Measuring Meaning: Searching For and Making Sense of Spousal Loss in Late-Life

Rachel A. Coleman and **Robert A. Neimeyer**
University of Memphis

Abstract

Despite much recent theorizing, evidence regarding the temporal relationship of sense-making to adjustment following bereavement remains relatively sparse. This study examined the role of searching for and making sense of loss in late-life spousal bereavement, using prospective, longitudinal data from the Changing Lives of Older Couples1 (CLOC) project (*N*=250). Searching at 6 and 18 months post-loss predicted both contemporaneous and subsequent grief. Sense-making was not related to grief for this sample. In contrast, sense-making at 6 months and 18 months predicted positive affect at 48 months, while searching had no prospective effect on this outcome. Searching at 6 months predicted depression at 18 months. Results are interpreted in terms of meaning-oriented theories of bereavement and processes promoting both adaptive and maladaptive outcomes.

Keywords

grief; bereavement; widowhood; meaning; adjustment

Broadly defined, "meaning-making" is a prominent theme in many current conceptualizations of mental health. Personal construct systems (Kelly, 1955), life schemes (Thompson & Janigian, 1988), and assumptive worlds (Janoff-Bulman, 1992; Parkes, 1971) are among the labels proposed by theorists for conscious or unconscious frameworks that enable people to interpret daily experience and engage in purposeful activity. Current theories of grief and loss also have focused increasingly on meaning-making. Disconfirmation of the basic beliefs that comprise these frameworks is widely seen as a particularly problematic aspect of profound or traumatic loss, occasioning both subjective distress and active efforts to assimilate or accommodate the disruption (Gillies & Neimeyer 2006; Janoff-Bulman, 1992; Park & Folkman, 1997). Consider the comments of one bereaved mother following the loss of her son in a car accident:

> I ask "Why" every day of my life. [As] a scientist, my husband says that the accident was a "random" act and cannot be understood. Since I have had a more religious upbringing, I struggle to understand *why* my son was taken. I can't help asking that question in fury, and I am not alone. The other mothers who have lost children feel the same way I do. *Why?* There is absolutely no reason why. Considering the legions of despicable people who take up space on the face of this earth while our children have gone defies any law of nature.

Direct correspondence to Rachel A. Coleman, Department of Psychology, University of Memphis, 400 Innovation Dr., Memphis, TN, 318152. racolemn@memphis.edu. Phone: (901) 679-6290.

> So I am left without any meaning in Tyler's death. Nothing is better for it; everything is worse. Here was a young man who inspired people and had recently returned from Indonesia where he had helped victims of the tsunami—a young man who was so transformed by that experience that he planned to spend two years in the Peace Corps before going on to grad school….

> Today marks week twelve of his death, and I am in the process of designing his gravestone. This simply should not be. Would that I could find some meaning in this tragedy. (Neimeyer, 2007, p. 194)

In the aftermath of personally devastating loss, survivors strive to adjust or reconstruct their assumptive worlds. According to a model of "meaning reconstruction" proposed by Neimeyer and his colleagues (Currier, Holland, Coleman & Neimeyer, 2007; Gillies & Neimeyer, 2006; Neimeyer, 2001, 2006), this process has a cyclical course in which the pain of bereavement prompts efforts to find meaning in the troubling transition, with new meanings being retained and integrated to the extent that they reduce distress; otherwise attempts at reconstruction are likely to continue.

The rubric of meaning-making following loss encompasses multiple overlapping constructs. However, researchers have been able to make increasingly clear distinctions between the process described above, most often termed "sense-making," and a related phenomenon labeled "benefit finding," in which people identify positive aspects of experiencing a loss, such as drawing closer to others or the ending of a loved one's suffering (Davis & Nolen-Hoeksema, 2001; Davis, Nolen-Hoeksema, & Larson, 1998; Holland, Currier, & Neimeyer, 2006). Sense-making may also be considered conceptually distinct from changes in personal identity, posttraumatic growth, and efforts to develop new life goals (Calhoun & Tedeschi, 2006; Gillies & Neimeyer, 2006). Thus, sense-making refers specifically to the reconciliation of pre-existing meanings with painfully anomalous implications of a loss.

In quantitative studies, sense-making has most often been assessed by directly asking participants to indicate the extent to which they have been able to "make sense of" a loss. A related group of studies examining the adaptive significance of making specific attributions about loss, such as establishing causal explanations, asking "why me" or "why my loved one," and assigning responsibility or blame to the self or others (e.g., Janoff-Bulman & Wortman, 1977; Thompson, 1991) likely measure processes that are subsumed by rather than synonymous with sense-making (Park & Folkman, 1997). Qualitative data that pertain to sense-making have also been elicited by studies that prompt participants to describe their loss experience in their own words (e.g., Braun & Berg, 1994; Hogan, Morse, & Tasón, 1996).

Sense-Making and Adjustment to Loss or Trauma

Although a number of quantitative studies have demonstrated associations between sense-making and concurrent outcome measures following loss and trauma, links to subsequent adjustment have been examined less frequently and have yielded inconclusive results. Sense-making has been associated with a number of clinically relevant outcomes in cross-sectional studies. An early study on the long-term effects of childhood incest (Silver, Boon, & Stones, 1983) found that adult women making "some sense" of their incest experience reported lower concurrent SCL-90 scores, better social adjustment, higher self-esteem, and a greater degree of "resolution" than those who made no sense, although the sense-making group had higher SCL-90 scores and poorer social adjustment than a community sample. Holland et al. (2006) reported that lower levels of sense-making were associated with higher scores on a measure of complicated grief for college students who had lost a family member or friend within the previous two years. Using data from the same sample, Currier, Holland

and Neimeyer (2006) showed that sense-making mediated the effect of losing a loved one violently (by homicide, suicide and accident) versus non-violently (through anticipated and sudden natural deaths) on complicated grief symptoms, when age, gender and closeness to the deceased were controlled. Schwartzberg and Janoff-Bulman (1991) also found that sense-making was associated with decreased grief in college students. One cross-sectional study of parents' reactions to the loss of a child showed that sense-making predicted concurrent measures of both "normal" and complicated grief (Keesee, Currier & Neimeyer, 2008) while another found that sense-making was negatively correlated with but did not emerge as a unique predictor of grief in a multivariate analysis (Uren & Wastell, 2002).

Taken together, these findings are broadly consistent with meaning reconstruction theories that understand the challenge that bereavement presents to survivors' assumptive worlds as a significant aspect of adjustment to loss. But although theoretical models discuss sense-making as a predictive or even causal factor for subsequent as well as concurrent outcomes, cross-sectional designs cannot test for this kind of relationship.

A small number of studies have used longitudinal designs to test whether sense-making predicts subsequent adjustment to loss or trauma. These have yielded mixed results, underscoring the need for further study. The strongest support for the longitudinal effects of sense-making is found in a recent study of responses to terrorism. Updegraff, Silver, and Holman (2008) conducted a prospective, longitudinal study of Americans' reactions to the events of September 11, 2001 (9/11), using a national random sample. Sense-making at two months after 9/11 predicted decreased posttraumatic stress (PTS) symptoms at 2 years, after controlling for pre-9/11 psychological diagnoses, degree of exposure to the attacks, acute stress symptoms at two months, and PTS symptoms at 1 year. Further, this relationship was mediated by sense-making's effect on fears of future terrorism.

In more traditional bereavement research, one study has provided evidence of limited longitudinal effects, while two others did not. In a prospective longitudinal study of 205 people whose loved ones died in hospice care, Davis et al. (1998) asked participants whether they had been able to "make sense of the death" and coded the responses as *yes, no*, and *partly*. Sense-making at 6 months predicted decreased distress (measured with a combination of indicators of depression, PTSD, and positive affect) at 6 months and 13 months when controlling for pre-loss distress, although the 13 month effect was only marginally significant ($p < .08$). This study found no effect of sense-making at 6 months on distress at 18 months post-loss. Sense-making at 13 months was not a predictor of concurrent or subsequent distress in this sample after controlling for sense-making at 6 months. An earlier longitudinal bereavement study conducted by McIntosh, Silver and Wortman (1993) asked parents who had lost a child to Sudden Infant Death Syndrome (SIDS) to rate the extent to which they had been able to "make sense of or find meaning in their loss," using a 5-point scale. Pre-loss distress measures were not available for this sample. Sense-making measured 3 weeks after a child's death predicted concurrent distress (abbreviated SCL-90-R) and well-being but was not directly related to the same outcome measures at 18 months when controlling for distress levels at 3 weeks post-loss. Finally, Bonanno, Wortman, and Nesse's (2004) analysis of data from a prospective, longitudinal study of spousal bereavement (the CLOC study, see below) found no role for sense-making in distinguishing five types of depression trajectories exhibited by survivors (resilient, depressed-improved, common grief, chronic grief, and chronic depression).

In summary, quantitative studies have generally revealed concurrent associations between sense-making and other measures of adjustment following loss and trauma, but results are less clear for prospective tests of sense-making's effects. Positive findings from two longitudinal studies (Davis et al., 1998; Updegraff et al., 2008) suggest that controlling for

pre-loss adjustment may reveal significant relationships between earlier measures of sense-making and more proximal outcomes. However, the few longitudinal studies to date have differed across multiple parameters, including the type of loss or trauma experienced, as well as the type and timing of measures used, leaving room for much additional work in this area.

Measuring Searching for Sense

In addition to measuring self-reported sense-making as such, research by Davis, Wortman, Lehman and Silver (2000) and Bonanno et al. (2004) underscores the value of directly assessing the extent to which the bereaved report actively *searching* to make sense of or find meaning in a loss. Like sense-making, "searching" has usually been measured quite simply, by asking respondents about the extent to which they are searching or have searched for sense or meaning. In addition, a few studies have included the extent to which participants ask themselves "why me" as part of the search construct.

Using data from two previously published studies of losses that can be considered "objectively" traumatic, Davis et al. (2000) found that a substantial minority of parents who had lost children to SIDS (see also McIntosh et al., 1993) and those who had lost a spouse or a child in a motor vehicle accident (MVA; see also Lehman, Wortman, & Williams, 1987) reported *never* searching to make sense of or find meaning in their loss. Fourteen percent of the participants in the SIDS study said they had not searched at 3 weeks post-loss. Four to seven years following an MVA, 30% of spouses and 21% of parents said they had never searched. As expected, SIDS study participants who reported both searching for sense and and successful sense-making at 3 weeks post-loss fared better on multiple outcomes across time (3 weeks, 3 months, and 18 months) relative to those who searched but had *not* made sense at 3 weeks post-loss. However, those who were not searching at this time point had as good or better outcomes as those who had successfully searched. Similarly, in the MVA study, those who had never searched did not differ significantly from those who searched successfully on measures of distress, well-being and self-rated recovery, while both of these groups displayed better outcomes than those who undertook a search unsuccessfully.

Bonanno et al.'s (2004) analysis of the CLOC data yielded results that are largely consistent with Davis et al.'s (2000) findings and are similarly supportive of the importance of the search variable in understanding adjustment following loss. They examined factors associated with five rationally derived depression trajectories for this sample, confirming that a "resilient" group of widowed persons who were not depressed either before or after their loss included more people who were *not* searching for sense at 6 and 18 months post-loss and fewer who searched unsuccessfully at 6 months. Conversely, those who were not searching were under-represented in a "chronic grief" category at both time points. The resilient group also reported searching less frequently compared with three other groups: chronic grievers, the chronically depressed, and "common grievers" who initially experienced significant distress but returned to their emotional baseline within 18 months following the loss. At 18 months, however, the chronic grief category also included a disproportionate number of those who *successfully* searched, a finding that is more difficult to interpret.

These results suggest that *not searching* for sense may be an important indicator of a resilient profile in which personal resources are such that a loss, even if painful, can be handled without more than a transient decrement in functioning (Bonanno, 2004). Within the meaning-reconstruction paradigm, these resources are understood to include beliefs about the world and the self that allow the non-disruptive assimilation of the loss experience (Berg & Braun, 1994; Janoff-Bulman & Yopyk, 2004; Neimeyer, 2006; Park & Folkman

1997), for example by placing it in a personal, secular or spiritual framework that renders the loss intelligible. Conversely, searching for sense is a direct indicator that the loss is in fact experienced as problematic in this respect. This accords with the results of several of the previously described studies, which found negative associations between searching and concurrent (Silver et al., 1983, Uren & Wastell, 2002) and subsequent adjustment (Updegraff et al., 2008).

The Present Study

The public availability of the Changing Lives of Older Couples (CLOC) data on spousal bereavement in later life provides a rich opportunity to replicate and extend the findings of the few existing longitudinal studies of sense-making following the loss of a loved one. Older married participants provided baseline data in extensive interviews; those whose spouses died during the study were contacted again at 6, 18, and 48 months post-loss. A group of non-bereaved control participants who were matched with bereaved participants on gender, age, and race were also interviewed at each time point. The prospective design and extensive scope of this study are its particular strengths, making it possible to statistically control for pre-loss levels of depression and well-being when testing whether measures of meaning-making predict both concurrent and subsequent adjustment to bereavement. In addition, both searching and sense-making were assessed for bereaved participants at each time point. Bereaved participants were also asked to provide narrative descriptions of their sense-making process. Finally, to the extent that late-life spousal bereavement is viewed as a relatively normative type of loss, the CLOC data can be usefully compared to studies that have focused on more objectively traumatic losses.

The present study used the CLOC data to examine how searching and sense-making at 6 and 18 months post-loss are related to each other and to grief, depression and well-being following late-life spousal bereavement. In contrast to Bonanno et al.'s (2004) previous analysis of this data set, the effect of sense-making was tested in relation to multiple outcomes at discrete time points rather than using holistic trajectories based on depression alone. This design allowed a more direct comparison of the sense-making process in this sample with results reported by Davis et al. (1998) and McIntosh et al. (1993) as well as replication of the cross-sectional associations observed in previous studies of bereaved college students (Holland, Currier & Neimeyer, 2006; Schwartzberg & Janoff-Bulman, 1991) and parents (Keesee, Currier & Neimeyer, 2008; Uren & Wastell, 2002).

The following specific hypotheses were tested:

1. Because searching is understood as an indicator that a loss presents a significant threat to pre-existing beliefs, higher levels of searching at both measurement points were expected to predict higher concurrent and subsequent levels of grief and depression, and lower levels of well-being.

2. The reverse was expected for sense-making, which should be associated with reduced distress, including less grief and depression and greater well-being, assessed both concurrently and subsequently.

3. Further, an interaction between searching and sense-making was hypothesized. In light of evidence that suggests sense-making may have different "meanings" in the context of different levels of search (Davis et al. 2000), sense-making was expected to have a stronger positive effect on adjustment when searching is more intense.

The relationship between searching and sense-making was also explored by examining the prospective effects of each on the other. Finally, categories derived from participants'

narrative descriptions of sense-making were used to examine the forms of meaning-making captured by the single-item sense measure in the CLOC study.

Method

Participants

The Changing Lives of Older Couples Study (CLOC) is a prospective study of a two-stage area probability sample of 1,532 men and women from the Detroit, Michigan Standardized Metropolitan Statistical Area (Carr & Utz, 2002).All participants were English-speaking members of a married couple, in which the husband was at least age 65 at the beginning of the study. Following initial interviews between June 1987 and April 1988, spousal loss was monitored using monthly death records provided by the State of Michigan and by reading daily obituaries in Detroit-area newspapers. Of 335 participants who lost their spouse during the course of the study, 316 were still living at follow-up, and 263 participated in at least one subsequent interview, at 6 months, 18 months, or 48 months post-loss. Eighty-three non-bereaved controls matched to bereaved participants using gender, age and race were also interviewed at Wave 1; there were 200 Wave 2 controls and 103 Wave 3 controls.

Wave 1 bereaved participants included 206 women and 33 men who contributed usable data[2]. This sample ranged in age from 53 to 89, with a mean of 72.84 years (SD = 6.60). The average time elapsed since the pre-loss baseline interview was approximately 37 months (SD = 17.99). Circulatory system conditions (heart attacks, strokes and other related conditions), cancer, and respiratory system conditions (emphysema, acute upper respiratory diseases) were the most common primary causes of death for the spouses of these survivors (~ 86%). About half of these losses were attributed by study participants to an ongoing medical condition suffered by their spouse; in contrast, approximately half of this sample had days, hours, or no warning prior to their spouse's death. The majority of Wave 1 participants were Caucasian (83%). Other ethnicities included African American (16%) and Hispanic/Latino (1%). Those who participated in both Wave 1 and Wave 2 included 164 women and 24 men, while those who participated in all three data collection waves included 89 women and 10 men. Carr (2004) found that younger participants, those who were less anxious at baseline, and those who owned their own homes were more likely to participate in Wave 1, but did not identify any predictors of selective attrition following Wave 1.

Measures

Dependent variables—*Grief* (α = . 88) symptoms, including anxiety, despair, shock, anger, yearning, and intrusive thoughts, were measured using 19 items derived from the Bereavement Index (Jacobs, Kasl, & Ostfeld, 1986), the Present Feelings About Loss Scale (Singh & Raphael, 1981), and the Texas Revised Inventory of Grief (Zisook, DeVaul & Click, 1982). Respondents indicated the extent to which they had experienced each symptom during the previous month, using the following categories: *No, never; Yes, but rarely; Yes, sometimes*; or *Yes, often*.

Depressive symptoms (α = .76) were assessed with a subset of nine negative items from the 20-item Center for Epidemiologic Studies–Depression Scale (CES-D; Radloff 1977). Respondents indicated how often they experienced each of nine symptoms in the week prior to interview. Responses ranged from 1 (*hardly ever*) to 3 (*most of the time*), and sample items included *I felt depressed; I felt that everything I did was an effort; my sleep was*

[2]For the present study, data quality indicators were used to exclude cases in which at least one interview was judged by the investigators to be of questionable or unsatisfactory quality or in which participants were rated as slightly or very unresponsive, or showing poor understanding of the survey questions.

restless. The CES-D was developed to assess depressive symptoms in a non-clinical population, and does not necessarily indicate a diagnosis of clinical depression (Coyne, 1994).

Subjective well-being (α = .79) was assessed with the Positive Affect subscale of the Affect Balance Scale (Bradburn, 1969). Respondents indicated how often they experienced each of five positive feelings in the week prior to interview. Responses at baseline ranged from 1 (*hardly ever*) to 3 (*most of the time*), while later waves used a 5-point scale ranging from *always* to *never*. Sample items included *feeling particularly excited or interested in something; feeling pleased about having accomplished something; feeling that things were going your way*.

Independent variables: Searching for Sense—Participants responded to the question, *During the past month, did you ever find yourself searching to make sense or find some meaning in your husband/wife's death*? using the following categories: *No, never; Yes, but rarely; Yes, sometimes*; or *Yes, often*.

Sense-Making—Participants responded to the question *Have you made any sense or found any meaning in your (husband's/wife's) death*? using the following categories: *No, not at all; Yes, a little; Yes, some*; or *Yes, a great deal*. In addition, participants who said they had made at least "a little" sense were asked *How have you done so*? while those who said they had made no sense were asked, *Can you tell me why you feel that way*? Responses were then coded into categories, including "spouse was young," "spouse had poor health habits," and "references to God or religion." Up to two categories were coded for each participant.

Demographic covariates included gender (where female = 0 and male = 1), age at baseline of the surviving spouse, and "the gap," or time elapsed between the baseline and later interviews.

Results

Descriptive statistics and zero-order correlations for all measures are presented in Tables 1-4. At Wave 1, 6 months post-loss, approximately 70% of bereaved participants reported that they had not searched to make sense of their loss in the previous month, suggesting that the majority of this sample did not experience the death of their spouse as a threat to previously held beliefs. However, approximately 10% reported "often" searching at Wave 1. At Wave 2, the proportion of participants who had not searched in the past month remained close to 70%, but only 4.5% reported searching "often." By Wave 3, 81.7% of the participants were not searching, with 1% often searching, 9.6% sometimes searching, and 7.7% rarely searching. A repeated measures ANOVA revealed a statistically significant difference in average levels of searching across time for those who participated in all three post-loss interviews, $F(1.83, 175.56) = 4.86$, $p < .05$ (Greenhouse-Geisser correction). Post-hoc tests indicated that participants searched less at Wave 3 compared to Waves 1 and 2.

At each wave, approximately 50% of participants said they had made no sense (range 50.2-55.9%) while the remainder split fairly evenly across the other three response categories (a little, some, a great deal). In keeping with previous studies, there were no significant concurrent zero-order correlations between searching and sense-making in this sample. There was a negative association between searching at Wave 1 and sense-making at Wave 2, $r = -.182$, $p < .05$.

Cross-sectional and prospective regression analyses were conducted to assess the effect of searching and sense-making on concurrent and subsequent adjustment to loss (Hypotheses

1-3)[3]. Gender, age at baseline, and the interval between baseline and post-loss interviews ("the gap") were modeled as covariates, as were pre-loss measures of adjustment, where applicable. Regression results are presented below for each outcome measure.

Predictors of Grief

A repeated measures ANOVA revealed that participants' average grief scores declined for each wave of data collection, $F(2, 196) = 62.81$, $p < .001$. In both concurrent and prospective regression analyses, the extent to which respondents reported searching for sense following their loss predicted increased grief. The magnitude of the effect of concurrent searching was greatest at 6 months post-loss, $\beta = .526$, $p < .001$, versus Waves 2, $\beta = .410$, $p < .001$, and 3, $\beta = .414$, $p < .001$. Searching at Wave 1 predicted subsequent grief at both Wave 2, $\beta = .465$, $p < .001$, and Wave 3, $\beta = .595$, $p < .001$. Searching at Wave 2 also predicted subsequent grief, $\beta = .441$, $p < .001$. An additional set of regression models in which concurrent grief was included as an independent variable was also tested (Table 5). These analyses showed that searching continued to predict subsequent grief in each model. This effect was strongest for the relationship between 6 month searching and 48 month grief, $\beta = .371$, $p < .001$. Similarly, Wave 2 searching did not account for unique variance in 48 month grief after controlling for Wave 1 searching.

Sense-making was not a significant predictor of concurrent or subsequent grief. Interaction terms for the joint effect of Search and Sense were not significant for any of the grief models. The covariates were not significantly related to grief.

Predictors of Depressive Symptoms

A one-way ANOVA indicated that pre-loss depression scores for participants who were bereaved during the study did not differ from those reported for controls. Bereaved participants were more depressed than controls at Wave 1, $F(1,317) = 8.403$, $p < .01$ but by Wave 2 there was no significant difference between the groups.

Concurrent regression analyses showed that searching was positively associated with depressive symptoms at Waves 1, $\beta = .343$, $p < .001$ and Wave 2, $\beta = .205$, $p < .01$. Prospective analyses indicated that searching at Wave 1 predicted increased depressive symptoms at Wave 2, $\beta = .251$, $p < .001$. Following the addition of Wave 1 depression to this model, the effect of searching became non-significant, but an interaction between searching and sense was revealed (Table 6). Probing of the interaction following procedures recommended by Aiken and West (1991) showed that after controlling for Wave 1 depression, Wave 1 searching significantly increased Wave 2 depression only at *higher* levels of sense-making (i.e., "some" or "a great deal," of sense), a counter-intuitive finding. However, excluding the two participants who reported both searching "often" and making "a great deal" of sense rendered this interaction non-significant, $p = .418$, suggesting the need for caution in interpreting this anomalous result.

Except for the interaction just described, sense-making was not a significant predictor of concurrent or subsequent depression. Baseline depression predicted increased depression at all three time points, concurrent model β's =.227-.347, p's < .001. Finally, older widowed persons suffered greater depression at Wave 3, $\beta = .216$, $p < .05$.

---

[3]Several possible transformations for addressing skew in the single-item searching and sense-making variables were attempted but not utilized as they did not substantially change the results presented here. Likewise, because dichotomizing the two predictor variables produced nearly identical results, the original four-point range of response options was retained.

Predictors of Well-Being (Positive Affect)

During initial interviews, measures of well-being for those who were bereaved during the CLOC study were not significantly different from controls. At Waves 1 and 2, however, widowed participants reported lower levels of positive affect, Wave 1 $F(1,317) = 13.103$, $p < .001$; Wave 2 $F(1,395) = 4.646$, $p < .05$. Positive affect was again equivalent for the two groups at Wave 3. In contrast to models for the other outcome measures, sense-making played a more important role in predicting well-being than did searching. Searching negatively predicted concurrent positive affect at Wave 1 only, $\beta = -.133$, $p < .05$, and had no prospective effects. Sense-making positively predicted concurrent well-being at Wave 2, $\beta = .174$, $p < .05$. Both Wave 1 and Wave 2 sense-making were significant predictors of Wave 3 well-being, $\beta = .258$, $p < .01$, and $\beta = .212$, $p < .05$ respectively. However, neither effect remained significant when concurrent well-being was added to the prospective models for Wave 3 (Table 7).

Interaction terms for the joint effect of searching and sense-making were not significant for any of the well-being models. Pre-loss well-being was a significant predictor of well-being at Wave 1, concurrent model $\beta = .144$, $p < .05$ and Wave 2, concurrent model $\beta = .241$, $p < .001$, but had no effect at Wave 3. Older widowed persons reported decreased well-being at Wave 2, concurrent model $\beta=-.151$, $p < .05$ and Wave 3, concurrent model $\beta=-.256$, $p < .01$. A longer gap also predicted decreased Wave 3 well-being in the final Wave 1-3 model, $\beta = -.166$, $p < .05$.

Relationship of Searching and Making Sense

Supplementary analyses examined the prospective relationships between searching and sense-making. Gender, age, the gap, and pre-loss levels of depressive symptoms and well-being were included as covariates in these analyses. In addition, earlier levels of searching were included as predictors of sense-making and vice versa. Regressions of sense-making on searching revealed that the direction of the effect of searching changed over time. Searching at Wave 1 predicted *decreased* sense-making at Wave 2, after controlling for the covariates and Wave 1 sense-making, $\beta = -.155$, $p < .05$. However, searching at Wave 2 predicted *increased* Wave 3 sense-making after controlling for the covariates and Wave 2 sense-making, $\beta = .217$, $p < .05$. Regressions of searching on sense-making did not reveal associations between the two aspects of meaning-making at any time point.

Types of Sense Made

A comparison of the types of responses given as follow-up to the single-item sense-making measure revealed both similarities and differences between those who reported making sense and those who did not. Bereaved participants who reported having made at least a little sense of their spouse's death were more likely to express positive acceptance of the death (death brought an end to suffering for their spouse; spouse was now at peace), $\chi^2 (1, N = 232) = 21.43$, $p < .001$, less likely to describe the death as non-normative or premature (spouse was young, in good health, or both), $\chi^2 (1, N = 232) = 12.95$, $p < .001$, and less likely to say they had concluded that the death had no meaning, $\chi^2 (1, N = 232) = 7.92$, $p < .01.$. The groups endorsed similar rates of neutral acceptance ("it was his time"; "that's life"), and were equally likely to describe the death as normative, make references to God or religion, make positive comments about the spouse's life, refer to the spouse's unhealthy habits, and attribute the death to mistakes by medical staff.

Discussion

Analysis of searching and sense-making reported by CLOC participants underscores the relevance of the former as a risk factor for poor bereavement outcome, whereas the latter

seems to predict ultimate resilience, as reflected in long-term positive affect or well-being. In addition, this study augments previous data that bear on the construct validity of the two single-item measures used here. We will conclude by commenting on each of these general findings in turn.

CLOC Sense-Making in Context

Although disruption of previously held assumptions did not appear to be an issue for the majority of participants in this sample, a substantial minority (30.5%, 6 months post-loss) did report searching to make sense of their loss. This is in notable contrast to the significantly higher rates of current searching reported by survivors of childhood incest (> 80%, average time elapsed 20 years; Silver et al., 1983), Americans reflecting on the events of 9/11 (68.4%, 2 months later; Updegraff et al., 2008) and parents grieving a perinatal loss (58%, median time elapsed 2-3 years; Uren & Wastell, 2002) or SIDS death (68%, 3 weeks post-loss; Davis et al., 2000). However the CLOC rate of searching is comparable to that reported by Lehman, Wortman, and Williams (1987) for those who lost spouses to motor vehicle accidents (32%, 4 to 7 years post-loss). For sense-making, the percentage of CLOC participants who reported making at least some sense (~45-50%) fell in the mid-range of rates reported in other studies.

To the extent that the death of an older spouse is a relatively normative loss, perhaps it is the presence in this sample of the group for whom the loss triggered an active search process that is most remarkable. Further study is needed to identify characteristics that distinguish searchers from non-searchers following a relatively normative loss and factors that predict sense-making. The CLOC data set is well suited for this kind of investigation as it contains extensive data on the pre-loss characteristics of widowed persons and their spouses, as well as measures of the quality of the marital relationship and the circumstances of the death.

Evidence for Prospective Effects of Searching and Sense-Making

Prospective effects were observed for some but not all of the regression models tested; results varied across the different outcomes studied. For grief, the outcome most specific to bereavement, prospective effects were observed for searching for all models. Effects were largest for searching at Wave 1, and this measure had the most predictive power at the most distal time point for which data was collected, 48 months after the loss. In addition, searching remained a significant predictor of grief even after earlier measures of grief were included in the model. These findings are consistent with theories that hold that disruption of pre-existing assumptions is an important risk factor for severe grief reactions following loss (e.g., Neimeyer, 2006) and with the results of the one previous study that specifically examined the link between searching and grief (Uren & Wastell, 2002). In contrast to findings from previous studies (Holland, Currier & Neimeyer, 2006; Keesee, Currier & Neimeyer, 2008; Schwartzberg & Janoff-Bulman, 1991), however, sense-making itself was not related to grief in this sample. The converse held for models of positive affect, in which sense-making but not searching predicted long-term well being. However, sense-making did not predict unique variance in subsequent positive affect after previous levels of positive affect were included in the models. Analyses of depression revealed a prospective effect of searching at Wave 1 on Wave 2 depression but when prior level of depression was modeled, this was true only when participants reported making "some" or "a great deal" of sense.

Several factors are important to consider in assessing these results in the context of previous research, including demographic characteristics of the samples, the extent to which each type of loss was "normative" versus objectively traumatic, and the amount of time elapsed since the loss. The results of this study also highlight the importance of considering the type of outcome modeled.

In understanding the lack of relationship between sense-making and grief observed in the present analyses, it may be most useful to focus on the level of objective trauma experienced by respondents. Keesee et al.'s (2008) participants had suffered the loss of a child, a decidedly less normative experience than the loss of an older spouse. This difference might explain the greater impact of sense-making in their sample, which seemed to assuage the intense and prolonged grief reported by a large proportion of the parents. Similarly, although many participants from the sample assessed by Holland et al. (2006) had lost elderly grandparents, nearly 30% had experienced violent losses through accidents, suicides, and homicides. The relative youth of this college student sample is another unique feature of the Holland et al. sample. These considerations do not account for Uren and Wastell's (2002) null findings for the effect of sense-making on grief following the perinatal loss of a child, however.

Similar factors are likely relevant when comparing the absence of effects of sense-making on negative outcomes in the CLOC study with previous studies in which sense-making has been associated with general measures of psychological distress. As above, the normative character of loss experienced by the CLOC sample distinguishes them from groups studied by McIntosh et al. (1993; SIDS deaths), Silver et al. (1980; incest in childhood), and Updegraff et al. (2008; 9/11). That is, inability to make sense of a loss may emerge as a stronger predictor of poor bereavement outcome when the death is traumatic, violent, or premature. However, the discrepancy between the results of the present study and the concurrent and prospective effects of sense-making on "distress" reported by Davis et al. in their 1998 hospice study remains puzzling. As discussed in the next section, the inclusion of positive affect in their composite outcome measure may help explain this apparent discrepancy.

In light of the absence of expected effects of sense-making on grief and depression, the finding that sense-making was related to positive affect for the CLOC participants is among the most intriguing results of this study, and has possible implications for new models of adjustment to bereavement and other stressors that explicitly include the role of positive affect and cognitions. Recent research has shown that positive and negative psychological states reliably co-occur during stressful experiences (Bonanno & Keltner, 1997; Folkman, 2008; Folkman & Moskowitz, 2000) and that they have different predictors (Moskowitz, Folkman & Acree, 2003; Moskowitz, Folkman, Collette, and Vittinghoff, 1996). Positive emotion can be thought of as a desirable outcome in itself and is associated with a range of other desirable outcomes, including flexible, creative cognitive processing (Isen, 1999), positive social interaction (Isen, 1999; Keltner & Bonanno, 1997), and reduced morbidity and mortality (Folkman, 2008). Updated stress and coping theories posit that positive emotions contribute to successful adjustment by sustaining coping efforts and providing respite from distress, as well as by helping to create and strengthen social ties (Bonanno, 2001; Folkman, 2008). Stroebe and Schut (2001a, 2001b) have also affirmed the value of incorporating positive psychological states into models of the grieving process, and have added "positive meaning" to their dual process model of coping with bereavement (Stroebe & Schut, 2001a).

The one previous study that specifically examined the relationship between sense-making and well-being found concurrent but not prospective effects (McIntosh et al., 1993). Other studies have identified bidirectional links between positive affect or mood and the form of meaning-making that bereavement literature usually refers to as "benefit-finding." Tugade and Fredrickson (2004) found that positive emotion was associated with higher levels of benefit-finding for college students writing about current personal problems. Moskowitz, Folkman, Collette, and Vittinghoff (1996) reported that positive reappraisal predicted concurrent positive affect after controlling for the previous month's positive affect for gay

men whose partners had died of AIDS three and five months previously. The present study's results indicate that early sense-making may also play a part in increasing positive affect for widowed persons at later stages of bereavement. Further, by demonstrating the differential effects of searching and sense-making on positive and negative measures, the CLOC data add to the body of work that suggests the utility of modeling both types of outcomes.

Construct Validity of "Searching" and "Sense-making"

Previous research has demonstrated the value of more precisely delineating diverse aspects of the larger concept of "meaning-making" (Davis et al., 1998; Davis et al., 2000; Holland et al., 2006). Most notably, this work has helped establish a basis for distinguishing between sense-making and benefit-finding, where sense-making refers to reconciling current experience with previous beliefs, and benefit finding is the identification of positive aspects or consequences of a primarily negative event. The present study provides further clarification of distinct aspects of sense-making itself and has implications for the construct validity of the single-item measures of searching and sense-making often used in earlier investigations.

In the CLOC study, the single-item measure of search demonstrated a strong, linear relationship with grief. Searching at 6 months predicted grief symptoms as much as three years later. In addition, searching was a significant predictor of subsequent grief even after controlling for earlier grief. In contrast, searching was not as useful in predicting depression. This is consistent with conceptualizations of grief as having an intrinsic meaning-related component (Neimeyer, 2001, 2006). In addition, it fits with recent research establishing the discriminant validity of grief *vis-à-vis* depression and PTSD (Prigerson, Vanderwerker, & Maciejewski, 2008). The search measure in this form appears to have particular utility as a) an indicator of the extent to which a person has experienced a loss as disruptive to existing beliefs about the self and the world, and b) a predictor of greater subsequent grief. However, the data in this study were not fully consistent with theoretical models in which searching is an adaptive response to loss that leads to increased sense-making. Similarly, levels of search did not depend on levels of sense-making. Efforts to further elucidate the search construct are needed, and will likely converge with recent efforts to disambiguate adaptive and maladaptive aspects of cognitive coping processes such as rumination (Nolen-Hoeksema, Wisco, & Lyubomirksy, 2008; Stroebe & Schut, 2001a; Taku, Calhoun, Cann & Tedeschi, 2008; Watkins, 2008).

Although sense-making did not appear to play an important role in relieving grief in this sample, it did predict participants' subsequent reports of positive affect. As noted above, effects of sense-making on negative outcomes may be more likely to be observed in samples who have suffered non-normative losses. Based on the limited evidence available to date, it is unclear whether this also applies to links between sense and well-being: further research is also needed here. In addition, the CLOC data suggest the value of additional investigation of the hypothesis that earlier searching and sense-making have the strongest impact on long-term adjustment.

A related consideration when assessing the construct validity of the single-item sense-making measure is the issue of how respondents understand this question. Although several previous studies have asked participants to describe how they made sense of a loss (Janoff-Bulman & Wortman, 1977, Davis et al., 1998, Schwartzberg & Janoff-Bulman, 1991), CLOC participants were asked to elaborate on this topic whether they did or did not report having made any sense. An examination of these data at Wave 1 reveals two particularly salient features. First, those reporting having made at least a little sense of their spouse's death were more likely to express positive acceptance of the death and less likely to describe the death as non-normative. However, there was also considerable overlap between the two

groups. Both groups of respondents made frequent references to religious meanings, cited conditions that would have made the death more predictable (normative), and expressed "neutral acceptance," via comments indicating that they viewed death as an inevitable part of the life-cycle. This overlap suggests substantial variation in the way respondents interpreted the sense-making question. In addition, the relatively frequently endorsed positive acceptance category overlaps with the benefit-finding construct.

Continued development and testing of more nuanced measures is needed to further establish the construct validity of what has been termed "sense-making" following bereavement. At minimum, additional single-item questions, such as those used by Davis et al. (1998) in which participants are asked about the extent to which making sense was important, as well as whether not making sense was painful, can helpfully contextualize the single-item sense-making measure. In addition, a recent study by Currier, Holland, and Neimeyer (2009) suggests the importance of broadening the conceptualization of sense-making to include a potentially dysfunctional mechanism in which negative beliefs about the world are confirmed by new trauma or loss. Future studies should thus continue to investigate the variation in and differential effects of the types of meanings associated with "making sense."

Finally, as noted above, the relationship between searching and sense-making remains elusive. Searching at 6 months predicted decreased sense-making at 18 months, whereas 18-month searching was associated with increased sense-making, again suggesting the complexity of these processes and the importance of studying them over time. In addition, the expected interactions between searching and sense-making were not observed in this sample. Continued efforts to discern how the two constructs are related require that they be measured together in additional longitudinal studies.

Limitations of this study include those that are common to this area of research: men are under-represented in the sample, as a function of the relative longevity of the two sexes, and although CLOC recruited over 1,500 people, this tremendous effort yielded only 239 participants who were bereaved during the 8-year study period. Notable strengths of the data and analyses presented here include the ability to model prospective effects of both early and later searching and sense-making's incremental influence on adjustment at several discrete time points. This allowed a more stringent test of the directionality of effects than has been possible in many previous studies of sense-making. The ability to compare the effects of sense-making on multiple distinct outcomes also proved particularly valuable. Although using regression models allowed the closest comparison with the results of previous studies (i.e., Davis, Nolen-Hoeksema, & Larson, 1998; McIntosh, Silver & Wortman, 1993), this approach does not exhaust the potential of a longitudinal data set to illuminate the role of meaning-making in adjustment to loss. In particular, future studies could attempt to use growth curve or hierarchical linear modeling to investigate how searching and sense-making affect *trajectories* of change in grief, depression and well-being following bereavement.[4]

Further work is needed to flesh out discrete dimensions of meaning making, disambiguate meaning-making processes from meaning-related outcomes, understand how meaning-making is differentially related to the wide range of measures that may be used to characterize adjustment to loss, and identify mediators, moderators, and precursors or diatheses that affect these processes. Still, the CLOC data are consistent with the growing body of current research that depicts bereavement as a complex process that varies as a function of numerous intrapersonal and contextual dimensions and affects multiple aspects

---

[4]In the present case, however, preliminary analyses indicated that growth modeling may not be the best fit for the CLOC data, which displayed little variation in grief slope, and a slope not different from zero for positive affect.

of survivors' lives. As detailed above, both searching and sense-making predict subsequent adjustment to loss for CLOC participants, although they are associated with different types of outcomes. The results of these analyses suggest the need to gain a better understanding of those who search desperately for meaning even in objectively normative circumstances.

In general, searching appears to be more prevalent, and sense-making more important to adjustment for people who have experienced more traumatic or premature loss. Although previous research has produced mixed results for prospective tests of early sense-making, the results of the present study are consistent with the general principle that early sense-making may carry the strongest implications for long-term well being, and are also compatible with current proposals that complicated grief be diagnosed only after six months of continuous distress (Prigerson et al., 2008). These results also reinforce the growing consensus that grief is a discrete clinical phenomenon, and that it often includes a meaning-disruption component, driven by both shock and the disruption of attachment. Finally, despite the psychometric limitations of single-item measures, this study suggests that asking the bereaved about the extent to which they are searching to make sense of their loss may be useful in assessing the problematic disconfirmation of basic beliefs following loss and in predicting subsequent grief, whereas not searching may be considered one indicator of a resilient response. Sense-making as measured by a single item remains a more ambiguous construct, but this study indicates that it may be specifically relevant to the experience of positive affect following bereavement.

In the clinical context, these findings suggest that interviewing the bereaved about the extent to which they are searching to make sense of a loss can serve as an effective screen for the presence of meaning-related distress. Follow-up should involve careful exploration of the unique personal meanings of a loss, without assuming that all forms of sense-making are helpful. In addition, clinicians should be alert to the possibility that particular vulnerabilities may lead some survivors to experience a crisis of meaning even when the circumstances of the loss are not judged to be objectively traumatic.

References

Aiken, LS.; West, SG. Multiple regression: Testing and interpreting interactions. Newbury Park, CA: Sage Publications, Inc.; 1991.

Bonanno, G. Grief and emotion: a social-functional perspective. In: Stroebe, M., et al., editors. Handbook of bereavement: consequences, coping, and care. Washington, DC: American Psychological Association; 2001. p. 493-515.

Bonanno GA. Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely adverse events? American Psychologist. 2004; 59:20–28. [PubMed: 14736317]

Bonanno GA, Keltner D. Facial expressions of emotion and the course of conjugal bereavement. Journal of Abnormal Psychology. 1997; 106:126–137. [PubMed: 9103724]

Bonanno G, Wortman C, Lehman D, Tweed R, Haring M, Sonnega J, Carr D, Nesse R. Resilience to loss and grief: A prospective study from preloss to 18-months postloss. Journal of Personality and Social Psychology. 2002; 83:1150–1164. [PubMed: 12416919]

Bonanno GA, Wortman CB, Nesse RM. Prospective patterns of resilience and maladjustment during widowhood. Psychology and Aging. 2004; 19:260–271. [PubMed: 15222819]

Bradburn, NM. The structure of psychological well-being. Chicago: Aldine; 1969.

Braun MJ, Berg DH. Meaning reconstruction in the experience of parental bereavement. Death Studies. 1994; 18:105–129.

Brown J, Jose P, Ng S, Guo J. Psychometric Properties of Three Scales of Depression and Well-being in a Mature New Zealand Sample. New Zealand Journal of Psychology. 2002; 31:39–46.

Calhoun, l; Tedeschi, R., editors. Handbook of posttraumatic growth: Research and practice. Mahwah, NJ: Lawrence Erlbaum; 2006. p. 68-80.

Carr D. The Desire to Date and Remarry among Older Widows and Widowers. Journal of Marriage and Family. 2004; 66:1051–68.

Carr D, Utz R. Late-life widowhood in the United States: New directions in research and theory. Ageing International. 2002; 27:65–88.

Coyne JC. Self-reported distress: analog or ersatz depression? Psychological Bulletin. 1994; 166:29–45. [PubMed: 8078972]

Currier, J.; Holland, J.; Coleman, R.; Neimeyer, RA. Bereavement following violent death: An assault on life and meaning. In: Stevenson, R.; Cox, G., editors. Perspectives on violence and violent death. Amityville, NY: Baywood; 2007. p. 177-202.

Currier JM, Holland JM, Neimeyer RA. Sense-making, grief, and the experience of violent loss: Toward a mediational model. Death Studies. 2006; 30:403–428. [PubMed: 16610156]

Currier JM, Holland JM, Neimeyer RA. Assumptive worldviews and problematic reactions to bereavement. Journal of Loss and Trauma. 2009; 14:181–195.

Davis CG, Nolen-Hoeksema S. Loss and meaning: How do people make sense of loss? American Behavioral Scientist. 2001; 44:726–741.

Davis CG, Nolen-Hoeksema S, Larson J. Making sense of loss and benefiting from the experience: Two construals of meaning. Journal of Personality and Social Psychology. 1998; 75:561–574. [PubMed: 9731325]

Davis CG, Wortman CB, Lehman DR, Silver RC. Searching for meaning in loss: Are clinical assumptions correct? Death Studies. 2000; 24:497–540. [PubMed: 11503666]

Downey G, Silver RC, Wortman CB. Reconsidering the attribution-adjustment relation following a major negative event: Coping with the loss of a child. Journal of Personality and Social Psychology. 1990; 59:925–940. [PubMed: 2266484]

Folkman S. The case for positive emotions in the stress process. Anxiety, Stress, & Coping. 2008; 21:3–14.

Folkman S, Moskowitz JT. Positive affect and the other side of coping. American Psychologist. 2000; 55:647–654. [PubMed: 10892207]

George, L. Affect balance scale. In: Maddox, GL., editor. Encyclopedia of Aging. 2. New York: Springer Publishing Company; 1996. p. 29

Gillies J, Neimeyer RA. Loss, Grief, and the Search for Significance: Toward a Model of Meaning Reconstruction in Bereavement. Journal of Constructivist Psychology. 2006; 19:31–65.

Hogan NS, Morse JM, Tasón MC. Toward an experiential theory of bereavement. Omega. 1996; 27:43–65.

Holland JM, Currier JM, Neimeyer RA. Meaning reconstruction in the first two years of bereavement: The role of sense-making and benefit-finding. Omega: Journal of Death and Dying. 2006; 53:175–191.

Jacobs S, Kasl S, Ostfeld A. The measurement of grief: Bereaved versus nonbereaved. The Hospice Journal. 1986; 2:21–36. [PubMed: 3647919]

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

Janoff-Bulman R, Wortman CB. Attributions of blame and coping in the "real world": Severe accident victims react to their lot. Journal of Personality and Social Psychology. 1977; 35:351–363. [PubMed: 874739]

Janoff-Bulman, R.; Yopyk, DJ. Random Outcomes and Valued Commitments: Existential Dilemmas and the Paradox of Meaning. In: Greenberg, J.; Koole, SL.; Pyszczynski, T., editors. Handbook of Experimental Existential Psychology. New York: Guilford Press; 2004. p. 122-138.

Isen, AM. Positive affect. In: Dalgleish, T.; Power, M., editors. Handbook of cognition and emotion. New York: Wiley; 1999. p. 521-539.

Keesee NJ, Currier JM, Neimeyer RA. Predictors of grief following the death of one's child: The contribution of finding meaning. Journal of Clinical Psychology. 2008; 64:1145–1163. [PubMed: 18698614]

Kelly, GA. The psychology of personal constructs. New York: Norton; 1955.

Keltner D, Bonanno GA. A study of laughter and dissociation: Distinct correlates of laughter and smiling during bereavement. Journal of Personality and Social Psychology. 1997; 73:687–702. [PubMed: 9325589]

Kempen GI. Psychometric properties of Bradburn's Affect Balance Scale among elderly persons. Psychological Reports. 1992; 70:638. [PubMed: 1598382]

Kohout FJ, Berkman LE, Evans DA, Cornoni-Huntley J. Two shorter forms of the CES-D Depression Symptoms Index. Journal of Aging and Health. 1993; 5:179–193. [PubMed: 10125443]

Lehman DR, Wortman CB, Williams AF. Long-term effects of losing a spouse or child in a motor vehicle crash. Journal of Personality and Social Psychology. 1987; 52:218–231. [PubMed: 3820074]

Maitland SB, Dixon RA, Hultsch DF, Hertzog C. Well-being as a moving target: measurement equivalence of the Bradburn Affect Balance Scale. Journal of Gerontology. 2001; 56B:69–77.

McIntosh DN, Silver RC, Wortman CB. Religion's role in adjustment to a negative life event: Coping with the loss of a child. Journal of Personality and Social Psychology. 1993; 65:812–821. [PubMed: 8229652]

Moskowitz JT, Folkman S, Acree M. Do positive psychological states shed light on recovery from bereavement? Findings from a 3-year longitudinal study. Death Studies. 2003; 27:471–500. [PubMed: 12814129]

Moskowitz JT, Folkman S, Collette L, Vittinghoff E. Coping and mood during AIDS-related caregiving and bereavement. Annals of Behavioral Medicine. 1996; 18:49–57. [PubMed: 24203643]

Neimeyer, RA., editor. Meaning reconstruction and the experience of loss. Washington: American Psychological Association; 2001.

Neimeyer, RA. Widowhood, grief and the quest for meaning: A narrative perspective on resilience. In: Carr, D.; Nesse, RM.; Wortman, CB., editors. Spousal bereavement in late life. New York: Springer; 2006. p. 227-252.

Neimeyer, RA. Meaning breaking, meaning making: Rewriting stories of loss. In: Doka, KJ., editor. Living with grief: Before and after the death. Washington, DC: Hospice Foundation of America; 2007. p. 193-208.

Nolen-Hoeksema S, Wisco BE, Lyubormirsky S. Rethinking rumination. Perspectives on Psychological Science. 2008; 3:400–424.

Park CL, Folkman S. Meaning in the context of stress and coping. Review of General Psychology. 1997; 1:115–144.

Parkes CM. Psycho-social Transitions. Social Science and Medicine. 1971; 5:101–115. [PubMed: 5088720]

Prigerson, HG.; Vanderwerker, LC.; Maciejewski, PK. A case for inclusion of prolonged grief disorder in DSM-V. In: Stroebe, MS.; Hansson, RO.; Schut, H.; Stroebe, W.; Van den Blink, E., editors. Handbook of bereavement research and practice: Advances in theory and intervention. Washington DC: American Psychological Association; 2008. p. 165-186.

Radloff LS. The CES-D scale: A self-report depression scale for research in the general population. Applied Psychological Measurement. 1977; 1:385–401.

Schwartzberg SS, Janoff-Bulman R. Grief and the search for meaning: Exploring the assumptive worlds of bereaved college students. Journal of Social and Clinical Psychology. 1991; 10:270–288.

Silver RL, Boon C, Stones MH. Searching for meaning in misfortune: Making sense of incest. Journal of Social Issues. 1983; 39:81–102.

Singh B, Raphael B. Postdisaster morbidity of the bereaved: A possible role for preventive psychiatry. Journal of Nervous and Mental Disease. 1981; 169:203–212. [PubMed: 7217925]

Stroebe, MS.; Schut, H. Meaning making in the Dual Process Model of Coping with Bereavement. In: Neimeyer, R., editor. Meaning reconstruction and the experience of loss. Washington DC: American Psychological Association; 2001a. p. 55-73.

Stroebe, MS.; Schut, H. Models of coping with bereavement: A review. In: Stroebe, MS.; Hansson, RO.; Stroebe, W.; Schut, H., editors. Handbook of bereavement research: Consequences, coping and care. Washington, DC: American Psychological Association; 2001b. p. 375-403.

Taku K, Calhoun LG, Cann A, Tedeschi RG. The role of rumination in the coexistence of distress and posttraumatic growth among bereaved Japanese university students. Death Studies. 2008; 32:428–44. [PubMed: 18767236]

Thompson SC. The search for meaning following a stroke. Basic and Applied Social Psychology. 1991; 12:81–96.

Thompson SC, Janigian AS. Life schemes: A framework for understanding the search for meaning. Journal of Social and Clinical Psychology. 1988; 7:260–280.

Tugade MM, Fredrickson BL. Resilient individuals use positive emotions to bounce back from negative emotional experiences. Journal of Personality and Social Psychology. 2004; 86:320–333. [PubMed: 14769087]

Updegraff JA, Silver RC, Holman EA. Searching for and finding meaning in collective trauma: results from a national longitudinal study of the 9/11 terrorist Attacks. Journal of Personality and Social Psychology. 2008; 95:709–722. [PubMed: 18729704]

Uren TH, Wastell CA. Attachment and meaning-making in perinatal bereavement. Death Studies. 2002; 26:279–308. [PubMed: 11980450]

Watkins ER. Constructive and Unconstructive Repetitive Thought. Psychological Bulletin. 2008; 134:163–206. [PubMed: 18298268]

Zisook S, DeVaul R, Click M. Measuring symptoms of grief and bereavement. American Journal of Psychiatry. 1982; 139:1590–1593. [PubMed: 7149059]

Table 1

Means (and Standard Deviations) for Bereaved Participants Providing Data at Each Wave

Variable	Wave 1 (N=239) (6 months)	Wave 2 (N=203) (18 months)	Wave 3 (N=104) (48 months)
Base Age	69.72 (6.61)	69.49 (6.65)	69.52 (6.44)
Gender	.14 (.35)	.14 (.35)	.10 (.30)
Base CES-D	12.07 (2.66)	12.06 (2.69)	12.41 (2.70)
Base Well-being[a]	10.92 (2.53)	10.88 (2.59)	10.53 (2.65)
Gap (months)	37.32 (17.99)	44.12 (14.77)	65.27 (8.01)
Searching	1.66 (1.07)	1.56 (0.94)	1.30 (.68)
Sense-making	1.95 (1.15)	1.96 (1.12)	1.84 (1.08)
Grief	2.08 (.58)	1.84 (.50)	1.57 (.44)
CES-D	12.89 (3.22)	12.37 (2.98)	11.48 (2.58)
Well-being	14.73 (3.80)	15.08 (3.79)	14.43 (4.12)

Note. CES-D = Center for Epidemiological Studies -- Depression scale.

[a]As described in the text, the baseline measure of well-being used a 3-point scale, whereas the post-loss waves used a 5-point scale.

Table 2

Correlations between Covariates, Searching (Search) and Sense-making (Sense)

	Base Age	Gender	W1 Gap	W2 Gap	W3 Gap	W1 Search	W2 Search	W3 Search	W1 Sense	W2 Sense	W3 Sense
Base Age	--										
Gender	.287***	--									
W1 Gap	-.139*	-.042	--								
W2 Gap	-.141*	.006	.993***	--							
W3 Gap	.019	-.048	.978***	.984***	--						
W1 Search	-.221***	-.072	.060	.037	-.115	--					
W2 Search	-.099	.122†	.077	.110	.046	.542***	--				
W3 Search	.006	.049	-.031	-.064	-.063	.313**	.312**	--			
W1 Sense	-.075	-.129*	-.089	-.001	-.002	-.042	-.037	-.081	--		
W2 Sense	.048	-.116	-.100	-.130†	-.254**	-.182*	-.106	-.003	.432***	--	
W3 Sense	.058	-.044	.060	.051	.057	.027	.104	.105	.378***	.445***	--

†
$p < .10$

*
$p < .05$

**
$p < .01$

***
$p < .001$

Table 3

Correlations for Covariates and Searching (Search) and Sense-making (Sense) with Outcome Measures

	W1 Grief	W2 Grief	W3 Grief	Base CESD	W1 CESD	W2 CESD	W3 CESD	Base Well	W1 Well	W2 Well	W3 Well
Base Age	-.079	-.099	-.008	.070	.042	.060	.167†	-.137*	-.125†	-.162*	-.236*
Gender	.046	.008	.135	-.107†	.036	-.011	-.074	-.173**	-.058	-.076	-.170†
W1 Gap	.097	.093	.088†	.037	123†	.101	.032	.138*	.076	-.010	-.124
W2 Gap	.042	.111	.091	-.035	-.010	.140*	.060	.186**	.082	-.024	-.085
W3 Gap	-.028	-.004	.062	.048	-.157	.030	.054	.145	-.019	-.103	-.112
W1 Search	.524***	.468***	.575***	.109†	.353***	.245**	.085	.005	-.121†	-.026	.062
W2 Search	.406***	.424***	.443***	.001	.201**	.214**	.106	-.003	-.013	.032	-.029
W3 Search	.270**	.208*	.415***	.167†	.221*	.156	-.005	-.198*	030	.007	.023
W1 Sense	-.057	-.002	-.056	-.079	-.023	-.019	.015	.022	.144*	.083	.246*
W2 Sense	-.186*	-.137†	-.086	-.005	-.065	-.118†	.083	.000	.158*	.172*	.217*
W3 Sense	-.033	-.031	.148	.019	-.099	-.117	-.069	.058	.187†	.162	.137

Note. CES-D = Center for Epidemiological Studies -- Depression scale; Well = Positive Affect subscale Bradburn Affect Balance Scale

†
$p < .10$

*
$p < .05$

**
$p < .01$

***
$p < .001$

Table 4

Correlations between Outcome Measures

	W1 Grief	W2 Grief	W3 Grief	Base CESD	W1 CESD	W2 CESD	W3 CESD	Base Well	W1 Well	W2 Well	W3 Well
W1 Grief	--										
W2 Grief	.691***	--									
W3 Grief	.646***	.607***	--								
Base CESD	.149*	.212**	.178†	--							
W1 CESD	.700***	.500***	.423***	.248***	--						
W2 CESD	.552***	.693***	.382***	.264***	.643***	--					
W3 CESD	.254**	.286**	.318*	.352***	.382***	.533***	--				
W1 Well	-.344***	-.184*	-.063	-.206**	-.375***	-.332***	-.279**	.173**	--		
W2 Well	-.200**	-.261***	-.154	-.168*	-.321***	-.417***	-.209*	.257***	.524***	--	
W3 Well	-.166†	-.047	-.136	-.170†	-.251*	-.233*	-.365***	.088	.623***	.548***	--

Note. CES-D = Center for Epidemiological Studies -- Depression scale; Well = Positive Affect subscale Bradburn Affect Balance Scale

†
p < .10

*
p < .05

**
p < .01

***
p < .001

Table 5

Prospective Regressions on Grief Controlling for Earlier Grief

Variable	W1 IVs→ W2 Grief (18 months) Standardized Coefficient	W1 IV's → W3 Grief (48 months) Standardized Coefficient	W2 IVs → W3 Grief (48 months) Standardized Coefficient
Gender	-.057	137[†]	.079
Age at Baseline	-.009	.016	-.005
Gap	.045	.123	.085
Searching	.156[*]	.371[***]	.225[*]
Sense-making	.009	.014	.089
Grief	.600[***]	.456[***]	.514[***]
Significance of Model	$F(6,176) = 28.488$[***]	$F(6,90) = 16.016$[***]	$F(6,96) = 11.624$[***]
R^2	.493[***]	.516[***]	.421[***]
N	183	97	103

[†] $p < .10$

[*] $p < .05$

[**] $p < .01$

[***] $p < .001$

Table 6

Prospective Regression of CES-D Scores Controlling for Earlier CES-D Scores

Variable	W1 IVs →W2 CES-D (18 months) Standardized Coefficient
Gender	-.082
Age at Baseline	.069
Gap	.077
Pre-loss CES-D	.087
Wave 1 CES-D	.604***
Searching[1]	.063
Sense-making[2]	-.014
Interaction	.122*
Significance of Model	$F(8, 173) = 17.993$***
R^2	.454***
N	182

Note. CES-D = Center for Epidemiological Studies -- Depression scale.

[†] $p < .10$

[*] $p < .05$

[**] $p < .01$

[***] $p < .001$

[1] In this analysis only, coefficient is for centered searching.

[2] In this analysis only, coefficient is for centered sense-making.

Table 7

Prospective Regressions of Well-Being (Positive Affect) Controlling for Earlier Well-Being

Variable	W1 IVs→W3 Well-being (48 months) Standardized Coefficient	W2 IVs→W3 Well-being (48 months) Standardized Coefficient
Gender	-.152[†]	-.059
Age at Baseline	-.152[†]	-.161[†]
Gap	-.166[*]	-.025
Pre-loss Well-being	-.014	.009
Concurrent Well-being	.560[***]	.481[***]
Searching	.059	-.016
Sense-making	.150[†]	.126
Significance of Model	$F(7,88) = 10.679$[***]	$F(7,94) = 7.066$[***]
R^2	.459[***]	.345[***]
N	96	102

[†] $p < .10$

[*] $p < .05$

[**] $p < .01$

[***] $p < .001$