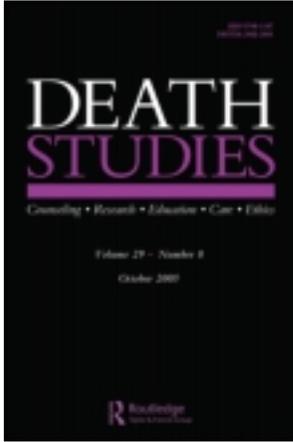


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SENSE-MAKING, GRIEF, AND THE EXPERIENCE OF VIOLENT LOSS: TOWARD A MEDIATIONAL MODEL

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Bereavement following violent loss by accident, homicide or suicide increases the risk for complications in grieving. This is the first study to examine a constructivist model of grief that proposes that sense-making, or the capacity to construct an understanding of the loss experience, mediates the association between violent death and complicated grief symptomatology. An ethnically diverse sample of 1,056 recently bereaved college students completed the Inventory of Complicated Grief (ICG) and questions assessing the degree of sense-making and the circumstances surrounding their losses. Consistent with this study's primary hypothesis, sense-making emerged as an explanatory mechanism for the association between violent loss and complications in grieving. Specifically, the results revealed that sense-making explained this relation, even when the element of sudden bereavement was shared by all of the participants. Overall, this study provides initial support for a model of grief in which failure to find meaning in a loss is conceptualized as a crucial pathway to complicated grief symptomatology.

Traumatic loss is emerging as an important subcategory of bereavement research that warrants special attention. Contrary to the resilient trajectories displayed by many of the bereaved (Bonanno, Wortman, & Nesse, 2004), the aftermath of traumatic loss can undermine survivors' fundamental beliefs about themselves and their larger world. In the wake of this "shattering of assumptive worlds" (Janoff-Bulman, 1992), clinical theorists and researchers have converged in emphasizing the central role of "sense-making", or the formulation of a subjective understanding of the loss in the restoration process (Davis, Nolen-Hoeksema, & Larson, 1998; Neimeyer & Anderson, 2002). Coupled with this

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subjective component, empirical studies have shown that the objective cause of death can also have a deleterious impact on the grieving process (e.g., Murphy et al., 1999). This study will differentiate the unique impact of these subjective and objective elements of traumatic loss by testing a model of grief whereby sense-making acts as an intermediate factor that explains the relation between an objective mode of death and symptoms of complicated grief (CG), a form of bereavement marked by elevated and persistent separation distress, seriously impaired functioning, and difficulties “moving on” with life following the loss of a loved one (Lichtenhal, Cruess, & Prigerson, 2004; Prigerson et al., 1999b; Prigerson & Jacobs, 2001).

We have proposed elsewhere (Currier, Holland, Coleman, & Neimeyer, 2006) that this relation might be explained by the capacity to comprehend or make sense of such a tragic bereavement experience. Sense-making as a crucial component of restoration initially emerged from the work of Janoff-Bulman and Frantz (1997) with trauma victims. Broadly-speaking, it refers to how well the potentially traumatic experience fits into the survivors’ existing “assumptive worldview” (Parkes, 1971), or the ordering principle for their psychological constructions of themselves and their larger psychosocial worlds (Kauffman, 2002). Sense-making, therefore, denotes both the process of searching for understanding post-loss and the outcome of the searching process at any given moment in time. According to Bonanno and his colleagues (2004), significant variation exists in trajectories through bereavement, with a subgroup displaying chronic distress irrespective of the passage of time. Importantly, the inability to find a reasonable sense of understanding over time frequently accompanies grief complications for those who undertake such a quest (Bonanno et al., 2004; Davis et al., 1998; Davis, Wortman, Lehman, & Cohen Silver, 2000). In particular, research has shown that the protracted search for understanding following bereavement is associated with greater distress (Davis et al., 2000), whereas even a provisional explanation for the death of the loved one predicts positive adjustment (Davis et al., 1998). This article will investigate the implications of sense-making as an outcome in reducing symptoms of CG at some point in the first two years of bereavement.

In the trauma and bereavement literature, “traumatic loss” is defined mainly in objective terms as “a sudden and violent mode

of death” that is characterized by one of three causes: suicide, homicide, or a fatal accident (e.g., Norris, 1992). Though the terms have been used interchangeably, the current study will use “violent loss” to denote the objective mode of death and “traumatic loss” to describe the subjective aspects of the survivor’s experience. Despite the general consensus that bereavement following violent death holds significant risks for negative grief outcomes (Sanders, 1988; Stroebe & Schut, 2001), the mechanisms underlying the association between violent loss and CG remain theoretical and have not been investigated empirically. Therefore, this inquiry will expand upon previous findings (Currier et al., 2006) by conducting a series of mediational tests that examine sense-making as an intervening variable that might account for the elevated CG that follows violent loss among a large and ethnically diverse sample of recently bereaved college students.

Implications of Bereavement Following Violent Death

Losses by suicide, homicide, or accident are often conceptualized as traumatic events that can lead to trauma symptoms (Green, 2000) and other indications of psychological distress, complicating the general grief response. Despite overlap with several psychiatric disorders (Lichtenhal et al., 2004), researchers have shown that CG is distinctive and distinguishable from both posttraumatic stress disorder (PTSD; Prigerson et al., 1999b; Prigerson & Jacobs, 2001) and major depressive disorder (MDD; Chen et al., 1999; Prigerson et al., 1995), two of the predominant categories of distress displayed by bereaved individuals. From a narrative-constructivist perspective, the experience of traumatic loss complicates the grieving process by preventing the processing of its significance, so as to allow for the integration of the disturbing memories and images associated with the death and/or deceased loved one (Neimeyer, Herrero, & Botella, 2006). Lifton (1982) describes the scenario of traumatic loss in terms of the “death imprint,” which creates intense feelings of personal vulnerability and anxiety, while simultaneously impairing the capacity to reconstruct fractured personal meanings in ways that would reassert the vitality and cohesiveness of the survivor’s sense of self. Other theorists have highlighted the “antisymbolic” nature of traumatic loss (e.g., Neimeyer, 2006a), maintaining that these events interfere

with the survivor's ability to symbolize and speak about the experience in the form of a comprehensible account; in a way that complicates its assimilation into the survivor's "self-narrative."

A growing number of empirical studies also support the claim that violent loss produces elevated psychological suffering (Amick-McMullan, Kilpatrick, & Resnick, 1991; Dyregrov, Nordanger, & Dyregrov, 2003; Green et al., 2001; Kaltman & Bonanno, 2000; Lehman et al., 1987; Lehman, Lang, Wortman, & Sorenson, 1989; Thompson et al., 1998). In light of the trauma-specific symptoms often seen after violent types of bereavement, Murphy and her colleagues (1999) conducted a five-year longitudinal investigation with 171 parents who lost children to violent causes and found that the proportion of mothers who met criteria for PTSD increased from 5% to 14% in the initial 20-month period. After five years, three times as many mothers (27.7%) and twice as many fathers (12.5%) reported PTSD symptoms compared with women and men in the normal population, with almost 50% of these parents still reporting reexperiencing symptoms at the end of the study (Murphy, Johnson, Chung, & Beaton, 2003). Studying a sample of 122 female undergraduates grouped according to histories of (1) no previous traumas ($n = 58$), (2) single experience of violent loss only ($n = 32$) and (3) the experience of a single physical assault ($n = 32$), Green and her associates (2001) found similar results. Namely, the group of young women who lost loved ones to violent death exhibited greater traumatic stress reactions, particularly in the domain of intrusive or reexperiencing symptoms, when compared to the other two groups of women.

In addition to manifestations of "traumatic distress" (Prigerson et al., 1999b; Prigerson & Jacobs, 2001), bereavement following violent death has also been linked with depression and other indices of psychological anguish. For example, Thompson et al. (1998) found that of a sample of 150 family members who lost a loved one to homicide, 26% could be considered clinically distressed based on their scoring at least two standard deviations above race and gender appropriate norms on measures of depression, anxiety, somatization, and hostility. Compared with elderly natural death survivors, Farberow, Gallagher-Thompson, Gilewski, and Thompson (1992) found that the grieving process was more difficult for elderly survivors of a suicide death, whose severe depressive feelings did not begin to lessen until after the first

year. Finally, Hardison, Neimeyer, and Lichstein (2005) found that the loss of a loved one through accident, suicide, or homicide was more commonly associated with both CG and the diagnosis of insomnia than was loss through natural causes for a group of 508 recently bereaved college students.

Sense-Making in Violent Loss

Considering this association between violent loss and complications in the grieving process, a constructivist conceptualization of bereavement proposes that: (a) individuals bring a set of existing beliefs about themselves and the world to the loss experience; (b) the experience of loss can violate or fracture these basic assumptions; (c) restoration entails a struggle to adapt one's personal world of meaning to "make sense" of the loss, with less "normative" or violent losses being more challenging to comprehend; and (d) complications in grieving result when the bereaved individual is unable to "make sense" of the loss within the context of his or her current system of meaning (Gillies & Neimeyer, 2006; Neimeyer, 1998, 2001, 2006b). As this conceptualization of grief implies, although challenges to finding meaning may have special relevance to violent loss, this is not to say that meaning-making is not relevant to healing from losses of other kinds as well.

The findings of an earlier investigation (Currier et al., 2006) supported this model in that the level of sense-making was the most salient factor distinguishing survivors of violent loss and survivors of natural loss. Specifically, those persons who experienced the violent deaths of loved ones were considerably more likely to report an unsuccessful struggle to make sense of the loss experience. Although the nearly 500 participants in the sample who lost loved ones to violent causes indicated greater difficulties on each of the measured outcomes, the degree of sense-making surfaced as the strongest distinguishing feature between the two groups. Overall, those participants who experienced a violent loss reported sense-making scores that were on average .79 standard deviations lower than their counterparts who experienced bereavement via natural causes; by comparison, differences in grief symptoms as measured by the Inventory of Complicated Grief (ICG; Prigerson et al., 1995; Prigerson & Jacobs, 2001) and Core Bereavement Items (CBI; Burnett, Middleton, Raphael, & Martinek, 1997)

tended to be substantially smaller ($d = .54$, $d = .37$, respectively). Therefore, these results not only support the centrally relevant process of sense-making in the wake of violent loss, but they also buttress the proposition that violent loss has an impact on this aspect of bereavement adaptation that is even greater than on grief symptoms, *per se*.

Though more empirical research is needed on this topic, there is other evidence that sense-making is a critical component in violent loss (Davis et al., 2000). For example, in investigating samples of sudden and violent loss survivors, Davis and his colleagues (2000) expanded on their earlier study of survivors of natural deaths (Davis, Nolen-Hoeksema, & Larson, 1998) and reported a dramatically larger proportion of survivors who did not find sense in their bereavement. In brief, these researchers reviewed data from a study of 124 parents coping with the death of their infants by SIDS (Lehman et al., 1989), and a study of 93 adults coping with the loss of their spouse or child to a motor vehicle accident, or MVA (Lehman et al., 1987). They found that less than half of the respondents in each of these samples reported finding any sense, even more than a year after the event. Furthermore, those survivors in both samples who engaged in an unsuccessful quest to construct a sense of understanding fared worse in their adjustment than did those who never pursued existential questions in the first place. Altogether, these findings lend further support to the central relevance of sense-making in adapting to the impact of violent loss for those who undertake such a search, and especially the distressing circumstance of searching for understanding and finding none.

Elements of Violent Loss

Although there is growing evidence that violent death complicates sense-making and the trajectory of the grieving process, it is less clear what particular components of violent death make these losses so traumatizing. There have been recent efforts to clarify whether any of the types of violent loss reliably engender more psychological suffering than others, particularly with those individuals bereaved by suicide (Jordan, 2001; McIntosh, 1993). Nevertheless, though the literature has only recently begun to examine the specific components of these losses, it is evident that deaths

by suicide, homicide, and accident possess unique features that distinguish them from one another. Thus, it is worth exploring whether these elements not only influence adjustment, but whether they might also create greater problems with sense-making.

Two of the possible traumatizing components common to suicide, homicide, and fatal accident that distinguish them from natural modes of bereavement are the factors of suddenness and violence. Although it is unclear whether unanticipated death alone poses a sufficient risk for enduring complications in grieving (Gamino, Sewell, & Easterling, 1998), there is evidence that the sheer violence of these losses has a deleterious impact on the psychological functioning of survivors. In an effort to compare violence and suddenness as potential risk factors with 87 individuals who lost spouses, Kaltman and Bonanno (2003) found that deaths resulting from the three types of violent death were shown to predict greater PTSD symptoms and more enduring depression over a 25-month period following bereavement, but suddenness by itself was found to be unrelated to these same outcome measures.

In partitioning the element of violence further, persons bereaved by suicide and homicide might face added challenges to sense-making that stem from the willful and intentional choice on the part of the perpetrator (in instances homicide) or deceased (in instances of suicide) to end human life. In contrast to accidental deaths, such deaths are more likely to involve the violation of taken-for-granted assumptions regarding the sanctity of human life, principally that human beings have an inherent right to live and to be protected from injustice (in instances of homicide) and that human beings want to go on living (in instances of suicide). It might, therefore, be hypothesized that these circumstances more profoundly challenge survivors' attempts to make sense of the loss and account for the higher prevalence of negative grief outcomes compared to those following natural forms of death.

Study Aims

Considering the challenges facing those bereaved by violent loss, the current study evaluated the possible mediating role of sense-making between the cause of death (predictor variable) and CG (outcome variable). In short, a mediator is an intervening variable that is presumed to function as a causal pathway between a

predictor and an outcome variable (Baron & Kenny, 1986; Judd & Kenny, 1981). In this investigation, four mediational hypotheses were explored, each of which isolated particular “elements” of violent loss. Specifically, it was hypothesized that sense-making will largely account for any differences in CG between: (a) violent and natural losses (homicide, suicide, and accident vs. natural anticipated and natural sudden losses); (b) violent and natural sudden losses (homicide, suicide, and accident vs. unanticipated natural losses); (c) deaths attributable to violent acts of volition and those attributable to violent random outside forces (homicide and suicide vs. accident); and (d) deaths attributable to violent acts perpetrated by others and those perpetrated by self (homicide vs. suicide). Beyond evaluating the overall influence of sense-making, the current inquiry also aimed to explore the mediational properties of sense-making among the particular components of violent death to determine which of these elements engendered the greatest obstacles to finding a subjective sense of understanding of the loss.

Method

Participants

Following institutional review of the project, 1,056 participants were recruited from undergraduate introductory psychology courses at a large southern urban university. Participants met the following criteria for eligibility: (a) each was at least 18 years of age; and (b) each reported the death of a friend or loved one within the past two years. The basis for this latter requisite stems from past research that suggests that significant bereavement phenomena can still be observed at 24 months following the loss (Prigerson & Jacobs, 2001).

The current sample ranged in age from 18 to 53 years with a mean of 20.9 years. Women made up 75% of the sample. Fifty-six percent of the participants were Caucasian, 38.4% African American, 1.5% Asian American, and roughly 4% were of another ethnicity, reflecting the undergraduate distribution of ethnicities at the urban research institution. Approximately 28% of the reported losses in the sample resulted from homicide ($n = 66$), suicide ($n = 46$), or accident ($n = 187$). The remaining 72% of the losses reported by participants were attributable to

natural anticipated causes, such as deaths from cancer and other progressive diseases ($n = 472$); natural sudden causes, such as heart failure ($n = 232$); and other causes ($n = 54$), such as perinatal or unexplained death, which were excluded from the analyses. Nearly 9% of the sample described the relationship with the decedent as being “intimate” ($n = 92$); 59.4% of the sample lost a family member ($n = 628$); 20.9% lost a “good friend” ($n = 221$), 6.6% lost an “acquaintance” ($n = 70$), 2.8% felt that they “barely knew” the decedent ($n = 30$), and the remaining 1.5% were excluded in that they failed to indicate the nature of the relationship ($n = 16$).

Procedure

Each eligible participant completed a questionnaire that included the Inventory of Complicated Grief (ICG; Prigerson & Jacobs, 2001; Prigerson et al., 1995), a single-item question pertaining to sense-making, questions concerning demographic information, and multiple-choice questions regarding the circumstances surrounding the loss (e.g., How did the death occur? How would you describe the nature of your relationship to the deceased?).

Measures

INVENTORY OF COMPLICATED GRIEF

The Inventory of Complicated Grief (ICG) is composed of 30 declarative statements, such as, “I feel like I have become numb since the death of [the deceased]” and “Ever since [the deceased] died I feel like I have lost the ability to care about other people or I feel distant from people I care about”, to which responses are made on a five-point Likert-type scale describing the frequency of symptoms (i.e., from 1 = never to 5 = always). Items assess such symptoms as the bereaved person’s preoccupation with thoughts of the deceased, hallucinations, disbelief about the death; feelings of being shocked and overwhelmed, numb, out of control, anxious and unsafe; in addition to avoidance behaviors, sense of purposeless about the future, and disturbances in sleep.

The first 19-item version of the ICG displayed strong psychometric properties in a number of studies (Chen et al., 1999; Neimeyer & Hogan, 2001; Prigerson et al., 1999b). For example,

this earlier version of the ICG (Prigerson et al., 1995) exhibited high internal consistency ($\alpha = .94$), six-month test-retest reliability of $r = .80$, and good concurrent validity with the Texas Revised Inventory of Grief (TRIG; Faschingbauer, 1981). The newer and recently expanded version of the ICG (Prigerson & Jacobs, 2001), which was used in the present study, has also shown solid psychometric values. For example, the newer version was tested in the Netherlands, where a Dutch translation displayed high internal consistency ($\alpha = .94$) and good temporal stability (.92) over a period ranging from 9 to 28 days (Boelen, van den Bout, De Keijser, & Houtjink, 2003). In addition to indications of good reliability, research has also provided considerable support for the validity of the newer version of the ICG. For example, diagnoses based on the newer ICG were found to have a sensitivity of .93 and a specificity of .93 in the detection of interview-determined CG (Barry, Kasl, & Prigerson, 2002; Prigerson et al., 1999b). Additionally, this newer scale has predicted a broad range of serious long-term health and mental health consequences of bereavement (Hardison et al., 2005; Ott, 2003; Latham & Prigerson, 2004; Prigerson et al., 1999a; Prigerson & Jacobs, 2001; Silverman et al., 2000), further justifying its interpretation as a measure of CG for the current study.

SENSE-MAKING

Sense-making was assessed by the single question, "How much sense would you say you have made of the loss?" with anchor points of 1 being no sense to 4 being a good deal of sense. This question corresponds closely to the single-item questions that other researchers have used to measure this construal of meaning for quantitative analyses (e.g., Davis et al., 1998; Lehman et al., 1987; McIntosh et al., 1993; Silver et al., 1983). As with these other investigations, this single item showed considerable utility in an earlier study in both differentiating violent and natural loss survivors and predicting CG (Currier et al., 2006).

OTHER VARIABLES

Basic demographic information was also gathered for each participant. This information included age, gender, and ethnicity. Participants additionally provided information regarding the circumstances surrounding their loss. This information included

such factors as the cause of death and the nature of the relationship to the deceased (e.g., family or good friend).

Results

Of the 1,056 research participants who were administered the ICG, 1,000 of the forms were fully completed. In an effort to reduce the number of missing cases, individual items for the 1,056 participants were summed and averaged to obtain overall scores. When a participant gave only partial information, the mean of those values was used as an estimate of the overall score. Considering the predominance of young adults in the current sample, the two items assessing spousal bereavement (#13 and #13a) on the ICG were excluded from the analyses. On average, for the 56 participants who did not fully complete the ICG, 15% of the 29 items were not completed ($M = 4.39$, $SD = 4.97$). Given the high reliability of the ICG in the present sample ($\alpha = .95$), it is reasonable to assume that these estimates represent close approximations of the total score for each respondent.

Mediation Analyses

The terms hypothesis, model, and step will be used in the following section, each of which denotes a unique phase of the analyses. Specifically, the term hypothesis will be used to refer to each of the four a priori contrasts with the cause of death variable. The term model indicates the different stages within a single hierarchical regression analysis. Finally, step refers to the four statistical analyses recommended by Baron and Kenny (1986) and Judd and Kenny (1981) to evaluate statistical mediation.

Thus, this four-step method, which requires a series of multiple regression analyses, was implemented to examine the mediating influence of sense-making in the four preplanned contrasts described earlier. The perceived level of closeness to the deceased as well as the participants' age and gender were entered in an initial model in each of these hierarchical regression analyses. The analyses statistically controlled for these demographic and relational factors in order to establish the unique contributions of mode of death and sense-making ($M = 3.27$ and $SD = .95$) in predicting ICG scores ($M = 48.43$ and $SD = 18.10$). The perceived

level of closeness to the deceased was dichotomized into two categories: “close relationships,” which included relationships designated as intimate, family, or friends, and “distant relationships” in which the deceased was described as an acquaintance or someone they barely knew. The variables of gender and the perceived level of closeness to the deceased were coded so that positive numbers indicate women and greater closeness.

Four criteria had to be met to establish mediation. First, the independent variable, cause of death, had to be significantly associated with the dependent variable, ICG scores (Step 1), as well as the mediator, sense-making (Step 2). If Steps 1 and 2 yielded statistically significant results, then a third hierarchical regression analysis was performed to see if the relation between cause of death and ICG scores weakened or became entirely non-significant with the inclusion of sense-making (Step 3). Evidence for sense-making as a “perfect mediator” would be demonstrated if the association between cause of death and ICG scores were non-significant in Step 3. In many cases, though, the independent variable remains significant in Step 3 but its impact is substantially reduced by the mediator. In such a case sense-making would be viewed as a “partial mediator,” which weakens the relation between cause of death and CG symptoms but not to the point of non-significance. If Steps 1 through 3 were met, the designation of sense-making as a “perfect” or “partial” mediator could be made using Sobel’s test of indirect effects, which assesses whether the impact of a mediator is statistically significant (Step 4; Preacher & Leonardelli, 2001; Sobel, 1982).

HYPOTHESIS 1

This analysis examined the influence of sense-making in mediating the relation between the violent nature of the death and CG. Although the distinction between violent death and natural death encompasses a variety of elements (e.g., suddenness, intentionality, grotesqueness), this initial mediational analysis aimed to explore the overall impact of the violent vs. natural contrast on CG, leaving more refined distinctions for later analyses. Thus, all of the available bereaved participants were included in this analysis, and the cause of death variable was dichotomized into two categories: (a) violent losses (homicide, suicide, and accident) and (b) natural losses (anticipated or sudden). As shown in Table 1, the control

TABLE 1 Hypothesis 1: Results of Violent vs. Natural Loss Mediation Analysis

Predictor	<i>B</i>	<i>SE B</i>	β	<i>R</i> ²	ΔR^2
Step 1: Violent vs. Natural losses in predicting ICG scores (<i>N</i> =990)					
Model 1				.025**	
Age	-.007	.004	-.056		
Gender	.102*	.043	.075*		
Closeness	.137**	.034	.128**		
Model 2				.080**	.055**
Cause of death (Violent vs. Natural)	.324**	.042	.238**		
Step 2: Violent vs. Natural losses in predicting sense-making (<i>N</i> =965)					
Model 1				.002	
Age	.004	.006	.019		
Gender	-.078	.066	-.038		
Closeness	.025	.052	.016		
Model 2				.113***	.111***
Cause of death (Violent vs. Natural)	-.692***	.063	-.337***		
Step 3: Violent vs. Natural losses in predicting ICG scores with the Inclusion of Sense-making (<i>N</i> =965)					
Model 1				.024***	
Age	-.007	.004	-.052		
Gender	.103*	.044	.075*		
Closeness	.135***	.035	.125***		
Model 2				.194***	.170***
Sense-making	-.276***	.019	-.413***		
Model 3				.204***	.011***
Cause of death (Violent vs. Natural)	.153***	.042	.112***		

p* < .05, *p* < .01, ****p* < .001.

variables of gender of the bereaved and closeness to the deceased were associated with complicated grief symptomatology; other things being equal, women who experienced the loss of close relationships reported more troubling symptoms. As predicted, the inclusion of the violent vs. natural loss contrast in Model 2 explained an additional 5.5% of the variance in ICG scores above and beyond age, gender, and closeness, thereby satisfying Step 1 of the mediational analysis (Step 1; $\Delta R^2 = .055$, $\Delta F(1, 986) = 59.22$, $p < .001$). Significant results were also found in Step 2. Specifically,

the cause of death variable accounted for a significant proportion of the variance in sense-making scores after controlling for demographic and relational factors (Step 2; $\Delta R^2 = .111$, $\Delta F(1, 960) = 120.40$, $p < .001$); overall, violent deaths predicted less successful sense-making than did natural deaths, in keeping with previous studies. In Step 3 of this procedure, demographic and relational variables, sense-making, and cause of death were entered hierarchically into a single regression equation. Table 1 also reveals that the inclusion of sense-making in this analysis led to a 17.0% increase in R squared above and beyond demographic and relational factors (Step 3; $\Delta R^2 = .170$, $\Delta F(1, 960) = 202.47$, $p < .001$). Furthermore, after the inclusion of sense-making, the cause of death variable only accounted for 1.1% of the variance in ICG scores in Model 3 of this regression (Step 3; $\Delta R^2 = .011$, $\Delta F(1, 959) = 13.04$, $p < .001$). Although the relation between cause of death and ICG scores was still statistically significant in Step 3, Sobel's test confirmed that the size of the relation was significantly reduced in the presence of the sense-making variable (Step 4; $z = 8.46$, $p < .001$). Thus, these results indicate that the level of sense-making acted as a "partial mediator" in this test, with the objective violent vs. natural loss contrast still maintaining a distinct but far less pronounced path of its own in predicting symptoms of CG.

HYPOTHESIS 2

In contrast to the above analysis, the participants who were bereaved by anticipated natural losses were excluded from the analysis testing the second hypothesis. Thus, the factor of suddenness was common to each of the two categories of loss, thereby making the circumstance of violence, rather than suddenness, the differentiating element in the contrast. All of the participants included in this analysis experienced one of two types of unanticipated loss: (a) violent (homicide, suicide, and accident) and (b) natural sudden losses. As Table 2 displays, the inclusion of the violent vs. natural sudden contrast in Model 2 explained 4.2% of the variance in ICG scores above and beyond age, gender, and closeness, thereby satisfying Step 1 of the mediational procedure (Step 1; $\Delta R^2 = .042$, $\Delta F(1, 519) = 23.22$, $p < .001$); other factors being equal, violent losses were associated with more complicated grief than natural losses, even when both were unanticipated. As can also be seen in Table 2, the criteria for Step 2 were also met.

TABLE 2 Hypothesis 2: Results of Violent vs. Natural Sudden Loss Mediation Analysis

Predictor	<i>B</i>	<i>SE B</i>	β	<i>R</i> ²	ΔR^2
Step 1: Violent vs. Natural sudden losses in predicting ICG scores (<i>N</i> = 524)					
Model 1				.027***	
Age	-.002	.007	-.010		
Gender	.125*	.060	.090*		
Closeness	.146**	.046	.138**		
Model 2				.069***	.042***
Cause of death (Violent vs. Natural sudden)	.271***	.056	.206***		
Step 2: Violent vs. Natural sudden losses in predicting sense-making (<i>N</i> = 507)					
Model 1				.001	
Age	-.005	.011	-.020		
Gender	-.020	.092	-.009		
Closeness	-.044	.071	-.028		
Model 2				.100	.098***
Cause of death (Violent vs. Natural sudden)	-.623***	.084	-.317***		
Step 3: Violent vs. Natural sudden losses in predicting ICG scores with the inclusion of sense-making (<i>N</i> = 507)					
Model 1				.027***	
Age	-.002	.008	-.012		
Gender	.127*	.061	.091*		
Closeness	.144***	.047	.135***		
Model 2				.203***	.177***
Sense-making	-.282***	.027	-.421***		
Model 3				.209***	.005
Cause of death (Violent vs. Natural sudden)	.104	.056	.079		

p* < .05, *p* < .01, ****p* < .001.

Specifically, the cause of death variable accounted for a significant proportion of the variance in sense-making scores after controlling for demographic and relational factors (Step 2; $\Delta R^2 = .099$, $\Delta F(1, 502) = 54.82$, $p < .001$); violent losses predicted greater struggles with sense-making than unexpected natural deaths. In Step 3 of this procedure, demographic and relational variables, sense-making, and cause of death were entered hierarchically into a single regression equation. The inclusion of sense-making in this

analysis led to an increase of almost 18% in R squared above and beyond demographic and relational factors (Step 3; $\Delta R^2 = .177$, $\Delta F(1, 502) = 111.30$, $p < .001$). Moreover, after the inclusion of sense-making, the relation between violent vs. natural sudden losses and ICG scores became statistically non-significant (Step 3; $\Delta R^2 = .005$, $\Delta F(1, 501) = 3.48$, $p = .063$). The results of Sobel's test corroborated that for this second analysis of mediation the size of the relation between the cause of death variable and ICG scores was not shown to differ from zero in the final model of Step 3 (Step 4; $z = 5.87$, $p < .001$). In other words, these results show that the level of sense-making "perfectly" mediated the association between violent vs. natural sudden cause of death and CG.

HYPOTHESIS 3

This test of mediation was designed to analyze the impact of sense-making in intervening between the volitional nature of violent death and ICG scores. Thus, all participants were violently bereaved in this analysis and the independent variable was dichotomized into two categories: (a) participants bereaved by deaths attributable to violent acts of volition (homicide and suicide) and (b) those attributable to violent random outside forces (fatal accident). Age, gender, and closeness to the deceased accounted for almost 5% of the total variance in ICG scores for the total group of 292 violently bereaved respondents ($R^2 = .047$, $F(3, 289) = 4.78$, $p = .003$). However, contrary to the previous two analyses, the first criterion (Step 1) necessary for establishing mediation was not met. Specifically, the cause of death contrast did not account for a significant amount of the variance in ICG scores above and beyond demographic and relational factors (Step 1; $\Delta R^2 = .003$, $\Delta F(1, 288) = .84$, $p = .36$). Thus, additional steps in the mediational procedure were not needed.

Although this analysis used fewer subjects than the first two hypotheses and hence had lower power, it is worth noting that the change in R^2 observed in Step 1 ($\Delta R^2 = .003$) was substantially smaller than that seen in Hypothesis 1 and Hypothesis 2 ($\Delta R^2 = .055$ and $.042$, respectively). Specifically, 2,491 participants would have been needed to detect a change in R^2 , with 80% power, as small as the one observed in this analysis. This estimated sample size is striking, given that the observed change in R^2 found in Step 1 of the mediational analyses for Hypothesis 1 and

Hypothesis 2 could have been detected with 80% power using only 137 and 179 participants, respectively. Therefore, the results of Step 1 for this analysis seem to indicate that, among this sample of individuals who were bereaved by violent causes, ICG scores do not significantly vary as a function of the intentionality of the death.

HYPOTHESIS 4

Similar results were obtained for this analysis as those described in Hypothesis 3. The purpose here was to examine the mediational influence of sense-making with respect to a smaller subset of 109 violently bereaved participants. Specifically, this analysis compared the two types of volitional death: (a) those participants bereaved by deaths attributable to violent acts of others (homicide) and (b) those bereaved by violent acts perpetrated by self (suicide). In Step 1, age, gender, and closeness accounted for nearly 4% of the variance in ICG scores ($R^2 = .037$, $F(3, 106) = 1.354$, $p = .261$). However, when the contrast of homicide vs. suicide deaths was added in Model 2 of this regression, this variable did not significantly predict ICG scores above and beyond the demographic and relational factors (Step 1; $\Delta R^2 = .003$, $\Delta F(1, 105) = .29$, $p = .59$). Again, it should be noted that statistical power was substantially reduced in Step 1 of this analysis compared to Hypothesis 1 and Hypothesis 2. However, this change in R^2 , which is not directly affected by sample size, was also comparatively smaller than the change in R^2 observed in the first two tests. For example, to detect a change in R^2 with 80% power as small as the one observed in this analysis, would have required a sample size of 2,517. Conversely, only 137 and 179 participants would have been needed to detect the observed change in R^2 , with 80% power, for Step 1 of Hypothesis 1 and Hypothesis 2, respectively. Thus, these results indicate that the distinction between homicidal and suicidal deaths was not a statistically meaningful one in terms of differentiating levels of CG, at least within the present sample.

Discussion

Overall, the current study offers support for a model of bereavement whereby the complicated grief (CG) that follows violent loss is conceptualized as stemming from one's inability to make sense of the experience. To our knowledge, this is the first investigation

to evaluate this particular model, which is consonant with a “new wave” of grief theory that places central emphasis on sense-making, and the struggle to reconstruct a personal world of meaning that has been challenged by loss (Gillies & Neimeyer, 2006; Neimeyer, 1998, 2001, 2006b; Neimeyer & Anderson, 2002). Consistent with this study’s primary hypothesis, sense-making emerged as an explanatory mechanism for the already established association between violent and natural deaths and CG (Currier et al., 2006). Specifically, the present results revealed that sense-making explained this relation, even when the element of suddenness was shared by all of the participants (Hypothesis 2: violent vs. natural sudden deaths). As sense-making was shown to be a “partial mediator” in Hypothesis 1 and a “perfect mediator” in Hypothesis 2, the results of these analyses support an understanding of grief that emphasizes sense-making as the critical pathway to CG rather than the objective cause of death (violent or natural).

The present results also showed that some distinctions between the causes of death were more meaningful than others. In particular, the latter two hypotheses revealed equivalent levels of CG for the two groupings of the violently bereaved, regardless of the intentionality of the death (Hypothesis 3: homicide and suicide vs. fatal accident) or the agent of the life-ending action (Hypothesis 4: homicide vs. suicide). Although bereavement researchers have proposed that the volitional elements of homicidal and suicidal losses might exacerbate complications in grieving (Jordan, 2001; McIntosh, 1993; Murphy, Johnson, & Lohan, 2003), these results indicate that the important distinctions in CG were restricted to the larger categories of violent and natural deaths. Moreover, as Kaltman and Bonanno (2003) have shown for the outcomes of PTSD and depression, the results of Hypothesis 2 revealed that the element of suddenness was also not crucial in accounting for CG; rather, it was the sheer violence of the losses that predicted CG in this test. Altogether, these four analyses converged in highlighting the devastating impact of violence in those deaths that occurred by homicide, suicide, and accident.

In view of these results, how can we conceptualize the challenges facing the individuals in our sample who lost loved ones to violent death? One possibility is that the very unnaturalness of the violent deaths creates significant problems with sense-making,

thereby causing greater distress. Such an explanation is consistent with newer models of bereavement, which propose that the unnaturalness of a loss may shake one's "assumptive world" (Janoff-Bulman, 1992; Kauffman, 2002; Parkes, 1971) or self-narrative (Neimeyer, 2006a), and wreak havoc across multiple spheres of functioning. On a personal level, the grotesqueness of these unnatural deaths could engrave horrifying sensory memories of the loss experience, which then fuse with troubling emotions of terror, despair, or helplessness (van der Kolk & van der Hart, 1991), regardless of whether the survivor was present at the death scene (Rynearson, 2001). The compounding effect of this traumatic dimension on a basic grief response can be further magnified at a social level, as survivors find the horrific dimensions of the loss inexpressible to potentially supportive others, or as important figures in the bereaved person's life withdraw in the face of non-normative losses (Neimeyer & Jordan, 2001). At a broadly social level, bureaucratic aspects of the criminal justice system often require invasive and lengthy court proceedings, thus rendering these survivors' experiences of grief subordinate to the state's need to exercise justice (Riches & Dawson, 1998). In short, these personal and social reverberations could bar the survivors of violent death from finding a greater degree of sense in their losses, thus giving rise to the greater levels of CG.

Clinical and Research Implications

Consistent with the findings of a previous investigation (Currier et al., 2006), the current results support the notion that, although the objective circumstances of a loss carry weight, the survivor's subjective interpretation of the loss is more influential in explaining the ensuing grief response. Though violent loss was shown to elevate the risk of CG in the current sample, the results of this study suggest that clinicians could do well to focus on structuring interventions toward meaning-making with the subset of bereaved persons struggling to find a greater degree of sense in their losses. This argument is compatible with the findings of an initial randomized controlled trial with "complicated grief therapy" featuring such meaning-making exercises as evocative retelling and recording of the story of the loss and projection of new life goals, which was found to be substantially more effective than standard interpersonal

psychotherapy (Shear, Frank, Houch, & Reynolds, 2005). Such results contrast sharply with the overall ineffectiveness of conventional grief therapy as demonstrated by several recent quantitative reviews (Allumbaugh & Hoyt, 1999; Jordan & Neimeyer, 2003; Kato & Mann, 1999), and offer further encouragement for therapies featuring meaning-making strategies as a primary goal, especially in cases where the death was attributable to a violent cause.

In the same way that these results suggest the need for clinicians to attend more closely to issues of meaning in their psychotherapeutic interventions, the current results also challenge researchers to reconsider the criteria for “traumatic loss.” As highlighted in the introduction, losses resulting from homicide, suicide, or a fatal accident are customarily referred to as “traumatic” in the trauma and bereavement literature. However, the results of the present study call this usage of terms into question, as the capacity for sense-making and not the objective cause of death emerged as the primary explanatory mechanism of CG. In other words, it appears that the violent losses in the present sample became “traumatic” or “complicated” insofar as the participants faced difficulties with finding sense or meaning in them. As a starting point, future studies in this area would do well to use the term “violent loss” when denoting deaths by homicide, suicide, and a fatal accident and to reserve “traumatic loss” to describe the subjective aspects of the loss experience.

Limitations and Future Directions

Overall, this study provides initial support for a model of grief whereby sense-making mediates the association between the objective cause of death and CG. However, there are some limitations to the current investigation that should encourage further refinement and expansion of this model. First, the cross-sectional nature of the present design limits causal and temporal inferences concerning the precise relations between cause of death, sense-making, and CG. For example, an alternative interpretation to the one proposed is that the survivors’ experience of distress (as measured by the ICG) caused disturbances in cognitive functioning, which then resulted in the inability to find a degree of sense post-loss, and not vice versa. Longitudinal studies that

investigate sense-making and grief complications at multiple points in time could shed light on their interaction.

As with most studies in this area, the present investigation had an overrepresentation of women compared to men (3:1), resulting in a possible under-representation of distinctively “masculine” styles of accommodating loss. Though the current sample represented a range of losses (e.g., violent and natural losses, loss of “close” and “distant” relationships), it also primarily consisted of young adults with equivalent levels of education (i.e., college students), which challenges the generalizability of these findings to age groups outside of young adulthood and with persons of different educational backgrounds. Past studies that have examined meaning reconstruction following bereavement with older samples have highlighted the importance of sense-making, particularly in the short-term (e.g., Davis et al., 1998); however, it still remains unclear whether the distinctive findings of this study represent general trends or are specific to college students. Thus, future research in this area that utilizes samples with greater heterogeneity in gender, age, and education level could significantly contribute to our understanding of how the impact of sense-making after loss might vary with these factors.

A further limitation obtains at the level of assessment of sense-making. Despite the demonstrated utility of the single sense-making item used in this and earlier research, the straightforward operational definition of this core construct limits our understanding of what is meant by sense-making when it is asserted by bereaved persons. For example, qualitative research suggests that survivors can “make sense” of even tragic loss in secular or spiritual terms, accepting it as part of the social injustice against which human beings must contend or as expression of God’s will (Braun & Berg, 1994). The development of more refined measures of meaning-making, as advocated by Gillies and Neimeyer (2006), could reveal which facets or types of meaning-making are associated with more favorable bereavement outcomes in the case of violent loss or bereavement in general. Additionally, it might be argued that the strong association between sense-making and ICG scores was attributable to similarities in the wording of certain items on the two measures. Thus, Hypotheses 1 and 2 were retested with the exclusion of ICG items #14, #21, and #23 – the three items that assess most directly for perceptions of meaning

(Prigerson & Jacobs, 2001). Notably, the results of these analyses were identical to those discussed in this paper, which diminishes the likelihood of a methodological confound accounting for the present findings.

Finally, this study did not assess various contextual factors that could influence sense-making. Such factors might include the role of religion or spirituality (McIntosh et al., 1993), socioeconomic status (SES), the level of communication and cohesiveness in the family environment following the death of a family member (Traylor, Hayslip, Kraminski, & York, 2003), the cultural milieu of the survivor (Morgan & Laugani, 2002, 2004, 2005), or the interaction of all four. For example, detailed qualitative research on one ethnic group exposed to high levels of violent loss, African-Americans, suggests that their experiences of grieving are shaped by strong faith, family ties and conflicts, and a history of struggle against racism (Rosenblatt & Wallace, 2005). How such factors interplay to facilitate or constrain meaning-making in response to a violent loss has yet to receive the attention of researchers utilizing more quantitative methods.

In spite of the aforementioned limitations, the current study provides a first line of support to a model of grief in which sense-making serves as an explanatory mechanism for complications in grieving seen after both natural and violent losses. However, the overarching purpose was not to prove this model, but rather to take a step toward elucidating the common complications of bereavement following violent loss. Ultimately, we hope that the present study will foster the development of a more adequate conceptualization of traumatic loss and improved grief treatments for those persons experiencing its devastating impact on their lives.

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