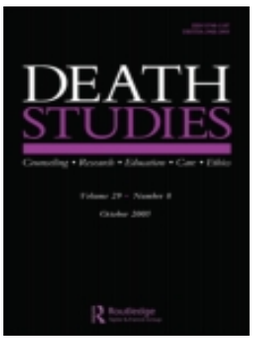

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The Grief and Meaning Reconstruction Inventory (GMRI): Initial Validation of a New Measure

James M. Gillies
New Mexico VA Healthcare System, Albuquerque, New Mexico, USA

Robert A. Neimeyer
Department of Psychology, University of Memphis, Memphis, Tennessee, USA

Evgenia Milman
Department of Counselling Psychology, McGill University, Montreal, Quebec, Canada

Although increasing numbers of grief theorists, researchers, and therapists have begun to focus on the quest for meaning in lives disrupted by loss, no convenient and psychometrically validated measure of meanings made specifically in bereavement has been available to guide their efforts. To construct such a measure, the authors began with a systematic content analysis of sense-making, benefit finding, and identity reconstruction themes gleaned from the narrative responses of a sample of 162 adults who were diverse in their age, ethnicity, relationship to the decedent, cause of death, and severity of their grief response. These were then formulated into a set of 65 candidate items in a Likert scale format representing the level of the respondent's endorsement of the item in the past week. Subsequent administration to a second sample of 300 bereaved respondents permitted factor analysis of this pilot version of the Grief and Meaning Reconstruction Inventory (GMRI), and reduced the items to 29, which loaded on 5 distinct factors, labeled Continuing Bonds, Personal Growth, Sense of Peace, Emptiness and Meaninglessness, and Valuing Life. Both the overall GMRI and its constituent factors showed good internal consistency and strong convergent validity in the form of negative correlations with established measures of bereavement-related negative emotions, symptoms of complicated grief, and more general psychological distress and mental health symptomatology, and positive correlations with grief related personal growth. The authors close by noting several specific research and clinical applications of the measure, which could play a useful role in testing and refining contemporary models of meaning made in the wake of loss.

The concept of finding or making meaning following a death-related loss has received increasing attention in contemporary bereavement theory, research and practice (Gillies, Neimeyer, & Milman, 2014; Mackinnon et al., 2013; Neimeyer, 2012a; Neimeyer, Harris, Winokuer & Thornton, 2011; Park, 2010). Despite this recognition of the importance of meaning in the contemporary grief literature, empirical research has yet to explicate fully the process by which individuals make meaning in response to loss or the form that meaning takes when it is made (Park, 2010; Steger, Frazier, Oishi, & Kaler, 2006). In part, this state of affairs stems from the absence of a consensual and empirically supported operationalization of meaning, so that researchers have been hindered in their attempts to understand the relationship between meaning and grief (Gillies et al., 2014; Park, 2010). In this study we sought to address this problem

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Address correspondence to James M. Gillies, PhD, New Mexico VA Healthcare System, Albuquerque, NM 87108; or Robert A. Neimeyer, PhD, Department of Psychology, University of Memphis, Memphis, TN 38152. E-mail: james.gillies@va.gov or neimeyer@memphis.edu

by developing an empirically derived, self-report measure of meaning that is based on a broad and inclusive sample of grieving individuals—the Grief and Meaning Reconstruction Inventory (GMRI). We begin by summarizing how meaning has been conceptualized in grief literature, and then segue to describing the construction of the GMRI, from its grounding in qualitative research on the bereaved to its refinement as a quantitative measure demonstrating factorial and construct validity as well as reliability.

CONCEPTUALIZATION AND ASSESSMENT OF THE ROLE OF MEANING IN GRIEF

Although theoretically diverse models of grief differ in their precise terminology, the concepts they put forth are consistent with those described in meaning scholarship (Gillies et al., 2014). Drawing on these converging literatures, a broad definition of meaning-making in the context of bereavement can be derived. Specifically, whether theorists formulate grief in terms of shifts in the mourner's assumptive world (Janoff-Bulman, 1992; Parkes, 1975), global meanings (Park, 2010; Park & Folkman, 1997), self-narratives (Neimeyer, 2001; Neimeyer & Sands, 2011), autobiographical schemas (Boelen, van den Hout, & van den Bout, 2006), or role relationship models (Horowitz, Bonanno, & Holen, 1993), each views the grieving individual as negotiating the challenge that a death event poses to his or her manner of understanding and functioning in the world (Gillies et al., 2014). Accordingly, in the present study, making, finding or reconstructing meaning in the aftermath of a loss is defined as negotiating the challenge that the loss event represents to one's meaning system. By extension, meaning is made, found, or reconstructed when the grieving individual makes progress in this process of negotiation by reaffirming or reformulating his or her prior system of meanings.

Just as specific meaning-oriented concepts have been advanced by different theorists, so too have efforts to assess meaning been diverse in their form and content (Gillies et al., 2014; Park, 2010). The most common approach has been simply to ask bereaved individuals to indicate the extent to which they have made meaning or sense of their loss (e.g., Currier, Holland, & Neimeyer, 2006; Davis, Wortman, Lehman, & Silver, 2000; Holland & Neimeyer, 2010; Keesee, Currier, & Neimeyer, 2008). Although this straightforward assessment has proven useful, it has the drawbacks of leaving uninvestigated the content domains of meaning made and how these conform to or conflict with the pre-existing meanings that framed the mourner's understanding of their world prior to the loss. In recognition of these limitations, investigators have conducted extensive qualitative studies of meaning reconstruction in the wake of a loss. Such studies have identified the content themes that emerge when one has made meaning (e.g., Davis, Nolen-Hoeksema, & Larson, 1998; Lichtenthal, Currier, Neimeyer, & Keesee, 2010; Miles & Crandall, 1983; Murphy, Johnson, & Lohan, 2003; Wheeler, 2001) and devised an observer-rated coding system for recognizing meaning themes in the narratives of grieving individuals (Gillies et al., 2014). There also have been a handful of self-report questionnaires developed that gauge the presence of various meaning themes (e.g., Crumbaugh & Maholick, 1964; Pakenham, 2007), although, with the exception of a scale that examines solely the spiritual domain of meaning (Burke et al., 2014), these measures are not bereavement-specific. Alternatively, researchers have constructed and validated a grief-specific self-report measure that assesses the degree and the manner in which the mourner integrates loss into pre-existing meaning structures, but again, this measure examines how much rather than what meaning the bereaved has made (Holland, Currier, Coleman, & Neimeyer, 2010; Holland, Currier, & Neimeyer 2014). Thus, although scholars have begun to devise and validate self-report measures of meaning, such measures either have been based on empirical work conducted in the context of non-bereaved populations or do not probe the content themes associated with having made meaning. As a result, it is uncertain whether these measures provide comprehensive assessments of meaning made in the context of grief. We therefore prompted a diverse, purposive sample of bereaved individuals to provide written reflections on the meaning they had constructed or reconstructed following death-related loss. We then conducted a content analysis of these reflections to identify common themes in the qualitative data that could be used to generate candidate items for the pilot version of the GMRI. By first factor analyzing this large set of items to yield theoretically and empirically grounded subscales, we were then able to evaluate the internal consistency, validity, and test-retest stability of the resulting abbreviated measure and to consider its possible advantages for future research and clinical applications.

METHOD

Preliminary Development of the Pilot GMRI

To generate items for the pilot version of the GMRI, we performed content analysis of responses given by a diverse sample of participants to questions pertaining to meaning reconstruction, as described below. Our analysis produced a codebook for categorizing the manner in which bereaved people have made (or not made) meaning of the loss, entitled the *Meaning in Loss*

Codebook. This codebook in turn informed the themes and wording of specific items in the GMRI. The complete methodology of the content analysis and the specific content categories represented in the codebook are reported in detail in a previous publication (Gillies et al., 2014), as summarized below.

Participants

Consistent with Glaser and Strauss's (1967) method of theoretical sampling, qualitative data were collected from diverse groups of bereaved adults to ensure a broad and representative pool of items reflecting meaning made. These groups included ethnically diverse college student samples, bereaved parents recruited online for a previous study (Keesee et al., 2008), and a sample of widowed persons recruited through an online support network (www.Widownet.org). Four factors were considered in this process of selective sampling to ensure considerable diversity in terms of the relationship between bereaved and decedent, age of deceased, cause of death, and level of grief distress (for more detail on purposive sampling procedure, see Gillies et al., 2014). Demographics and loss-related factors of the 162 participants selected and of the samples used in successive phases of the study are reported in Table 1.

Content Analysis

Participants responded in writing to the following three questions, designed as open-ended prompts to aid them in expressing the meaning of their grief experiences.

1. How much sense would you say you have made of the loss? Please comment on how.
2. Despite your loss, have you been able to find any benefit from your experience of loss? Please comment on this benefit.
3. Do you feel that you are any different, that your sense of identity has changed, as a result of this loss? Please comment on this change.

Content analysis involved open coding of the qualitative data into individual meaning units and then grouping those meaning units into common meaning themes or categories through the process of constant comparison (Glaser & Strauss, 1967; Strauss & Corbin, 1990), using the QSR NUD*IST software package (QSR, 1999). The meaning themes that emerged from this content analysis are described and defined in a categorical coding system, the *Meaning of Loss Codebook*, and Cohen's Kappa between pairs of three raters

TABLE 1
Demographics, Relationship of Deceased and Cause of Death for Samples

Variable	*Content analysis (n = 162)*	*Exploratory factor analysis (n = 300)*	*Validation analyses (n = 109)*
Age			
M	27.2	19.8	20
SD	12.0	3.4	4.0
Gender			
Male	21%	22%	16.5%
Female	79%	78%	83.5%
Ethnicity			
Caucasian	53%	52%	60%
African American	40%	41%	36%
Hispanic/Latino	0%	1%	1%
Asian American	0.7%	3%	3%
Native American	0.7%	1%	0%
Other	2.7%	2%	0%
Relationship of deceased to bereaved			
Grandparent	31 (19.1%)	100 (33.3%)	34 (31.1%)
Aunt, uncle, or cousin	28 (17.4%)	68 (22.7%)	23 (21.1%)
Friend	26 (16.1%)	83 (27.7%)	29 (26.6%)
Parent	24 (14.9%)	16 (5.3%)	7 (6.4%)
Child	21 (13.0%)	1 (0.3%)	1 (0.9%)
Spouse/Partner	16 (9.9%)	0	0
Sibling	12 (7.6%)	3 (1.0%)	1 (0.9%)
Other	3 (1.9%)	29 (9.7%)	14 (12.8%)
Cause of death			
Natural, anticipated	49 (42.6%)	140 (46.7%)	47 (43.1%)
Natural, sudden	35 (21.6%)	62 (20.7%)	27 (24.8%)
Accident	22 (13.6%)	54 (18%)	19 (17.4%)
Homicide or suicide	20 (12.3%)	20 (6.7%)	8 (7.3%)
Other	16 (9.9%)	23 (7.7%)	8 (7.3%)

established strong inter-rater reliability of the listed themes, greater than .8 for each pair (for more detail on the content analysis and the meaning themes it produced, see Gillies et al., 2014).

Construction of Candidate GMRI Items

Individual items for the inventory were generated to represent the meaning themes derived from the content analysis, giving each category equal weight and writing items whose language, denotations, and connotations most closely matched that of the meaning themes and of the participants' original statements. The inventory items were presented in the form of declarative statements on a 7-point Likert-type scale ranging from 0 (*I strongly disagree*) to 5 (*I strongly agree*). Mirroring the phrasing of participants in the qualitative sample, this set of items included both positively framed statements (e.g., "This death ended my loved one's suffering") and negative responses (e.g., "I have been able to make no sense of this loss"). In all, 65 items were developed in this manner, and then examined through exploratory factor analysis.

Primary Psychometric Study of the GMRI

Participants

Following institutional review board approval of the study, 332 bereaved participants were recruited from University of Memphis introductory psychology classes, with the criterion that each must have experienced loss of a significant person within the past two years. Participants were asked to provide information about themselves and the nature of their bereavement, and to complete the pilot GMRI. Thirty-two participants failed to complete one or more parts of the questionnaire. One-way analysis of variance between those who completed the questionnaire and those who did not indicated no significant differences between the two groups on the factors of age, gender, ethnicity, relationship to the decedent, age of the decedent, contact with the decedent, degree of intimacy, time since loss, having experienced other losses, prior treatment, treatment since the loss, support, and report of time spent talking about the loss. The only significant difference between the two groups was found on the factor of cause of death ($F = 6.067$, $p < .05$), with non-completers more likely to have experienced a loss through an accident, suicide, or homicide than completers. Their incomplete response sets were removed from the sample and data collected from the remaining sample of 300 participants were analyzed.

A subsample of 113 participants (hereafter termed the *validation sample*) who had completed the pilot version of the GMRI were re-administered the scale within 4 to 6 weeks, at which time they also completed several additional measures, described below, for the purpose of assessing the construct validity of the scale and its factors. Data from four of these participants were determined to have been misidentified and were removed from the study, leaving a sample size of 109 participants in this phase. Demographics and important loss-related factors for both the initial sample and the validation sample are depicted in Table 1.

Measures

Inventory of Complicated Grief–Revised

The Inventory of Complicated Grief–Revised (ICG-R; Prigerson & Jacobs, 2001) assesses grief symptoms indicative of long-term dysfunction in bereavement. This 34-item scale uses a series of 5-point Likert-style ratings of the frequency of various symptoms ranging from 1 (*almost never*) to 5 (*always*). Representative items include "Memories of _____ upset me" and "I think about _____ so much that it can be hard for me to do the things I normally do." The ICG-R has been shown to have high internal consistency (Cronbach's $\alpha = .95$) and test-retest reliability ($r = .80$) in a sample of bereaved college students (Schnider, Elhai, & Gray, 2007), and high internal consistency ($\alpha = .95$) in samples of homicidally bereft African Americans (Burke, Neimeyer, & McDevitt-Murphy, 2010; Laurie & Neimeyer, 2008). The scale's construct validity has been supported by its convergence with other validated measures of grief (Keesee, et al., 2008; Laurie & Neimeyer, 2008), as well as with interviewer ratings of CG (Prigerson et al., 2009). In the present sample, the ICG-R also had high internal consistency ($\alpha = .96$).

Hogan Grief Reactions Checklist

The Hogan Grief Reactions Checklist (HGRC; Hogan, Greenfield, & Schmidt, 2001) is an empirically derived 61-item self-report checklist of reactions to grief. Factor analysis confirmed six content factors: (a) Despair, (b) Panic Behavior, (c) Blame and Anger, (d) Detachment, (e) Disorganization, and (f) Personal Growth (Hogan et al., 2001). The internal consistency of these factors ranged from Cronbach's alpha of .79 to .90, while test-retest reliability ranged from $r = .56$ to .85. Its items are presented on a 5-point Likert-type scale, ranging from 1 (*does not describe me at all*) to 5 (*describes me very well*).

Hopkins Symptom Checklist

The Hopkins Symptom Checklist (HSCL; Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) is a well

validated 58-item self-report inventory that assesses general psychological distress in terms of nine symptom dimensions: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Items on this scale are presented as symptoms that have caused distress to the respondents in the past 7 days, to which they may respond on a 4-point Likert-type scale ranging from 1 (*not at all*) to 4 (*extremely*). Internal reliability for the HSCL-58 has been reported to be excellent ($\alpha = .95$) (Neimeyer, Kazantzis, Kassler, Baker & Fletcher, 2008).

Behavior and Symptom Identification Scale

The BASIS-32 (Eisen, 1996) is a 32-item self-report measure designed to assess mental health symptoms and behavioral and functional impairment. It assesses difficulties in domains of interpersonal relations, role functioning, daily living skills, impulsivity, substance abuse, anxiety, self-understanding, mood disturbance, suicidality, and psychotic symptoms. Items are presented on a 5-point Likert-type scale, ranging from 0 (*no difficulty*) to 4 (*extreme difficulty*). The BASIS-32 has evidenced strong internal consistency ranging from $\alpha = .66$ to .95 and good test–retest reliability, $r = .65$ to .85, over a 2- to 4-day period (Eisen & Dickey, 1996; Eisen, Dill, & Grob, 1994; Eisen, Wilcox, Scaefer, Culhane, & Leff, 1997). It has also shown good content validity in differentiating patients with DSM diagnoses (Eisen et al., 1994) and construct validity in its convergence with the SF-36 Health Survey (Eisen et al., 1997; Ware, Snow, Kosinski, & Gandek, 1993).

Meaning Making Behaviors Checklist

To provide a behavioral index related to meaning making in loss, participants were asked to report whether or not they had been involved in the following activities since their loved one's loss: volunteering to counsel other bereaved people, making a positive contribution in a grief support group, enjoying new hobbies or interests, donating to charitable causes, taking time to enjoy the little things in life, and talking more freely about life, spiritual, philosophical, or existential matters. The tally of items checked constituted the score on the measure, ranging from 1 to 6.

Plan of Analysis

An exploratory factor analysis was conducted on the initial sample of 300 respondents to examine clusters and patterns of correlation between individual items within the 65-item pilot version of the GMRI. Items that failed to load clearly on an identified factor of the measure as explained in the Results section were considered candidates for removal and the inventory was revised and abbreviated accordingly. Cronbach's alpha was then calculated for the measure and each of its identified factors to establish their internal consistency. A second exploratory factor analysis was performed with the validation sample to examine the degree to which the model was replicated; confirmatory factor analysis was not appropriate, as the participants were also included in the initial factor analysis.

Construct validity was examined by analyzing the measure's convergence with the above measures of grief-related distress, general distress, and behavioral and functional engagement in meaning making activities using the Pearson's correlation. We predicted that the GMRI would correlate positively with the subscale of the HGRC measuring Personal Growth, and negatively with measures of grief and more general psychological distress and impairment of functioning. We further calculated hierarchical regression analyses to determine the relationship between the GMRI and circumstantial and demographic factors (including age of decedent, relationship of decedent, degree of intimacy, cause of death), as well as behaviors listed in the meaning-making behaviors checklist.

RESULTS

Exploratory Factor Analyses and Internal Reliability

Statistical analyses were completed with the use of the SPSS 11 Statistical Software Package. Of 19,500 data points collected for the GMRI, only 97 were missing, constituting .5% of the data set. These missing data points were replaced through linear interpolation.

The responses to the GMRI were determined to be appropriate for factor analysis, as Bartlett's test of sphericity was significant ($\chi^2 = 3587.92$, $df = 406$, $p < .01$) and the Keiser-Meyer-Olkin measure of sampling adequacy was .833. A series of exploratory principal-components analyses with varimax rotation were performed. Although the original 65-item measure produced 16 eigenvalues greater than unity, a scree test indicated that a five-factor solution was most appropriate. Therefore, the principal components analysis was limited to five factors and successive analyses systematically removed items that did not load on one of these five factors with a rotated factor loading of at least .4. Also removed were items that loaded negatively on their respective factors, or were judged to be redundant with higher loading items. Following this process of item reduction, 29 items remained, each loading on one of the five principal factors. The five factors explained 56.58% of the total variance. Table 2 displays the five GMRI factors, their items and factor loadings, and internal reliabilities of each factor and the GMRI Total, as indicated by Cronbach's

TABLE 2
Exploratory Factor Analysis on Pilot Measure: Factor Loadings and Internal Consistencies ($n = 300$)

Factor *or item**	M	SD	*1*	*2*	*3*	*4*	*5*	α
1. Continuing Bonds	30.72	4.55						.85
32. Time together was a blessing	4.44	0.84	.88					
33. Cherish memories	4.47	0.84	.83					
31. Good person/good life	4.33	0.97	.77					
40. In a better place	4.35	1.02	.72					
50. Miss loved one	4.40	0.83	.70					
8. Will see loved one again	4.16	1.15	.54					
44. Memories bring peace	3.75	0.99	.48					
2. Personal Growth	24.87	3.98						.83
61. More responsible person	3.36	1.07		.80				
56. Positive lifestyle change	3.30	1.03		.75				
65. Knowledge and learning	3.32	1.09		.74				
59. More self-reflective	3.32	0.96		.69				
57. Value friendship more	3.81	1.00		.62				
25. Stronger person	3.61	0.93		.61				
53. Help others	3.55	0.94		.61				
3. Sense of Peace	17.17	4.60						.79
35. Ended suffering	3.71	1.46			.80			
28. Loved one was prepared	3.03	1.48			.76			
29. I was prepared	2.54	1.39			.73			
36. Brought loved one peace	3.95	1.29			.73			
20. I've made sense of loss	3.65	1.15			.50			
4. Emptiness & Meaninglessness	14.08	4.73						.76
54. Feel empty and lost	2.07	1.13				.71		
63. Pain from regrets	2.73	1.20				.69		
62. Lost innocence	2.23	1.09				.67		
16. Alone and isolated	2.12	1.16				.64		
58. Can't understand the loss	2.40	1.29				.62		
64. No benefit	2.54	1.19				.52		
5. Valuing Life	16.30	2.70						.76
1. Value, appreciate life	4.29	0.91					.80	
2. Life is short	4.35	0.94					.75	
3. Live to the fullest	4.09	0.94					.69	
7. Value family more	4.32	0.93					.60	
GMRI**	110.98	12.16					.84	

*For comparison of different factor scores, mean scores for each factor (rather than sum scores) should be used. See Discussion.
**For computation of overall Grief and Meaning Reconstruction Inventory (GMRI) score, Factor 4 items are reverse scored.

α. GMRI Total scores were calculated as the sum of all 29 GMRI items, with Factor 4 items reverse-scored. As such, internal reliability for the full scale was good, with Cronbach's $\alpha = .84$. Cronbach's α values for the five factors were fair to good at .85, .83, .79, .76, and .76.

Names were assigned to each factor based on the content of its items and consideration of the meaning-making literature. Consistent with theories of attachment (Bowlby, 1980) and continuing bonds (Field, Gal-Oz, & Bonanno, 2003; Klass, Silverman, & Nickman, 1996), the items in Factor 1 conveyed the theme of an ongoing attachment or connection with the deceased and therefore, Factor 1 was named Continuing Bonds. The items loading on Factor 2 generally fit the theme of personal growth, conceptualized by Calhoun and Tedeschi (1998) as "post-traumatic growth" and also operationalized by Hogan et al. (2001) as "personal growth." The items loading on Factor 3 were conceptualized as bringing a sense of peace to the bereaved, conveying the sentiments that the death ended the loved one's suffering and brought a sense of peace, that the bereaved and deceased were prepared for the death, and that the death made sense. Factor 4's items correlated negatively with the rest of the GMRI items. As opposed to the meaningful experiences manifested by the other factors, the items in Factor 4 described distress and loss of meaning as a result of the loss. The factor was named Emptiness and Meaninglessness to convey the distress, feelings of a void, and loss of meaning conveyed by these items. Because this factor was inversely related to other factors, its scores were reverse scored for calculation of GMRI full scores. The items loading on Factor 5 include existential themes underscored by Frankl (1959) and Yalom and Lieberman (1991) and was therefore named Valuing Life.

Factor Correlations

Correlations between the factors of the GMRI are presented in the upper portion of Table 3. As mentioned above, Factor 4 (prior to reverse-scoring) was negatively correlated with the GMRI total and its other factors. Of note are the substantial correlations between Factors 1 and 2, 1 and 5, and 2 and 5. Substantively, these correlations suggest that bereaved participants who report a strong continuing bond with their loved one tend to report greater personal growth, sense of peace, and valuing of life, as well as less struggle with emptiness and meaninglessness. Likewise, personal growth was inversely correlated with emptiness and meaninglessness, and positively associated with appreciating life's value.

Validity and Reliability Analyses

The data set for test–retest reliability and construct validity analyses was missing less than 1% of data points, and those missing data points were replaced by linear interpolation. GMRI full-scale scores were calculated by reverse scoring Factor 4 items and summing item scores.

Test–Retest Reliability

The results of these analyses are displayed in Table 4. These analyses indicated strong correlations and no significant differences between test and retest for the full GMRI and Factors 1 to 4. However, the test–retest correlation of Factor 5 scores was significantly lower, $r = .345$, with retest scores significantly higher at Time 2, $t = -2.08$, $df = 108$, $p < .05$. This weaker test–retest agreement may be due to Factor 5's being comprised of only four items, whereas the other factors are comprised of five or more items. Another explanation for the significant increase is that exposure to the items of Factor 5 at the time of the initial test may have initiated adaptive meaning-making processes that were at observed in the increase in scores at the point of retest.

TABLE 3
GMRI Factor Correlations and Construct Validity Analyses

Factor	*Full GMRI*	*Continuing Bonds*	*Personal Growth*	*Sense of Peace*	*Emptiness and Meaninglessness*	*Valuing Life*
GMRI						
Full GMRI	—					
Continuing Bonds	.718**	—				
Personal Growth	.511**	.256**	—			
Sense of Peace	.538**	.221*	−.077	—		
Emptiness and Meaninglessness	−.561**	−.153	.003	−.276*		
Valuing Life	.522**	.397**	.366**	−.097	−.167	—
ICG						
Full ICG	−.391**	.009	.136	−.369**	.678**	−.160
HGRC						
Despair	−.282*	−.004	.092	−.190*	.553**	−.109
Panic Behavior	−.113	.053	.062	−.092	.292**	−.023
Personal Growth	.353**	.223*	.541**	−.026	−.112	.262**
Blame & Anger	−.261**	.003	.085	−.252*	.451**	−.087
Detachment	−.319**	−.085	−.010	−.150	.467**	−.205*
Disorganization	−.241**	−.017	.015	−.118	.406**	−.167
HSCL						
Full HSCL	−.239*	−.034	.066	−.135	.417**	−.156
Somatization	−.185	.017	.064	−.150	.357**	−.076
Obsessive/Compulsive	−.140	.068	.135	−.083	.386**	−.130
Interpersonal Sensitivity	−.293**	−.107	−.029	−.118	.395**	−.208*
Depression	−.253**	−.084	.056	−.125	.398**	−.173
Anxiety	−.212*	.063	.036	−.090	.333**	−.166
BASIS-32						
Full BASIS−32	−.248**	−.061	.100	−.132	.453**	−.147
Relation to Self & Others	−.239*	−.024	.081	−.126	.432**	−.186
Daily Living/Role Functioning	−.214*	−.032	.097	−.064	.455**	−.150
Depression/Anxiety	−.226*	−.049	.078	−.120	.427**	−.100
Impulsive/Addictive	−.159	−.084	.118*	−.177	.233*	−.039
Psychosis	−.277**	−.158	.051	−.151	.375**	−.141

Note. GMRI = Grief and Meaning Reconstruction Inventory; ICG = Inventory of Complicated Grief; HGRC = Hogan Grief Reactions Checklist; HSCL = Hopkins Symptom Checklist; BASIS-32 = Behavior and Symptom Identification Scale.

*Correlation is significant at the 0.01 level (two-tailed).

**Difference is significant at the 0.05 level.

TABLE 4
Test-Retest Analyses: Correlations and Paired-Samples *t* Tests ($n = 109$)

		Paired Differences				
Factor	*Pearson's* r	M	SD	t	*df*	*Sign*
1. Continuing Bonds	.598*	0.83	4.41	1.98	108	.051
2. Personal Growth	.603*	0.67	3.86	1.79	107	.076
3. Sense of Peace	.733*	0.59	3.56	1.73	107	.087
4. Emptiness and Meaninglessness	.619*	−0.05	4.06	−0.13	108	.897
5. Valuing Life	.345*	−0.61	3.08	−2.08	108	.039**
GMRI	.714*	1.39	9.46	1.52	108	.132

Note. GMRI = Grief and Meaning Reconstruction Inventory.
*Correlation is significant at the 0.01 level (2-tailed).
**Difference is significant at the 0.05 level.

Further research is required to determine the temporal stability of this factor.

Factor Analysis

Exploratory principal components analysis with varimax rotation for the validation sample ($n = 109$) revealed a five-factor structure closely resembling that found with the initial sample, except that a single item (#20), "I've made sense of the loss," did not load on Factor 3, Sense of Peace; rather, it loaded negatively on Factor 4, Emptiness and Meaninglessness. Making sense of the loss, then, was strongly, negatively correlated with emptiness and meaninglessness. Given this close replication, the factor structure for the total sample of 300 (see Table 3) guided the construction of factors, as reflected in the final version of the GMRI that appears in the Appendix.[1]

Construct Validity

The predicted convergence of the GMRI with adaptive meaning making behaviors and personal growth, and its divergence from measures of grief-related distress (ICG-R and HGRC), general distress (HSCL), and behavioral and functional impairment (BASIS-32) were assessed using Pearson's *r* correlation coefficient. Table 3 presents correlations between full-scale and individual factor GMRI scores and each measure and its individual factors. Several findings highlight the measure's strong convergent and discriminant validity. Consistent with the literature suggesting that having made meaning of a loss constitutes an adaptive grief reaction, full-scale GMRI scores were significantly negatively correlated with ICG-R scores ($r = -.391$, $p < .01$), as were Factor 3 scores ($r = -.369$, $p < .01$). However, as expected, Factor 4 scores, which indicate having not made sense of the meaning, were significantly positively correlated with ICG-R scores ($r = .678$, $p < .01$).

The HGRC is an empirically derived inventory, which incorporates four factors representing grief-related distress and one factor representing personal growth. Because the personal growth factor correlates negatively with the other factors, Hogan et al. (2001) advised against a single, full-scale score for the measure. As expected, significant negative correlations were observed between the GMRI and the HGRC grief-related distress factors of Despair ($r = -.282$, $p < .01$), Blame and Anger ($r = -.261$, $p < .01$), Detachment ($r = -.319$, $p < .01$), and Disorganization ($r = -.251$, $p < .05$). Also expected, significant positive correlations were found between the HGRC's Personal Growth factor and both the GMRI total ($r = .353$, $p < .01$), and GMRI Factor 2, Personal Growth ($r = .541$, $p < .01$).

As might be expected, the GMRI was found to have more modest divergence from general psychological distress, as opposed to specifically grief-related distress, as seen in the negative correlations found between the GMRI and the HSCL. The correlation between the full scales of each measure was significant and negative ($r = -.239$, $p < .05$). Only GMRI Factor 4, Emptiness and Meaninglessness, correlated significantly with the full-scale HSCL and its factors (see Table 3). A similar significant negative correlation was found between the total scores for the GMRI and BASIS-32 ($r = -.248$, $p < .01$). This correlation was again accounted for by the strong positive correlation of GMRI Factor 4 with the full-scale BASIS-32, $r = .453$, $p < .01$), and with each of the BASIS-32 subscales (see Table 3).

Predictive Validity

Regression analyses were run to examine the ability of the GMRI to predict behaviors associated with an adaptive meaning-making process. As predicted, the GMRI total had significant predictive validity, F (1, 107) = 4.622, $p < .05$, with $R^2 = .41$, for these behaviors.

[1]Readers interested in the factor matrix for the validation sample may obtain it from the authors.

However, Factor 2, Personal Growth, was the only individual GMRI factor that was significantly predictive, $F = 6.86$, $p = .01$, with $R^2 = .60$, indicating that increased Personal Growth predicts a greater likelihood of engaging in behaviors such as volunteering to help other bereaved persons; contributing to grief support groups; enjoying new hobbies and activities; donating to charitable causes; talking about spiritual, existential, and philosophical issues; and taking time to enjoy the little things in life.

Finally, a series of linear regression models were computed to assess the relation of the GMRI to the following demographic or circumstantial factors: age and gender of the bereaved, age of decedent, time since loss (in months), degree of contact between bereaved and decedent rated 1 (*never*) to 6 (*daily*), level of intimacy in the relationship rated 1 (*not at all close*) to 5 (*intimate*), previous grief experience (yes or no), mental health treatment prior to the loss (yes or no), having someone to talk with about the loss (yes or no), and time spent talking about the loss (in hours). The categorical variables of ethnicity of bereaved, cause of death, and relationship of the decedent to the bereaved were effect coded and tested in multiple regression models. Greater reports of meaning made on the GMRI were associated with

- older age of the decedent, $F(1, 106) = 8.458$, $p < .01$, $R^2 = .075$;
- natural, anticipated death, $t(3, 108) = 2.44$, $p < .05$, $R^2 = .066$;
- loss of friends as opposed to family members, $t(6, 108) = .043$, $p < .05$, $R^2 = .082$; and
- having someone to talk with about the loss, $F(1, 87) = 6.493$, $p < .05$, $R^2 = .070$.

DISCUSSION

The present study introduces the GMRI. To our knowledge, the GMRI is the first measure of the content of meaning made that is specific to grief, based on a diverse sample of adult mourners (in terms of ethnicity, cause of death, kinship to deceased, age, etc.), and grounded in qualitative research rather than theory. To develop such a measure, the present study thematically analyzed grieving individuals' reports of meaning made in order to produce a preliminary item pool that was then refined through the use of exploratory factor analysis. The resulting measure has 29 items that load onto the following five principal factors: Valuing Life, Emptiness and Meaninglessness, Personal Growth, Sense of Peace, and Continuing Bonds.

Below, we begin by summarizing initial findings on the GMRI's validity and reliability as a measure of meaning made, and go on to discuss the measure's research and clinical applications. We conclude by acknowledging the limitations of the current study and offer future research directions pertaining to further development of the instrument.

The Reliability and Validity of the GMRI

The GMRI items and its constituent factors display encouraging preliminary evidence of validity and reliability. Concurrent validity analyses were promising in that the GMRI performed as predicted in relation to a number of well-validated distress measures: having made meaning was found to be associated with significantly lower levels of grief-specific distress, general psychological symptomology, and behavioral and functional impairments. Further support for the GMRI's construct validity lies in its positive association with behavioral indices of having made meaning such as self-reports of greater willingness to engage in spiritual, philosophic or existential discussions. Conversely, circumstantial factors that meaning theory would predict to be associated with difficulty finding meaning in a loss were linked with lower scores on the GMRI; such factors include the death of a younger person, loss of more intimate relational figures, sudden or violent death, and having no one with whom to process the loss experience. Also encouraging was evidence of strong internal consistency and test–retest reliability both for the measure as a whole as well for four of the five GMRI factors. The single least stable factor was the briefest of the subscales: Valuing Life. Despite its low test–retest reliability, this latter factor was retained in part because it displayed significant internal consistency and substantial explanatory value in the factor analysis, and because of the contribution it makes to a multidimensional understanding of meaning. This factor does, however, merit further research to determine whether its instability in the current sample is anomalous or meaningful (e.g., in terms of being more sensitive to early bereavement adaptation), and whether it requires further development, perhaps through the addition of more items.

The GMRI and the Manifestation of Meaning

As a quantitative measure founded in the qualitative reports of a diverse sample of adult mourners, the GMRI suggests that experiencing a sense of peace with the loss, reaffirming the bond with the deceased, appreciating life, and/or perceiving oneself as having grown through adversity are all indications that one has made meaning in the context of bereavement. In contrast, a sense of emptiness or meaninglessness serves as an indication that meaning has not been made or found in the grief experience.

This multidimensional portrayal of meaning made accords with different theoretical perspectives evident in the grief literature. For example, existential scholarship has focused on how a confrontation with human mortality can prompt profound questioning of the nature of one's existence (Heidegger, 2008; Yalom & Lieberman, 1991), optimally galvanizing one's sense of life's preciousness and purpose (Frankl, 1959). In line with this perspective, Valuing Life was identified in this study as a GMRI factor representative of having made meaning. Alternatively, attachment theorists such as Bowlby (1980) have described the grief experience in terms of a reorganization of the bond with the deceased. This concept has been expanded in contemporary bereavement theory to emphasize the possible benefits of maintaining a symbolic, security-enhancing "continuing bond" to the deceased (Klass et al., 1996; Neimeyer & Thompson, 2014; Stroebe, Schut, & Boerner, 2010; Worden, 2009). Accordingly, the formation of a continuing bond with the deceased emerged in this study as a key component of having made meaning. For their part, scholars focusing on psychological adjustment to death-related loss (Barry, Kasl, & Prigerson, 2002; Hebert, Dang, & Schulz, 2006) have emphasized how family members' perception of being "prepared" for their loved one's death may predict less severe grief experiences. Consistent with this literature, a Sense of Peace with the loss emerged as a key component of meaning made in the context of grief. Furthermore, meaning reconstruction theory encourages the bereft to revisit the "event story" of the death and the "back story" of the relationship with the deceased, optimally in such a way that the survivor identifies a compensatory sense of growth or benefit in their loss experience (Gillies & Neimeyer, 2006; Neimeyer, 2001; Neimeyer & Sands, 2011). This focus on growth corresponds to the identification of Personal Growth as a prominent dimension of having made meaning. Finally, the "negative" factor of the GMRI capturing a sense of Emptiness and Meaninglessness seems to epitomize the existential angst, isolation, incomprehension, and despair that is the antithesis of a meaningful life as portrayed by such humanistic and existential psychologists as Rogers (1959), Kelly (1955) and Schneider (2007, 2011). Thus, the empirically derived operationalization of meaning offered by the GMRI, arising as it does from the qualitative reports of diverse mourners, appears to offer an inclusive depiction of meaning in the wake of loss that converges with a broad spectrum of psychological theories.

As an empirically derived and validated measure of meaning, the GMRI could serve as a unique tool for research in bereavement. Although other generic instruments measuring related constructs such as a sense of coherence (Antonovsky, 1993), purpose in life (Crumbaugh & Maholick, 1964), and posttraumatic growth (Calhoun & Tedeschi, 1998) exist, none of these maps the diverse features or specific presentation of meaning made in the wake of a loved one's death, as captured by GMRI items such as "The time I spent with my loved one was a blessing" (Continuing Bonds), "My loved one was prepared to die" (Sense of Peace), or "Since this loss, I'm more self-reflective" (Personal Growth). Moreover, the GMRI's focus on the specific content domains of meanings made distinguishes it from well-validated measures that assess the extent to which mourners have integrated the loss, as reflected in the Integration of Stressful Life Experiences Scale or ISLES (Holland et al., 2010; Holland et al., 2014). As such, the GMRI could prove to be a useful complement to the ISLES, especially in circumstances where a more elaborate content analysis of people's grief narratives using a reliable observer-rated coding system (e.g., Gillies et al., 2014) proves unworkable. Finally, when researchers are investigating the bereavement experiences of more secular mourners, the absence of explicit religious content on the GMRI might make it a useful alternative to specialized scales assessing a spiritual struggle with the meaning of the loss (Burke et al., 2014).

As a distinctive measure of meaning made, the GMRI stands to contribute to future research examining the role of meaning in the grief experience. One recent focus of bereavement research has been the prediction of severe and prolonged grief trajectories (Burke & Neimeyer, 2013; Stroebe, Folkman, Hansson, & Schut, 2006), inasmuch as grief therapy has been found to be effective for mourners at risk for or experiencing such grief trajectories, but not necessarily effective when applied universally (Currier, Neimeyer, & Berman, 2008; Neimeyer & Currier, 2009). In this connection, preliminary evidence suggests that a struggle to make meaning may serve as one useful prospective predictor of prolonged grief, whereas having made meaning of a loss predicts long-term resilience and well-being (Coleman & Neimeyer, 2010). Alternatively, having made meaning of the loss may prove to be a robust mediator of how other risk factors increase the likelihood of prolonged grief, as has been suggested by research on violent death bereavement (Currier et al., 2006) and spiritual crisis following loss (Lichtenthal, Burke & Neimeyer, 2011). Finally, it may be that having made meaning is best conceptualized as an outcome of grief in its own right (Huta, 2009). Thus, investigators might find the GMRI suitable as a tool to explore the role of meaning made in predicting, mediating, and/or representing bereavement outcomes.

Beyond research applications per se, the encouraging results of the present study suggest that the GMRI also could be of value in clinical contexts. For example, by calculating and graphing a simple mean score for a given

client on each of the GMRI's five factors, it would be possible to construct a visual profile for the client in a way that could provide direction for future intervention efforts. Specifically, if family members of a patient in palliative care score particularly low in the Valuing Life or Sense of Peace domains, they could prove responsive to dignity enhancing interventions that engage the patient and family in reviewing and validating the patient's life stories and lessons (Chochinov et al., 2004). Alternatively, if clients struggle with reaffirming a Continuing Bond to their loved one or finding Personal Growth in the wake of loss, then any of a number of specific therapeutic techniques that target these goals might be considered. These could range from therapeutic review of the family photo album (Gamino, 2012), procedures for introducing the deceased (Hedtke, 2012), or imaginal conversations (Jordan, 2012) in the former instance, to loss timelines (Dunton, 2012), biographical work (Neimeyer, 2014) or directed journaling (Lichtenthal & Neimeyer, 2012) in the latter. Finally, mourners who struggle with high levels of Emptiness and Meaninglessness might benefit from such interventions as mindfulness training (Cacciatore, 2012), expressive arts exploration of grief related emotions (e.g., Milman, 2014; Thompson & Neimeyer. 2014) and specialized procedures for restorative retelling of the traumatic death narrative (Neimeyer, 2012b; Rynearson, 2012). Likewise, use of the GMRI to track treatment-related changes in meaning making would clearly be relevant for both practitioners and evaluators of various treatment programs or approaches.

Limitations and Future Directions

Although the initial sample used to generate GMRI items included a notably diverse group of bereaved persons (defined in terms of age, ethnicity, relation to the deceased, cause of death and level of grief-related distress), the validation sample used to factor analyze and winnow these items was limited to a bereaved college student population. As a result, the structure of particular factors and their relations to other measures of bereavement adaptation may not generalize to bereaved groups who differ from them in demographic or loss-related variables. Thus, administration of the GMRI to large and diverse samples of bereaved persons should be performed to further establish its reliability and validity.

A second limitation of this study is that, as an initial report on the construction and validation of the GMRI, confirmatory factor analysis was not performed. Therefore, despite the strong psychometric properties that the GMRI has displayed, future work should evaluate the stability of the instrument's factor structure. Direct comparison of the measure to other recently constructed indices of meaning making or meaning made in bereavement would also be a priority, to identify unique advantages and disadvantages of each in ongoing research and practice.

In summary, we have presented an initial report of the development and validation of the GMRI, as a psychometrically promising tool for the assessment of meaning made in the context of loss. We hope that other investigators will join us in refining and applying the measure, contributing to the growing evidence base for the role of meaning reconstruction as a prominent theme in adaptation to bereavement.

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APPENDIX: GRIEF AND MEANING RECONSTRUCTION INVENTORY

Name:_____ Date:_____

The following statements refer to thoughts, beliefs, feelings, and meanings some bereaved people experience following their loss. Please circle the number that rates the degree to which each of these experiences has been true for you **in the past week,** on a scale from 1 to 5:

1 = Strongly disagree
2 = Disagree
3 = Neither agree nor disagree
4 = Agree
5 = Strongly agree

1. The time I spent with my loved one was a blessing.	1	2	3	4	5
2. I do not see any good that has come from this loss.	1	2	3	4	5
3. Since this loss, I'm more self-reflective.	1	2	3	4	5
4. I value family more.	1	2	3	4	5
5. I will see my loved one again.	1	2	3	4	5
6. Since this loss, I find myself more alone and isolated.	1	2	3	4	5
7. I've been able to make sense of this loss.	1	2	3	4	5
8. Since this loss, I'm a stronger person.	1	2	3	4	5
9. I can't understand this loss.	1	2	3	4	5
10. I was prepared for my loved one to die.	1	2	3	4	5
11. My loved one was a good person; he/she lived a good life.	1	2	3	4	5
12. I value and appreciate life more.	1	2	3	4	5
13. Since this loss, I've changed my lifestyle for the better.	1	2	3	4	5
14. Memories of my loved one bring me a sense of peace and solace.	1	2	3	4	5
15. This death brought my loved one peace.	1	2	3	4	5
16. I've lost my innocence.	1	2	3	4	5
17. This death ended my loved one's suffering.	1	2	3	4	5
18. I miss my loved one.	1	2	3	4	5
19. Since this loss, I make more effort to help others.	1	2	3	4	5
20. I feel empty and lost.	1	2	3	4	5
21. I cherish the memories of my loved one.	1	2	3	4	5
22. Since this loss, I value friendship and social support more.	1	2	3	4	5
23. My loved one was prepared to die.	1	2	3	4	5
24. Whenever I can, I seize the day. I live life to the fullest.	1	2	3	4	5
25. Since this loss, I'm a more responsible person.	1	2	3	4	5
26. I believe my loved one is in a better place.	1	2	3	4	5
27. I feel pain from regrets I have in regard to this loss.	1	2	3	4	5
28. I've come to understand that life is short and it gives us no guarantees.	1	2	3	4	5
29. Since this loss, I've pursued new avenues of knowledge and learning.	1	2	3	4	5

Factor	*Item #'s*
1. Continuing Bonds	1, 5, 11, 14, 18, 21, 26
2. Personal Growth	3, 8, 13, 19, 22, 25, 29
3. Sense of Peace	7, 10, 15, 17, 23
4. Emptiness & Meaninglessness*	2, 6, 9, 16, 20, 27 [*these items are reverse scored]
5. Valuing Life	4, 12, 24, 28