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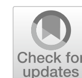

"I Changed After the Death": Symptoms of Psychopathology Predict Lower Agency and Communion Themes in Loss Narratives Over 16 Months

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Abstract

Purpose Some individuals struggle to adjust after the death of a close other. Constructing an adaptive narrative about the loss is important to adjustment but symptoms of psychopathology may interfere with this process. We examined whether psychopathology symptoms measured 2 months after the loss of a spouse or parent predicted loss narratives with lower agency and communion themes as well as more negative emotional tone and self-event connections.

Method Participants included 507 adults from the Aarhus Bereavement Study who completed psychopathology symptom measures at 2, 6, 11, and 18 months after the death of their spouse or parent. Symptom measures included prolonged grief disorder (PGD), PTSD, depression, and anxiety. Eighteen months after the death, participants wrote a narrative about the loss and answered questions about its emotional qualities (i.e., tone, self-event connections). The narratives were content coded for agency and communion themes.

Results Multiple regressions showed that higher PGD symptoms at 2 months predicted less adaptive loss narratives at 18 months, even after controlling for neuroticism and age.

Conclusion Individuals who experience high symptom levels are struggling to construct adaptive loss narratives. This may hinder identity changes needed to accommodate their altered life circumstances.

Keywords Loss narratives · Grief · Prospective · Narrative identity · Mental health · Death

All people lose significant others to death as they traverse their lifespan. The death of close others is a major life stressor (Stroebe et al., 2013) that prompts emotional, social, and practical changes in the life of the bereaved. Individuals must continue with their daily activities but in the absence of a person who was an integral part of their life. They are faced with countless practical tasks related to the death. Their roles may change, and their identity may be challenged (Eckholdt et al., 2018; Harris et al., 2021). Though loss is stressful, most individuals cope. Some, however, experience prolonged, negative reactions, that is, symptoms of psychopathology (O'Connor, 2010). This may include symptoms of depression, post-traumatic stress disorder (PTSD), anxiety, and prolonged grief disorder (PGD). Affected individuals experience painful yearning for the deceased, lack of motivation and reduced positive affect, overwhelming worries, and/or intrusive images related to the loss (Boelen, 2021; Komischke-Konnerup et al., 2021; Maccallum & Bryant, 2011).

Cognitive theories suggest that severe negative reactions to loss derive from poor integration of the loss into autobiographical memory, an identity characterized by merging with the deceased, negative self-beliefs, and interpreting symptoms in maladaptive ways (Boelen et al., 2006; Maccallum & Bryant, 2013). In the present paper, we take a narrative approach to illuminating the processes involved in negative reactions to loss. This is grounded in literature on the key role of narratives in those processes theorized to be involved in negative reactions, including autobiographical

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memory, identity, and emotional processing (Bluck & Habermas, 2000; Conway et al., 2004; Habermas, 2019; McAdams, 2001; McLean et al., 2007).

According to the narrative approach, individuals attempt to adapt to the loss through constructing a narrative that makes sense of the loss and its impact on their life and identity (Baddeley & Singer, 2010; Bluck & Mroz, 2018; Neimeyer et al., 2014). Creating a personal narrative helps individuals organize events in time and make attributions about causes and consequences (Bruner, 1990). Narratives of autobiographical events are intertwined with identity as they represent what the person did to affect the course of events and how these events in turn impacted the self, e.g. narrative identity (McAdams & McLean, 2013; Pasupathi et al., 2007). As such, loss narratives constitute a phenomenological perspective on identity involved in adaptation to loss. The importance of narrative in dealing with loss is also evident in narrative-focused interventions developed to support individuals with prolonged negative reactions (Barbosa et al., 2014; Neimeyer et al., 2008).

Prior studies have focused on investigating whether characteristics of loss narratives predict mental health over time (Bauer & Bonanno, 2001; Capps & Bonanno, 2000; Thomsen et al., 2018). The implicit assumption in this research is that narrative identity processes influence how individuals react to the loss. This perspective is consistent with theoretical frameworks on PGD that emphasize identity as contributing to mental health after loss (Boelen et al., 2006; Maccallum & Bryant, 2013). We provide a new perspective on the relation between mental health and narrative identity by examining whether symptomology after a loss predicts individuals' construction of loss narratives. To address this issue, we followed 507 bereaved spouses and adult children over 16 months and examined whether levels of psychopathology symptoms over time predicted themes and emotional qualities of loss narratives.

Characteristics of Adaptive Loss Narratives

Studies on narrative identity demonstrate that various characteristics of narratives are related to better mental health (Adler et al., 2016; Bauer, 2021). We drew from that literature to identify four characteristics of loss narratives to investigate in the current research: Agency and communion themes, emotional tone, and self-event connections. Together, these characteristics capture central human needs, affective orientation, and integrating the loss into identity in adaptive ways.

Agency and communion refer to two recurring patterns of human intentions that emerge as themes in narratives (McAdams, 1993). Agency themes include striving for power, autonomy, and mastery, whereas communion themes comprise striving for closeness, being a part of a larger whole, and nurturing. Both agency and communion may be challenged by the death of close others. Death is the ultimate reminder of our inability to prevent the passing away of our loved ones, a clear challenge to personal agency. Though we cannot prevent death itself, narrating loss with some modicum of agency is possible by highlighting those parts where we were able to play a directive role before, during or after the death. Similarly, communion with the loved one is challenged by death but narratives of loss can still emphasize caring and loving in how relationships to the lost one and with other people are depicted (Mroz et al., 2020). Studies have confirmed that higher agency and communion themes in loss narratives relate to better outcomes (Habermas, 2021; Huang & Habermas, 2019). Agentic language in relationship narratives shared by bereaved spouses predicted better mental health over time when controlling for baseline measures of mental health (Bauer & Bonanno, 2001; Capps & Bonanno, 2000). We take a different perspective on the temporal relationship between loss narratives and mental health, and test whether higher initial symptoms levels predict lower agency and communion themes in loss narratives shared 16 months later.

Another important characteristic of loss narratives is their emotional tone. Clearly narratives of illness and death may involve negative affect, including anger, sadness, and confusion. For some individuals, negative reactions may dominate the narrative. While the death of a close other is stressful, the period of the loss, or certain memories from that time, may still be narrated positively (Bluck & Mroz, 2018; Wolf et al., 2023) with the feeling that the loved one had a good ending to their life (Generous & Keeley, 2022). Spouses and adult children may construct a narrative that emphasizes positive aspects. They may reflect on how their caregiving and interactions brought comfort to the loved one and highlight positive emotions such as love and gratefulness (Lowers et al., 2020).

Loss narratives may involve linking the loss to positive and negative stability and change in the individual's identity, also termed self-event connections (Liao & Bluck, 2022; Pasupathi et al., 2007). That is, the narrator engages in reasoning about their own stable characteristics (self-stability connections, both negative and positive) or changes (self-change connections, both negative and positive) in relation to the loss. Individuals may interpret themselves negatively, for example, considering how they have always been poor at coping (negative self-stability connection) or have become more vulnerable after the loss (negative self-change connection). However, they could also narrate themselves as bringing their strengths into play during the period of the loss and as undergoing positive changes from coping with loss-related challenges (Mackay & Bluck, 2010; Mroz et al., 2020). Research has demonstrated that more positive

and less negative loss narratives are associated with better mental health, including lower psychopathology (Bauer & Bonanno, 2001; Huang et al., 2020; Maccallum & Bryant, 2008; Mroz et al., 2020; Thomsen et al., 2018). However, higher levels of initial symptoms of psychopathology may be an obstacle to forming loss narratives that emphasize positive emotions and self-event connections.

As shown, previous research indicates that how individuals narrate their loss may impact their level of psychopathology symptoms. Likewise, theories suggest that identity is causally involved in the development of PGD (Maccallum & Bryant, 2013). However, we suggest that the reverse may also be true: That negative reactions, as captured in high symptomatology, may interfere with the construction of an adaptive narrative identity (i.e., one with relatively high agency and communion, lower negative self-event connections, and greater positive self-event connections) after the loss. Having a maladaptive narrative could contribute to maintaining high symptom levels. This idea is consistent with literature suggesting that psychopathology compromises identity in ways that undercut adaptive coping (Thomsen et al., 2023). Individuals who react to the loss with more symptoms of psychopathology may shy away from exploring the loss through narrating: they may struggle to narrate themselves as agentic and communal, finding it hard to construct positive self-event connections. That is, those bereaved individuals who find themselves burdened with constant yearning for their close other, uncontrollable worries and intrusive images, difficulties motivating themselves to engage in activities and feeling a lack of pleasure in life, may create loss narratives that highlight a sense of their own lack of ability to take charge of their life, their loneliness and isolation, and a view of themselves as defective or having been damaged by their loss. Such loss narratives and the accompanying negative identity implications may undermine healthy coping efforts and hinder identity adaptation to the bereaved person's altered life circumstances, thereby maintaining higher symptom levels.

The Present Study and Hypotheses

We followed 507 bereaved adults (loss of spouse or parent) over 16 months. The data derived from the Aarhus Bereavement Study (Harris et al., 2021; Lundorff et al., 2020). This multi-wave study encompasses various measurements, including several indicators of psychopathology symptoms (depression, generalized anxiety, PTSD, and PGD), assessed at 2 (T1), 6 (T2), 11 (T3), and 18 (T4) months after the loss. At the latest time point (i.e., only at 18 months post loss) participants wrote a narrative of their loss. We asked them to write not just about the death itself, but about the period concerning the loss of their spouse/parent, because the experience of loss extends over time rather than being limited to the moments of death. We examined whether more symptoms of psychopathology at T1, T2, T3, and T4 related to and predicted characteristics of loss narratives written 18 months after the loss (T4).

We hypothesized that having greater symptoms of psychopathology at T1, T2, T3, and T4 would predict T4 loss narratives with: (1) lower agency themes, (2) lower communion themes, (3) less positive and more negative emotional tone, and (4) less positive and more negative self-event connections. We assessed agency and communion themes in the narratives with standard, reliable content-coding methods (Adler et al., 2017). Emotional tone and self-event connections were assessed using self-report questions developed in prior studies (Jensen et al., 2020).

To examine whether symptoms of psychopathology predicted characteristics of loss narratives over and above other correlates of reactions to loss, we included measures that may relate to narrative characteristics and symptoms of psychopathology. These included neuroticism, attachment, type of relationship (i.e., loss of spouse or parent), gender, age, and type of death (Boelen et al., 2006). In our statistical analyses, we then control for any of these variables that were found to relate to characteristics of the loss narratives.

Method

Hypotheses 1 and 2 and related analyses concerning agency and communion themes were pre-registered (https://aspredicted.org/gg538.pdf). Hypotheses 3 and 4 concerning emotional tone and self-event connections were not pre-registered, as initial analyses of these variables were conducted prior to registration. The data is not being made publicly available due to national data sharing rules. Analyses of the narratives are unique to this paper, and other articles relying on this dataset do not overlap with the current study (Harris et al., 2021; Johannsen et al., 2022; Komischke-Konnerup et al., 2021; Lundorff et al., 2020, 2021; Vang et al., 2022).

Participants

The participants were a subsample from the Aarhus Bereavement Study. National registers in Denmark were used to identify individuals between 25 and 85 years living within the Aarhus area who lost their spouse between January 2017 and March 2018. Identified individuals received an invitation to participate, approximately 1 month following the death of their spouse and, if so agreed, responded to the first questionnaire 2 months post loss. To recruit adult child participants, spouse participants were invited to share information about the research with their adult children.

We included those participants who at T4, 18 months after their loss, responded to the loss narrative prompt. This included 507 adults with 331 having lost their spouse and 163 having lost their parent (13 missing responses for this item). There were 340 women (67%) and 154 men (30%; 13 missing responses), and the mean age was 61.85 years ($SD = 16.24$, range 18–86). The sample for the present study did not differ significantly from the full sample responding at T1 on the psychopathology symptom measures, $ts(1185) < 1.60$.

The sample was relatively well-educated with 12% having a university degree at the MA level, 26% having the Danish equivalent of an undergraduate college degree, and the remaining 58% reporting other education, manual training, high school, or secondary school as their highest level of education (20 missing responses). Finally, cause of death of their lost one was reported as from different conditions, though largely cancer.

Materials and Measures

Loss narrative prompt. Participants were given the following instruction with an open text field to write their narrative: "In this part of the study, we ask you to please describe the period or the chapter that concerns the loss of your spouse/parent. Please include descriptions of your relationship with your spouse/parent, what happened during the time before the loss and the following months, what you thought and felt during the course of events, what the period says about who you are as a person and how the period may have changed you". We asked for a period/chapter because loss is best conceived as an extended process that would be mentally represented as a life story chapter (McAdams, 2001; Thomsen, 2015).

Emotional tone and self-event connections. After narrating their loss chapter participants rated positive/negative emotional tone, positive/negative self-change connections, and positive/negative self-stability connections in relation to the loss using six questions. Questions were rated on 5-point scales anchored with 1 = not at all and 5 = to a very high degree. Similar questions have been used in previous studies and their construct validity is supported by correlations with personality traits and symptoms of psychopathology (Holm & Thomsen, 2018; Jensen et al., 2020). The six questions were (positive/negative indicates two separate questions):" Try to think about how you experienced the period when it happened. To what degree would you describe what happened during this period as something positive/negative?" [positive/negative emotional tone]; "Try to think about how you experience that period today. Does the period emphasize some positive/negative attributes that characterize you today?" [positive/negative self-stability connections]; and "Try to think about how you experience the period today. Has the period changed you as a person in a positive/negative way?" [positive/negative self-change connections].

The participants completed psychopathology symptom measures at T1–T4. In addition, they completed measures of neuroticism and attachment at T1, which are used as control variables in the present study. For all scales missing values were replaced using the Expectation–Maximization algorithm (Twala, 2009) if less than 50% of items were missing. The measures include those listed below.

Symptoms of PGD were measured using the Prolonged Grief-13 (Prigerson et al., 2009). The scale is validated in Danish and includes 11 items assessing symptoms within the last month, including yearning, shock, and numbness as well as two items measuring functional impairment and symptom duration, which were not included in the sum score for the scale (Vang et al., 2022). Symptom items were all rated on 1–5 points scales with higher scores indicating more severe symptoms.

Symptoms of anxiety were measured using the Generalized Anxiety Disorder-7 (Spitzer et al., 2006). The scale includes seven items assessing generalized anxiety disorder symptoms within the last two weeks, including worrying, difficulties relaxing, and feelings of nervousness and anxiety. Items were rated on 0–3 points scales with higher scores indicating higher symptom levels.

Symptoms of PTSD were measured using the Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5) (Blevins et al., 2015; Forkus et al., 2022). The list includes 20 symptoms within the domains of re-experiencing, avoidance and hyperarousal that are all rated on 0–4 points scales with respect to the selected event. For the present study, the scale was adapted to invite participants to complete the items with respect to the death of their close other and instructions asked them to consider their experiences within the last month. Higher scores indicate more severe symptoms.

Symptoms of depression were measured using the Center for Epidemiologic Studies Short Depression Scale (Radloff, 1977; Weiss et al., 2015). The scale includes 10 items measuring symptoms such as poor sleep, lack of positive affect, and feelings of depression all rated on 0–3 points scales with respect to frequency within the last week. Higher scores reflect more severe symptom load.

Neuroticism was measured with the NEO Personality Inventory-Revised neuroticism subscale (Costa & McCrae, 1992) which includes 12 items rated on 1–5 points scales. Higher scores indicate more neuroticism.

Attachment was measured with the Experiences in Close Relationship Scale-Short (Wei et al., 2007) that assesses attachment in romantic relationships. The scale includes 12 items that assess orientations of anxious attachment (6 items) and avoidant attachment (6 items), rated on 1–7 points scales with higher scores indicating more anxious/avoidant attachment. Participants who were spouses to the

deceased were instructed to complete the items with respect to how they experienced their relationship with their spouse. For the adult child participants, the response was based on their experience of romantic relationships in general.

Procedure

Approximately 2 months after the death of their spouse or parent, individuals provided informed consent and received either an electronic link with the questionnaire or a paper copy of the questionnaire. They responded to questionnaires again at 6, 11, and 18 months after the death of their close other (the content differed across T1–T4 but always included the measures of symptoms described above). The loss narratives were only collected at T4, and after all other measures). In case of non-response, participants received up to two reminders.

Content-Coding: Agency and Communion

The loss narratives were coded for agency and communion themes using an adapted coding manual developed by Jonathan Adler (McLean et al., 2020). Agency themes were scored from 0 to 4, with 0 representing individuals who narrate themselves as powerless and at the mercy of external circumstances and 4 representing individuals who narrate themselves as able to affect their own lives, initiate change, and have some degree of influence over events in their lives. Scores of 1, 2, and 3 represent intermediate levels of agency themes. Communion themes were likewise scored from 0 to 4, with 0 indicating individuals who narrate themselves as completely disconnected, isolated or rejected and 4 indicating individuals who narrate themselves as highly connected to others. Scores of 1, 2, and 3 represent intermediate levels of communion themes. The first author adapted the coding manual to capture specific expressions of agency and communion themes in the context of loss narratives. These adaptions included examples of how agency and communion themes may emerge in the narrative, e.g., making decisions about how to cope with illness and death preparations and showing strength in coping with the loss [examples of agency themes] and describing a loving relationship with the deceased as well as support from others [examples of communion themes]. The adapted coding manual and examples of loss narratives high and low on agency and communion themes can be found in Appendices A and B.

The first author trained an MSc student in Psychology using the narratives from the current study. When interrater reliability was satisfactory, the student assistant coded all narratives independently. A reliability check was performed with the first author independently coding 20% of the narratives. Interrater reliability as calculated with intraclass correlations was good for agency (0.77) and for communion (0.73).

Results

We first report descriptive analyses on symptom measures and narrative characteristics, and then provide preliminary analyses to identify relevant control variables for the main analyses (e.g., demographic variables, neuroticism, and attachment). In the main analyses, we report the pre-registered correlations and multiple regression analyses concerning agency and communion themes (hypotheses 1 and 2) as well as a similar set of analyses for positive/negative emotional tone and self-event connections (hypotheses 3 and 4).

Descriptive Analyses

The means for all psychopathology symptom measures as well as the control variables, neuroticism and attachment orientations, are shown in Table 1. As would be expected, symptoms were higher at T1 and then dropped over time with the lowest mean scores at T4, Fs(3, 1401) > 29.93, ps < 0.001. At the same time, measures of symptoms at T1–T4 correlated highly: 0.75 to 0.84 for PGD symptoms; 0.63 to 0.72 for anxiety symptoms, 0.73 to 0.82 for PTSD symptoms, and 0.65 to 0.79 for symptoms of depression. Interrelations between all symptom measures were positive and moderate to high (rs from 0.48 to 0.80).

The mean scores for the characteristics of loss narratives were as follows: Agency themes ($M = 2.02$; $SD = 0.89$); communion themes ($M = 2.14$; $SD = 0.77$); positive emotional tone ($M = 2.34$; $SD = 1.17$); negative emotional tone ($M = 3.25$; $SD = 1.24$); positive self-change connections ($M = 2.57$; $SD = 1.10$); negative self-change connections ($M = 1.51$; $SD = 0.80$); positive self-stability connections ($M = 2.90$; $SD = 1.07$), and negative self-stability connections ($M = 1.91$; $SD = 0.96$). In general, the sample rated the loss narratives as more negative than positive in emotional tone but with substantial variation $t(506) = 9.51$, $p < 0.001$, $d = 0.42$. As a group, participants endorsed positive self-event connections to a higher extent than negative self-event connections (self-change: $t(506) = 16.75$, $p < 0.001$, $d = 0.74$ and self-stability: $t(506) = 14.87$, $p < 0.001$, $d = 0.66$), indicating that positive identity implications are common even amidst the stresses of the loss.

Preliminary Analyses

To identify control variables for the main analyses, we conducted a series of tests to examine correlates of the loss narratives characteristics. The mean number of words in the loss narratives was 155.58 ($SD = 189.50$).

Table 1 Descriptive statistics for psychopathology symptom measures (T1–T4) and correlations with characteristics of the loss narrative at T4

	M (*SD*)	Agency	Communion	Positive tone	Negative tone	Positive self-change	Negative self-change	Positive self-stability	Negative self-stability
T1 PGD	25.34 (8.77)	– 0.34*	– 0.26*	– 0.20*	0.30*	– 0.05	0.36*	– 0.11	0.42*
T2 PGD	23.59 (8.34)	– 0.36*	– 0.26*	– 0.18*	0.32*	– 0.09	0.41*	– 0.17*	0.42*
T3 PGD	21.43 (7.63)	– 0.41*	– 0.28*	– 0.18*	0.28*	– 0.09	0.43*	– 0.19*	0.46*
T4 PGD	20.78 (7.67)	– 0.42*	– 0.32*	– 0.18*	0.30*	– 0.10	0.47*	– 0.17*	0.48*
T1 anxiety	4.25 (4.39)	– 0.30*	– 0.28*	– 0.17*	0.22*	– 0.00	0.39*	– 0.13	0.38*
T2 anxiety	3.93 (4.35)	– 0.32*	– 0.24*	– 0.11	0.23*	– 0.08	0.43*	– 0.14	0.42*
T3 anxiety	3.20 (3.96)	– 0.30*	– 0.25*	– 0.15	0.23*	– 0.03	0.46*	– 0.17*	0.40*
T4 anxiety	3.00 (3.88)	– 0.32*	– 0.25*	– 0.19*	0.21*	– 0.09	0.39*	– 0.19*	0.39*
T1 PTSD	12.68 (11.39)	– 0.34*	– 0.31*	– 0.19*	0.30*	– 0.03	0.43*	– 0.13	0.46*
T2 PTSD	11.41 (11.29)	– 0.37*	– 0.29*	– 0.14	0.28*	– 0.11	0.47*	– 0.19*	0.43*
T3 PTSD	9.72 (9.86)	– 0.37*	– 0.30*	– 0.18*	0.29*	– 0.07	0.50*	– 0.18*	0.45*
T4 PTSD	8.97 (9.63)	– 0.42*	– 0.33*	– 0.18*	0.29*	– 0.10	0.51*	– 0.16*	0.51*
T1 depression	8.84 (5.71)	– 0.36*	– 0.29*	– 0.18*	0.23*	– 0.07	0.39*	– 0.14	0.41*
T2 depression	8.13 (5.75)	– 0.37*	– 0.26*	– 0.14	0.23*	– 0.10	0.43*	– 0.19*	0.41*
T3 depression	7.25 (5.21)	– 0.36*	– 0.28*	– 0.14	0.21*	– 0.10	0.44*	– 0.17*	0.37*
T4 depression	6.92 (5.04)	– 0.43*	– 0.30*	– 0.20*	0.22*	– 0.17	0.42*	– 0.22*	0.39*
T1 neuroticism	29.66 (8.67)	– 0.29*	– 0.26*	– 0.08	0.12	– 0.02	0.32*	– 0.14	0.41*
T1 attachment avoidance	14.03 (5.58)	– 0.18*	– 0.25*	– 0.04	0.03	– 0.04	0.13	– 0.09	0.12
T1 attachment anxiety	18.44 (6.01)	– 0.14	– 0.18*	– 0.01	– 0.01	0.09	0.16	– 0.05	0.21*

$^{*}p < 0.0004$

Number of words correlated positively and significantly (all ps < 0.05) but with small effect sizes with negative emotional tone, $r(505) = 0.10$, negative self-stability connections, $r(505) = 0.09$, and negative self-change connections, $r(505) = 0.13$. None of the other correlations reached significance, rs$(505) < 0.08$. Based on these analyses, number of words does not appear to be a major explanatory factor with respect to characteristics of loss narratives and was not included as a covariate in any analyses.

We examined associations between characteristics of loss narratives and demographic variables, type of relationship with the deceased, and type of death. There were no significant differences by gender (ts < 1.80), type of relationship (spouse vs. parent; ts < 1.45), or type of death ($F < 1.90$). Age correlated with small effect sizes but significantly (all ps < 0.05) and positively with communion themes, $r(499) = 0.10$, and positive emotional tone, $r(499) = 0.09$, and negatively with negative emotional tone, $r(499) = -0.19$, negative self-stability connections, $r(499) = -0.13$, negative self-change connections, $r(499) = -0.20$, and positive self-change connections, $r(499) = -0.11$. With the exception of the last finding on positive self-change, the age-related findings are consistent with studies showing that older age is related to positivity in memory and life stories (Carstensen & Mikels, 2005; Jensen et al., 2020). It is also possible that these relations reflect that loss is more normative, more expected, in older age. Based on these preliminary findings, it appears that individual differences in loss narratives are associated with age, so we include age in the multiple regressions reported below.

As a further step in identifying relevant control variables, we examined whether characteristics of loss narratives were related to neuroticism and attachment (i.e., avoidance and anxiety) measured at T1, by running a planned series of correlations (see Table 1). Neuroticism at T1 predicted lower agency and communion themes as well as less positive and more negative loss narratives at T4. The highest correlation coefficients were found for neuroticism with agency themes (−0.29) and negative self-event connections (self-change: 0.32 and self-stability: 0.41). These findings are in line with other research on neuroticism and narrative identity (Jensen et al., 2020; McAdams et al., 2004). The prospective relations between attachment avoidance and anxiety and characteristics of loss narratives were in the expected direction but were generally weak, only reaching significance for agency and communion themes (− 0.18 and − 0.25) and negative self-stability connections (0.21). Since the correlations with neuroticism had larger effects sizes and were consistent across characteristics of the loss narratives, we included neuroticism as a control variable in the multiple regressions reported below.

Main Analyses

We conducted a series of correlations before running regression analyses. To test our pre-registered hypotheses 1 and 2 that symptoms of psychopathology measured at T1, T2, T3, and T4 were associated with agency and communion themes in loss narratives at T4, we ran the planned series of correlations. Similarly, to test hypotheses 3 and 4 we correlated symptom measures with emotional tone and self-event connections in the narratives (see Table 1 for all correlations). Because we ran 128 correlations between eight characteristics of the loss narratives and 16 T1–T4 measures of psychopathology, we Bonferroni corrected the p-level by dividing 0.05 by 128 and derived a significance level of $p < 0.0004$. Using this p-level, having more severe symptoms of psychopathology was related to loss narratives characterized by lower agency and communion themes. This was true for all four time points (*r*s from small to medium effect sizes; − 0.24 to − 0.43). The pattern of correlations for symptoms across T1–T4 with negative emotional tone and self-event connections (T4) was similar (*r*s from 0.21 to 0.51) but with lower effect sizes and more non-significant correlations for positive emotional tone and positive self-event connections (*r*s from − 0.00 to − 0.22). Notably, the correlation coefficients between symptoms and the loss narrative characteristics (T4) did not vary widely across measurement times (T1 to T4). There was a tendency, however, towards correlation coefficients for later measures of psychopathology symptoms to show stronger relations to the T4 narratives. We explored whether change between T1 and T4 for each of the symptom measures (i.e., change score = T1–T4 score), was related to any of the characteristics of loss narratives but did not find any significant correlations (*r*s < 0.095). This implies that there is no relationship between decrease or increase in symptom measures over time and loss narratives.

Following our pre-registered analyses, we ran two separate multiple regressions to test whether symptoms of psychopathology predicted agency and communion themes in loss narratives. Based on the preliminary analyses, we controlled for neuroticism and age. We ran the same set of multiple regressions for emotional tone and self-event connections variables. We had pre-registered that we would include the measurement of symptoms of psychopathology from only one time-point (i.e., T1–T4), the one with the numerically highest correlation to characteristics of the loss narrative. However, the correlations with narrative characteristics were very similar across T1–T4. As such, we decided to use T1 measures of symptomology to predict T4 narrative characteristics to take full advantage of this longitudinal dataset for testing relations prospectively over 16 months. Regression results can be seen in Table 2. Note that we do not report the regressions for positive self-change connections and positive self-stability connections as the overall models were not significant, $Fs(6, 493) = 1.41$ and 2.03 respectively. PGD symptoms at T1 predicted lower agency themes, higher negative emotional tone, and more negative self-stability connections in loss narratives at T4, after controlling for neuroticism and age. Other symptom measures did not relate significantly to characteristics of the loss narratives after controlling for neuroticism and age.

The four measures of symptoms overlap in predicting narrative characteristics (Table 1 and descriptive analyses of relationships between symptoms measures). The analyses reported above indicated that PGD symptoms were most robust in predicting characteristics of loss narratives. Hence, we also explored whether symptoms of PGD predicted

Table 2 Multiple regressions predicting characteristics of the loss narrative at T4 from T1 psychopathology symptom measures

	Agency	Communion	Positive tone	Negative tone	Negative self-change	Negative self-stability
Step 1						
Neuroticism	− 0.29*	− 0.25*	− 0.07	0.10*	0.31*	0.40*
Age	− 0.00	0.08	0.08	− 0.18*	− 0.16*	− 0.08
Step 2						
Neuroticism	− 0.09	− 0.07	0.10	− 0.11	0.04	0.20*
Age	0.03	0.08	0.10*	− 0.19*	− 0.16*	− 0.09*
PGD	− 0.15*	− 0.07	− 0.12	0.23*	0.10	0.20*
Anxiety	0.01	− 0.03	− 0.03	− 0.03	0.05	− 0.04
PTSD	− 0.06	− 0.11	− 0.06	0.13	0.15	0.16*
Depression	− 0.16	− 0.10	− 0.09	0.06	0.15	0.06
Model summary	$F(6, 493) = 14.54$*, adj $R^2 = .14$	$F(6, 493) = 10.62$*, adj $R^2 = .11$	$F(6, 493) = 4.88$*, adj $R^2 = .05$	$F(6, 493) = 13.05$*, adj $R^2 = .13$	$F(6, 493) = 23.69$*, adj $R^2 = .22$	$F(6, 493) = 27.98$*, adj $R^2 = .25$

*$p < 0.05$

agency and communion themes, emotional tone, and self-event connections, after controlling for neuroticism and age, but excluding the three other measures of symptoms (e.g., depression, anxiety, and PTSD). This set of analyses were not pre-registered but followed from the above observations and help illuminate whether symptoms of PGD play a distinctive role in predicting characteristics of loss narratives, while avoiding potential problems of high covariation between predictor variables. Symptoms of PGD significantly predicted six of eight narrative characteristics (see Table 3, note that regressions for positive self-change and positive self-stability connections are not reported as PGD did not significantly predict these, βs = − 0.03 and − 0.06, *p*s > 0.05). Notably, higher initial levels of PGD predicted loss narratives that 16 months later were characterized by lower agency and communion themes (βs = − 0.27 and − 0.20), less positive tone (β = − 0.22), more negative tone (β = 0.33), and negative self-event connections (βs = 0.30 (self-change) and 0.31 (self-stability)).

Discussion

We examined whether higher levels of psychopathology symptoms predicted less adaptive loss narratives in 507 bereaved adults. Individuals who across time reacted to the loss with more symptoms of psychopathology, narrated the loss with lower agency and communion themes, with more negative emotional tone, and with more negative self-event connections. In narrative identity terms, they constructed the loss narrative in ways that represented them as powerless, disconnected, and as having changed negatively from this life stressor. It is particularly notable that content-coded agency and communion themes were predicted by symptom measures because these associations cannot reflect shared method variance as could be the case for the self-reported characteristics of emotional tone and self-event connections. Analyses controlling for neuroticism and age indicated that initial PGD symptoms were a robust predictor of less adaptive loss narratives 16 months later. This is consistent with viewing PGD as a distinct disorder tied to the loss of a close other (Maccallum & Bryant, 2013) and suggests that higher levels of PGD symptoms, even soon after the loss, may reflect a detrimental trajectory ahead.

Loss Narratives and Symptoms of PGD

By demonstrating that symptoms of PGD predict characteristics of loss narratives, our findings expand prior studies that have also documented associations between loss narratives and concurrent and later mental health (Bauer & Bonanno, 2001; Capps & Bonanno, 2000; Huang & Habermas, 2019; Maccallum & Bryant, 2008; Thomsen et al., 2018). Our findings show that bereaved individuals who react to loss with more PGD symptoms, including intense yearning for the deceased, shock and numbness, have difficulties constructing an adaptive loss narrative that could support adjustment. Neuroticism has been related to more severe grief reactions and to negative narrative identity (Jensen et al., 2020; Maccallum & Bryant, 2013; McAdams et al., 2004). Our analyses also showed that neuroticism at T1 was related to negative loss narrative characteristics 16 months later. Importantly, however, the relations between symptomology and loss narrative characteristics did not simply reflect neuroticism. Effects persisted when neuroticism was controlled in analyses. Notably, symptoms of PGD were the most robust predictor of less adaptive loss narratives. This may reflect that PGD symptoms arise in the context of the loss, whereas symptoms of depression and anxiety may not relate specifically to the loss. Some adaptive characteristics of the loss narrative, including positive emotional tone and positive self-event connections were not as strongly predicted by PGD measures. Future studies could illuminate

Table 3 Multiple regressions predicting characteristics of the loss narrative at T4 from T1 PGD symptoms controlling for neuroticism and age

	Agency	Communion	Positive tone	Negative tone	Negative self-change	Negative self-stability
Step 1						
Neuroticism	− 0.29*	− 0.25*	− 0.07	0.10*	0.31*	0.40*
Age	− 0.00	0.08	0.08	− 0.18*	− 0.16*	− 0.08
Step 2						
Neuroticism	− 0.17*	− 0.16*	0.03	0.05	0.17*	0.25*
Age	0.03	0.10*	0.11*	− 0.21*	− 0.19*	− 0.11*
PGD	− 0.27*	− 0.20*	− 0.22*	0.33*	0.30*	0.31*
Model summary	$F(3, 490) = 26.70$* adj $R^2 = 0.14$	$F(3, 490) = 18.91$* adj $R^2 = 0.10$	$F(3, 490) = 8.53$* adj $R^2 = 0.04$	$F(3, 490) = 24.67$* adj $R^2 = 0.13$	$F(3, 490) = 40.61$* adj $R^2 = .19$	$F(3, 490) = 53.57$* adj $R^2 = .24$

Note: *$p < 0.05$

factors involved in the construction of more positive loss narratives, including social support and extraversion.

More broadly, the findings are consistent with the idea that psychopathology impacts narrative identity by fostering negative self-interpretations (Thomsen et al., 2023). This interpretation would have been more strongly supported in a design that included loss narratives at baseline so that we could have statistically controlled for baseline narrative characteristics in examining relations between symptomology and T4 narratives. Still, our findings suggest a bidirectional relation between narrative characteristics and psychopathological symptoms following loss (especially PGD). Theories tend to view narrative identity as affecting the emergence of symptoms (Maccallum & Bryant, 2013; Neimeyer, 2006), which is consistent with prior prospective studies on loss (Bauer & Bonnanno, 2001; Capps & Bonanno, 2000) and well as prospective studies on narratives and mental health more generally (Adler, 2012). Based on our findings (whether considering prospective or concurrent relations between symptoms and narrative characteristics), we suggest, however, further exploring bi-directional links between narrative identity and PGD symptoms. Individuals who are plagued with yearning and numbness may avoid using narrative to explore emotions and identity, which previous research has indicated can be beneficial (Pals, 2006). With fewer opportunities for explorative narrating, they may struggle to construct a loss narrative that emphasizes moments of agency and communion. The symptoms in themselves may become sources of negative self-interpretations (e.g., "I can't cope" and "I am weak") that over time are folded into less adaptive loss narratives. Carrying such narratives in memory as one moves forward in time may hinder healthy adaptation.

Clinical Implications

Our findings show that PGD symptoms are related to the construction of less adaptive loss narratives. We suggest that psychosocial interventions directly target loss narratives as a potential maintaining mechanism for prolonged grief. Existing narrative approaches emphasize the construction of narratives to make sense of the loss (Barbosa et al., 2014; Neimeyer et al., 2008). When doing so, therapists may invite individuals to focus narrative reconstruction on moments where agency and communion emerged most strongly during the loss period and in present life. This should be carefully balanced with narrative processing of negative emotions which may also be needed for healthy adjustment, and repeated narration of the loss may further aid grieving individuals in understanding and coping (Habermas, 2019). The grieving participants in our study found myriads of ways to exert agency and experience communion, including planning care of the deceased, asking for help and support, and engaging in social activities despite experiencing difficult emotions (see Appendices A and B for examples). Furthermore, our findings emphasize the need for an explicit focus on eliciting and encouraging reframing of negative self-interpretations that have become a part of the loss narrative, including those arising from intense symptom reactions (e.g., "There is something wrong with me"). This is consistent with existing cognitive behavioral approaches where identity and interpretations of symptoms are viewed as drivers in development and maintenance of disorders (Boelen et al., 2006; Maccallum & Bryant, 2013). We call attention to the key role of narratives in these processes and suggest integrating narrative methods into cognitive behavioral therapy. Narratives represent the loss and implicated processes of identity, appraisals, and memory in richly contextualized ways that help anchor interventions in individuals' lived experience.

Limitations and Future Directions

The present study has several strengths including a relatively large sample, prospective assessments over 16 months, measuring a range of symptoms and control variables, and reliable content-coding of loss narratives for both agency and communion. However, there are also limitations. First, we cannot exclude the possibility that non-measured variables explain the prospective relations between PGD symptoms and characteristics of loss narratives. Specifically, we did not assess loss narratives in the early time points of the study. It is possible that these would directly predict later loss narratives eliminating effects of initial symptom levels and challenging the interpretation that symptoms can play a causal role in how loss narratives are constructed. Second, it is possible that aspects of the actual lived experience of the loss, determine both how individuals narrate it and the symptoms they experience. This would imply that loss narratives should be considered together with aspects of the actual loss in understanding grief reactions. Third, self-report scales, with their incumbent problems, were used as indicators of symptoms of psychopathology. Future studies could include clinical assessment. Fourth, the sample was recruited from a general population of bereaved individuals with only a minority reporting high symptom levels, thereby representing typical grief responses. Future studies could, however, include individuals at high risk of developing PGD to test whether our results generalize to clinical samples.

Conclusion

We conclude that high symptomatology after loss, especially PGD symptoms, predict less adaptive loss narratives, characterized by low agency and communion themes and more negative self-event connections. Less adaptive loss

narratives may reflect narrative identity challenges after the death of a close other. Existing interventions, including cognitive behavioral approaches, could be tailored to target such narratives with the aim of supporting narrative reconstruction. Such work could focus on increasing agency and communion as well as self-event connections emphasizing how strengths, growth, and values emerged during this difficult life period.

Appendix A

Coding Manual for Agency and Communion Themes in Loss Narrative

Adapted from the coding manual developed by Jonathan Adler (McLean et al., 2020). Below, the original coding system is shown followed by the adaptions made for the present study.

Agency

Narratives high in agency are fundamentally concerned with the autonomy of the protagonist. Highly agentic narratives describe protagonists who can affect their own lives (Lysaker), initiate changes on their own (Adler, Skalina, & McAdams), and who achieve some degree of control over the course of their experiences (McAdams' status/victory). This theme is related to the degree to which people internalize their actions, reflect on them, and engage in them with a full sense of choice (Deci & Ryan's Self-Determination Theory). This achievement may come through self-insight, gaining a sense of control, or a feeling of increased power (McAdams' self-mastery). The theme of agency bears some relationship to internal locus of control (Rotter), but it is not identical; for example, if someone feels that they are responsible for everything in their life, but they are failing at all of them, they might be rated as high in internal locus of control, but low in agency. This theme should be coded only as it pertains to the protagonist of the narrative, not other characters.

Code 0–4, where 4 = highest agency.

0: Protagonist is completely powerless, at mercy of circumstances; all action is motivated by external powers; or narrative is not written in first person (rare).
1: Protagonist is somewhat at the mercy of circumstances, with primary control of the plot at the hands of external powers.
2: Recorded where there is no code-able language pertaining to the theme of agency (quite rare), or when narrative displays both agentic and non-agentic elements.
3: Protagonist is minimally at the mercy of circumstances, with the majority of the control of the plot in the hands of the protagonist.
4: Protagonist is agentic, able to affect their own lives, initiate changes on their own, and achieves some degree of control over the course of their experiences; may or may not include description of some struggle to achieve agentic status.

Communion

Narratives that are high in communion are fundamentally concerned with the connection, intimacy, love, belonging, union, friendship, and caring of the protagonist. Highly communal narratives describe protagonists who experience satisfying romantic and friendship relationships, involve nurture and caretaking, and are rich with themes of unity and togetherness (McAdams). Social connections may be to individuals, groups, or to society (although connections to specific individuals are weighed heaviest towards high communion scores and isolation from society writ large are weighted highest in low communion scores). Communion may be revealed in the explicit language participants use to describe their relational lives, or evidenced in their pronoun use (i.e. "we is more communal than "I"; likewise, "me" versus "them" is less communal than "me" versus "him/her," but these are fairly low-level ways in which communion is instantiated in narratives). Participants may discuss their lack of connection to others, which is to be scored as low in communion.

Code 0–4, where 4 = highest communion.

0: Protagonist is completely disconnected, isolated, or rejected and strong disconnection language is predominant.
1: Protagonist is mostly disconnected from others, and disconnection language is predominant, though some connection language is present; or only mildly negative connection language is used.
2: Recorded where there is no code-able language pertaining to the theme of communion (quite rare), or when narrative displays both communal and noncommunal elements.
3: Protagonist is mostly connected to others and rich connection language is predominant, although some disconnection language is present; or only mildly positive connection language is used.
4: Protagonist is highly connected to others and rich connection language is predominant.

Adaptation of the Coding Manual for the Present Study

There are different indicators of high/low agency and communion in loss chapters. How much these indicators count towards deciding the final numeric score depends on how strong the language is ("we were very close" is stronger than "we had a good marriage"), how much it is elaborated ("I now see that I did well and made many good choices, and I realized that I am a strong and independent person" is more elaborated than "I did well"), the length of the timespan described ("I cared for her and gave her all I had during the 10 years she was ill" counts more than "I held her hand when she passed away"), and on the development in the narrative (if a high/low agency/communion passage changes its meaning because the described situation no longer applies, it counts less, i.e. if the narrator mentions a feeling of loneliness (low in communion) but then afterwards describes supportive social relationships, then the loneliness counts less in the final communion score).

In loss chapters the following are indicators of the presence of agency:

- Descriptions of life before the loss where the narrator shows autonomy or mastery, i.e., through descriptions of work, travelling, lifestyle etc.
- Descriptions of mastery during the periods of sickness and loss., i.e., descriptions of doing something in relation to the treatment and death of the deceased, making choices, planning, talking about what happened, giving support, making the most of the situation.
- Trying to influence one's own inner world, i.e., by holding on to positive memories or by thinking about the process in a certain way.
- Indications of personal qualities, i.e., learning or realizing something, or feeling/showing strength.

In loss chapters the following are indicators of lack of agency:

- Enumeration of negative events that "just happened" without any description of what the narrator did, thought, or felt.
- Mentions of not being able to do anything, i.e., feeling powerless, not knowing what to do, or making bad choices that the narrator now regrets, or questions.
- Loss of agency in the narrator's inner world, i.e., feeling chaotic, being overwhelmed, not being able to grasp the situation, feeling paralyzed or shocked, or feeling as if it happened suddenly/out of the blue.

In loss chapters the following are indicators of the presence of communion:

- A good relationship with the deceased, i.e., "we had a close relationship", "we did everything together", "she was my best friend" etc. Notice, that if there is no description of other positive communion elements than with the deceased, this can only be given a maximum score of 2 in communion, because losing the deceased is also losing the only communal element described. However, sometimes there are descriptions after the actual death that points towards the narrator carrying the deceased with them in their thoughts in a positive way, i.e., "I have him with me as a positive memory in everything I do". In this case, consider giving an extra point in the communion score depending on how strongly it is expressed.
- Naming of others that have been supportive throughout the course of the illness and death, i.e., children, siblings, friends, or family. Also, naming of relations after the loss, i.e., a new partner, friends, using "we" etc. Notice that these can add one point to the communion score or two points if there is an elaborated description or mentioning of a specific person ("my sister" versus mentioning groups, like "my family" or "my friends").

In loss chapters the following are indicators of lack of communion:

Conflict, isolation, loneliness, loss, amputated, empty, "lacking someone to share my life with".

Appendix B

Anonymized Examples of Loss Narrative High and Low on Communion and Agency Themes

Example 1

We had been married for 25 years when my wife had a stroke. We lived in a traditional marriage with 2 children, my wife working part time and I had retired about 3 years ago. The illness turned our life upside down. Once the doctors had made a plan for her rehabilitation, I had almost become a disabled carer for her, a task I found it natural to take on. We became a well-known couple in the town, the husband with the wife in the wheelchair, because we still tried to get out and experience nature and other things going on. We had found a rhythm that fitted our daily lives and I had taken on all housework and my wife would supervise it all in a good way. Then it happened again, she got another stroke that she didn't survive. The first week after was taken up by all the practical tasks with a lot of help from my children. It was now very quiet and calm in our home since the caring staff did not come by several times a day. Over time, I made a new everyday life for

myself where my children and grandchildren were a big help. Family and friends were also there when I needed it. I became wiser concerning many things in life that I had previously taken for granted. I also benefitted much from seeing a psychologist both before and after my wife's death. Something I have noticed subsequently is that I cry easily, especially if someone expresses too much empathy with me and the children. I emphasize telling people I meet to remember to live while they are here and not postponing their dreams. My wife and I did not make all of our dreams, but we had a good life together although it ended too early.

Man, 68 years. Coded 4 on agency themes and 4 on communion themes. Self-rated 1 and 4 on positive and negative emotional tone respectively, 3 and 1 on positive and negative self-stability connections respectively and 3 and 1 on positive and negative self-change connections respectively.

Example 2

My mother wasn't a pleasant woman. She was depressed and took it out on me and the rest of the family. Hence, my relationship with her got worse and worse over the last few years. I didn't like my mother and she didn't like me. My mother died of a stroke, so it happened suddenly and was a shock to all of us. I did shed a tear when I saw her corpse at the hospital but since then I have not cried because of her death, which says more about my relationship to her than what I can describe. I have felt bad about my reaction to her death, I think it is unnatural not to cry about an event like that and have had difficulties talking to others about the whole thing. Despite this it has not had a big impact on my psychological state of mind and if anything, I am probably a bit relieved in my everyday life now that I don't have to have her in the back of my mind all the time.

Woman, 22 years. Coded 1 on agency themes and 1 on communion themes. Self-rated 2 and 3 on positive and negative emotional tone respectively, 2 and 2 on positive and negative self-stability connections respectively and 1 and 1 on positive and negative self-change connections respectively.

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Declarations

Conflict of interest The authors report no conflict of interest.

Human or Animal Participants The study involved human participants and was conducted in accordance with ethical standards for research, including asking participants to sign an informed consent form before participation.

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References

Adler, J. M. (2012). Living into the story: Agency and coherence in a longitudinal study of narrative identity development and mental health over the course of psychotherapy. *Journal of Personality and Social Psychology, 102*, 367–389. https://doi.org/10.1037/a0025289

Adler, J. M., Lodi-Smith, J., Philippe, F. L., & Houle, I. (2016). The incremental validity of narrative identity in predicting well-being: A review of the field and recommendations for the future. *Personality and Social Psychology Review, 20*(2), 142–175. https://doi.org/10.1177/1088868315585068

Adler, J. M., Dunlop, W. L., Fivush, R., Lilgendahl, J. P., Lodi-Smith, J., McAdams, D. P., McLean, K. C., Pasupathi, M., & Syed, M. (2017). Research methods for studying narrative identity: A primer. *Social Psychological and Personality Science, 8*(5), 519–527. https://doi.org/10.1177/1948550617698202

Baddeley, J., & Singer, J. A. (2010). A loss in the family: Silence, memory, and narrative identity after bereavement. *Memory, 18*(2), 198–207. https://doi.org/10.1080/09658210903143858

Barbosa, V., Sá, M., & Rocha, J. C. (2014). Randomised controlled trial of a cognitive narrative intervention for complicated grief in widowhood. *Aging and Mental Health, 18*(3), 354–362. https://doi.org/10.1080/13607863.2013.833164

Bauer, J. J. (2021). *The transformative self: Personal growth, narrative identity, and the good life*. Oxford University Press.

Bauer, J. J., & Bonanno, G. A. (2001). I can, I do, I am: The narrative differentiation of self-efficacy and other self-evaluations while adapting to bereavement. *Journal of Research in Personality, 35*(4), 424–448. https://doi.org/10.1006/jrpe.2001.2323

Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The posttraumatic stress disorder checklist for DSM-5 (PCL-5): Development and initial psychometric evaluation. *Journal of Traumatic Stress, 28*(6), 489–498. https://doi.org/10.1002/jts.22059

Bluck, S., & Habermas, T. (2000). The life story schema. *Motivation and Emotion, 24*(2), 121–147. https://doi.org/10.1023/A:1005615331901

Bluck, S., & Mroz, E. L. (2018). The end: Death as part of the life story. *The International Journal of Reminiscence and Life Review, 5*, 6–14.

Boelen, P. A., van den Hout, M. A., & van den Bout, J. (2006). A cognitive-behavioral conceptualization of complicated grief. *Clinical Psychology: Science and Practice, 13*(2), 109–128. https://doi.org/10.1111/j.1468-2850.2006.00013.x

Boelen, P. A. (2021). Symptoms of prolonged grief disorder as per DSM-5-TR, posttraumatic stress, and depression: Latent classes

and correlations with anxious and depressive avoidance. *Psychiatry Research*, 114033. https://doi.org/10.1016/j.psychres.2021.114033

Bruner, J. (1990). *Acts of meaning*. Harvard University Press.

Capps, L., & Bonanno, G. A. (2000). Narrating bereavement: Thematic and grammatical predictors of adjustment to loss. *Discourse Processes, 30*, 1–25. https://doi.org/10.1207/S15326950dp3001_01

Carstensen, L. L., & Mikels, J. A. (2005). At the Intersection of Emotion and Cognition: Aging and the Positivity Effect. *Current Directions in Psychological Science, 14*(3), 117–121. https://doi.org/10.1111/j.0963-7214.2005.00348.x

Conway, M. A., Singer, J. A., & Tagini, A. (2004). The self and autobiographical memory: Correspondence and coherence. *Social Cognition, 22*(5), 491–529. https://doi.org/10.1521/soco.22.5.491.50768

Costa, P. T., & McCrae, R. R. (1992). Normal personality assessment in clinical practice: The NEO Personality Inventory. *Psychological Assessment, 4*(1), 5–13. https://doi.org/10.1037/1040-3590.4.1.5

Eckholdt, L., Watson, L., & O'Connor, M. (2018). Prolonged grief reactions after old age spousal loss and centrality of the loss in post loss identity. *Journal of Affective Disorders, 227*, 338–344. https://doi.org/10.1016/j.jad.2017.11.010

Forkus, S. R., Raudales, A. M., Rafiuddin, H. S., Weiss, N. H., Messman, B. A., & Contractor, A. A. (2022). The Posttraumatic Stress Disorder (PTSD) Checklist for DSM–5: A systematic review of existing psychometric evidence. *Clinical Psychology: Science and Practice*. https://doi.org/10.1037/cps0000111

Generous, M. A., & Keeley, M. P. (2022). Exploring the connection between end-of-life relational communication and personal growth after the death of a loved one. *Omega-Journal of Death and Dying, 84*(3), 792–810.

Habermas, T. (2019). *Emotion and narrative: Perspectives in autobiographical storytelling*. Cambridge University Press. https://www.proquest.com/books/emotion-narrative-perspectives-autobiographical/docview/2253375119/se-2?accountid=14468

Habermas, T. (2021). Personal communication on additonal analyses of data from Huang & Habermas (2019).

Harris, C. B., Brookman, R., & O'Connor, M. (2021). It's not who you lose, it's who you are: Identity and symptom trajectory in prolonged grief. *Current Psychology*, pp 1–11. https://doi.org/10.1007/s12144-021-02343-w

Holm, T., & Thomsen, D. K. (2018). Self-event connections in life stories, self-concept clarity, and dissociation: Examining their relations with symptoms of psychopathology. *Imagination, Cognition and Personality, 37*(3), 293–317. https://doi.org/10.1177/0276236617733839

Huang, M., & Habermas, T. (2019). The ambiguity of loss affects some, but not all autobiographical memories: Redemption and contamination, agency and communion. *Memory, 27*(10), 1352–1361. https://doi.org/10.1080/09658211.2019.1655579

Huang, M., Schmiedek, F., & Habermas, T. (2020). Only some attempts at meaning making are successful: The role of change-relatedness and positive implications for the self. *Journal of Personality*. https://doi.org/10.1111/jopy.12573

Jensen, R. A. A., Kirkegaard Thomsen, D., O'Connor, M., & Mehlsen, M. Y. (2020). Age differences in life stories and neuroticism mediate age differences in subjective well-being. *Applied Cognitive Psychology, 34*(1), 3–15. https://doi.org/10.1002/acp.3580

Johannsen, M., Schlander, C., Farver-Vestergaard, I., Lundorff, M., Wellnitz, K. B., Komischke-Konnerup, K. B., & O'Connor, M. (2022). Group-based compassion-focused therapy for prolonged grief symptoms in adults - Results from a randomized controlled trial. *Psychiatry Research, 314*, 114683. https://doi.org/10.1016/j.psychres.2022.114683

Komischke-Konnerup, K., Zachariae, R., Johannsen, M., Nielsen, L. D., & O'Connor, M. (2021). Co-occurrence of prolonged grief symptoms and symptoms of depression, anxiety, and posttraumatic stress in bereaved adults—a systematic review and meta-analysis. *Journal of Affective Disorders Reports, 4*. https://doi.org/10.1016/j.jadr.2021.100140

Liao, H.-W., & Bluck, S. (2022). Recalling self-disruptive events and maintaining self-continuity in adulthood. *Psychology and Aging, 38*(1), 17–29. https://doi.org/10.1037/pag0000719

Lowers, J., Scardaville, M., Hughes, S., & Preston, N. J. (2020). Comparison of the experience of caregiving at end of life or in hastened death: A narrative synthesis review. *BMC Palliative Care, 19*(1), 1–16.

Lundorff, M., Bonanno, G. A., Johannsen, M., & O'Connor, M. (2020). Are there gender differences in prolonged grief trajectories? A registry-sampled cohort study. *Journal of Psychiatric Research, 129*, 168–175. https://doi.org/10.1016/j.jpsychires.2020.06.030

Lundorff, M., Johannsen, M., & O'Connor, M. (2021). Time elapsed since loss or grief persistency? Prevalence and predictors of <i>ICD-11</i> prolonged grief disorder using different applications of the duration criterion. *Journal of Affective Disorders, 279*, 89–97. https://doi.org/10.1016/j.jad.2020.09.116

Maccallum, F., & Bryant, R. A. (2008). Self-defining memories in complicated grief. *Behaviour Research and Therapy, 46*(12), 1311–1315. https://doi.org/10.1016/j.brat.2008.09.003

Maccallum, F., & Bryant, R. A. (2011). Autobiographical memory following cognitive behaviour therapy for complicated grief. *Journal of Behavior Therapy and Experimental Psychiatry, 42*(1), 26–31. https://doi.org/10.1016/j.jbtep.2010.08.006

Maccallum, F., & Bryant, R. A. (2013). A cognitive attachment model of prolonged grief: Integrating attachments, memory, and identity. *Clinical Psychology Review, 33*(6), 713–727. https://doi.org/10.1016/j.cpr.2013.05.001

Mackay, M. M., & Bluck, S. (2010). Meaning-making in memories: A comparison of memories of death-related and low point life experiences. *Death Studies, 34*(8), 715–737.

McAdams, D. P. (2001). The psychology of life stories. *Review of General Psychology, 5*(2), 100–122. https://doi.org/10.1037/1089-2680.5.2.100

McAdams, D. P., & McLean, K. C. (2013). Narrative identity. *Current Directions in Psychological Science, 22*(3), 233–238. https://doi.org/10.1177/0963721413475622

McAdams, D. P., Anyidoho, N. A., Brown, C., Huang, Y. T., Kaplan, B., & Machado, M. A. (2004). Traits and stories: Links between dispositional and narrative features of personality. *Journal of Personality, 72*(4), 761–784. https://doi.org/10.1111/j.0022-3506.2004.00279.x

McAdams, D. P. (1993). *The stories we live by: Personal myths and the making of the self*. Guilford Press.

McLean, K. C., Pasupathi, M., & Pals, J. L. (2007). Selves creating stories creating selves: A process model of self-development. *Personality and Social Psychology Review, 11*(3), 262–278. https://doi.org/10.1177/1088868307301034

McLean, K. C., Syed, M., Pasupathi, M., Adler, J. M., Dunlop, W. L., Drustrup, D., Fivush, R., Graci, M. E., Lilgendahl, J. P., Lodi-Smith, J., McAdams, D. P., & McCoy, T. P. (2020). The empirical structure of narrative identity: The initial Big Three. *Journal of Personality and Social Psychology, 119*(4), 920–944. https://doi.org/10.1037/pspp0000247

Mroz, E. L., Bluck, S., Sharma, S., & Liao, H. W. (2020). Loss in the life story: Remembering death and illness across adulthood. *Psychological Reports, 123*(1), 97–123. https://doi.org/10.1177/0033294119854175

Neimeyer, R. A. (2006). Complicated grief and the reconstruction of meaning: Conceptual and empirical contributions to a cognitive-constructivist model. *Clinical Psychology: Science and Practice, 13*(2), 141–145. https://doi.org/10.1111/j.1468-2850.2006.00016.x

Neimeyer, R. A., Klass, D., & Dennis, M. R. (2014). A social constructionist account of grief: Loss and the narration of meaning. *Death Studies, 38*(8), 485–498. https://doi.org/10.1080/07481187.2014.913454

Neimeyer, R. A., Holland, J. M., Currier, J. M., & Mehta, T. (2008). Meaning reconstruction in later life: Toward a cognitive-constructivist approach to grief therapy. In D. Gallagher-Thompson, A. M. Steffen, & L. W. Thompson (Eds.), (pp. 264–277, Chapter xxxiv, 347 Pages). Springer. https://doi.org/10.1007/978-0-387-72007-4_17

O'Connor, M. (2010). A longitudinal study of PTSD in the elderly bereaved: Prevalence and predictors. *Aging & Mental Health*, *14*(5), 3. https://search.proquest.com/docview/754052697?accountid=14468

Pals, J. L. (2006). Narrative identity processing of difficult life experiences: Pathways of personality development and positive self-transformation in adulthood. *Journal of Personality, 74*, 1079–1110. https://doi.org/10.1111/j.1467-6494.2006.00403.x

Pasupathi, M., Mansour, E., & Brubaker, J. R. (2007). Developing a life story: Constructing relations between self and experience in autobiographical narratives. *Human Development, 50*(2–3), 85–110. https://doi.org/10.1159/000100939

Prigerson, H. G., Horowitz, M. J., Jacobs, S. C., Parkes, C. M., Aslan, M., Goodkin, K., Raphael, B., Marwit, S. J., Wortman, C., Neimeyer, R. A., Bonanno, G., Block, S. D., Kissane, D., Boelen, P., Maercker, A., Litz, B. T., Johnson, J. G., First, M. B., & Maciejewski, P. K. (2009). Prolonged grief disorder: Psychometric validation of criteria proposed for DSM-V and ICD-11. *PLoS Medicine*, *6*(8). https://doi.org/10.1371/journal.pmed.1000121

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*(3), 385–401. https://doi.org/10.1177/014662167700100306

Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine, 166*(10), 1092–1097. https://doi.org/10.1001/archinte.166.10.1092

Stroebe, M., Schut, H., & van den Bout, J. (2013). *Complicated grief: Scientific foundations for health care professionals*. Routledge/Taylor & Francis Group.

Thomsen, D. K. (2015). Autobiographical periods: A review and central components of a theory. *Review of General Psychology, 19*(3), 294–310. https://doi.org/10.1037/gpr0000043

Thomsen, D. K., Lundorff, M., O'Connor, M., & Damkier, A. (2018). Narrative identity and grief reactions: A prospective study of bereaved partners. *Journal of Applied Research in Memory and Cognition, 7*(3), 412–421. https://doi.org/10.1016/j.jarmac.2018.03.011

Thomsen, D. K., Holm, T., Lind, M., Jensen, R. A. A., & Pedersen, A. M. (2023). *Storying mental illness and personal recovery*. Cambridge University Press.

Twala, B. (2009). An empirical comparison of techniques for handling incomplete data using decision trees. *Applied Artificial Intelligence, 23*(5), 373–405. https://doi.org/10.1080/08839510902872223

Vang, M. L., Prigerson, H. G., Elklit, A., Komischke-Konnerup, K. B., & O'Connor, M. (2022). Do we all grieve the same? A multigroup test of the dimensional structure of prolonged grief disorder among Danish bereaved partners and children. *Psychiatry Research, 318*, 114937. https://doi.org/10.1016/j.psychres.2022.114937

Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The Experiences in Close Relationship Scale (ECR)-short form: Reliability, validity, and factor structure. *Journal of Personality Assessment, 88*(2), 187–204. https://doi.org/10.1080/00223890701268041

Weiss, R. B., Aderka, I. M., Lee, J., Beard, C., & Björgvinsson, T. (2015). A Comparison of Three Brief Depression Measures in an Acute Psychiatric Population: CES-D-10, QIDS-SR, and DASS-21-DEP. *Journal of Psychopathology and Behavioral Assessment, 37*(2), 217–230. https://doi.org/10.1007/s10862-014-9461-y

Wolf, T., Strack, V., & Bluck, S. (2023). Adaptive and harmful autobiographical remembering after the loss of a loved one. *Aging & Mental Health, 27*(2), 408–416. https://doi.org/10.1080/13607863.2021.2003299

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