Psychopathology Symptoms, Rumination and Autobiographical Memory Specificity: Do Associations Hold After Bereavement?

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Summary: Symptoms of psychopathology are associated with overgeneral memory retrieval. Overgeneral memory is hypothesized to be the result of an emotion regulatory process, dampening emotional reactions associated with retrieval of distressing specific memories. However, higher post-loss symptom severity has been related to higher specificity of loss-related memories recalled on the Autobiographical Memory Test. This may imply that such memories are 'immune' to the reduced specificity effect. We aimed to test this idea by investigating, for the first time, associations of depressive and complicated grief symptoms and depressive and grief rumination with autobiographical memory specificity on a sentence-completion task (SCEPT) in a bereaved sample. One hundred ninety-one adult mourners (89% women) filled out questionnaires and the SCEPT. A main finding was that higher depressive and complicated grief symptom and grief rumination levels were associated with reduced specificity of non-loss-related memories but not with specificity of loss-related memories. Implications of these results are discussed. Copyright © 2015 John Wiley & Sons, Ltd.

Although most people adjust to the loss of a loved one without professional intervention, a minority of bereaved individuals develops mental and physical health problems and/or complications in the grieving process (Bonanno, Westphal, & Mancini, 2011; Stroebe, Schut, & Stroebe, 2007). Given this variation in outcomes, it is important to identify factors that potentially influence the way people cope with bereavement. Several authors have suggested that memory processes may play a crucial role in the development and persistence of complications in adaptation to bereavement (e.g., Boelen & van den Bout, 2008; Eisma et al., 2013; Maccallum & Bryant, 2013). In particular, the specificity of autobiographical memories retrieved by bereaved individuals may contribute to emotion regulation in the aftermath of a loss (for a review, see Sumner, 2012).

In a classic study on autobiographical memory specificity, Williams and Broadbent (1986) showed that autobiographical memories can be represented at varying degrees of specificity. For example, a person may recall general semantic knowledge on periods of one's life (e.g., the name of a favorite soccer team), memories related to an event that took place over an extended period of time (e.g., I coached a team last season), memories that describe a category of similar events (e.g., I watched my son's soccer games) or memories that describe an event that happened at a specific time and place (e.g., I went to see a soccer match last Sunday). Williams and Broadbent (1986) discovered that patients with suicidal tendencies show deficits in their ability to retrieve specific memories when asked to provide these in response to positive and negative cue words in the Autobiographical Memory Test (AMT). Instead, they showed a tendency to retrieve more general memories, an effect they termed 'overgeneral memory retrieval'.

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Since the seminal research of Williams and Broadbent (1986), researchers have shown that various types of psychopathology, such as depression and posttraumatic stress, are associated with reduced specificity of autobiographical memories (for reviews, see Sumner, 2012; Williams et al., 2007). Recently, researchers have started exploring autobiographical memory specificity in bereaved individuals (e.g., Boelen, Huntjens, van Deursen, & van den Hout, 2010; Golden, Dalgleish, & Mackintosh, 2007; Maccallum & Bryant, 2010; Neshat Doost et al., 2014, Robinaugh & McNally, 2013). Among other things, these studies showed that reduced specificity of autobiographical memory is found in individuals who meet criteria for complicated grief (e.g., Golden et al., 2007; Maccallum & Bryant, 2010; Robinaugh & McNally, 2013) and that higher levels of complicated grief are associated with lower autobiographical memory specificity (Boelen et al., 2010).

In the CAR-FA-X model, an often-used theory to explain overgeneral memory, three mechanisms were proposed to underlie reduced memory specificity (for reviews, see Sumner, 2012; Williams et al., 2007). First, a process called 'capture and rumination' (CAR) may disrupt the retrieval of specific memories. When instructed to retrieve a specific memory, an individual engages in 'generative retrieval' in which he or she matches retrieval specifications (i.e., cue characteristics and instructions) with memory content in the autobiographical knowledge base and at the same time inhibits irrelevant cognitive material (Conway & Pleydell-Pearce, 2000). Therefore, generative retrieval may be disrupted by an overrepresentation of abstract, conceptual information in the autobiographical knowledge base, which increases the chance that a memory search is truncated before event-specific knowledge is accessed. Rumination, as a recurrent, self-focused, abstract thinking style, may increase the availability of conceptual autobiographical knowledge, thereby contributing to reduced memory specificity. Second, overgeneral retrieval is thought to serve as a strategy

to 'functionally avoid' (FA) negative affect. That is, recalling memories of negative life events (e.g., the death of a loved one) in less specific ways is proposed to function as an emotion regulatory strategy aimed at generating less emotional distress. Consequently, an overgeneral retrieval style may be less disruptive to an individual than a more specific one, because the influence of emotional material is dampened. Third, because the voluntary retrieval of specific memories in response to cue words is a cognitively demanding task (Conway & Pleydell-Pearce, 2000), it may be disrupted by limitations of 'executive resources' (X).

Typically, autobiographical memories can be retrieved in two ways (Berntsen, 2009; Conway & Pleydell-Pearce, 2000; Watson, Berntsen, Kuyken, & Watkins, 2013) that occur about equally often in everyday life (Rubin & Berntsen, 2009). First, as described earlier, 'generative retrieval' entails that a person voluntarily engages in effortful retrieval of a specific autobiographical memory from one's autobiographical memory base. Second, 'direct retrieval' occurs when event-specific knowledge is activated automatically and involuntarily in response to cues in the environment, circumventing processes normally engaged in during generative retrieval. An example of direct retrieval is an intrusive memory that is common in individuals who have experienced a trauma (Kleim, Graham, Bryant, & Ehlers, 2013) or bereavement (Boelen & van den Bout, 2008). Being automatic and uncontrolled, direct retrieval (in contrast to generative retrieval) should typically not be affected by processes specified in the CAR-FA-X model (Williams et al., 2007).

Researchers have suggested that autobiographical memories tied to an individuals' source of distress, such as bereavement, are more often directly retrieved than memories unrelated to distress (Golden et al., 2007). As a consequence, loss-related memories would logically be resistant to the reduced specificity effect specified in the CAR-FA-X model. A prediction that follows from this assumption is that bereaved individuals experiencing more distress will typically recall more specific loss-related memories but will show reduced specificity for memories unrelated to the loss. To test this idea, Golden and colleagues (2007) compared bereaved individuals with and without complicated grief, on three versions of the AMT: a standard AMT, a 'Biographical Memory Test-Deceased' (BMT-deceased), in which participants were asked to recall biographical memories from the life of the deceased, and a 'Biographical Memory Test-Living' (BMT-living), in which participants were prompted to recall biographical memories from the life of a non-deceased significant other. In support of the hypothesis that distressing memories are 'immune' to the reduced specificity effect, individuals with complicated grief retrieved fewer specific memories on the AMT and the BMT-living, but more specific memories on the BMT-deceased, compared with individuals without complicated grief.

In a related study, Robinaugh and McNally (2013) compared autobiographical memory of bereaved individuals with and without complicated grief on an AMT in which participants were instructed to recall memories including the deceased (AMT-deceased) and an AMT in which they were instructed to recall memories without the deceased (AMT-without). They found no difference between groups on specificity of autobiographical memories on the AMT-

deceased, but they did find that individuals with complicated grief were less specific than individuals without complicated grief on the AMT-without. In similar vein, Boelen and colleagues (2010) reported that symptom levels of complicated grief were related to an increased chance that specific memories retrieved on a standard AMT were loss related. Additionally, complicated grief, depression and posttraumatic stress levels were associated with an increased likelihood that recalled specific memories on a trait version of the AMT (cf. McNally, Lasko, Macklin, & Pitman, 1995) were loss related. In summary, symptom severity after bereavement is associated with reduced specificity of memories unrelated to the loss but not of memories related to the loss, supporting the idea that distress-related memories are 'immune' to the reduced specificity effect, because they are typically directly retrieved (Golden et al., 2007).[1]

This may imply that overgeneral memory retrieval is an ineffective method to regulate emotions after bereavement. That is, if the reduced specificity effect does not apply to distressing memories, overgeneral recall is not likely to dampen the emotional impact of these memories. Therefore, a main goal of the current study was to replicate previous findings on the relationship between post-bereavement symptom severity and autobiographical memory specificity of memories both related and unrelated to the loss. However, we also aimed to extend previous results in two important ways. First, because research on autobiographical memory after loss has relied exclusively on versions of the AMT, potentially limiting the generalizability of previous results, we used the newly developed Sentence Completion for Events from the Past Test (SCEPT). The SCEPT is an alternative to the AMT that assesses a habitual tendency to retrieve autobiographical memories in response to neutrally phrased sentence stems (Raes, Hermans, Williams, & Eelen, 2007). Second, we also aimed to establish the associations between rumination and memory specificity after loss. As mentioned, if loss-related memories are habitually directly retrieved (cf. Golden et al., 2007), they should not be affected by mechanisms proposed to affect generative retrieval, such as rumination (e.g., Watkins & Teasdale, 2004). This means that rumination should be associated with increased specificity of memories related to the loss but to reduced specificity of memories unrelated to the loss.

In summary, we predicted higher levels of complicated grief and depression to be associated with retrieval of fewer specific autobiographical memories overall (e.g., Boelen et al., 2010; Golden et al., 2007; Maccallum & Bryant, 2010). Moreover, in line with the hypothesis that loss-related memories are unaffected by the reduced specificity effect (Golden et al., 2007), we predicted that higher complicated grief and depression levels would be linked with retrieval of *more* specific loss-related memories and *fewer* specific non-loss-related memories. Furthermore, we expected complicated grief and depression symptoms to be related to an

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[1] While direct retrieval of distressing autobiographical memories is a commonly used explanation for this effect, other explanations are possible. For example, generative retrieval may be easier for distressing memories, because such memories are more often rehearsed, have more recently been recalled or correspond more with current concerns than non-distressing memories.

increased likelihood that recalled specific memories are loss related.

Because previous research has shown a negative association between rumination and memory specificity on the SCEPT in a non-clinical sample (Raes et al., 2007), we expected grief rumination (Eisma et al., 2014) and depressive rumination (Treynor, Gonzalez, & Nolen-Hoeksema, 2003), to be associated with retrieval of fewer specific autobiographical memories overall. Additionally, we expected that depressive and grief rumination would be associated with retrieval of *more* specific loss-related autobiographical memories and *fewer* specific non-loss-related memories. Finally, we predicted grief rumination and depressive rumination to be associated with an increased likelihood that recalled specific memories are loss related.

METHOD

Participants

Table 1 depicts sample characteristics. The sample consisted of 191 British adults (88.5% female), who lost a first-degree relative on average 13 months previously ($M = 12.6$, $SD = 11.6$). Participant's symptom scores on complicated grief and depression measures showed an approximately normal distribution with mean scores of 66.7 ($SD = 27.7$) and 10.6 ($SD = 5.3$), respectively. Because only 18.8% of all participants scored above 90, a previously established threshold for clinically relevant levels of complicated grief

Table 1. Demographic and loss-related characteristics of the sample ($N = 191$)

Demographic variables	
Gender [N (valid %)]	
Male	22 (11.5)
Female	169 (88.5)
Age in years [M (SD)]	48.9 (13.2)
Educational level [N (valid %)]	
Secondary school	67 (35.3)
Vocational school	31 (16.3)
University	45 (23.7)
Postgraduate education	30 (15.8)
Other	17 (8.9)
Characteristics of the loss	
Lost person is [N (valid %)]	
Partner	73 (38.2)
Child	28 (14.7)
Sibling	13 (6.8)
Parent	77 (40.3)
Cause of death is [N (valid %)]	
Natural causes (e.g., disease and heart attack)	165 (86.4)
Accident	13 (6.8)
Murder	4 (2.1)
Suicide	4 (2.1)
Other (e.g., addiction)	5 (2.6)
Death was [N (valid %)]	
Expected	70 (36.6)
Unexpected	109 (57.1)
Other (i.e., both or neither)	12 (6.3)
Time since the loss in months [M (SD)]	12.6 (11.6)
Complicated grief symptoms [M (SD)]	66.7 (27.2)
Depressive symptoms [M (SD)]	10.6 (5.3)

(Boelen, van den Bout, de Keijser, & Hoijtink, 2003), the sample was regarded as sub-clinically bereaved.

Procedure and measures

The study was performed in accordance with local ethical regulations for scientific research. Participants were recruited online in the UK within the context of another survey study. Announcements were placed on websites of online support groups for bereaved individuals and on the content network of Google. People who were interested in participation could link through to a website with study information (e.g., on study goals, voluntariness and anonymity). Individuals who decided to participate gave informed consent, after which they could fill out an online questionnaire, which included the SCEPT.

Sociodemographic and loss-related information
A background questionnaire was used to obtain participants' sociodemographic (i.e., age, sex and education level) and loss-related characteristics (i.e., the relationship with the deceased, time since loss, cause of death and expectedness of the loss).

Depressive symptoms
The seven-item depression subscale of the Hospital Anxiety and Depression Scale was used to assess depressive symptoms (Zigmond & Snaith, 1983). Participants reported how often or to what extent they had certain experiences in the last week on four-point scales. In the current study, the internal consistency of the depression subscale was good, $\alpha = .89$.

Complicated grief symptoms
The Inventory of Complicated Grief Revised (ICG-R) was used to assess symptoms of complicated grief (Prigerson & Jacobs, 2001). The ICG-R consists of 30 statements about symptoms of complicated grief. Participants were requested to indicate on five-point scales how often or intensely they had experienced certain symptoms over the past month. The internal consistency of the ICG-R in this sample was excellent, $\alpha = .96$.

Grief rumination
The 15-item Utrecht Grief Rumination Scale (UGRS) was used to measure grief-specific rumination (Eisma et al., 2012; 2014). Participants indicated how frequently they had experienced ruminative thoughts associated with the loss in the last month on a five-point scale, ranging from 1 (almost never) to 5 (very often). Example items are as follows: '(How often in the past month)…did you analyze if you could have prevented the loss?' and '…did you try to understand your feelings about the loss?' The reliability of the UGRS in the current study was excellent, $\alpha = .90$.

Depressive rumination
To measure depressive rumination, a five-item subscale of the Ruminative Response Scale, the brooding subscale, which shows no content overlap with depression, was used (Treynor et al., 2003). Participants indicated how often they engage in ruminative behavior when they feel sad, depressed

or blue on a four-point scale. In this study, the reliability for the brooding subscale was adequate, α = .78.

Autobiographical memory

The SCEPT was used to assess overgeneral memory (Raes et al., 2007). It consists of 11 short sentences that probe for autobiographical memories. Participants were requested to provide a correct completion of each provided sentence stem. Examples are as follows: 'I still remember well how/that I …' and 'Last year I…'.

The responses were coded on two dimensions by two independent raters. First, specificity was coded in five categories according to guidelines given by Raes and colleagues (2007): specific events (i.e., referring to a specific moment or time), categorical events (i.e., referring to a repeated activity or group of related events without specification of a particular time), extended events (i.e., referring to an extended period of time lasting longer than a day) or semantic associate (i.e., referring to overgeneral personal semantic information) and omission. Second, 'loss-relatedness' was coded. Sentence completions were coded as loss related if they referred to (i) moments with the lost person, (ii) moments surrounding the actual death or (iii) moments after the death with a reference to the loss or lost person. Other memories were coded as non-loss related (cf. Boelen et al., 2010).

Inter-rater reliability and percentage of agreement was acceptable for specificity (κ = .74, 87.2%), valence (κ = .72, 81.8%) and loss-relatedness (κ = .81, 92.6%). Responses on which raters failed to reach agreement after the initial coding procedure were discussed and recoded after mutual agreement was achieved.

RESULTS

Preliminary analyses

We calculated the overall percentage of specific memories, and the percentage of specific loss-related and non-loss-related memories. In addition, we determined the Specificity-Relatedness Index (SRI), which was calculated by subtracting *the number of specific memories unrelated to the loss from the number of specific memories related to the loss*, divided by the *total number of specific memories* (Boelen et al., 2010). A positive value on the SRI indicates that specific memories were more often related than unrelated to the loss. A negative value on the SRI indicates that specific memories were more often unrelated than related to the loss. For example, a person reporting five specific memories, of which four are related to the loss and one is unrelated to the loss, has an SRI of $(4-1)/5 = 0.60$. The SRI gives a direct impression of the preferential retrieval of loss-related compared with non-loss-related specific memories.

Percentages of memories of each category are shown in Table 2. The distributions of percentages of specific loss-related and non-loss-related memories were positively skewed. The distribution of the SRI was negatively skewed. Therefore, all correlational analyses were conducted with nonparametric correlation analyses, Spearman's Rho (Spearman, 1904). Because we conducted multiple analyses, we

Table 2. Average percentages of autobiographical memories in each memory category

	Specific	Non-specific	Total
Loss related	22.5 (29.7)	53.3 (70.3)	75.8
Non-loss related	5.3 (21.9)	18.9 (78.1)	24.2
Total	27.8	72.2	100.0

Note: Omissions and non-valid responses were excluded when calculating these percentages. The percentages of loss-related and non-loss-related memories that are specific and non-specific are shown in brackets.

corrected for capitalization on chance using the False Discovery Rate (FDR) for each outcome variable (i.e., overall percentage specific memories, percentage loss-related specific memories, percentage non-loss-related specific memories and SRI), because, compared with other methods such as 'family wise error rate', FDR provides more power and minimizes the rejection of true null hypotheses (Benjamini & Hochberg, 1995).

Associations between symptom levels and memory specificity

Table 3 shows the correlations of symptom levels of complicated grief and depression with the overall percentage of specific memories, the percentage of specific loss-related and non-loss-related memories, and the SRI.

Contrary to our hypotheses, no evidence was found for an association of complicated grief and depression symptom levels with overall percentages of recalled specific autobiographical memories.

In line with expectations, complicated grief and depression symptoms were associated with retrieval of fewer specific non-loss-related memories, $r_s(184) = -.14$, $p = .03$, and $r_s(186) = -.17$, $p < .01$, respectively. However, symptom levels were not associated with retrieval of specific loss-related memories.

As expected, symptom levels of complicated grief and depression were positively related to the SRI, $r_s(171) = .14$, $p = .04$, and $r_s(173) = .18$, $p < .01$, indicating that higher symptom levels were associated with preferential retrieval of specific memories related to the loss instead of specific memories unrelated to the loss.

Table 3. Correlations between symptom levels, rumination and percentages of specific memories

	Specific overall	Specific non-loss	Specific loss	SRI
Complicated grief	.00	−.14*	.09	.14*
Depression	−.06	−.17*	.06	.18*
Grief rumination	−.02	−.16*	.09	.16*
Brooding	−.08	−.07	−.05	.04

Note: All correlation coefficients were calculated using Spearman's rho. SRI, specificity-relatedness index = (number of specific loss-related memories − number of specific non-loss-related memories)/total number of specific memories. *$p < .05$.

Associations between rumination and memory specificity

Table 3 also shows the correlations of grief rumination and brooding with the overall percentage of specific memories, the percentage of specific loss-related and non-loss-related memories, and the SRI.

Contrary to expectations, grief rumination was not significantly associated with the overall number of specific memories that were retrieved. In line with predictions, participants who reported more grief-specific rumination retrieved fewer specific non-loss-related memories, $r_s(185) = -.16$, $p = .01$. However, grief rumination was not related to the percentage specific loss-related memories recalled.

To conform expectations, grief rumination levels showed a positive relationship with the SRI, $r_s(172) = .16$, $p = .02$, signifying that more grief rumination was related to preferential retrieval of specific loss-related memories rather than specific non-loss-related memories. Brooding was unrelated to memory specificity and the SRI.

DISCUSSION

A first main aim of the current investigation was to assess the relationships of depression, complicated grief, and depressive and grief rumination levels with the overall percentages of specific autobiographical memories bereaved individuals habitually retrieve. Contrary to expectations, we found no relationships between symptom and rumination levels and overall memory specificity. A second aim was to assess whether loss-related memories, as opposed to non-loss-related memories, are 'immune' to the reduced specificity effect, potentially because they are more often directly retrieved (cf. Golden et al., 2007). We expected bereaved individuals' symptom and rumination levels to be associated with retrieval of *fewer* specific non-loss-related memories and *more* specific loss-related memories. These expectations were partially supported. Complicated grief, depression and grief rumination levels were related to retrieval of fewer specific memories unrelated to the loss but not the percentage of specific memories related to the loss. Additionally, we found that higher symptom and grief rumination levels were associated with an increased likelihood that specific memories were loss related rather than non-loss related. Notably, the significant effects were modest in size ($.14 > r > .18$) but comparable with those found in other research using the SCEPT (Raes et al., 2007).

Building on previous findings (Boelen et al., 2010; Golden et al., 2007; Robinaugh & McNally, 2013), this research provides some support for the view that loss-related autobiographical memories are less susceptible to mechanisms that influence generative autobiographical memory retrieval, potentially because they are more often directly retrieved. This study extends the results of previous research in mourners with the AMT, to another method to assess autobiographical memory retrieval, namely, the SCEPT. Furthermore, we were the first to show that rumination is associated with reduced specificity of non-loss-related memories but not with reduced specificity of loss-related memories. This illustrates that loss-related memories may, apart from being less affected by the 'functional avoidance'

mechanism of the CAR-FA-X model, also be less affected by the 'capture and rumination' mechanism.

Nevertheless, the current results are also discrepant with some results in previous research. In particular, we did not find an association of symptom levels and rumination with the overall number of specific memories, whereas earlier research with the AMT (e.g., Boelen et al., 2010; Maccallum & Bryant, 2010; Golden et al., 2007) and the SCEPT (Raes et al., 2007) supported such a link. A plausible explanation for this result is that memories reported in this study were on average more often loss related (75.8%) than non-loss related (24.2%). Because loss-related memories were typically not less specific, the predominance of such memories has likely reduced the association of symptom and rumination levels with overall autobiographical memory specificity.

Another notable finding was that participants with higher symptom levels did not retrieve *more* specific loss-related memories, but instead there was no association between symptom levels and specificity of loss-related memories. This finding is in line with research by Robinaugh and McNally (2013), who reported no difference between individuals with complicated grief and individuals without complicated grief on specificity on an AMT eliciting autobiographical memories including the deceased (AMT-deceased). In apparent contrast with these results, a group with complicated grief, compared with a group without complicated grief, showed higher memory specificity on a memory test tapping biographical memories of the deceased (BMT-deceased) (Golden et al., 2007). A possible explanation for these divergent results is that memories about a deceased persons' life differ from memories about one's own life that are related to the deceased. For example, biographical memories about the life of the deceased may be more salient than autobiographical memories in which the deceased was present, as the former are rehearsed more in conversations with other people in the period directly subsequent to the loss. As a consequence, these memories may more often be directly retrieved.

Finally, this study had a number of limitations. First, we used only one version of the SCEPT (Raes et al., 2007), and memories were coded on loss-relatedness after administration. An advantage of our procedure is that it is more likely that people retrieve memories as they would do habitually. However, a disadvantage is that we cannot straightforwardly compare effects of rumination and psychopathology on memory specificity of loss-related and non-loss-related memories. It would be informative to manipulate instructions of the SCEPT, for instance, by administering two versions, one in which participants are instructed to retrieve memories related to the loss and another in which they would be instructed to retrieve memories unrelated to the loss (cf. Robinaugh & McNally, 2013). Second, we did not induce rumination and other types of cognitive processing, such as experiential awareness (e.g., Watkins & Teasdale, 2004), which precludes inferences about the causal effect of rumination on specificity for loss-related and non-loss-related memories. However, we believe the results of this investigation are encouraging enough to warrant a more extensive investigation, and we recommend that future studies on habitual autobiographical memory retrieval in

bereaved individuals use multiple versions of the SCEPT and/or inductions of ruminative and non-ruminative processing.

Third, as is common in bereavement research, conjugally bereaved women were overrepresented in this sample. This is likely due to the overrepresentation of women in widowhood (Arbuckle & De Vries, 1995) and/or an increased need of women to share their emotional experiences (Stroebe, Stroebe & Schut, 2001). However, because previous research in a bereaved sample has not shown differences in memory specificity between bereaved men and women (Boelen et al., 2010), we have no reason to assume associations found in this study are different across gender. Fourth, the SCEPT was administered in the context of a larger survey study about adjustment to bereavement. While the goals of this study were formulated in very broad terms, and the SCEPT was administered in the beginning of our investigation, the context of this study may have resulted in an increased number of retrieved loss-related memories. We therefore advise to include memory measures such as the SCEPT before questionnaires in future research so that a potential effect of filling out loss-related questions on memory retrieval is controlled for more thoroughly.

Despite these limitations, this investigation adds to our understanding of autobiographical memory specificity following bereavement. In particular, it provides corroborating evidence that habitually recalled loss-related memories are not affected by mechanisms that affect generative retrieval (e.g., functional avoidance, capture and rumination), whereas non-loss-related memories are. This may be due to the fact that loss-related memories are more often directly retrieved in everyday life than non-loss-related memories (Golden et al., 2007).

To test this idea, we recommend further examination of relationships between the mechanisms of the CAR-FA-X model and specificity of loss-related and non-loss-related autobiographical memories. For example, future research could investigate relationships between limitations of cognitive resources and specificity of memories related and unrelated to the loss. Moreover, it would be informative to assess whether autobiographical memories of other distressing events, such as accidents or natural disasters, are similarly unaffected by the reduced specificity effect: Do the patterns we found apply to stressful life events in general? If such research corroborates and extends our findings, this may suggest limitations regarding the use of the CAR-FA-X model in understanding everyday remembering after a major negative life event.

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CONFLICT OF INTEREST

The authors of this manuscript have no conflict of interest.

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