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Adaptive and harmful autobiographical remembering after the loss of a loved one

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ABSTRACT

Objectives: Remembering one's personal past serves psychosocial functions. Adaptive use of autobiographical memory is related to well-being but little research has focused on grief. We address this in two studies theoretically grounded in the model of reminiscence and health.

Method: Participants were adults who were actively grieving, and in both studies, completed the Reminiscence Functions Scale and grief-related measures (i.e. feelings of grief, positive changes in life perspective). Study 1 focused on uses for generally recalling one's past and Study 2 on uses of memories of the deceased.

Results: Across studies, self-negative ways of remembering were associated with stronger feelings of grief and also mediated relations between social ways of remembering and grief. Self-positive ways of remembering the deceased (Study 2) were associated with having experienced positive changes in life perspective since the loss.

Conclusion: The discussion focuses on how memories of one's personal past are linked to the experience of loss, even years into bereavement.

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KEYWORDS

Autobiographical memory functions; reminiscence; grief; bereavement; adaptive use of memories

Introduction

Autobiographical memories serve psychosocial functions: creating a sense of self-continuity across the lifespan, directing current or future behaviour, and connecting socially with others (Bluck & Alea, 2002). Memory may thus help in navigating everyday life but may also be useful in more significant, stressful life situations. One of the most stressful events individuals experience is the death of a close other (Stroebe et al., 2007). Autobiographical memories are crucial in the context of loss: although the loved one is gone, individuals can 'keep their loved one alive' in memory (Mroz & Bluck, 2019). The relation of autobiographical remembering to grief, however, is complex. Positively remembering the lost loved one can be adaptive but thinking and talking about the past can also serve to maintain sadness, increase loneliness, or temporarily escape from what feels like a negative present. In the present research, we examine adaptive and harmful ways of autobiographical remembering in the context of loss of a loved one.

Several theories of adaptation to bereavement refer to the importance of autobiographical memory (e.g. Boelen et al., 2006; Shear & Shair, 2005). Little is known, however, about how well autobiographical memory may serve the bereaved after their loss. Cappeliez and O'Rourke (2006) proposed the model of reminiscence and health, distinguishing between adaptive and harmful ways of autobiographical remembering. We adopt their model, applying it to understand the relation of self-positive, self-negative, and social ways of remembering to grief outcomes in adults who are actively grieving.

Self-positive, self-negative and social ways of remembering

The model of reminiscence and health (Cappeliez & O'Rourke, 2006) is grounded in Webster's (1993, 1997) taxonomy that distinguishes eight reasons for autobiographical remembering, categorized as: *self-positive*, *self-negative* and *social*¹ ways of remembering. Self-positive remembering involves using memories to maintain identity, prepare for death and for problem-solving. Creating and maintaining a sense of identity is an important function of memory across the lifespan, especially in the face of a challenge (Bluck & Liao, 2013). Problem-solving is also self-positive remembering as it involves showing agency and coping with challenging situations. Cappeliez and O'Rourke (2006) also consider preparing for one's own end of life as a self-positive way of remembering because it represents the use of memories 'to reduce anxiety about death and to approach the end of life with a sense of completion and wholeness' (p. 238). Hence, death preparation can be considered as pro-actively coming in terms with life's finitude. Previous research has demonstrated self-positive ways of remembering are related to adaptive outcomes such as higher psychological well-being (e.g. life satisfaction, mental health) and lower psychiatric distress (O'Rourke et al., 2011; Ros et al., 2016).

In contrast, the model identifies self-negative ways of remembering such as for reducing boredom, reviving bitter emotions, and striving for intimacy including with lost loved ones (Cappeliez & O'Rourke, 2006; Webster, 1997). Using memory for boredom reduction can be viewed as a defensive escape from an unsatisfying present. Bitterness revival through memory entails ruminating about negative experiences or unattained goals. Both have been associated with lower well-being

and higher psychiatric distress (Cappeliez et al., 2005; Cully et al., 2001; Hofer et al., 2017). Intimacy maintenance largely entails remembering someone who is no longer part of one's life and is thus self-negative due to its focus on loss. Though its relation to mental health is less clear (Cully et al., 2001), some studies have also found greater use of memory for intimacy maintenance to be associated with higher psychiatric distress (Cappeliez & O'Rourke, 2006; Ros et al., 2016).

The third category in the model is using memory in social ways (i.e. contrary to the self-functions just described). Two factors from Webster's (1997) taxonomy are subsumed: use of memory to make conversation and to teach others. In contrast to self-positive and self-negative remembering which can occur either in social interactions or in solitude, social remembering always occurs in social context (Cappeliez & O'Rourke, 2006). While some studies document adaptive benefits of social sharing of memories (e.g. Pasupathi, 2003; Webster & McCall, 1999), most research shows no relation between the overall frequency of social memory-sharing and mental health outcomes (Cappeliez et al., 2005; Cully et al., 2001). Instead, Cappeliez and O'Rourke (2006) argue that social uses of remembering are not directly associated with mental health but may contribute indirectly, depending on the valence of the memories shared. That is, whether the social sharing involves self-positive or self-negative ways of remembering.

To sum up, the tripartite structure proposed in the model of reminiscence and health is based on these three ways of remembering having distinct associations with mental health outcomes. Hence, this model is useful for guiding research on adaptive and harmful autobiographical remembering. Note, however, that self-positive, self-negative, and social ways of autobiographical remembering are conceptually distinct but interrelated (Cappeliez & O'Rourke, 2006). They describe different reasons for, ways of, recalling one's past. In the present research, we examine how the three ways of autobiographical remembering are related to grief outcomes.

Applying the model of reminiscence and health to the loss of a loved one

To meaningfully apply the model of reminiscence and health to the loss of a loved one we first consider different reactions to grief (i.e. feelings of grief, positive changes in life perspective) and, second, different types of memories. According to major grief researchers, Stroebe and Schut (1999), bereavement involves multiple stressors. Above all, the loss of the socioemotional relationship with the deceased is typically accompanied by feelings of grief. Hence, the emotional recovery from difficult grief reactions, such as sadness and loneliness, is an important challenge for the bereaved to overcome (Baddeley & Singer, 2009). The loss of a loved one may entail profound changes in the bereaved person's life. They have to adapt to the new reality and plan their future without the deceased. Reorganizing one's identity and future can be associated with negative emotions, but also provides the context for positive changes in life perspective (i.e. posttraumatic growth; Calhoun et al., 2010). Individuals may experience feelings of strength and confidence, feel closer to family and friends, discover new possibilities or take on new roles, develop a greater awareness of life's fragility, and/or experience positive spiritual change. Hence, the loss of a loved one often naturally entails feelings of grief, but also creates the possibility, or even opportunity, to gain positive

changes in life perspective. The extent to which autobiographical remembering is associated with feelings of grief or even the experience of positive changes in life perspective may depend on how memories are used. Self-negative ways of remembering (i.e. to escape from the present or revive past bitterness) can be viewed as defensive tactics (Cappeliez et al., 2005) or even avoidance tendencies, that are associated with negative outcomes in bereavement (Eisma et al., 2013). As such, a self-negative focus towards one's past is likely to be associated with stronger feelings of grief and fewer positive changes in life perspective. Self-positive ways of remembering, such as the use of memories to bolster one's identity or to cope with current problems, in contrast, can be considered as proactive or growth-oriented (Webster, 2003), and thus may be associated with better grief outcomes.

Whether autobiographical remembering is adaptive or harmful after the loss of a loved one may also depend on the type of memory that one is focusing on. Regarding different ways of autobiographical remembering, studies often focus on the overall frequency of using memories in daily life (Bluck & Alea, 2011; Cappeliez & O'Rourke, 2006; Wolf & Zimprich, 2015). In the context of the loss of a loved one, however, one can differentiate between the memories of one's past in general and memories that specifically refer to the lost loved one. These types of memories are remembered differently (Boelen et al., 2010; Golden et al., 2007), but this does not necessarily imply that the use of memories differs depending on whether memories refer to one's past in general or specifically refer to the deceased. In focusing on life chapters of one's past, Thomsen et al. (2018) found that loss-related life chapters were similarly related to grief reactions and positive affect as life chapters that were not related to the loss. In the present research, we will examine whether this also holds for self-positive, self-negative, and social ways of recalling one's past in general and remembering the deceased in particular.

The present studies

In two studies, we examined potential harmful and adaptive ways of autobiographical remembering after the loss of a loved one. In both studies, participants were adults who had lost a close other and considered themselves as actively grieving. The studies differed, however, regarding the type of memories that participants were focusing on. In Study 1, participants were instructed to think about their past in general and to report the overall frequency of using autobiographical memories for self-positive, self-negative, and social ways. In Study 2, participants also rated the frequency of using autobiographical memories for self-positive, self-negative, and social functions, but this time, they were instructed to focus on memories about the lost loved one. Grounded in the model of reminiscence and health (Cappeliez & O'Rourke, 2006) and applying it to the specific situation of losing a loved one, we hypothesize that individuals who more frequently engage in self-negative ways of remembering show stronger feelings of grief and are less likely to experience positive changes in life perspective. Self-positive ways of remembering are expected to show the reversed pattern: More frequently using autobiographical memories in self-positive ways should be associated with better outcomes in bereaved individuals (i.e. less severe feelings of grief and more positive changes in life perspective). In contrast to self-negative and self-positive ways of remembering, which are

expected to be directly linked to grief outcomes, social sharing of memories might be neither adaptive nor harmful per se. In the current research, social remembering describes the context in which memories are recalled (i.e. shared with others). Those shared memories can be manifestations of either positive or negative ways of remembering. As such, potential effects of social sharing of memories on mental health outcomes may be mediated by whether those memories also are shared in self-positive or self-negative ways (cf. Cappeliez & O'Rourke, 2006).

Study 1

Methods

Participants

Participants were recruited via grief support groups and through flyers (e.g. posted in Facebook groups) to reach participants across Germany. Participants were provided with detailed information about the study. Participation was voluntary and required written consent.² The main criterion for inclusion was that participants considered themselves actively grieving. Participants could have experienced any type of loss and we did not restrict time since loss. Of 88 people who expressed some interest, 59 (67.0%) completed the study questionnaire. They were aged 18 to 81 years ($M=44.19$; $SD=17.69$) and the majority were female (79.70%). Time since loss varied from a few weeks to more than twenty years ago ($M=62.71$ months; $SD=80.38$). In terms of type of loss, participants reported having lost their partner (23.7%), one of their parents (30.5%) or another relative (30.5%). Five participants had lost a child (8.5%), three lost a very close friend (5.1%) and one did not report type of loss. Participants did not receive compensation.

Measures

Ways of autobiographical remembering. We used the Reminiscence Functions Scale (RFS; Webster, 1993) consisting of 43 items that refer to reasons for recalling the past in everyday life. Participants indicated how often they reminisce for each reason on a scale from 1 (*almost never*) to 5 (*very frequently*). Based on the model of reminiscence and health (Cappeliez & O'Rourke, 2006), RFS items were grouped into: *self-positive* (i.e. items concerning identity, death preparation, and problem solving; 18 items), *self-negative* (i.e. items concerning boredom reduction, bitterness revival, and intimacy maintenance with the lost one; 15 items) and *social ways of remembering* (i.e. items concerning conversation, and teaching; 10 items). Internal consistencies were $\alpha = .84$ for self-negative, $\alpha = .94$ for self-positive, and $\alpha = .86$ for social ways of remembering.

Feelings of grief. The Inventory of Complicated Grief (ICG-D; German version, Lumbeck et al., 2012) was used. The scale consists of 19 items developed to capture symptoms associated with grief (e.g. 'I feel I cannot accept the death of the person who died' or 'I feel myself longing for the person who died'). Responses were made on a scale ranging from 1 (*almost never*) to 5 (*very frequently*). The ICG-D showed high internal consistency with $\alpha = .95$. High scores may indicate complicated grief but the measure is also a good assessment for more mild or moderate experience of grief.

Positive changes in life perspective. Lehman et al. (1993) identified different domains in which positive changes in life perspective may occur following bereavement. These were used to form a checklist on which participants indicated whether they had experienced each of seven positive changes, as shown in Table 1. Scores are the sum of positive changes in life perspective experienced by the participant.

Analytical approach

We used Hayes's (2013) PROCESS analyses. Two mediation models were specified: one using feelings of grief (i.e. ICG mean score) as the criterion and another using number of positive changes in life perspective as the criterion. In both mediation models, social ways of remembering were the independent variable, and self-negative and self-positive ways of remembering were entered as mediators. This procedure allows to simultaneously test: (1) whether self-positive and self-negative ways of remembering are directly linked to grief outcomes (i.e. feelings of grief, number of positive changes in life perspective), and (2) whether the relation of social ways of remembering to grief outcomes is indirect, that is mediated by, self-positive or self-negative ways of remembering. We also controlled for age, gender, and time since loss. Each analysis used 5,000 bootstrapped samples, and unstandardized regression coefficients (coeff) are reported (Hayes, 2013).

Results

Preliminary analyses

Descriptive statistics appear in Table 2. Participants reported moderate levels of grief symptoms as measured with the ICG. On average, they reported having experienced two to three positive changes in life perspective. Only three participants had not experienced any positive change in life perspective. Frequency ratings for self-positive, self-negative, and social ways of remembering ranked on a medium level, on average.

Pearson correlation coefficients for variables included in the mediation analyses also appear in Table 2. No significant associations were evident for any major study variable with either age of participant or time since loss. Men and women did not differ regarding feelings of grief or the number of positive changes in life perspective. The two grief outcome variables were negatively related: higher levels of grief were associated with the experiences of fewer positive changes in life perspective. Both variables were correlated with self-negative ways of remembering, a positive correlation for grief and a negative correlation for positive changes in life perspective. The three ways of remembering from the model of reminiscence and health were also significantly, and positively correlated. The strongest association was found between self-positive and social ways of remembering.

Main analyses

The mediation models are depicted in Figure 1. In the first mediation model (Panel A), feelings of grief were the outcome variable. Regarding self-negative ways of remembering, we found a positive association with feelings of grief: Individuals, who use their memories more frequently in self-negative ways, reported stronger feelings of grief. Self-positive ways of remembering were not significantly related to feelings of grief. Social ways of

Table 1. Checklist to assess positive changes in life perspective (based on Lehman et al., 1993).

	Categories from Lehman et al. (1993)	Current Study Items
1	Feelings of strength or increased sense of self as a result of loss	I have feelings of strength or an increased sense of self (-esteem) as a result of loss.
2	Positive changes in orientation towards relationships with others.	I have experienced positive changes in relationships with others.
3	Spending more time with family or make sure that they are loved and appreciated	I spend more time with my family and make sure that they are loved and appreciated.
4	Positive changes in outlook on life, priorities	I have experienced positive changes in my perspective on life and my priorities.
5	Positive change in religious beliefs, values and commitments	I have experienced positive changes in religious beliefs, values and commitments.
6	Learning to embrace life by living in the 'here and now'	By living in the 'here and now' I have learned to embrace life.
7	Recognizing death as an inevitable part of life; or an increased appreciation for life's shortness or unpredictability as a motivator to live well	I have recognized death as an inevitable part of life. Appreciating life's brevity and unpredictability motivates me to live well.

Table 2. Pearson correlation coefficients, means and standard deviations for variables included in mediation analyses in Study 1 ($N=59$).

	1	2	3	4	5	6	M	SD
1. Inventory of Complicated Grief							2.23	.88
2. Positive Changes in Life Perspective Checklist	-.411**						2.75	1.71
3. RFS Self-positive remembering ^a	.066	.043					2.65	.80
4. RFS Self-negative remembering ^a	.411**	-.452**	.397**				2.48	.62
5. RFS Social remembering ^a	-.061	.040	.724**	.308*			2.75	.77
6. Age of participant	.181	.116	.040	-.212	.062		44.19	17.69
7. Time since loss (months)	-.249	.111	-.011	-.143	.078	.040	62.71	80.38

Note. * $p < .05$, ** $p < .01$.

^aIn Study 1, participants were instructed to think about their past in general.

remembering were directly, and negatively related to feelings of grief. Individuals, who frequently share their memories with others show lower levels of grief. Social remembering was also indirectly, but positively associated with feelings of grief, that is, mediated by self-negative ways of remembering. Individuals, who more frequently talk about their past also use memories frequently in self-negative ways, which then is related to stronger feelings of grief. As such, the relation of social ways of remembering to grief is twofold: Sharing memories is associated with reduced feelings of grief, but also serves as a context to use memories in self-negative ways.

In the second mediation model (Panel B), the number of positive changes in life perspective was the outcome variable. Regarding self-negative ways of remembering, we found a negative association with positive changes in life perspective: Individuals, who use their memories more frequently in self-negative ways, reported fewer numbers of positive changes in life perspective. Self-negative ways of remembering also mediated the association between social ways of remembering and positive changes in life perspective. Individuals, who talk about their memories frequently, also often remember the deceased in self-negative ways, which then is associated with reporting fewer numbers of positive changes in life perspective. Social ways of remembering were not directly associated with the number of positive changes in life perspective. Hence, self-negative ways of remembering fully mediated the relation of social ways on remembering to positive changes in life perspective. Finally, self-positive ways of remembering were not significantly related to the number of positive changes in life perspective.

Study 2

In Study 1, we found that a self-negative use of memories can be harmful (i.e. related to negative grief outcomes) in the context of a personal loss. This is in line with previous research on autobiographical remembering and mental health (Cappeliez

& O'Rourke, 2006; Ros et al., 2016). Note, that participants reported on their use of autobiographical memory in general, including all memories from their life without consideration of whether that included memories about the lost loved one. Recalling particularly, however, memories of the lost loved one may be painful and invoke feelings of grief. At the same time, individuals may dearly want to remember those they have lost and remembering them might be helpful in adapting to life without the other (Field & Filanosky, 2010). As such, the goal of the second study was to test whether findings from Study 1 would hold for the use of memories about the deceased or whether these memories may even be helpful after losing a loved one (i.e. related to better grief outcomes).

Methods

Participants

Participants were recruited via grief support groups in Germany. As in Study 1, no restrictions were made regarding the type of loss or the time since loss. Participants were provided with detailed information about the study. Participation was voluntary and required written consent. Of the 126 questionnaires given to those in grief support groups, $N=55$ (43.65%) complete questionnaires were sent back. Participants were aged 22 to 91 years ($M=61.91$; $SD=14.10$). The majority were female (80%). Time since loss varied between five months and more than twenty years ago ($M=47.69$ months; $SD=54.06$). Participants mostly reported having lost their partner (52.7%) or one of their parents (21.8%). Eleven participants had lost a child (20%) and three reported having lost a sibling (5.5%). Participants were not compensated but were offered a summary of the study results.

Measures

The same questionnaires as in Study 1 were administered. To fit the goal of the study, the Reminiscence Functions Scale instructions, however, focused on assessing the frequency of using memories of the deceased (not all possible personal memories) in self-positive, self-negative, and social ways. That is, the stem

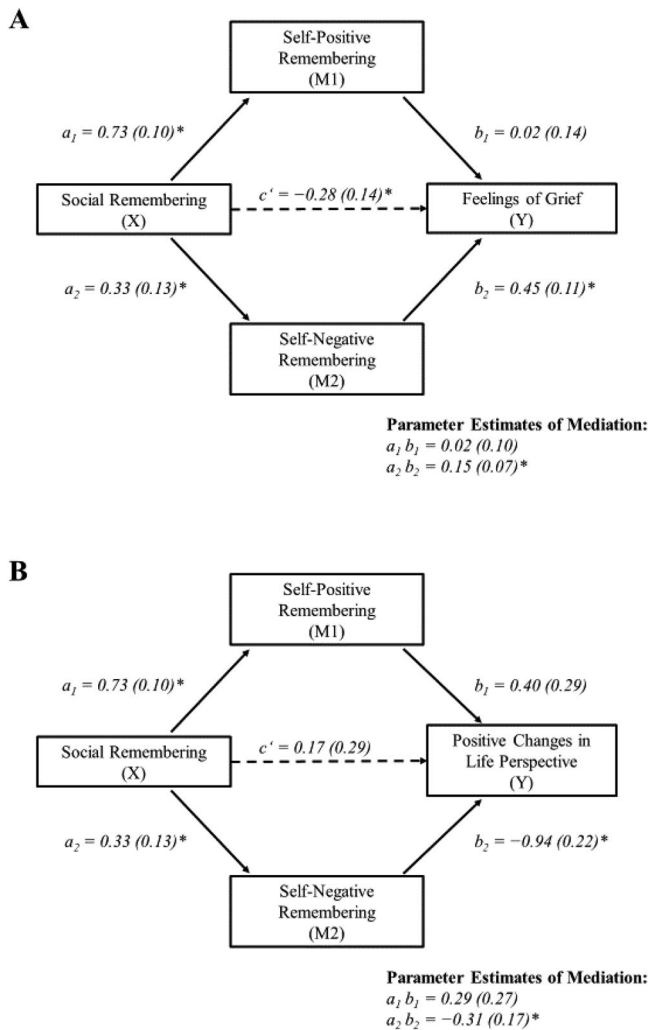


Figure 1. Relations of the three ways of remembering one's past in general to grief outcomes (i.e. feelings of grief, positive changes in life perspective) in Study 1. Panel A: Self-negative ways of remembering partially mediate the relation between social ways of remembering and feelings of grief ($R^2 = .42, p \leq .001$). Panel B: Self-negative ways of remembering mediate the relation between social ways of remembering and the number of positive changes in life perspective ($R^2 = .32, p \leq .01$). Age, gender, and time since loss were control variables in both models. An asterisk (*) indicates significant effects.

for all items was changed into: 'When I remember the deceased it is to...'. Responses were again made on a Likert scale from 1 (*almost never*) to 5 (*very frequently*). Internal consistencies were: $\alpha = .90$ for self-positive, $\alpha = .82$ for self-negative, and $\alpha = .79$ for social ways of remembering. As in Study 1, feelings of grief and positive changes experienced since the loss were assessed, respectively, with the German version of the Inventory of Complicated Grief (ICG-D; Lumbeck et al., 2012; $\alpha = .94$) and the checklist of seven positive changes in life perspective (Lehman et al., 1993).

Analytical approach

As in Study 1, we used Hayes's (2013) PROCESS analyses to test: (1) whether self-positive and self-negative ways of remembering are directly linked to grief outcomes (i.e. feelings of grief, number of positive changes in life perspective), and (2) whether the relation of social ways of remembering to grief outcomes is indirect, that is mediated by, self-positive or self-negative ways of remembering. Two mediation models were specified: one using feelings of grief (i.e. ICG mean score) as the criterion and another using number of positive changes in life perspective as the criterion. In both mediation models, social ways of

remembering were the independent variable, and self-negative and self-positive ways of remembering were entered as mediators. We also controlled for age, gender, and time since loss. Each analysis used 5,000 bootstrapped samples, and unstandardized regression coefficients (coeff) are reported (Hayes, 2013).

Results

Preliminary analyses

Descriptive statistics are presented in Table 3. Participants reported, on average, moderate levels of grief symptoms on the ICG and that they had experienced multiple positive changes in life perspective. Only two participants did not experience any positive changes in life perspective. Frequency ratings for self-positive, self-negative, and social ways of remembering ranked on a medium level, on average.

Pearson correlation coefficients for variables included in the mediation analyses are shown in Table 3. No significant associations were evident for any major study variable with age of participant. Time since loss was related to the number of positive changes in life perspective: Participants reported more positive changes in life perspective the longer ago the loss occurred. Men and women did not differ regarding feelings of grief or the number of positive changes in life perspective. The two grief outcomes were negatively related: higher levels of grief were associated with fewer experiences of positive changes in life perspective. Feelings of grief were correlated with the three ways of remembering the deceased: higher levels of grief were associated with more frequently remembering the deceased in self-positive, self-negative, and social ways. No associations were evident for positive changes in life perspective and the three ways of remembering the deceased. They were, however, significantly, and positively correlated with each other. The strongest association was found between self-positive and social ways of remembering.

Main analyses

The mediation models are depicted in Figure 2. In the first mediation model (Panel A), feelings of grief were the outcome variable. Regarding self-negative ways of remembering the deceased, we found a positive association with feelings of grief: Individuals, who use memories of the deceased more frequently in self-negative ways, reported stronger feelings of grief. No associations were found between feelings of grief and both self-positive and social ways of remembering the deceased. However, there was a significant indirect relation of social ways of remembering the deceased to feelings of grief mediated by self-negative ways of remembering. Individuals, who talk about the lost loved on more frequently, also use memories about the deceased more frequently in self-negative ways, which, in turn, is related to stronger feelings of grief. Hence, self-negative ways of remembering the deceased fully mediated the relation of talking about the lost loved one to feelings of grief.

In the second mediation model (Panel B), the number of positive changes in life perspective was the outcome variable. No significant association was found between self-negative ways of remembering the deceased and positive changes in life perspective. Regarding self-positive ways of remembering the deceased, we found a positive association with the outcome variable: Individuals, who remember the lost loved one more frequently in self-positive ways, reported greater numbers of

Table 3. Pearson correlation coefficients, means and standard deviations for variables included in mediation analyses in Study 2 ($N=55$).

	1	2	3	4	5	6	M	SD
1. Inventory of complicated grief							2.44	.79
2. Positive changes in life perspective checklist	-.305*						3.58	1.73
3. RFS self-positive remembering ^a	.345**	.204					2.61	.79
4. RFS self-negative remembering ^a	.551**	-.045	.612**				2.23	.61
5. RFS social remembering ^a	.266*	.101	.738**	.455**			2.25	.69
6. Age of participant	.158	-.087	.007	.186	.157		61.91	14.10
7. Time since loss (months)	-.265	.352**	-.096	-.164	-.045	-.064	47.69	54.06

Note. * $p < .05$, ** $p < .01$.

^aIn Study 2, participants were instructed to focus on memories about the lost loved one.

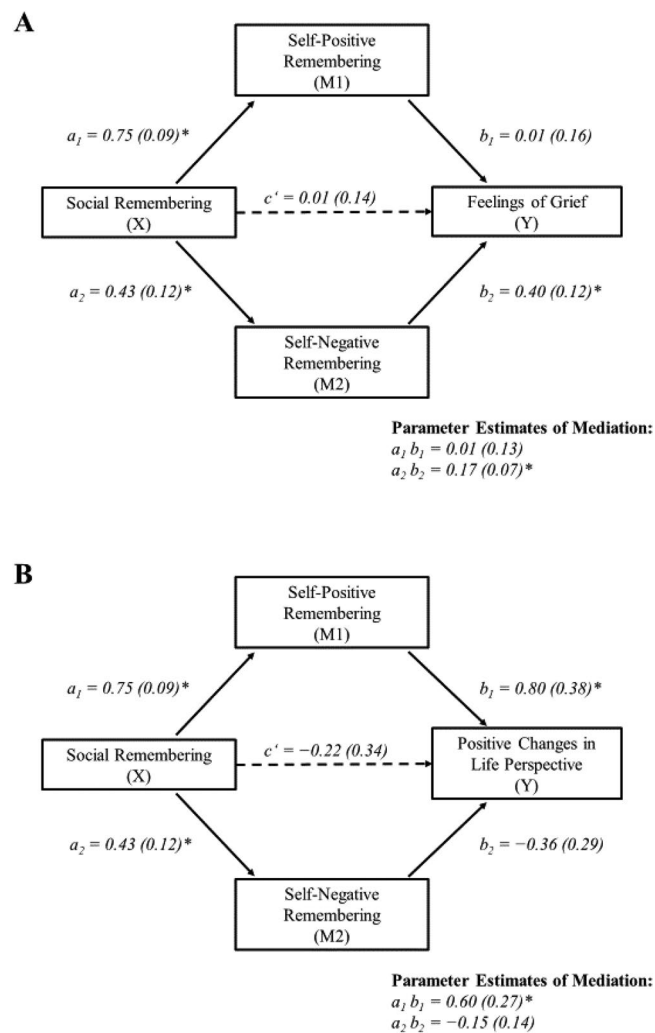


Figure 2. Relations of the three ways of remembering the deceased to grief outcomes (i.e. feelings of grief, positive changes in life perspective) in Study 2. Panel A: Self-negative ways of remembering the deceased mediate the relation between talking about the deceased and feelings of grief ($R^2 = .34$, $p \leq .01$). Panel B: Self-positive ways of remembering the deceased mediate the relation between talking about the deceased and the number of positive changes in life perspective ($R^2 = .22$, $p = .06$). Age, gender, and time since loss were control variables in both models. An asterisk (*) indicates significant effects.

positive changes in life perspective. Self-positive ways of remembering the deceased also mediated the association between social remembering and positive changes in life perspective. Individuals, who talk about the lost loved one frequently, also often remember the lost loved one in self-positive ways, which, in turn, is associated with reporting greater numbers of positive changes in life perspective. There was no direct relation of talking about the deceased to the number of positive

changes in life perspective. Hence, self-positive ways of remembering fully mediated the association between talking about the deceased and positive changes in life perspective.

Discussion

Based on the model of reminiscence and health (Cappeliez & O'Rourke, 2006) we propose there may be harmful but also adaptive ways of using autobiographical remembering after the loss of a loved one. In the current research, we examined this for two different types of memories. In Study 1, participants were instructed to think about their past in general and to report the overall frequency of using autobiographical memories in self-positive, self-negative, and social ways. In Study 2, participants also rated the frequency of using autobiographical memories for self-positive, self-negative, and social functions, but this time, they were instructed to focus on memories about the lost loved one. Findings across two studies provide further evidence for the model's proposed association between autobiographical remembering and mental health. The current studies also extend that model meaningfully, applying it to the context of losing a loved one. That is, the current results do not simply provide further evidence for the model but apply it to a real-life, emotional, and complex event. As would be expected, findings indicate that self-negative ways of remembering (i.e. both in general, and about the lost loved one) may be interpreted as harmful in that they are related to greater feelings of grief. Despite that, these findings also show that memory may have a positive role to play: remembering the deceased in self-positive ways can be adaptive. It is related to having experienced positive changes in life perspective (e.g. in self-esteem, life priorities, relationships). Social ways of remembering (i.e. both in general, and about the lost other) seem to be neither adaptive nor harmful per se. Instead, greater social memory-sharing mainly serves as a context for using memories more, whether that be in adaptive or harmful ways.

The study was novel in examining different ways of using autobiographical memory particularly in those actively grieving the loss of a loved one. Loss is a normative life event that most people will experience, often beginning in adolescence and multiple times across adulthood (Berntsen & Rubin, 2004; Hansson & Stroebe, 2007). Depending on the loss, it may present a major coping challenge (Stroebe et al., 2007). Memory plays an important role: individuals often find it painful to remember a lost loved one while at the same very much wanting to remember, to not forget, the one who has died. In keeping with that, our discussion of findings elaborates two major issues: the more pervasive effects of self-negative, as compared to self-positive ways of remembering, and the adaptive value

of not just general autobiographical remembering but remembering the lost loved one.

Is autobiographical remembering harmful after losing a loved one?

Across both studies, self-negative ways of remembering were related to greater feelings of grief. That is, using memories to escape the present, relive negative emotions, and keep the memory of a dead loved one alive was related to greater feelings of grief. This pattern held across both studies, indicating that it occurred whether recalling one's personal past in general or specifically thinking about a lost loved one. The extent of using memory in self-negative ways is also harmful to individuals' ability to view themselves as having made positive perspective changes in their life. Such perspective changes include feelings of strength or increased self-esteem as well as changes in a person's values or life priorities that can result from actively coping with bereavement (Calhoun et al., 2010). Self-negative ways of remembering, on the contrary, can be viewed as defensive tactics (Cappeliez et al., 2005) or even avoidance tendencies. Using memory in self-negative ways can thus be seen as harmful in two ways: in maintaining negative symptoms of grief and in thwarting an approach-oriented perspective towards one's life, including the possibility of embracing positive changes in life perspective (Thomsen et al., 2018).

The relations between self-negative ways of remembering and grief outcomes in the current study are in line with past research grounded in the model of reminiscence and health also showing the relation of self-negative ways of remembering to poorer mental health (Cappeliez & O'Rourke, 2006; Hofer et al., 2017). O'Rourke et al. (2015) postulated that for mental health outcomes 'the deleterious effects of self-negative functions appear to be roughly double the beneficial effects of self-positive functions' (p. 336). We also found this to be the case in the current research. Self-negative ways of remembering were much more harmful than self-positive ways were beneficial. This was especially true for recalling autobiographical memories in general. Remembering the lost loved, however, revealed a finer graded pattern: Remembering the deceased in self-negative ways was related to greater feelings of grief, but no association was found regarding the number of positive changes in life perspective. Even if thinking or talking about the deceased can be painful and negative ways of remembering can be related to difficult grief outcomes, it does not necessarily hinder the bereaved to also embrace positive changes in life perspective.

Is autobiographical remembering adaptive after losing a loved one?

The present findings revealed that self-positive ways of autobiographical remembering (e.g. to reassure themselves of their identity, to cope with current problems) can be adaptive after a personal loss. Due to consistent positive relations to life-satisfaction and well-being (Cappeliez & O'Rourke, 2006), we expected self-positive use of memory to have well-being benefits also for those who have lost a loved one. In line with that, we found using memories of the lost loved one in self-positive ways is associated with reporting more positive changes in life perspective. According to Cappeliez et al. (2008), self-positive

ways of remembering are growth-oriented (see also Webster, 2003). This pro-active stance in memory use may create a sense of meaning and purpose in the face of loss (Cappeliez & Robitaille, 2010) and help individuals incorporate the loss into their ongoing view of life (Boelen et al., 2006; Thomsen et al., 2018). As such, it seems important to encourage those who have lost a loved one to not only engage in remembering (Eisma & Stroebe, 2017), but to help them frame how they use those recollections, ensuring that they do so in adaptive ways.

Research has revealed positive consequences of sharing one's memories with others (e.g. Pasupathi, 2003; Webster & McCall, 1999). In the present studies, we also found social ways of remembering to be important in the context of loss of a loved one, but most times only indirectly (i.e. as mediated by self-positive or self-negative ways of remembering). With respect to bereavement, the usefulness of disclosing one's thoughts, feelings, and memories remains a controversial topic (Baddeley & Singer, 2009). Our research also suggests, that disclosure of memories about a lost loved one can be helpful, but it also depends on whether shared memories are used by individuals in self-positive or self-negative ways. This holds for recalling one's past in general and talking about the deceased in particular.

Limitations

The current research provides additional evidence of adaptive and harmful ways of autobiographical remembering extending it to those particularly who are grieving a lost loved one. There are, however, limitations regarding the size and composition of the two samples. Participants were mainly recruited from grief support groups that are likely comprised of individuals who are feeling they need support. Also, the majority of participants were female (80% in both studies). This recruitment method ensured we recruited people who consider themselves actively grieving. It does, however, limit the ability to generalize to all individuals across the wide spectrum of responses to grief. Participants were, on average, currently experiencing moderate grief. While the pattern of findings across the two studies was supportive, future research with larger samples and a wider range of participants is warranted.

Replication studies based on larger samples may be required to detect small effects. For instance, regarding positive changes in life perspective, the relations to self-positive remembering in Study 1 and self-negative remembering in Study 2, were small to medium effects and did not reach significance. Moreover, replication studies could include a wider range of participants and also consider additional (predictor) variables such as the type of loss. Alternatively, future research should test whether these findings are replicated in samples that directly compare different types of loss (e.g. loss of partner, loss of parent, loss of child). Finally, in the present research, we conducted to separate studies to examine adaptive and harmful ways of autobiographical remembering for two different type of memories: recalling one's past in general (Study 1) and remembering the deceased in particular (Study 2). Although the samples were similar in many ways (e.g. same recruitment strategy, similar distributions regarding gender and type of loss) and we controlled for potential effects of age, gender, and time since loss, there might be unidentified factors distinguishing the samples. Consequently, direct comparisons between the two types of memories are difficult and a replication of these results is indicated.

Conclusion

The way individuals think and talk about their past and the lost loved one is related to their grief reactions. Remembering one's past in self-negative ways can be harmful in that it is associated with ongoing feelings of grief. Thinking or talking about the deceased can also be painful and negative ways of remembering can be related to difficult grief outcomes. However, if memories about the lost loved one are used in adaptively trying to cope with loss, they could help experiencing positive changes in life perspective.

Notes

1. Note that Cappeliez and O'Rourke named this category *prosocial* in their model. In our view, the term 'prosocial' can be misleading as it connotes intended good to others, which is not clear in all items. We therefore just refer to social ways of remembering.

2. At the time of data collection, the ethics committee of Ulm University provided a checklist to consider whether a full application for ethical approval was needed. The current studies did not meet the suggested criteria. Participants were provided with detailed information about the respective study. Participation was voluntary and required written consent.

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