Thinking and Talking about the Past: Why Remember?

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SUMMARY

Following functional theory, the focus of this paper is to examine individuals' reports of the functions that thinking and talking about the past serves in their daily lives. Younger and older men and women provided reports of the frequency with which they think and talk about their personal past to serve self-continuity, social-bonding and directing-behaviour functions. Younger and older adults endorsed the same frequency of using the past to maintain social bonds. In keeping with the context of their developmental life phase, including the need to forge self-concept clarity and their more open-ended perspective of the future, younger adults reported more often using autobiographical memory to create self-continuity and direct future plans. Copyright © 2009 John Wiley & Sons, Ltd.

Across nations and across the lifespan (Wang, 2004), beginning at about age 3 (Nelson, 1993), humans think about and talk about their personal past. Not only do we think and talk about the past but we do so with some frequency: 14% of occasions spent in social interaction involve sharing information about the past (Pasupathi & Carstensen, 2003). Of course, thinking and talking about our past relies on autobiographical remembering. Some researchers have argued that the capacity to recall personal experiential information for long periods of time is uniquely human (e.g. Conway, 2005). Regardless of its uniqueness to humans it is a commonplace yet rather amazing human activity. An 80-year-old woman sits alone smiling as she remembers horseback riding on the beach in Mexico as a young girl. A graduating student laughs with friends about anxiously arriving at a statistics exam in his first year at university. Such memories enrich the aesthetic experience of life, but it seems unlikely that events are remembered *only* for their aesthetic qualities. Thus, the question of central interest arises, why remember? Why do humans remember so much of their personal past even over long periods of time? The general answer is that individuals remember because memories serve important psychosocial functions (Bluck & Alea, 2002; Neisser, 1978; Pillemer, 1992, 1998). The goal of the current research was to answer this question more specifically by collecting younger and older men and women's reports of the functions that autobiographical memory serves in their lives. The functional approach to autobiographical memory is briefly presented, the utility of examining age differences to elucidate function is discussed, and the specific aims of the study are provided.

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THE FUNCTIONAL APPROACH

Much of the current memory literature focuses on mechanistic issues of performance and accuracy but some researchers have also described the benefits of posing questions from a functional perspective (e.g. Neisser, 1978). The primary concern of the functional approach is to ask *why*, not how, humans remember personal events (Bruce, 1989). In Baddeley's (1988) classic paper he calls on researchers to establish replicable memory phenomena, but then to go a step further and ask, 'What the hell is it for?' (p. 4). He discusses how the field of memory might benefit from keeping this question at the top of the research agenda and gives some specific examples. One example focuses on what might be learned about *autobiographical* memory by carefully considering its function in daily life. He speculates that autobiographical memory allows people to re-experience the past so as to solve current problems and direct future actions. He stresses that autobiographical memory is the repository of information about the self suggesting that loss of access to biographical identity (i.e. through brain injury or limited access to familiar cues as may occur in long-term care) may result in difficulties in maintaining a clear self-concept (see Addis & Tippett, 2004).

Since Baddeley's (1988) early work, autobiographical memory has been theorized to serve three broad functions: self, social and directive (Bluck & Alea, 2002; Cohen, 1998; Pillemer, 1998; see also Webster, 1997). The *self function* involves retrieving autobiographical memories to maintain a sense of being the same person over time or to update the self while maintaining continuity (Conway, 2005). Retrieval of memories provides one with knowledge of one's self in the past that can be related to the present and to the projected future self (Bluck, Alea, Habermas, & Rubin, 2005; Conway, Singer, & Tagini, 2004; Neisser, 1988). The *social function* of autobiographical memory involves retrieving memories to develop, maintain and enhance social bonds (Alea & Bluck, 2003; Neisser, 1988; Nelson, 1993; Pillemer, 1998). Autobiographical memories provide material for conversations (e.g. Cohen, 1998; Hyman & Faries, 1992; Webster, 1997), create intimacy in relationships (Alea & Bluck, 2007), and may be related to empathy (Bender, Lachmann, Pohl, & Chasiotis, 2009). The *directive function* involves retrieving past experiences to guide present and future thoughts and behaviour (Bluck, Dirk, Mackay, & Hux, 2005; Pillemer, 1998). Current problems can be addressed by retrieving autobiographical memories to guide actions (Bluck & Alea, 2002; Cohen, 1998; Webster, 1997).

In sum, Baddeley's (1988) early call has been at least faintly heard and several researchers have further developed both theoretical and empirical work on the functions of autobiographical memory (for a special issue, see Bluck, 2003). The current study builds on past work using a straight-forward approach: the study involves directly asking older and younger men and women to rate the frequency with which they think and talk about the past to serve self, social and directive functions.

EXAMINING AGE

Examining age differences and similarities in the functional use of memory is relevant from a lifespan developmental perspective (Baltes, Staudinger, & Lindenberger, 1999): it allows an understanding of how memory is used across life phases to achieve different developmental tasks. For example, Webster (1995) found that younger adults tend to

reminisce more to reduce boredom, solve current problems and to struggle with identity formation, whereas older adults report reminiscing to teach lessons, or to maintain intimate ties to lost loved ones. Researchers have also examined the relation of these different functions of reminiscing to health and well-being in later life (e.g. Cappeliez, O'Rourke, & Chaudhury, 2005). Thus, examining the functional use of memory across adult life phases helps to further our understanding of the goals and priorities of these different phases.

The inclusion of different age groups in the current study also had another rationale, however, based on the functional approach described by Bruce (1989). He suggested that one fruitful way to study function is to examine, like a population biologist, how relationships between identified psychological constructs vary across a population. Understanding variation across a population (e.g. by age), and particularly how related constructs vary together (or not) across a population, allows a closer understanding of function. We embrace Bruce's idea in the current study. That is, the use of autobiographical memory to serve self, social and directive functions is assessed across two age groups in relation to more proximal (than age) psychological constructs. That is, where age differences are present, we examine whether age is simply a predictor of memory function or actually acts as a mediator between a theoretically related psychological construct and memory use (e.g. Does age mediate the relation of self-concept clarity to the use of the self function of autobiographical memory?).

Following Bruce's idea, we began by identifying a set of three psychological variables (self-concept clarity, extraversion, future time perspective) each of which is theoretically related to one of the three functions. Future research might certainly explore additional constructs using this strategy. Self-concept clarity (Campbell, Trapnell, Heine, Katz, Lavallee, & Lehman, 1996) was examined in relation to the self-continuity function of autobiographical memory. Individuals with low self-concept clarity were expected to more frequently use autobiographical memory as they attempt to maintain self-continuity (Bluck et al., 2008). This is in line with Baddeley's (1987) suggestion that self-concept clarity may be diminished if one could not recall the personal past (e.g. due to brain injury). One could, however, also predict that individuals with high self-concept clarity use memory frequently for self-continuity purposes, and that is in fact why they have high self-concept clarity. Given our lifespan developmental focus, we suggest that the more likely relation is the former: that younger adults, who are forging a sense of identity (low self-concept clarity) as they move into adulthood (Habermas & Bluck, 2000; McAdams, 1999) will be more likely to use memory to help them achieve a sense of self-continuity. The social function of autobiographical memory was expected to be related to level of extraversion. Webster's (1994) research with the Reminiscence Functions Scale supports this relation: individuals who are more extraverted are more likely to reminiscence to maintain social interaction and friendships (see also Cappeliez & O'Rourke, 2002). The variable expected to be related to the directive function was a person's perspective on the extent to which the future is open-ended. Theoretical and empirical work (e.g. Carstensen, Isaacowitz, & Charles, 1999) suggests that younger individuals are more future-oriented than older adults. We expect that individuals who perceive the future as more open-ended will be more likely to use autobiographical memory to direct behaviour and solve problems.

In short, our aim in examining different age groups is to learn something about the use of autobiographical memory in different adult life phases, but also to strengthen our understanding of the functions served by autobiographical memory by tracking age differences in their use, and relating these differences to substantive psychological variables. Other personality traits (e.g. openness to experience, neuroticism) were used as

control variables so that age effects and psychological variables of interest could be interpreted independent of trait-level personality differences in the sample.

THINKING AND TALKING ABOUT THE PAST: WHY REMEMBER?

As per Baddeley's (1988) question, the study goal was to investigate the functions of thinking and talking about the past. The specific aims were: (i) to examine adult age differences/similarities in overall frequency of thinking and talking about the past, (ii) to examine adult age differences/similarities in using autobiographical memory to serve self, social and directive functions and (iii) to follow-up any obtained age differences in functional use of the past through regression analyses examining age as a mediator in the relation between three psychological variables and theoretically related autobiographical memory functions.

METHODS

Participants

Participants were 95 young (43 men, 52 women; M age $= 19.31$, $SD = 2.80$) and 90 older men and women (44 men, 46 women; M age $= 73.04$, $SD = 7.53$). Younger participants were recruited from the undergraduate psychology participant pool. They were compensated with research credit. Older participants were volunteers recruited through a participant database. The majority of the sample (81%) reported their race as Caucasian. Older adults had an average of 21.31 years of formal education ($SD = 4.48$) and younger adults had 14.87 years ($SD = 3.59$), $t(183) = 12.49$, $p < .001$.[1] On a 6-point scale ($1 = very$ $good$, $6 = very\ poor$), both age groups reported their health as being $good$ to $very\ good$ compared to age peers (young: $M = 1.84$, $SD = 0.70$; old: $M = 1.79$, $SD = 1.02$), $t(183) = 0.51$, $p > .05$. Older adults were screened for dementia (Roccaforte, Burke, Bayer, & Wengel, 1992). The sample showed typical cognitive abilities (Schaie, 1994): younger adults performed worse than older adults on vocabulary (WAIS-R Vocabulary; Wechsler, 1981), but better on reasoning (Letter Series Task; Thurstone, 1962) and episodic memory (Auditory Verbal Learning Test; Rey, 1941).

Procedure and measures

Data were collected in small groups in a quiet meeting room. Participants provided demographic (e.g. age, gender, race, education) and health information, and completed measures of basic cognitive ability. The Thinking About Life Experiences questionnaire (TALE) was given next followed by the proximal psychological variables (Self-Concept Clarity, Future Time Perspective), and the personality measure (Big Five Inventory). Each is further described below. Cronbach's alphas are from the current study.

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[1]Most studies employing older and younger adults report that the older adult group is more highly educated. A limitation of the current study, however, is that a wider range of educational levels in both age groups was not sampled. Educational level was not included in analyses.

Thinking About Life Experiences Questionnaire (TALE)

The TALE questionnaire is a 15-item, three subscale measure assessing the self, social and directive functions of autobiographical memory. It is a reliable, valid measure for examining the functions of autobiographical memory in young and older adults (see Bluck & Alea, in preparation; Bluck et al., 2005, for psychometric properties of the TALE). The three subscales of the TALE are theoretically distinct, yet interrelated, as suggested by the literature (Bluck et al., 2005). Initial instructions tell people that thinking and talking about recent and distant events in one's life occurs in everyday life, and that the researchers are interested in how people connect the memories of events in their life (i.e. *autobiographical reasoning*, Bluck & Habermas, 2001). Two baseline questions assess people's overall tendency to think back over, and to talk about, their life. Responses to all questions are made on a 5-point Likert scale, with 1 = *almost never* and 5 = *very frequently.* After these two baseline items, participants indicate how often they think back about or talk about their past to serve a variety of functions. The stem for each of the 15 items is: 'I think back over or talk about my life or certain periods of my life . . .' Stem completion items assessing the self-continuity, social-bonding and directing-behaviour function of autobiographical memory are presented in random order.

   The *Self-Continuity Subscale* includes items that represent thinking about the past with a concern for maintaining stability (e.g. '. . . when I want to feel that I am the same person that I was before') or evaluating change in terms of self, values and beliefs (e.g. '. . . when I am concerned about whether my beliefs have changed over time'). The Self-Continuity function subscale reflects thinking back over or talking about one's past in order to assess self-continuity over lived time. Cronbach's alpha was .83. The *Social-Bonding function subscale* centres on reflecting and talking about the past in the service of social-bonding, such as using autobiographical memory to develop new relationships (e.g. '. . . when I hope to also find out what another person is like') and nurturing existing relationships ('. . . when I want to maintain a friendship by sharing memories with friends'). Cronbach's alpha was .74. The *Directing-Behaviour function subscale* concerns thinking and talking about the past to guide current actions (e.g. '. . . when I want to try to learn from my past mistakes'), and using the past to guide choices about one's future (e.g. '. . . when I need to make a life choice and I am uncertain which path to take'). This involves reflecting on lessons learned and past mistakes so as to react well in present and future situations. Cronbach's alpha was .78.

Self-Concept Clarity Scale (SCCS)

Individuals who have low self-concept clarity may rely on autobiographical memory to help create greater self-continuity. Thus, self-concept clarity was assessed as a potential predictor of the extent to which individuals think and talk about the past to create self-continuity. The SCCS (Campbell et al., 1996) is a reliable, valid 12-item self-report measure assessing the extent to which self-concept is clearly defined and internally consistent. SCCS items direct people to think about the level of clarity and consistency in their self-view (e.g. 'In general, I have a clear sense of who I am and what I am'). Responses are made on a 5-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). Cronbach's alpha was .87.

Future Time Perspective Scale (FTPS)

The FTPS (Carstensen & Lang, 1996) was included to predict the frequency of thinking and talking about the past to direct behaviour. Those who see the future as more

open-ended (i.e. young adults; Carstensen et al., 1999) should be more likely to be invested in future goals and thereby to more frequently employ autobiographical memory in the service of problem-solving and directing future behaviour. The FTPS is a 10-item measure with good construct validity for assessing the extent to which individuals view the future as open-ended (e.g. 'Many opportunities await me in the future'). Likert-type scales are used to indicate the extent to which statements are *very untrue* (1) to *very true* (7). Cronbach's alpha was .89.

Big Five Inventory

Personality traits were assessed (BFI; John, Donahue, & Kentle, 1991) for two reasons. The first was to examine Extraversion as a predictor of the TALE Social-bonding function (if age differences on that subscale appeared). The entire BFI was also included, however, as a control for overall personality differences in thinking about the past (e.g. see Webster, 1994). Controlling for personality differences allowed examination of the relation of psychological predictor variables to autobiographical memory functions independent of trait-level personality. The BFI is a 44-item self-report measure of the big five personality traits. Responses are made on a 5-point Likert scale, ranging from *disagree strongly* (1) to *agree strongly* (5) (e.g. 'I see myself as someone who . . .' 'is talkative', 'tends to be lazy'). Items were averaged to produce extraversion, agreeableness, conscientiousness, neuroticism and openness to experience subscales; Cronbach's alpha $>.80$ for all subscales.

RESULTS

Three sets of analyses were conducted. The first examined age and gender differences and similarities in the overall frequency of thinking and talking about one's personal past. The second set of analyses examined the functions of thinking and talking about the past, specifically examining the extent to which older and younger men and women use the past to serve the psychosocial functions of self-continuity, social-bonding and directing future behaviour. The final set of analyses examined whether age or gender differences (if obtained) mediate the relation between proximal psychological variables and functions of thinking and talking about the past.

Frequency of thinking and talking about the past

A 2 (mode: thinking, talking) $\times$ 2 (age: young, old) $\times$ 2 (gender: male, female) mixed analysis of variance (ANOVA) was conducted to examine age and gender differences in thinking and talking about the past. Mode of accessing the past was a within-participants variable. Two outliers were identified by multiple indices (i.e. more than 3 *SD* units away from the mean, case-wise diagnostics) and were thus dropped from analyses (Field, 2005). There was a main effect for frequency of thinking and talking about the past, $F(1, 174) = 48.91$, MSE $= 21.71$, $p < .001$, $\eta_p^2 = 0.22$. Participants thought about the past ($M = 3.98$, $SD = 0.77$) more often than they talked about the past ($M = 3.48$, $SD = 0.86$). There were no age or gender differences, nor any interactions. Thus, men and women, young and old, think about the past with greater frequency than they talk about the past.

Thinking and talking about the past: Why remember?

A 3 (function: self-continuity, social-bonding, directing-behaviour) $\times$ 2 (age: young, old) $\times$ 2 (gender: male, female) mixed ANOVA was conducted to examine age and gender differences in the self-continuity, social-bonding and directing-behaviour functions of autobiographical memory.[2] The function of thinking and talking about the past was a within-participants variable. There was a main effect for function, $F(2, 362) = 53.44$, MSE $= 22.92$, $p < .001$, $\eta_p^2 = 0.23$. Follow-up paired-sample t-tests (using Bonferroni correction, $p = .02$) indicated that there were significant differences between all functions. Thinking and talking about the past in an effort to direct behaviour ($M = 3.42$, $SD = 0.76$) was used more often than thinking and talking about the past for social-bonding ($M = 3.23$, $SD = 0.80$) or for self-continuity; directing-behaviour: social-bonding, $t(184) = 2.91$, $p < .01$; directing-behaviour: self-continuity, $t(184) = 11.26$, $p < .001$. The self-continuity function was used less often ($M = 2.75$, $SD = 0.88$) than either of the other functions; social-bonding: self-continuity, $t(184) = 6.23$, $p < .001$.

There was also a significant age main effect, $F(1, 181) = 15.13$, MSE $= 5.03$, $p < .001$, $\eta_p^2 = 0.08$. Younger adults ($M = 3.30$, $SD = 0.61$) reported using the functions of thinking and talking about the past more often than older adults overall ($M = 2.96$, $SD = 0.53$). These main effects, however, were qualified by a function by age group interaction, $F(2, 362) = 4.75$, MSE $= 1.98$, $p < .01$, $\eta_p^2 = 0.03$. Results are shown in Figure 1.

Follow-up t-tests for each function by age (Bonferroni $p = .02$) revealed that younger adults report using the self-continuity function of autobiographical memory more frequently than older adults, $t(183) = 4.15$, $p < .001$, and report using autobiographical memory for directing behaviour more often than older adults, $t(183) = 3.58$, $p < .001$. There was no age difference for the social-bonding function, $t(183) = 0.91$, $p > .02$.

Follow-up paired-sample t-tests for each age group (Bonferroni $p = .008$) indicated that for young adults, there was a difference in the frequency of thinking and talking about the past between the directing-behaviour and self-continuity functions, $t(94) = 7.44$, $p < .001$, and the directing-behaviour and social-bonding functions, $t(94) = 3.32$, $p < .008$. Young adults use autobiographical memory to direct behaviour more than for maintaining
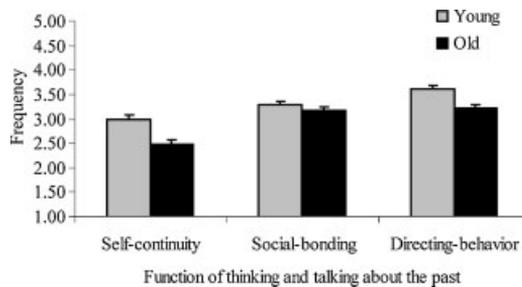

Figure 1. Function by age group interaction for differences in thinking and talking about the past to serve self-continuity, social-bonding and directing-behaviour functions. *Note*: Young: Directing-behaviour > self-continuity and social-bonding, $p > .008$. Old: Directing-behaviour and social-bonding > self-continuity, $p > .02$. Young > old for both self-continuity and directing-behaviour, $p > .02$.

[2]Results do not change when controlling for general frequency of thinking and talking about the past. Variations in sample size for analyses are due to missing data.

self-continuity or for social-bonding. There was no difference in how often young adults think and talk about the past for the self-continuity and social-bonding functions, $t(94) = 2.49$, $p > .008$.

For older adults, the results were slightly different. Both the directing-behaviour function, $t(89) = 8.49$, $p < .001$, and the social-bonding function, $t(89) = 6.85$, $p < .001$, were used more often than the self-continuity function. The directing-behaviour function and the social-bonding function did not differ, $t(89) = 0.51$, $p > .008$.

A closer look at age differences in the functions of thinking and talking about the past

Age is not particularly useful as an explanatory variable and, as per Bruce (1989), the following analyses were used to follow-up obtained age variations in functional use of memory, through reference to more proximal psychological constructs that were theoretically expected to be related to each memory function. In analytic terms, regression analyses were conducted to examine whether age was a mediator rather than a direct predictor of each of the functional uses of autobiographical memory. The direct predictors of the functions of autobiographical memory were variables more conceptually proximal (than chronological age, which is a relatively distal predictor due to its biopsychosocial complexity) to the functions of thinking and talking about the past. Self-concept clarity was considered as a mediator of the self-continuity function, and future time perspective was considered as a mediator of the directing-behaviour function of autobiographical memory. As there were no age differences in the social-bonding function of autobiographical memory, mediation analyses were not conducted. That is, it was not relevant to examine whether extraversion mediated the relation between age and the social-bonding function of memory.

Several control variables were included in the initial step of each regression analysis: gender, TALE overall level of thinking and talking about the past, and personality traits (i.e. BFI subscales). Gender was included to maintain consistency with the ANOVA analyses. Although there were no mean age differences in overall TALE levels of thinking and talking about the past, these variables were included as covariates because they represent baseline levels of individual differences in thinking and talking about the past that should be controlled. Personality traits were also controlled because previous work indicates that personality can influence the reasons why people reminisce (e.g. Webster, 1994). The inclusion of personality variables on the first step of the regression model allowed examination of the role of age and proximal psychological variables above and beyond any effects due to personality. From an empirical standpoint, as shown in Table 1, personality was related to some of the proximal psychological variables and to age, further suggesting that controlling for personality was appropriate. Following the criteria outlined by Baron and Kenny (1986), three separate regression analyses were conducted to determine mediation in each set of analyses.[3]

The self-continuity function
The relation between self-continuity, age and self-concept clarity can be found in Figure 2. In the first regression analysis the predictor was self-concept clarity and the criterion

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[3]Before beginning analyses, we examined whether age was a moderator rather than a mediator. It was not. We further analysed the data for non-linear trends. There were none.

Table 1. Correlation matrix for variables in mediation regression analyses

|	1	2	3	4	5	6	7	8	9	10	11	12	13
Functions													
1. Self-continuity	—												
2. Directing-behaviour	.52**	—											
Predictors													
3. Self-concept clarity	-.22**	-.01	—										
4. Future perspective	.21**	.27**	-.10	—									
Mediator													
5. Age	-.30**	-.27**	.37**	-.63**	—								
Control variables													
6. Gender	.04	.08	-.09	.07	-.09	—							
7. Overall thinking	.12	.22**	-.14	-.05	-.02	.09	—						
8. Overall talking	.08	.27**	.04	.03	.03	.06	.34**	—					
9. Extraversion	.02	.06	.33**	.22**	.13	-.02	.02	.27**	—				
10. Agreeableness	-.07	.01	.38**	.05	.25**	.16	.02	.11	.33**	—			
11. Conscientiousness	-.03	.13	.42**	.01	.15	.18	-.14	-.04	.15	.26	—		
12. Neuroticism	.11	.01	-.51**	.05	-.38**	.25**	.08	-.09	-.30**	-.50**	-.12	—	
13. Openness	-.03	.00	.27**	-.03	.23**	-.09	.11	-.01	.21**	.04	.18	-.22**	—

$**p < .01$.
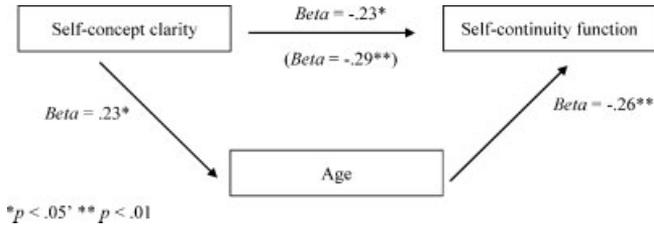
Figure 2. Age is a partial mediator of the relation between self-concept clarity and the self-continuity function of thinking and talking about the past. *Note*: Regression weight in parentheses indicates when age is not in the model. Gender, overall levels of thinking and talking about the past and personality traits were entered as control variables in the first step of the model.

variable was the self-continuity function subscale of the TALE. The control variables (gender, general levels of thinking and talking about the past, personality), entered in the first step of the model, together accounted for 3% of the variance in the self-continuity function of autobiographical memory, $F(8, 168) = 0.65$, $p > .05$. Self-concept clarity was entered in the second step of the model and explained an additional 5% of the variance, $R^2 = .05$, $F(1, 167) = 8.47$, $p < .01$. Having lower self-concept clarity is related to thinking and talking about the past to create self-continuity more frequently than having higher self-concept clarity, $B = -0.03$, $SEB = 0.01$, Beta $= -0.29$, $t = 2.91$, $p < .01$. Thus, the first step in mediation was confirmed.

The second analysis examined whether self-concept clarity was related to the mediator, age. The group of control variables was entered in the model first. The predictor, entered in the second step of the model, was self-concept clarity. The criterion variable was age. The control variables explained 18% of the variance in age, $F(8, 167) = 4.50$, $p < .001$. Self-concept clarity accounted for an additional 3% of the variance in age, $R^2 = .21$, $F(1, 166) = 6.34$, $p < .05$. There was a positive relation between self-concept clarity and age, $B = 0.79$, $SEB = 0.31$, Beta $= 0.23$, $t = 2.52$, $p < .05$. Younger adults, who are at a stage in their life when they are still developing a coherent sense of self (Erikson, 1959; Habermas & Bluck, 2000) were less clear about and less confident of their self-concept. Thus, the second step necessary to show mediation was also confirmed.

The final regression analysis involved the full mediation model: examining whether age mediates the relation between self-concept clarity and the frequency of thinking and talking about the past for self-continuity. The group of control variables was entered in the first step of the regression equation. Self-concept clarity and age, as the mediator, were entered together as predictors in the second step. The criterion variable was the frequency of using the self-continuity function of autobiographical memory. As before, control variables together accounted for 3% of the variance explained in how often people report using the self-continuity function of autobiographical memory, $F(8, 167) = 0.65$, $p > .05$. Self-concept clarity and age explained an additional 10% of the variance in the self-continuity function of autobiographical memory, $R^2 = .10$, $F(2, 165) = 9.69$, $p < .001$. Most relevant to the mediation hypothesis, however, is whether age continues to be related to the frequency of using the self-continuity function, and if the regression weight for self-concept clarity is decreased (partial mediation) or is eliminated (full mediation) when age is included in the regression equation. Age did remain related to thinking and talking about the past to serve a self-continuity function, $B = -0.008$, $SEB = 0.003$, Beta $= -0.26$, $t = 3.19$, $p < .01$. As would be expected from the ANOVA results, as age increased,

thinking and talking about the past to maintain a sense of self-continuity decreased. Adding age to the model reduced the relation between self-concept clarity and the self-continuity function, $B = -0.03$, SEB $= 0.01$, Beta $= -0.23$, $t = 2.36$, $p < .05$. Thus, age is a partial mediator of the relation between self-concept clarity and thinking and talking about the past in an effort to maintain a sense of self-continuity. More frequent use of the self-continuity function of autobiographical memory to enhance self-concept clarity is partly related to one's age. As such, younger individuals at a developmental stage when self-concept is still being formed and consolidated think and talk about their past to help in that developmental task.

The directing-behaviour function

The relation between the directing-behaviour function, age and future time perspective can be found in Figure 3. In the first regression analysis the predictor was future time perspective and the criterion variable was the directing-behaviour function subscale. The control variables (gender, general levels of thinking and talking about the past, personality) were entered in the first step of the model. Control variables together accounted for 12% of the variance in the frequency of thinking and talking about the past to direct one's behaviour, $R^2 = .12$, $F(8, 169) = 2.99$, $p < .01$. Future time perspective explained an additional 9% of the variance in the directing-behaviour function of autobiographical memory, $R^2 = .21$, $F(1, 168) = 18.86$, $p < .001$. Orienting oneself more towards the future is related to using the past more frequently to direct one's behaviour, $B = 0.02$, SEB $= 0.004$, Beta $= 0.31$, $t = 4.34$, $p < .001$.

The second regression analysis examined whether future time perspective was related to age. Thus, future time perspective was the predictor and age was the criterion variable. Control variables explained 17% of the variance in age, $R^2 = .17$, $F(8, 168) = 4.41$, $p < .001$, and future time perspective explained an additional 41% of the variance, $R^2 = .58$, $F(1, 167) = 163.16$, $p < .001$. Specifically, extent of future time perspective decreased with age, $B = -1.41$, SEB $= 0.11$, Beta $= -0.67$, $t = 12.77$, $p < .001$.

The final regression analyses examined whether age mediates the relation between future time perspective and the use of autobiographical memory for directing one's behaviour. Control variables were entered in the model's first step, followed by future time perspective and age on a second step. The criterion variable was the directing-behaviour function subscale of the TALE. Again, control variables accounted for 12% of the variance in thinking and talking about the past in order to direct one's behaviour, $R^2 = .12$,
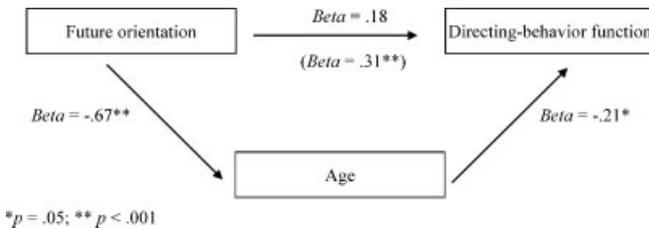

Figure 3. Age is a full mediator of the relation between future time perspective and the directing-behaviour function of thinking and talking about the past. *Note*: Regression weight in parentheses indicates when age is not in the model. Gender, overall levels of thinking and talking about the past and personality traits were entered as control variables in the first step of the model.

$F(8, 169) = 2.78$, $p < .01$. Future time perspective and age together explained an additional 11% of the variance in the directing-behaviour function of autobiographical memory, $R^2 = .22$, $F(2, 166) = 11.70$, $p < .001$. As would be expected from the ANOVA results, age was a significant predictor of the extent to which people think and talk about the past to direct their behaviour: as age increased, using the past for the directing-behaviour function decreased, $B = -0.006$, $SEB = 0.003$, $Beta = -0.21$, $t = 7.94$, $p = .05$. More importantly for the mediation analyses, including age as a predictor in the model eliminated future time perspective as a predictor of the directing-behaviour function of autobiographical memory, $B = 0.01$, $SEB = 0.006$, $Beta = 0.18$, $t = 1.79$, $p > .05$. Thus, age fully mediated the relation between future time perspective, and thinking and talking about the past in an effort to direct behaviour.

DISCUSSION

Individuals think and talk about their personal past on a daily basis. But what the hell is it for (Baddeley, 1988)? Why remember? The goal of the current research was to provide more specific answers to these question by collecting younger and older men's and women's reports of the frequency with which they use autobiographical memory to serve particular functions in their everyday lives. The findings show that older and younger individuals show both variation and continuity in their functional use of autobiographical memory. This suggests that the functions that memory serves may be aligned with developmental tasks of different life periods. Where the use of autobiographical memory does vary by age, it is also meaningfully related to more proximal psychological variables. Following Bruce (1989), demonstrating how these relationships between memory use and psychological variables differs across age groups strengthens the argument that memory serves important psychosocial functions. Note that no gender differences were found in the overall frequency of thinking and talking about one's past or the tendency to use memory to serve specific functions and that reported findings hold independent of trait personality differences as these were controlled for in the major analyses. The results are discussed further below.

Regardless of age or gender, people report thinking about the past somewhat more than talking about it. This makes sense since thinking is, hopefully, a precursor to talking. It also, however, draws attention to private remembering or reminiscing. Much of the memory literature focuses on the social sharing of memories but simply thinking about the past has been investigated less often, or has been studied in clinical samples (e.g. intrusive memories) partly because of methodological challenges. In future research, experience-sampling methodology would be useful for examining the frequency of thinking about the past in everyday life, and elucidating the functions of memories that remain as private reflections as compared to those memories shared with others.

Differences emerged in the overall frequency with which people think and talk about their personal past to serve different functions. It appears that Baddeley's (1988) early musings on the functions of autobiographical memory were generally correct though not fully inclusive. The reported functions were, in order of endorsement, to direct current and future behaviour, to create social bonds with others and to maintain self-continuity. Note that while significant differences emerged between these broad functions, all mean values are in the scale range representing 'occasionally to often' using autobiographical memory to serve these ends. These results hold regardless of gender: men and women report equal frequency of using autobiographical memory for each of the three functions. Some

research indicates that women are more likely than men to reflect on the personal past (e.g. Davis, 1999; Webster, 1995), and that they may gain more from doing so (e.g. increased intimacy; Alea & Bluck, 2007). The current research suggests that when asked to self-report about their use of memory to serve broad self, social and directive functions, no gender differences emerge.

Based on a lifespan developmental perspective, the study particularly focussed on whether functional use of memory would vary across two adult age groups. Young and older adults reported using autobiographical memory for social-bonding with equal frequency. Maintaining social bonds is indeed important across the lifespan (Carstensen, 1993) and some have argued that social-bonding is the primary function of autobiographical remembering (Neisser, 1978; Nelson, 1993). Thus, it is unsurprising that both young and older adults use their personal past to serve this social function. These results are consistent with previous reminiscence research that shows no age differences in one social function, the conversational function of reminiscing (e.g. Webster & McCall, 1999).

Age differences emerged for the other two functions. Younger adults report more frequent use of autobiographical memory to direct behaviour and to create self-continuity. Note that cohort effects for these group differences cannot be ruled out given this cross-sectional design. Demonstration of adult age differences in these functions suggests, however, that memory may be used to serve functions in a manner that is sensitive to the demands of different life phases. If autobiographical memory is to serve psychosocial functions it makes sense that those should relate to the goals and tasks of the individual in their current context, including their developmental context. Supporting this, research from the reminiscence literature (e.g. Webster & Gould, 2007; Webster & McCall, 1999) suggests that young adults are more likely than older adults to reminiscence in an effort to solve problems as well as to create identity. Though assessed differently, the current findings are in line with this previous research, but also build on it by identifying substantive psychological predictors of obtained age differences. Thus, our examination of age differences suggests that autobiographical memory serves functions that are in line with an individual's lifespan context.

Following Bruce's (1989) idea, age differences in functional use of autobiographical memory were examined in relation to psychological variables that should be associated with the adaptive use of memory. This proved a fruitful method. Younger adults' greater use of thinking and talking about the past to forge self-continuity is related to their developmental need to create greater self-concept clarity (i.e. partial mediation). Older adults had higher self-concept clarity: having had more time and life experience to forge a self-concept they relied less on autobiographical memory to maintain self-concept clarity. Future research might examine whether autobiographical memory is used to promote self-continuity during times when one faces challenges. Across the lifespan there are circumstances in which one's self-concept might be challenged (e.g. job loss, retirement, divorce, loss of spouse) and memory might act as a resource to maintain self-continuity.

Younger adults' greater endorsement of the use of autobiographical memory for directing behaviour was also related to demands of their life phase context. Younger adults have a longer future time perspective. This is not to say that older adults do not think about the future. They simply have a less extended time perspective, and thereby use autobiographical memory less frequently to serve the specific function of directing future behaviour. Thus, it was not younger adults' age *per se* but a greater sense of time ahead (i.e. full mediation) that was related to greater frequency of using autobiographical memory to

direct future behaviour. To follow-up, research might examine the role of memory in directing behaviour when faced with limited time perspective regardless of one's point in the lifespan (e.g. terminal illness, imminent relocation).

CONCLUSION

From about age 3 and through one's final days of life, humans think about and talk about their personal past. Though we forget much that happens (quite crucially), humans have an amazing capacity to remember the events and experiences of their lives. The focus of this paper, coming from the tradition of Baddeley (1988), Bruce (1989) and others, was to examine individuals' reports of the functions that thinking and talking about the past serves in their daily lives. Older and younger adults endorsed the use of the past to create and maintain social bonds. In keeping with the context of their developmental life phase, younger adults reported more frequently using memory to direct future behaviour and to create self-continuity. Strengthening the functional interpretation of these results, age differences were deconstructed through mediation analyses. These show that age differences in use of memory to serve the function of self-continuity is related to one's current self-concept clarity, and that age differences in use of memory to direct future behaviour is related to the differing future time perspectives of older and younger people. Future research might further specify how the functional use of memory varies across different groups in the population, comparing adaptive outcomes of the functional use of autobiographical memory during different life phases or when encountering particular normative and non-normative life events.

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