

Older, wiser, and happier? Comparing older adults' and college students' self-defining memories

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The present study compared self-defining memories in adults 50 years of age and older to the self-defining memories of college students. Findings are largely congruent with previous memory and ageing research, but shed additional light on how personal memories are employed to achieve a sense of identity and continuity in older adults. Older adults' self-defining memories, compared to those of younger adults, were more positive in emotional tone, more summarised and less detailed, and more likely to contain integrative meaning. The implications of these findings for assessing normative personal memory in older adults are discussed along with more general observations about narrative identity in older adulthood.

Self-defining memories are a subcategory of autobiographical memories that are highly relevant to personality processes. As defined by Singer and Salovey (1993), they are vivid, emotionally intense, repetitively recalled, linked thematically to similar memories, and focused on enduring concerns or unresolved conflicts. These memories can be voluntarily recalled or they may be evoked spontaneously in response to external or internal cues. Previous research has demonstrated the relationship of these memories to the pursuit of long-term goals (Moffitt & Singer, 1994), emotional responses (Sutin & Robins, 2005; Wood & Conway, 2006), meaning making (Blagov & Singer, 2004; Thorne, McLean, & Lawrence, 2004), and dispositional traits (Sutin & Robins, 2005). In addition, individuals frequently communicate about themselves and their lives by telling self-defining memories, a process that facilitates intimacy and the development of self-knowledge (McLean & Thorne, 2003; Thorne & McLean, 2002, 2003; Thorne et al., 2004). Self-defining memories also

provide valuable information for assessment and treatment of individuals and couples in psychotherapy (Singer, 2004a, 2005; Singer, Baddeley, & Frantsve, in press).

Thus far, research on self-defining memories (SDMs) has focused exclusively on adolescent and young adult samples drawn from high school, undergraduate, and graduate student populations. Since it is postulated that SDMs play an important role in adults' narrative identity (McAdams, 1988, 1999, 2001; Pals, 2006; Singer, 2004b), and clinical case studies have highlighted their importance at all stages of the lifespan (Singer, 2001, 2004a, Singer & J. L. Singer, 1992), it is critical that the experimental study of SDMs expand to samples of older adults. The present study is the first systematic investigation of SDMs in a sample of adults who are at least 50 years old. By studying SDMs from this age group we are able to contrast their results with previous adolescent and young adult samples, and also contribute to a growing literature on autobiographical memory processes

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in older adults and the elderly. In addition, this research should provide further insight into the ways in which older adults may employ autobiographical memories to consolidate a sense of identity and continuity across the lifespan.

To address these topics, we explored the following questions: (1) Would an older sample's ratings of their SDMs' importance, vividness, and emotionality match college students' ratings and reflect similar levels of intensity and personal significance? (2) Would the narrative-specificity, content, and meaning-making aspects of the memories be similar or differ between the two samples?

The first set of questions could be answered through straightforward comparisons of the participants' ratings of their SDMs. The second set of questions was examined through memory scoring systems employed by Blagov and Singer (2004) to evaluate specificity, content and meaning making. The following sections review the research findings in college students for these various aspects of SDMs. Since SDMs have not been studied in older adults, it is necessary to draw on the more general memory and ageing literature in order to hypothesise about potential differences from the younger sample.

SPECIFICITY

Narrative memories can be highly specific, filled with unique details and traceable to a precise moment in time. Alternatively, memories may describe a series of events over several days, weeks, or months or blend repeated similar events separated in time into a single recollection (Barsalou, 1988; Williams, 1996; Williams et al. 2007). In such memories, no single event is portrayed with enough detail and imagery to locate it in a unique moment in time. In Singer and Blagov's (2002) coding system, the former type of memory narrative is called *specific* and the latter is called *summary*.

In an earlier study sampling this distinction, Singer and Moffitt (1991–92) collected SDMs from over 500 college students across three studies, and found that participants generated roughly 78% specific and 22% summary memories. Other researchers studying specificity in college students' SDMs have found that anywhere from 70% to 83.5% of the memories

are specific (Blagov & Singer, 2004; Pillemer, Rhinehart, & White, 1986; Singer & Blagov, 2002; Wood & Conway, 2006). College students, in other words, show a strong tendency to tell memory narratives that provide detailed renderings of particular events.

In contrast, a large body of research evidence on ageing and memory has accumulated to demonstrate that older individuals are more likely to recall semantic vs episodic memories and less likely to recall the source of memories accurately (Cohen & Faulkner, 1989; Levine, Svoboda, Hay, Winocur, & Moscovitch, 2002; McIntyre & Craik, 1987). These deficits in episodic and source memory have been attributed to declines in frontal and prefrontal lobe functioning (Glisky, Rubin, & Davidson, 2001; Schacter, Kazniak, Kihlstrom, & Valdiserri, 1991; Trott, Friedman, Ritter, Fabiani, & Snodgrass, 1999). Piolino et al. (2006) examined specificity of recall in older adults (65 and older), and not only replicated the finding of greater semantic vs episodic memory, but also reported that older adults displayed less auto-otetic recollection and more observer as opposed to field perspective in their autobiographical memories. They did find that older individuals expressed greater specificity in more remote memories associated with the "reminiscence bump" period in their lives (adolescence and young adulthood), but the researchers did not assess the emotional or personal significance of the memories retrieved by the sample. In their discussion, Piolino et al. raised intriguing questions about what happens to the sense of identity as individuals lessen their purchase on the specifics of past experiences; however they suggested that a perpetuation of a personal semantic memory punctuated by key enduring SDMs allows for a healthy relationship to the past and sense of continuity across the lifespan.

On the basis of this research, it is most likely that the SDMs of older individuals will reflect a semantic or summary bias. Yet, building on Piolino et al.'s work, it is possible that older individuals would also possess some well-rehearsed SDMs that retain imagery and specificity; therefore one would expect a greater number but not an exclusive selection of summary memories for the older sample.

AFFECT

Research on SDMs in college students indicates that negative emotion is somewhat more prevalent than positive emotion (Blagov & Singer, 2004; Moffitt & Singer, 1994; Singer & Moffitt, 1991–1992). Singer and Moffitt (1991–1992) found students' narratives were slightly more negatively charged (at about 55%) in comparison to the positive ones (at about 45%). Similarly, Blagov and Singer (2004) found that negative emotion was the dominant emotional response for college students in 58% of memories, compared to 40% in which positive emotion prevailed. Wood and Conway (2006) found similar results in their study of college students' SDMs, with negative memories receiving stronger initial ratings than positive memories.

In contrast, both longitudinal and cross-sectional studies have shown a tendency in older adults to display a "positivity effect" in their autobiographical memories, such that they highlight positive events and tend to disregard or re-frame negative events from their lives (Carstensen & Mikels, 2005; Field, 1981; Kennedy, Mather, & Carstensen, 2004; Levine & Bluck, 1997; Schlagman, Schulz, & Kvavilashvili, 2006). However, some studies have not found this result (e.g., Anderson, Cohen, & Taylor, 2000), and researchers are still uncertain as to whether or not the "positivity" is due to an increase in positive memories for older adults or a decrease in their access to negative memories. Interestingly, while Schlagman et al. found that their older sample recalled fewer accidents or stressful events than their younger sample, De Vries, Blando, and Walker (1995) found that older adults were more likely to mention illness and injury in their recollections. For the purposes of the current study it was hypothesised that older adults would report more positive and less negative emotional responses to their SDMs than the college student sample.

INTEGRATIVE MEANING

With the increased focus on narrative in psychology, systematic research on meaning making associated with narrated experiences has begun to emerge (Blagov & Singer, 2004; Singer & Blagov, 2002; Thorne et al., 2004; Wood & Conway, 2006). Meaning making allows individuals to

integrate their memories and emotions into recognised and acceptable cultural patterns and prescriptions that help to consolidate and guide individual identity.

Singer and Blagov (2002) developed a coding manual that divided self-defining memory narratives into two groups: those that have explicit integrative statements and those that do not. Integrative narratives contain statements about what the memory has taught the individual about him/herself or the world; non-integrative memories do not contain such statements. Studies of integrative meaning in college students' self-defining memories have found that, more often than not, these self-defining memories do not contain integrative meaning statements. Only 28% of the self-defining memories provided by Blagov and Singer's (2004) participants, and 23% of self-defining memories provided by Thorne, McLean and Lawrence's (2004) participants, contained integrative meaning-making statements.

Hypotheses about meaning making in older adults' SDMs must be derived from related literatures on reminiscence and life review in the elderly, and particularly from research on the functions of reminiscence (e.g., Watt & Wong, 1991; Webster & McCall, 1999; Wong & Watt, 1991). Webster and McCall (1999) assessed reminiscence functions across adulthood in a study of 268 participants ranging from 18 to 88 years old. They found that older participants, compared to younger participants, showed more integrative tendencies and were more likely to engage in reminiscence that involved death preparation and the sharing of life lessons. Wong and Watt's (1991) research has shown that among older individuals, those who are ageing successfully¹ are significantly more likely to engage in integrative and instrumental reminiscence, but less likely to engage in obsessive reminiscences than unsuccessful agers. Labouvie-Vief (1982) asserted that the elderly are more likely than the young to possess and draw on a larger and time-independent store of knowledge that is accumulated through a lifetime, which in turn accounts for wisdom. Considering the aforementioned findings in conjunction with this assertion, it was proposed

¹ Successful ageing, in Wong and Watt's (1991) study, was operationally defined as "higher than the average ratings in mental and physical health and adjustment as determined by an interviewer and a panel of gerontological professionals" (p. 272).

that the SDMs of the elderly would be likely to reflect more integration than college student participants.

CONTENT

The content of SDMs refers to the themes that run through the memories. The themes in individuals' autobiographical memories are thought to reflect their current concerns and goals (Blagov & Singer, 2004; Singer, 2004b). Thorne and McLean (2001) developed a manual for scoring and classifying the content of self-defining memories. The authors classified the contents of the memories into the following categories: *life-threatening events, recreation, relationship, achievement/mastery, guilt/shame, and drug and alcohol*.

Thorne et al. (2004) assessed the dimensions of meaning and content using the self-defining memories of 168 college students between 18 and 23 years old. The authors found that the content of self-defining memories was represented as follows: relationship (44%), mortality (24%), leisure (17%), and achievement (13%). Relationship and mortality themes appeared to be most prevalent among this sample. Similarly, Blagov and Singer (2004) asked 104 undergraduate college students to write down 10 self-defining memories each. The authors found that relationships were the most prevalent (31%); achievement themes were present in 23% of the memories, and themes of threat were found in 15% of the memories, with the remainder of the memories distributed among several smaller categories.

No research has been done on the content of SDMs in older adults. However, one can draw on more general studies of personal memories in older samples compared to younger participants. De Vries et al. (1995) assessed 30 men and 30 women for themes of life review. Three age groups—young, middle-aged, and old—were asked to engage in life review. The results revealed that more older adults than younger participants discussed career issues, although younger adults did not discuss schooling more frequently than older adults. In addition, themes of births and deaths were more prevalent among the middle-aged group and themes of relationship were more prominent among the young and middle-aged groups. Additionally, as noted earlier, older individuals mentioned illness and injury more frequently in their memories. It

was anticipated, then, that older participants' SDMs would show fewer themes of relationship and more themes of life-threatening events than college student participants' memories.

THE PRESENT STUDY

Both groups of participants were given the same questionnaire in which they were required to write down five self-defining memories and rate them for vividness, emotional responses, and importance to the self. Older adults' and college students' self-defining memories were compared on the four dimensions of specificity, affect, integrative meaning, and content. In addition, participants filled out a subjective well-being inventory in order to assess any influences their general well-being might have had on their memory narratives and emotion ratings. In previous research on ageing and memory, researchers (e.g., Schlagman et al., 2006) have found it prudent to demonstrate that ratings of memory affect are independent of current mood or well-being effects.

Method

Participants. The college student sample consisted of 49 undergraduate students (44 women and 5 men) ranging from 17 to 22 years of age ($M = 18.93$) enrolled in an introductory psychology course at a small liberal arts college in the north-east United States. Students received course credit for their participation. In order to match the student sample with a comparable older sample so as to minimise differences in education, class, or ethnicity between the two groups, alumni of the same liberal arts college who were 50 years old and older were contacted. A total of 30 alumni participants (26 women, 4 men) completed the questionnaire. In addition, to supplement this sample and more closely match the number of college student participants, questionnaires were also given to and completed by seven older faculty members (both current and retired) and staff at the college (six women and one man, $M = 64$ years of age). Finally, five faculty members (four women and one man; $M = 59$ years old) from another nearby liberal arts institution, and two retirees (one woman and one man; $M = 79.50$ years old) who were living in a local senior citizens' community also completed the questionnaire. In total, 44 older participants

(37 women, 7, men) completed the study.² They ranged from 50 to 85 years old ($M = 64.63$). They averaged 17.98 ($SD = 2.69$) years of education. Based on evaluation of participants' protocols and evaluation of their subjective well-being ratings, there was no evidence of compromised cognitive functioning or clinical depression in the sample.

Measures. The measures were the *Self-Defining Memory Task* and *Self-Defining Memory Rating Sheet* (SDMRS) (Blagov & Singer, 2004). Participants were asked to write down five SDMs according to the standard self-defining memory instructions that describe the features of the SDM (e.g., vividness, emotionality, repetitive recall, importance, and linkage to other memories). Participants were instructed to draw on memories that are "important to an enduring theme, issue, or conflict" in the participant's life. The SDMRS is a 14-item scale that asks the participant to rate from 0 (not at all) to 6 (extremely) their emotions associated with each SDM at the time of recall. The emotions listed are *happy, sad, angry, fearful, surprised, ashamed, disgusted, guilty, interested, embarrassed, contemptful, and proud*. Participants also used the same 0–6 rating scale to indicate the vividness and importance of each memory.

Memory coding. All 465 SDMs from the sample were scored for specificity and integration, according to the Singer and Blagov (2002) manual, by two of the authors and a trained undergraduate rater who was blind to the hypotheses. Agreement among the three raters averaged 85%.

Scoring for content. Two undergraduate raters were trained to score the content of the memories according to *The Classification System and Scoring Manual for Coding Events in Self-Defining Memories* (Thorne & McLean, 2001). The manual's authors classified the contents of the memories into the following categories: life-threatening events, recreation, relationship, achievement/mastery, guilt/shame, drug/alcohol, and an "events not classifiable" category for memories that do not fit into any other category.

² A total of 10 additional participants (6 alumni, 1 Connecticut College staff, 1 faculty member from the nearby liberal arts institution, and 2 participants from a senior citizen's community) were omitted from the analysis because they either were not 50 years old (3 participants) or did not follow the questionnaire's instructions properly (7 participants).

The raters of the current study first were trained with 20 memories each, and subsequent agreement reached was 89%. The second author scored all of the memories independently and averaged 82% agreement with the raters.

The Subjective Well-Being Scale (SWBS). This scale, adopted from Diener and Emmons (1985), consisted of 18 items, and participants were asked to rate their emotions (with 0 indicating "not at all" and 6 indicating "extremely much") according to how they had felt in the last month. It proved highly reliable within the sample ($\alpha = .87$).

Procedure. College students received the memory survey in groups in a classroom. They provided demographic information and wrote down five self-defining memories. Using the Self-Defining Memory Rating Sheet, they then indicated the vividness and importance of each memory and recorded their current emotional responses to each memory. Participants also recorded how long ago each memory took place, and finished with the Subjective Well-Being Scale. The session lasted 60 minutes. Older participants were recruited from the alumni, emeriti faculty, and staff of the college, and through an alumnus who worked for a local senior outreach programme. Nearly 100 questionnaires were distributed to alumni during a college reunion event held at the campus. Participation was on a voluntary basis; no compensation was provided. The questionnaire was either handed or mailed to older participants, along with a covering letter containing directions for completing and returning the study materials. The contents of the questionnaire and the order of scales was identical to the one distributed to college student participants. Older participants returned 40% of the distributed questionnaires.

Results

Comparing the quality and intensity of SDMs in young and old samples. Compared to the college sample, older participants judged their memories to be significantly higher in vividness (5.42 vs 4.89), $F(1, 88) = 14.23$, $p < .001$, and importance (5.36 vs 4.73), $F(1, 88) = 13.37$, $p < .001$. Older participants recalled memories that were more distant from their current age ($M = 37.19$), than the college sample ($M = 5.50$), $F(1, 86) = 225.78$, $p < .001$. The average number of words ($M = 119.54$, older sample; $M = 113.35$, younger

sample) for each group was not significantly different.

Memory content. Contrary to predictions, the two samples did not differ in their life-threatening event memories ($M = 1.00$, older sample; $M = 1.00$, college sample, *ns*), and there was only a marginal difference in relationship memories with the younger sample providing a higher average number of these memories ($M = 1.76$ vs $M = 1.34$), $F(1, 88) = 3.20$, $p < .08$ (see Table 1 for content percentages for each sample).

Comparing specificity, affect, and integration. In order to examine the hypotheses related to specificity, affect, and integration, a MANOVA was conducted with age group (older vs younger) as the independent variable and memory specificity, affect (positive and negative), and integrative meaning as the dependent variables (Wilks' Lambda = .71), $F(4, 84) = 8.70$, $p < .001$. Univariate ANOVAs were conducted for each of these four dependent variables in order to examine each hypothesis. Mean comparisons are presented in Table 2.

Memory specificity. As predicted, older participants recalled significantly fewer specific memories across the five memories ($M = 2.27$) than their college counterparts ($M = 3.69$), $F(1, 88) = 17.12$, $p < .001$.

TABLE 1

Memory content percentages for older participants and college student participants ($N = 93$)

Content of memory	College student participants ($N = 49$)	Older participants ($N = 44$)
Life-threatening Events	20.5% (50)	21% (46)
Relationship Theme	34% (84)	27.5% (59)
Recreation Theme	7% (17)	8% (17)
Achievement Theme	23% (58)	32% (71)
Guilt Theme	7% (16)	5.5% (12)
Drug and Alcohol	0.5% (1)	0% (0)
Event not Classifiable	8% (19)	6% (13)

Percentages of memory content for the college student participants are based on a total of 245 memories. Percentages for the older participants are based on a total of 220 memories (there were occasional missing memories for the older sample).

Memory affect. To reduce the 12 emotion items from the SDMRS to overarching emotion factors, a principal components factor analysis with a varimax rotation was conducted. Two factors, one Positive and one Negative, emerged. The Positive factor consisted of *Happy*, *Proud*, and *Interested* ($\alpha = .71$). The Negative factor consisted of *Sad*, *Angry*, *Fearful*, *Shamed*, *Disgusted*, *Guilty*, *Embarrassed*, and *Contemptful* ($\alpha = .88$).

The Positive and Negative factors for the two samples were averaged across the five self-defining memories for each participant and values for each sample were compared. As predicted, older participants reported memories that on average were more positive ($M = 3.33$) than the college age participants' memories ($M = 2.53$), $F(1, 88) = 12.28$, $p < .001$. Additionally, the older participants reported memories that were on average less negative ($M = .86$) than the college student memories ($M = 1.40$), $F(1, 88) = 12.05$, $p < .001$.

Memory integration. Meaning-making statements were coded using the memory integration scoring system (Singer & Blagov, 2002) and totalled across the five memories. As predicted, older participants' memories on average included more meaning-making statements ($M = 2.29$) than the college students' memories ($M = 1.23$), $F(1, 88) = 8.81$, $p < .004$.

Controlling for subjective well-being. Since research has repeatedly demonstrated that older participants tend to show a positivity bias in mood and well-being, it is possible that the memory differences that were obtained could be attributed to a mood difference between the older and the younger samples. Although baseline mood for each sample was not assessed, participants did fill out the Subjective Well-Being Scale (SWB), which measured their overall well-being in the past month. Examining SWB for the two samples, there was indeed the expected positivity effect for the older sample (older sample $M = 4.15$; younger sample $M = 3.63$), $F(1, 90) = 10.93$, $p = .001$. In order to examine any potential confound from this well-being difference, a MANCOVA introducing SWB as a covariate was conducted with Age Group again as the independent variable and Specificity, Positive and Negative Affect, and Integration, as the dependent variables. This MANCOVA was significant, Wilks' Lambda = .75, $F(4, 83) = 7.00$, $p < .001$, indicating an overall difference between the two groups even when controlling for any variation in the groups with regard to SWB. Follow-up univariate ANOVAs

TABLE 2

Memory specificity, positive and negative memory affect, and integration in older participants versus college student participants (N=93)

	College students (N=49)		Older participants (N=44)	
	Mean	Standard deviation	Mean	Standard deviation
Memory *** Specificity	3.69	(1.45)	2.27	(1.79)
Positive *** Affect	2.53	(1.03)	3.33	(1.13)
Negative *** Affect	1.40	(0.84)	0.86	(0.60)
Memory Integration **	1.23	(1.51)	2.29	(1.87)

** $p < .005$. *** $p < .001$.

remained significant and showed little or no change with SWB effects removed. These additional analyses suggest that differences in memory affect, specificity, and integration were not simply due to overall well-being differences between the two samples.

Examining patterns of correlations for the two age groups. Tables 3 and 4 present the intercorrelations of Specificity, Affect, and Integration for the younger (Table 3) and older (Table 4) samples. In the younger sample, memory specificity is positively related to memory age and negatively related to integration. In other words, more specific memories tend to be less recent and less linked to meaning and insights for the younger participants. The older sample showed no similar significant relationships among Specificity, Affect, and Integration.

To examine if the large difference between the older and younger sample's correlations of Specificity with Integration ($r = .03$; $r = -.58$, respectively) was significantly different, a Fisher's r to z transformation was conducted. This resulted in a $z = 2.91$, $p < .005$, indicating that the younger sample did indeed show a significantly stronger relationship between Specificity and Integration than the older sample.

DISCUSSION

Although it has been consistently argued that self-defining memories play an important role in adults' narrative identity (McAdams, 1988, 1999, 2001; Pals, 2006; Singer, 2004b), previous research on these memories has been limited to young adults and adolescents. In contrast, this investigation targeted a sample of adults 50 years of age and older and compared their self-defining memories to those of a college student sample. By collecting five self-defining memories from each group, this study examined potential differences in the specificity, affect, meaning making, and content for each age group.

First, it should be noted that older participants engaged with the self-defining memory request with every bit as much gusto and thoughtfulness as the younger sample. Their memories were equal in length and actually received higher ratings in vividness and importance. In reviewing their memories' content, one sees clearly that they wrote about serious and meaningful topics involving relationships, achievements, educational milestones, child rearing, political events, illnesses, and deaths. Based on this initial sample, the preliminary conclusion, which corresponds

TABLE 3

Intercorrelations of memory age, specificity, positive and negative affect, and integration for college student participants (N=49)

	Specificity	Positive affect	Negative affect	Integration
Memory Age	.30*	-.16	.02	-.22
Integration	-.58**	.19	-.17	
Negative Affect	.14	-.39**		
Positive Affect	-.13			

* $p < .05$. ** $p < .01$.

TABLE 4
Intercorrelations of memory age, specificity, positive and negative affect, and integration for older participants ($N=44$)

	<i>Specificity</i>	<i>Positive affect</i>	<i>Negative affect</i>	<i>Integration</i>
Memory Age	.18	-.21	-.01	.17
Integration	.03	-.07	-.15	
Negative Affect	.06	-.31*		
Positive Affect	.15			

* $p < .05$. ** $p < .01$.

with clinical case observations (Singer, 2001, 2004a) seems to be that the self-defining memory task can be meaningfully extended to an older population.

Specificity and age group

As hypothesised, older participants did indeed recall significantly fewer specific memories across their five memories than the college sample. Similar to previous studies (Blagov & Singer, 2004; Singer & Blagov, 2002; Singer & Moffitt, 1991–92; Wood & Conway, 2006), the college student sample recalled 83% specific memories. The older sample recalled only 44% specific memories, and actually showed a preference for more summarised self-defining memories.

This finding is congruent with previous research on autobiographical memories (Levine et al., 2002) that has demonstrated a diminished tendency in older individuals to recall episodic memories along with an overall preference for semantic memories. Similarly, Winthorpe and Rabbitt (1988) and Holland and Rabbitt (1990) demonstrated a bias towards more general memories in older individuals, as well as reduced recall of memory details. Recent brain-imaging studies have identified neural changes in the hippocampal region that are associated with changes in recall capacity for specific event memories in older individuals (Maguire & Frith, 2003). Older individuals show more diffuse and bilateral activation in the hippocampus when attempting to recall specific memories while younger participants show only left hippocampal activation. Older and younger participants look identical in activation when recalling semantic memories.

Whatever the neural underpinnings of the overgeneral bias in the elderly, one result of this memory effect is that the older participants tended to make linkages across time periods and lend a greater degree of abstraction and thematic generalisation to their memories. For example,

here is a typical summarised memory from an older participant:

Meeting my husband – it is because of him that I am as strong as I am today. He was from the moment I saw him my knight in armor. He allowed me to be me, helped me in down times, listened to my angry rage, knew how to ignore me when he knew I needed space. He put me through hell at times but from all those times I learned. All the struggles brought me to the contentment I feel now and to realize that meeting him was worth it.

It should be noted again that despite the summarising tendency in older participants, their memory narratives were no shorter than the college students' accounts. This is important to mention since it rules out an "effort" or "fatigue" explanation for overgeneral memories. Older participants provided memories of reasonable length, but simply employed a different recall practice. Additionally, as Piolino et al. (2006) have suggested, older adults' capacity for retaining well-rehearsed, vivid, and thematically critical memories from across the lifespan appears to remain intact, despite the tendency towards greater numbers of more general memories. The fact that the older participants gave higher importance ratings to their memories than the younger sample also raises the possibility that, with increasing distance from the memories, older adults are better able to distinguish the most pivotal experiences that have helped to define their enduring sense of identity.

One negative consequence of the older adults' generalising tendency is that they may lump together experiences that are actually more nuanced or differentiated than such summaries would suggest. Although the capacity to connect several discrete experiences together aids in efficiency of processing, the failure to engage inhibitory mechanisms that allow for identification of specificity may also make older people

more vulnerable to cognitive rigidity and stereotyping (von Hippel, Silver, & Lynch, 2000).

Another consideration worth raising is the degree to which the older participants' summarising bias might play a mood-regulatory role. It is possible that older individuals are more likely to employ protective strategies that slow detailed recollection and allow for emotional modulation of more specific and affectively intense memories (especially negative ones), a practice that may cost them some emotional highs but may also stave off the vivid experience of particularly distressing recollections.

Affect and age group

Older participants rated their memories on average with a higher degree of positive affect than the college student sample. Similarly, the older participants saw their memories as generating lower levels of negative affect. Although only 4% of older participants had memories in which their overall negative affect equalled or exceeded their positive affect ratings, 35% of the college sample had memories in which their negative ratings equalled or outweighed the positive ones. These findings fit within the larger literature on autobiographical memory in older people, which has consistently documented that older people recall fewer emotionally negative memories and at least as many emotionally positive memories as younger people (Berntsen & Rubin, 2002).

Considering narrative identity, there are some important implications that emerge from older participants' tendency to recall more positively toned self-defining memories. The ability to see one's self and one's life experiences in a positive light speaks to the lower levels of Neuroticism and higher levels of Agreeableness that seem to characterise adult development over the lifespan (McCrae et al. 1999). As the following memory suggests, many older participants seemed to have found ways to make their peace with past struggles and to accentuate the more uplifting and redemptive aspects of their memories:

The death of my youngest son. He was 20 years old. He was killed in a motorcycle accident. The memory of the police coming to the house and subsequently having to drive and tell his sister and his grandparents continues to haunt. His death, due to his drinking, led me to seek

my current profession. And, keeping him in mind I believe I have connected with numerous people but especially younger men with a clearer understanding of their issues. This has made me a better person.

In contrast, younger participants are still encountering many unresolved questions with regard to their own autonomy and competence, as well as their desirability within relationships. The ability to take a long view and put personal challenges in perspective may grant older individuals greater opportunity to emphasise the positive and filter out the more negative emotion from their recollections. Younger participants may still be in the throes of their late adolescent *sturm und drang* and not able to distance themselves from more negative emotion about their remembered experiences.

As with their tendency to produce summary rather than specific memories, older participants' positivity bias may serve a protective purpose and allow them to regulate their emotional lives in order to avoid excessive rumination or distress. Schlagman et al. (2006) have proposed that the decrease in negatively toned memories may reflect a repressive coping style that minimises negative emotion.

One issue that was not fully resolved by the current research is whether the difference in the two groups' affective responses to their memories is a function of their current mood states or the actual emotional tone of the memories themselves. For example, younger participants' more negative response to their memories might be due to higher levels of current stress, resulting in more negative evaluation of their previous experiences, whether or not the actual memories are in and of themselves negatively toned. Following Schlagman et al. (2006), future research might seek to take baseline mood information for both older and younger samples and then control for these mood ratings in examining memory affect ratings. In an effort to address this concern in the current study, subjective well-being was introduced as a proxy method of measuring overall mood state. Despite its role as a covariate, the two groups still showed significant differences for both positive and negative affective responses to memories, as well as for specificity and integration. Nevertheless, future studies would do well to include more sensitive and state-oriented measures of mood.

Integration and age group

Older participants' memories on average included more explicit meaning-making statements than the college students' memories. A total of 43% of all older participants had three or more integrative self-defining memories out of five total self-defining memories, compared to only 21% of their college counterparts. This finding emerged even though older participants' memories were on average more than two decades older than the younger sample. This demonstration of the strong linkage between participants' age and the presence of integrative statements helps to shed light on previous findings regarding the prevalence of integrative statements in self-defining memories. Blagov and Singer (2004) found only 28% of self-defining memories contained meaning-making statements, while McLean and Thorne (2003), using a similar meaning-making coding system, found only 23% of their participants displayed statements of lessons or insights in their memories. These relatively low percentages, compared to the older participants' 43%, suggest that younger individuals may simply lack the requisite distance from their memories to develop a meaning-making perspective. The fact that younger participants, compared to the older sample, show a significantly stronger relationship between specificity and integration in a negative direction also supports this idea. It may be that younger individuals' specific memories have not yet been linked to thematically similar experiences and therefore lack much opportunity for integration or lesson learning. The benefit of more time elapsing since an event occurred is that individuals have more freedom to see the overlapping themes and linkages among memories, yielding both greater numbers of summary memories and more integration. Since older individuals can sift through a larger store of memories that include recent and more distant ones, they also have more freedom than younger individuals to connect lessons to both specific and summarised experiences, meaning there is a less rigid relationship between specificity and integration in this older group.

These speculations about the role of participants' age in integrative tendencies could point to a cognitive difference between old and young, but it might also be a simple function of how much time the memory has had to foster meaning in

individuals' life stories. One way to test this possibility is to ask older and younger participants to recall memories from the same number of years ago (e.g., 2 years, 5 years, 10 years ago) and then look at their relative rates of meaning making. With memory age controlled, it is possible that one might not see differences for the two groups. If such a finding should obtain, then it would encourage some reconsideration of researchers' tendency to see meaning making or wisdom as a cognitive advantage that older individuals possess, rather than simply a function of increased access to older memories (Butler, 1963; Webster & McCall, 1999).

Content and age group

Contradicting the last hypothesis regarding memory content differences for the two samples, the two groups did not differ in memories involving illness or death and only marginally differed in relationship-focused memories. A total of 34% of the college sample memories highlighted relationship themes, which was similar to the 29% for Blagov and Singer's (2004) college participants, although considerably less than the 44% noted by Thorne et al. (2004). The current results failed to replicate De Vries et al.'s (1995) findings that themes of births and deaths were more prevalent among older adults and themes of relationship were more prominent among younger participants. Since the age cut-off for our older participants was only 50, it is possible that study of a more elderly sample might have revealed a greater emphasis on physical health and mortality.

Limitations of the study

Despite the generally confirmatory findings in this study, there were several limitations. Given the time-consuming nature of the memory task (i.e., writing out and rating five memory narratives, as well as filling out several other questionnaires), it was difficult to find a large number of older participants willing to complete the whole study. Additionally, since the study sought to match the backgrounds of the older and younger samples by drawing primarily on students and alumni from the same college, it was forced to draw on many all female alumni classes that pre-dated the college's admission of males in

the late 1960s. The older primarily female sample was then matched to a primarily female college student sample. Future studies would clearly benefit from larger and more diverse samples of older participants.

Another potential limitation of the study is that the two samples filled out the questionnaire under different circumstances. Older participants received the questionnaire in the mail or in person and filled it out on their own. The college sample filled out the questionnaires through group administration in a classroom. Given that some of the older participants misunderstood the questionnaire instructions and generated incomplete protocols that had to be withdrawn from the study, it is clear that future projects should be conducted in the presence of the researcher and/or more explicit and step-by-step instructions should be provided. Regarding completed questionnaires, the difference in administration did not lead to marked differences in the content or length of the memories and would therefore be unlikely to influence the affective quality or meaning of the memories. Still, future investigations would limit any potential confound by making sure to employ the same procedure for both groups.

Conclusion

In the emerging literature on narrative identity (McAdams, 1999; Pals, 2006; Singer, 2004b), self-defining memories have been identified as critical units of self-understanding that help to crystallise individuals' enduring goals and central conflicts. However, previous to this investigation self-defining memories had only been collected and analysed experimentally in adolescent and young adult samples. This study has supported findings from previous autobiographical memory research regarding the increased generality and positive affect of older individuals' memories.

Understanding the propensity of older individuals to generate more positive and general memories offers an important baseline for clinicians who seek to assess older individuals through collection of personal memories. Similarly, the connection between age and meaning making suggests that older individuals might find the task of reflecting on their memories a meaningful and satisfying endeavour in counselling or psychotherapy. Life review therapy for individuals and groups of older adults has become an

increasingly important modality for treating depression in the elderly (Serrano, Latorre, Gatz, & Montanes, 2004; Watt & Cappeliez, 2000).

By expanding the study of self-defining memories across the entire lifespan, researchers in narrative identity are likely to develop a more accurate and complicated picture of how individuals use remembered experience to construct a coherent narrative identity (see Baddeley & Singer, 2007). It is somehow comforting to learn that individuals who are moving into the latter part of this narrative process are likely to make more connections across their life experiences, reflect more positively over these experiences, and find greater meaning in the memories that they choose to define the self.

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