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Recalling Youth: Control Over Reminiscence Bump Events Predicts Life Satisfaction in Midlife

Hsiao-Wen Liao[1], Susan Bluck[2], and Judith Glück[3]
[1] School of Psychology, Georgia Institute of Technology
[2] Department of Psychology, University of Florida
[3] Department of Psychology, University of Klagenfurt

The reminiscence bump phenomenon is well established: adults in the second half of life remember more events from their youth than from other periods. Almost no research has focused, however, on the adaptive value of the reminiscence bump for adult well-being. Grounded in a life story approach, this research examined whether perceiving that one had control over events from the bump period (compared with other past periods and also one's present life) was related to current life satisfaction. We also investigated whether chronological age moderated these associations. Participants ($N = 470$; 49–90 years; 59% women) were part of the European Study on Adult Well-being. They briefly reported up to 15 personally significant events from across their entire life. They indicated age at occurrence and rated their perceived control for each reported event. Well-being was assessed with a standard measure of current life satisfaction. Perceived control over the present and covariates including memory valence and current circumstances (i.e., financial security, social living arrangement, number of medications, and mental health) were also measured. Findings indicate that greater perceived control over reminiscence bump events, but not other past events, predicted current life satisfaction in adults in late midlife (i.e., ages 49–60). In contrast, greater present-focused perceived control was associated with life satisfaction in those 62 years and older. The findings are discussed in the context of the life story account of the reminiscence bump. Understanding the adaptive value of recalling one's personal past may require attention to individuals' current life phase.

Keywords: life-span development, life satisfaction, perceived control, reminiscence bump, positive aging

The reminiscence bump refers to preferential memory for the events of one's youth. Starting in midlife, when people recall their past, they remember disproportionally more autobiographical events from late adolescence and young adulthood than from other times in their life (Rubin et al., 1998). Prior research on the reminiscence bump has focused almost exclusively on why this age-frequency distribution occurs. There are several plausible theoretical accounts (e.g., identity formation; Conway & Haque, 1999; life story; Glück & Bluck, 2007; cognitive ability; Janssen & Murre, 2008; life script; Rubin & Berntsen, 2003; life chapter transitions; Steiner et al., 2014). In this article, however, we introduce a new direction for aging research on the bump. Instead of examining why the bump occurs we focus on the potential adaptive value of recalling events from the bump period in the context of positive aging. Specifically, we ask: might the reminiscence bump play a unique role in individuals' well-being in later life?

Remembering Life Events From the Reminiscence Bump Versus Other Past Periods

Theoretically, the idea that remembering one's personal past may serve adaptive psychosocial functions is well accepted in the autobiographical memory literature (e.g., Bluck, 2003; Fivush, 2011; Pillemer, 2001). The innovative aspect of this research is to apply this functional framework to the bump phenomenon. We know of no prior research that has empirically tested whether recall of events from the bump period, compared with other life periods, relates to well-being across the second half of life. A study by Berntsen et al. (2011) comes closest. They assessed the relation of individuals' views of positive and negative life events to well-being in older adults. Perceiving positive events as central to one's identity was related to current happiness. Given that those positive events also formed a reminiscence bump, their findings suggest that bump events may be related to well-being. The present study built on that work but, by design, had the advantage of explicitly assessing the relation between recalling bump events and older adults' well-being and doing so in comparison with other past events (i.e., non-bump past events).

To begin this line of research on how characteristics of remembered bump events may relate to well-being, we focused on individuals' perceived control. Specifically, we investigated whether sensing that one had control over life events that occurred

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Hsiao-Wen Liao https://orcid.org/0000-0002-0303-3313
Judith Glück https://orcid.org/0000-0001-8923-9306
Hsiao-Wen Liao is now at the School of Psychology at Georgia Institute of Technology.
Preliminary findings of this study were presented at the 68th annual scientific meeting of the Gerontological Society of America in November 2015. Data used in this study can be retrieved from https://osf.io/69kzn/.
Correspondence concerning this article should be addressed to Hsiao-Wen Liao, School of Psychology, Georgia Institute of Technology, Atlanta, GA 30332, United States. Email: liao@gatech.edu

during one's bump period (i.e., young adult years), compared with other past periods, was related to current life satisfaction. We posit that the occurrence of a life event can be under one's control to a greater or lesser extent (e.g., deciding to move out of one's home) but that individuals also likely vary on the extent to which they perceive, in retrospect, that they had control over the event. We examined how much individuals sense that they made happen important events in the bump and nonbump periods and the relations of such perceptions to well-being. Sense of control was the focus for two reasons. The first is that Glück & Bluck (2007) found that perceived control distinguishes bump from nonbump events beyond the effect of event positivity. The contribution of Glück and Bluck's (2007) study showed that only high-perceived control events formed a bump. Their finding extended existing literature that has made it clear that the bump only occurs for positive, not negative, events (for a review, see Koppel & Rubin, 2016; Munawar et al., 2018). The current study, in contrast, contributes by examining the relation of greater perceived control over reminiscence bump events to independently assessed well-being (i.e., life satisfaction). The second reason that encourages us to focus on perceived control is that it is important in the context of positive aging. Researchers have documented its centrality to well-being in late life (e.g., social engagement; Curtis et al., 2018; life satisfaction; Gerstorf et al., 2014; physical and mental health; Lachman & Weaver, 1998; for a review, see Lachman, 2006).

Our postulate that perceived control over bump events may be uniquely related to the fact that how satisfied individuals feel with their lives is based on prior research concerning characteristics of the bump. There is evidence that compared with events from other past periods, reminiscence bump events are central to identity (for a review, see Habermas et al., 2015) and more likely to be normative milestones that follow societal life scripts (Berntsen & Rubin, 2002). Bump events are also self-rated as more biographically meaningful (Demiray et al., 2009) and identity relevant (Rathbone et al., 2008) than other past events, and stimuli from the bump years are judged as more desirable (Ju et al., 2016). Taken together, events occurring in the bump period are often personally meaningful events that are important in setting up one's adult identity and trajectory. It seems reasonable to posit that how older individuals recall this particular part of their past, the way they recall bump events today, may link to their current satisfaction with life.

Regarding why perceived control over bump events should link to current life satisfaction, we grounded our thinking in the life story literature. Research over the past two decades has provided evidence that autobiographical remembering involves reinterpreting past events from one's current vantage point in life (Bluck & Habermas, 2000; Conway et al., 2004; see also classic research on scripts, schemas; Schank & Abelson, 1977). The way that individuals reflect on their personal past has been associated with a range of well-being outcomes (for a review, see McAdams & McLean, 2013). In terms of the relation to life satisfaction in particular, we consider findings from prior research on the reminiscence bump that events that happened in one's youth are mostly age-graded normative life events. Individuals tend not to deviate from one another to a great extent in terms of their recalled bump events (e.g., falling in love, getting married, having children, completing education, first job; Berntsen & Rubin, 2002; Glück & Bluck, 2007). These normative life events involve individuals making choices. As such they can be within the individual's control (e.g., choosing to join the army versus get a job at 21, staying single versus getting married at 23). Despite that, individuals likely vary in the extent to which they feel, particularly in retrospect, they really were in control (e.g., perceiving one did choose to join the army but it was because they thought they had no other options; perceiving that one did choose to marry but it was due to an unplanned pregnancy). Importantly, the extent to which people feel they had control over an event is likely interpreted and reinterpreted in the years after the event. From the vantage point of recall in older adulthood, those who look back on these milestones with a view of themselves as having been agentic and having acted volitionally (i.e., higher perceived control) likely feel more satisfied with their lives. That is, how significant events from the bump period are interpreted years later, in terms of one's feeling of being in control of these events, should have implications for one's evaluation of the life lived (i.e., beyond the forthright effect of how positively life events are viewed).

Past- and Present-Focused Control and Life Satisfaction: The Moderating Role of Age

While the focus of this work is on the personal past, we realized that, in old age, present-focused perceived control may be more strongly related to life satisfaction than is having a sense of control over events that occurred in one's youth. The conceptual model of temporal control (Frazier et al., 2011, 2012) suggests that control over events from different time periods (e.g., personal past, present) has distinct associations with adaptive outcomes. Frazier et al. (2011) found, for example, that having higher present perceived control is related to lower-stress cross sectionally and longitudinally (i.e., more so than past- or future-focused control).

The life-span developmental literature also suggests that present-focused control may become increasingly critical with advancing age. For example, socioemotional selectivity theory (Carstensen, 2006) maintains that people become more present oriented as a function of the shortened future time horizon that comes with age and that older people gain psychologically from this present focus. From the perspective that the gain–loss dynamics become less favorable in later than earlier life (e.g., fourth age; Baltes & Smith, 2003), focusing on the present to manage pressing circumstances may become increasingly essential as people age. These theoretical tenets regarding present-focused control have been borne out in empirical work. The benefits of perceived control (usually assessed as present focused) vary by age (Infurna et al., 2011; Lachman & Andreoletti, 2006; Lang & Heckhausen, 2001; Windsor & Anstey, 2008) with increasing importance to well-being across midlife and beyond. For example, Lang and Heckhausen (2001) found that perceived control was related to life satisfaction across adulthood (i.e., ages 40–90) but the strongest association was for the oldest group (i.e., ages 70–90).

Increased age may, therefore, attenuate the association between past-focused perceived control and life satisfaction. That is, there may be age differences across the second half of life in the relative importance to life satisfaction, of perceived control over past events, and perceived control over present circumstances. As such, we tested the moderating role of age in the associations between perceived control over bump and nonbump past periods and life satisfaction, as well as age effects on the relation between present-focused perceived control and life satisfaction.

The Current Study: Hypotheses

The present research is grounded in previous literature on the reminiscence bump and on control beliefs in later life. Across the second half of life, the adaptive value of past-focused perceived control was expected to become less salient, while present-focused perceived control was expected to become more important, to life satisfaction. Specifically, we hypothesized (i) perceived control over reminiscence bump events to be more strongly related to current life satisfaction than perceived control over events from nonbump past years, (ii) this effect to be weaker with increased chronological age (i.e., moderation), and (iii) present-focused perceived control to be a stronger predictor of life satisfaction for those in later than earlier life phases.

Method

Participants

This study was approved by the Institutional Review Board at the University of Florida (IRB201900359) to examine data from the European Study on Adult Well-being (ESAW), a large-scale project funded by the European Union. The ESAW was conducted during 2002 and 2003. A representative sample was recruited from Austria, Italy, Luxembourg, the Netherlands, U.K., and Sweden. Data in the current study were collected by Austrian partners at the University of Vienna (Weber et al., 2005). All participants received standardized information about the study and orally consented to participate. Data used in this research were drawn from a subsample of 1500 ESAW participants who were invited to complete additional measures at home. About 1200 agreed and just over 50% completed and mailed back those additional measures ($N = 765$). There were no substantial differences in gender or self-rated health between those invited and those who completed the measures of interest. Those who completed were slightly younger and more likely to live in urban areas (see Glück & Bluck, 2007).

In line with the study goals, this study included participants ($N = 470$; age range: 49–90; 52.6%, 61 years or older) who completed the Life Story Matrix (i.e., providing control ratings of remembered life events) and the Life Satisfaction scale (see "Measures"). The sample size met the power criterion for regression-type analyses of having an absolute minimum of ten participants per predictor. Educational background was roughly similar for the cohorts of middle-aged and older participants in the sample. That is, 31.8% of middle-aged participants (ages 49–60) had completed primary or secondary education, 34.5% had completed tertiary-/high-school education, and 22.4% had a college or graduate education. For older adults (ages 61 and older), 45.7% had completed primary or secondary education, 31.2% had tertiary/high-school education, and 13% had completed college or graduate education. About 10% of the participants did not provide information about educational background (10.1% for midlifers and 10.9% for older adults).

Measures

Life Story Matrix

Participants were instructed to look back over their entire life and list up to 15 personally important life events. They were asked to provide a phrase from one to five words to encapsulate each event. For each event they then reported their age at the time of event, their perceived control over the recalled event, and its valence. Several other ratings on the Life Story Matrix were completed that were not used in the current study, including the extent to which the event influenced self-development. Other self-report measures in the larger study included wisdom, regret, functions of autobiographical memory, and personal life philosophy.

Glück & Bluck (2007) found a reminiscence bump in the age 21–30 decade. As this study also used the same ESAW data, we categorized that span as the bump period. Recalled events outside the 21–30 age bin were categorized as nonbump events. Descriptively, participants reported an average of 2.37 bump events ($SD = 1.33$) and 5.89 nonbump events ($SD = 3.53$). Of nonbump events, an average of 2.64 events ($SD = 2.12$) occurred before the bump window and 3.19 ($SD = 2.44$) events occurred after the bump window.

Perceived Control Over Bump and Nonbump Events. Participants indicated their sense of control over each event they listed, providing ratings one event at a time, on a 5-point scale (1 = none, 5 = very much). The stem question was: Some events you bring about yourself and you feel you can control what is happening. Other events happen without your influence and you feel you have little control over them. How much was this experience under your control? Mean scores for perceived control over all reminiscence bump events (i.e., age at event: 21–30) and all nonbump events (i.e., age at event: all other years) were calculated (see Table 1). Higher scores indicated higher perceived control over events from that past time period. Perceived controls over bump and nonbump events were moderately correlated, $r(455) = 0.26$, $p < .001$.

Memory Valence. Participants were also instructed to report valence for each event on a 5-point scale (1 = negative, 5 = positive). To assess the extent to which the past was recalled positively overall, we calculated mean valence scores across all nominated events. Consistent with prior research on the reminiscence bump, findings from a paired sample t test showed that bump events were rated as more positive ($M = 4.17$, $SD = 1.14$) than nonbump events ($M = 3.27$, $SD = 1.11$), $t(456) = 13.73$, $p < .001$. Note, however, that the average rating of nonbump events was also positive as per the labels on the 5-point scale. Nonbump events from before the bump (i.e., before age 21) and after the bump period (i.e., after age 30) did not differ in valence (Ms = 3.24, 3.34, SDs = 1.29, 1.31), $t(371) = -1.08$, $p = .28$).

Present-Focused Perceived Control

Four items from Paulhus's (1983) measure of personal control were used as a proxy for present-focused perceived control. Though a present timeframe was not explicit, ratings can be assumed to reflect current perceptions. The four items assessed the extent to which individuals are in control in various ways (i.e., when I make plans I am almost certain to make them work; I can learn almost anything if I set my mind to it; when I get what I want it's usually because I worked hard for it; my major accomplishments are entirely due to my hard work and ability). Higher mean scores indicated higher perceived control (1 = strongly disagree, 7 = strongly agree). These four items (Cronbach's $\alpha = 0.70$) are conceptually comparable with the variables assessing perceived control over past

Table 1
Correlations Among All Study Variables

		M (*SD*)	1	2	3	4	5	6	7	8	9	10
1.	Age	62.68 (9.08)	1.00									
2.	Gender	0.59 (0.49)	−.01	1.00								
3.	Financial security	1.39 (0.59)	−.02	−.17**	1.00							
4.	Social living arrangement	0.71 (0.45)	−.16**	−.32**	.19**	1.00						
5.	Number of medications	1.85 (1.98)	.35**	.17**	−.23**	−.16**	1.00					
6.	Mental health	2.02 (0.72)	−.18**	−.17**	.23**	.10*	−.29**	1.00				
7.	Memory valence	3.71 (0.86)	−.17**	−.18**	.17**	.23**	−.21**	.11*	1.00			
8.	Bump perceived control	3.88 (1.15)	−.14**	−.02	.07	.19**	−.09	.05	.44**	1.00		
9.	Nonbump perceived control	3.03 (1.04)	−.08	−.12*	.03	.14**	−.09	.11*	.39**	.26**	1.00	
10.	Present perceived control	5.79 (0.83)	−.08	−.14**	−.01	.08	−.12*	.32**	.04	.17**	.10*	1.00
11.	Life satisfaction	11.2 (3.47)	−.16**	−.16**	.32**	.27**	−.33**	.41**	.26**	.19**	.12*	.23**

Note. Gender: women = 1, men = 0; social living arrangement: 1 = lived with spouse or significant other, 0 = did not live with spouse or significant other. According to the results of two-way ANOVAs (age group by educational level), educational level showed no main effects or interaction effects for perceived control over bump or nonbump events or present-focused control (*p*s ranging from .11 to .99).
* $p \leq .05$. ** $p < .01$.

events. Original-scale items attributing success to luck were excluded (e.g., people get ahead just by being lucky).

Life Satisfaction

Eight positively phrased items (Neugarten et al., 1961) assessed the extent to which participants felt satisfied with their life (i.e., things seem better than I thought they would be; I have had more good luck in life than most people I know; I am just as happy as when I was younger; these are the best years of my life; the things I do are as interesting to me as they ever were; as I look back on my life, I am fairly well satisfied; I make plans for what I will be doing a month or a year from now; I have received what I expected out of life). Items were rated on 3-point scales (0 = disagree; 1 = not sure; 2 = agree). Composite scores were created with higher scores indicating greater satisfaction. Internal consistency was acceptable (Cronbach's $\alpha = 0.72$).

Control Variables

As our main interest was to examine the unique effect of perceived control over reminiscence bump and nonbump events on life satisfaction, memory valence was included as a covariate. Gender and current circumstances were also included as covariates. Current circumstances included a snapshot of social living arrangements, financial security, number of medications (i.e., as an indicator of physical health), and mental health. Social living arrangement was measured by whether participants live with a spouse or significant other (0 = no; 1 = yes). Financial security was assessed by perception of how well financial resources meet current needs (0 = poorly; 1 = fairly well; 2 = very well). The number of medications being taken to manage each of a list of 20 illnesses was calculated (0 = no; 1 = yes; e.g., arthritis, heart problems, pain, circulation, diabetes, ulcers, and seizure). Higher scores indicate that individuals were managing more health issues. Mental health was measured by reports of perceived mental and emotional health (0 = poor to 3 = excellent). Mean scores were used for all covariates.

Procedure

The complete ESAW battery included questionnaires assessing life satisfaction, resources, activity and social engagement, and health (for further information on ESAW, see Ferring et al., 2004). Participants completed the ESAW questionnaires in person, in one or two sessions as needed, with a trained interviewer. At the end of that interview, participants who experienced no difficulty completing the main ESAW battery were introduced to the Life Story Matrix and invited to complete it at home and mail it in. They were provided with a stamped and preaddressed envelope.

Results

For intercorrelations of all study variables, see Table 1. Perceived control over bump and nonbump events and present-focused perceived control were correlated with life satisfaction. All covariates including memory valence were associated with life satisfaction. Both perceived control over bump and nonbump events positively correlated with memory valence. Hierarchical regression analysis was conducted to identify the unique variances explained by the main variables of interest. As per hypotheses, we compared standardized regression coefficients of perceived control over reminiscence bump events and nonbump events in predicting life satisfaction. We also tested the moderating role of chronological age in the associations between perceived control variables and life satisfaction. This allowed comparison of the relative relation of past-focused and present-focused perceived control to life satisfaction.

In Step 1, age and the quadratic term for age were included as predictors. We included the quadratic age term because past research (Lang & Heckhausen, 2001) found a quadratic effect of age on life satisfaction. In Step 2, covariates including gender, social living arrangement, financial security, number of medications, and mental health were added. Past research has already documented a clear link between memory valence and well-being outcomes (e.g., Speer & Delgado, 2017). Given that we were interested in the unique effects of past-focused perceived control, memory valence was included as

a covariate, not a moderator. As such, in Step 3, memory valence, perceived control over bump events, perceived control over nonbump events, and present-focused control were entered. In Step 4, interaction terms for age and the perceived control variables were included. To avoid collinearity, age and variables of perceived control were centered. Life satisfaction was the criterion.

In terms of our main study hypotheses, the final model in Table 2 indicated that perceived control over reminiscence bump events interacted with age to predict life satisfaction ($p = .05$) but perceived control over past events outside the bump did not (i.e., no significant main or interaction effects). The main effect of present-focused control was also significant and modified by age ($p < .05$). All the interaction terms explained an additional 1.5% of the variance in life satisfaction, $F(3, 410) = 3.06$, $p < .05$. We used the Johnson–Neyman technique (Johnson & Fay, 1950) embedded in Hayes's (2012) macro to identify regions of significance for these two perceived control variables that showed effects. Results indicated that the positive effect of perceived control over bump events on life satisfaction was significant among participants aged 49–60 (about 43.25% of the participants), with unstandardized coefficients getting smaller with advancing age within the age range (e.g., aged 49: $B = 0.55$, $SE = 0.24$, $t = 2.31$, $p = .02$; aged 60: $B = 0.29$, $SE = 0.15$, $t = 1.97$, $p = .05$). Perceived control over bump events was unrelated to life satisfaction in those whose age was 61 and older (i.e., 57.75% of participants, $p > .05$). See Figure 1 for an illustration of this diminishing effect by age (i.e., one standard deviation lower than sample mean, sample mean age, and one standard deviation higher than sample mean).

The opposite pattern was found for present-focused perceived control: it correlated with better life satisfaction among individuals who were age 62 and older (about 41.19% of participants). Identified regions of significance showed that the positive effect of present-focused perceived control on life satisfaction was stronger in adults in later than in earlier life phases (e.g., aged 62: $B = 0.35$, $SE = 0.18$, $t = 1.97$, $p = .05$; aged 72: $B = 0.73$, $SE = 0.25$, $t = 2.91$, $p = .004$; aged 90: $B = 1.48$, $SE = 0.55$, $t = 2.67$, $p = .001$; see Figure 2). Note that these effects remained with current circumstances and memory valence held constant. Though small, the findings indicated the relative importance of perceived control over bump events, as compared with nonbump events, in relation to life satisfaction. Findings also indicated differential patterns for past-focused control over bump events and present-focused control across the second half of life.

Discussion

The presence of the reminiscence bump is a robust finding in the memory literature. Adopting a functional approach, the current study investigated the adaptive value of this preferential retrieval for events from one's youth. We found that perceived control over reminiscence bump events, but not other past events, predicted life satisfaction in late midlife (i.e., aged 49–60). The role of present-focused perceived control was more salient across later life, predicting life satisfaction among individuals over 61 years of age. These findings held when several predictors of life satisfaction, and memory positivity, were taken into account.

Below we discuss these findings in terms of the importance of reminiscence bump events, relative to nonbump events, in building cornerstones of a personal life story and, subsequently, how this life story perspective may require simultaneous considerations of age-related changes across the adult life-span.

Adaptive Value of Memories From the Reminiscence Bump

Our data suggest that sensing that one had control over events from the bump period of life is adaptive, in terms of greater life satisfaction. This makes sense given that, compared with other periods of the personal past, the bump period represents an important life phase when individuals establish biographical identity (Erikson, 1959), develop personal agency (McAdams, 2013), strive for gains (Ebner et al., 2006), and achieve developmental milestones (e.g., Conway & Holmes, 2004). Memories from this period are self-definitional (Rathbone et al., 2008) and help to maintain self-continuity (Wolf & Zimprich, 2016). Psychologically and socially, when individuals look back on the bump years, they are recalling developmental milestones that are anchors in their life story (Glück & Bluck, 2007).

Our findings show that the relation of perceived control over one's past to life satisfaction holds for the reminiscence bump period but not for other past periods. Looking back on one's youth as a time when one took control, forged ahead to develop, and achieved life goals may comprise an agentic interpretation of the life lived thus far, leading to life satisfaction. That is, in evaluating life satisfaction (e.g., as I look back on my life, I am fairly well satisfied), adults who sense that they were in control of important events, particularly in their youth, may be able to give themselves credit for their youthful mastery over life milestones. In contrast, feeling that significant events in one's youth unfolded more haphazardly (i.e., lower perceived control) likely prevents the individual from looking back with a sense of agency, about having "made it happen." We consider that perceived control ratings given years later is not necessarily the same as perceived control at the time the event occurred. If these two perceptions were equivalent, the pattern should also hold for control over nonbump past events. That said, the study would have benefited from having longitudinal ratings of control at the time of events and then again, decades later, in the second half of life.

Contrasting Age Effects: Reminiscence Bump-Focused and Present-Focused Control

The adaptive value of perceived control over bump events, however, applied to adults in midlife but not those in later life. This may be best interpreted in relation to the finding that present-focused perceived control was more strongly related to life satisfaction for the young–old, old–old, and oldest–old than individuals in midlife. We consider that these age-differential effects may be understood in terms of the increased salience of the present in late life as compared with the temporal focus on balancing of one's past and present that first occurs in midlife (Neugarten, 1979) when life's finitude just begins to enter awareness.

In midlife, individuals gradually realize that time left to live is shorter than life already lived (Strough et al., 2016). They become aware of life's shifting time horizons between past and future (Jung, 1933) and this time perspective may prompt them to review the life lived thus far. For example, prior research that examined memories of crises or turning points (Pasupathi & Mansour, 2006) suggests

Table 2

Hierarchical Regression Analysis Predicting Life Satisfaction From Past-Focused Perceived Control and Present-Focused Perceived Control Controlling for Age, Gender, Life Circumstances, and Memory Valence

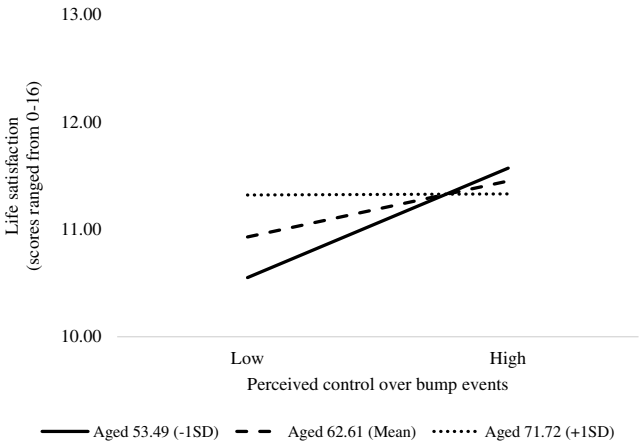
	Step 1				Step 2				Step 3				Step 4			
	B	*SE*	β	*t*	*B*	*SE*	β	*t*	*B*	*SE*	β	*t*	*B*	*SE*	β	*t*
(Constant)	11.37	0.22		51.31***	6.65	0.69		9.58***	5.18	1.01		5.12***	5.39	1.02		5.30***
Age	−0.06	0.02	−0.16	−2.98**	0.00	0.02	0.01	0.09	0.01	0.02	0.02	0.42	0.00	0.02	0.00	0.04
Age squared	0.00	0.00	−0.06	−1.09	0.00	0.00	−0.09	−1.90	0.00	0.00	−0.09	−1.98*	0.00	0.00	−0.10	−2.03*
Gender					0.13	0.31	0.02	0.42	0.21	0.31	0.03	0.69	0.18	0.31	0.03	0.58
Financial security					1.07	0.26	0.18	4.17***	1.06	0.26	0.18	4.12***	1.11	0.26	0.19	4.34***
Social living arrangement					1.34	0.34	0.18	3.98***	1.10	0.34	0.15	3.22***	1.06	0.34	0.14	3.12***
Number of medications					−0.31	0.08	−0.18	−3.79***	−0.28	0.08	−0.16	−3.41***	−0.29	0.08	−0.17	−3.55***
Mental health					1.43	0.21	0.29	6.64***	1.31	0.22	0.27	5.91***	1.23	0.22	0.25	5.56***
Memory valence									0.48	0.21	0.12	2.34*	0.46	0.21	0.11	2.22*
Bump control									0.17	0.14	0.06	1.18	0.23	0.14	0.08	1.57
Nonbump control									−0.05	0.15	−0.02	−0.35	−0.05	0.15	−0.02	−0.37
Present control									0.35	0.19	0.08	1.86	0.37	0.19	0.09	1.98*
Age*bump control													−0.03	0.01	−0.09	−1.96*
Age*nonbump control													0.01	0.01	0.02	0.45
Age*present control													0.05	0.02	0.11	2.53*
R^2	0.04				0.30				0.32				0.34			
ΔR^2	0.04***				0.26***				0.03**				0.02*			

Note. Gender: women = 1, men = 0; social living arrangement: 1 = lived with spouse or significant other, 0 = did not live with spouse or significant other. Variables in interaction terms were centered. No collinearity issues were found: Values of the variance inflation factor ranged between 1.11 and 1.55. When covariates were excluded and only age and perceived control over the past (bump and nonbump) and the interaction terms were included, age and bump control (ps < .001) predicted life satisfaction whereas nonbump control (p = .26) and the interaction terms of age* bump control (p = .15) and age*nonbump had no effect (p = .79).

* $p \leq .05$. ** $p < .01$. *** $p < .001$.

Figure 1

Moderating Effects of Age on the Association Between Perceived Control Over Bump Events and Life Satisfaction



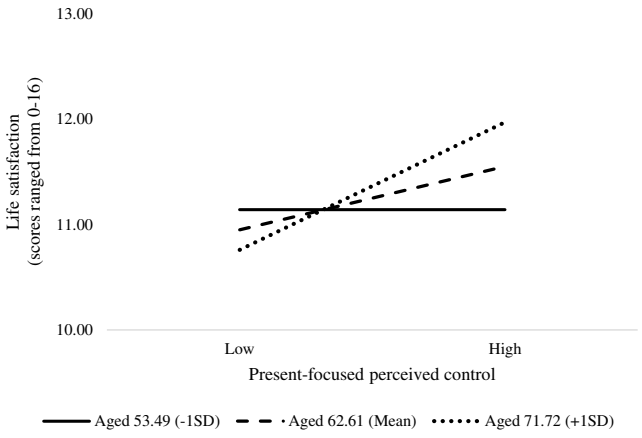
Note. Covariates included significant variables reported in Step 4 in Table 2. The coefficient for individuals aged one standard deviation below the mean (aged 53.49) was significant ($p < .05$).

that individuals' life stories may be at their richest in midlife. These characteristics of the midlife context (Staudinger & Bluck, 2001) fit well with our finding that life satisfaction is associated with perceived control over important events of one's youth. Middle-aged adults may be motivated to interpret their past when considering their current life satisfaction. In tandem, perceived control over their present circumstances may not be particularly relevant to their life satisfaction as midlife remains a time when people are often functioning relatively well across multiple domains. In general, middle-aged adults have relatively high levels of control over their work and social lives, are often in reasonable health, and are not facing pronounced functional limitations due to chronic conditions.

For those in the older age range, beyond midlife (i.e., over 60), the picture is different. Perceived control remains important, but consistent with previous research (Lang & Heckhausen, 2001; Infurna et al., 2011), our findings suggest that perceived control over one's present is what matters for life satisfaction. This finding can be understood in terms of the age-related shift that restricts one's future time horizon. It aligns with socioemotional selectivity theory (Carstensen, 2006) in its postulate that older adults' well-being relates to creating a meaningful present. This relation of present control to life satisfaction became increasingly stronger over late adulthood, possibly also related to the gain–loss ratio becoming less favorable across old age (Baltes & Smith, 2003). People inevitably begin to face some declines in functional status and increases in problems with activities of daily living and chronic health concerns at some point during their 70s, 80s, or 90s. Many people may also experience the loss of professional roles. Having a strong sense of control over one's ability to accomplish daily tasks and engage in meaningful social and leisure activities in one's present life likely becomes more important to life satisfaction, at this point in life, than having an agentic view of one's youth.

Figure 2

Moderating Effects of Age on the Association Between Present-Focused Perceived Control and Life Satisfaction



Note. Covariates included significant variables reported in Step 4 in Table 2. The coefficients of the two dotted lines, individuals whose age was at the mean level (aged 62.61) and one standard deviation above the mean (aged 71.72), were significant ($ps < .05, .01$).

Limitations

The current study has its limitations. First, like much autobiographical memory research, it is unable to disentangle whether the feature of importance is the type of event memories participants elected to share or if it is how they retrospectively imbue the event with a sense of control. Selecting events to tell and imbuing them through reconstructive memory processes (e.g., autobiographical reasoning; Habermas & Bluck, 2000) are both central to authoring one's life story (McAdams, 2013). We argue, however, that while selection of events may play a role, given that participants were instructed to evaluate the extent to which they now feel they had control over the event, the main driver of the relation between perceived control over bump memories and current life satisfaction is how the memories are imbued by the individual at the time of recall.

In addition, although this is a large representative sample, the cross-sectional design prevents us from teasing apart reciprocal relations, that is, whether perceived control affects life satisfaction (e.g., Ritchie et al., 2017) or vice versa. Participants with higher current life satisfaction may have selectively chosen to recall only memories of events that they perceive they had control over, when reporting their life events. While recognizing this, we have adopted the conceptual stance that perceived control variables predict life satisfaction, not the other way around. This is based on research supporting the role that memory plays in eliciting and regulating emotion (e.g., anxiety; Bluck & Liao, 2019; depressive symptoms; Westerhof et al., 2010) and the extent to which perceived control has been shown to affect older adults' well-being over the long term (e.g., Infurna et al., 2011). Note that the cross-sectional design also prevents us from knowing whether the age differences reported here reflect changes that would occur within individuals as they age, in a longitudinal design. We are also unable to rule out potential cohort effects. For example, participants in their late midlife had their reminiscence bump in the 60s and 70s, a period where societal rules started to become less strict and individuality was increasingly

valued. Other historical contexts such as the social turmoil in Europe in the first half of the 20th century could also affect the association between age and past-focused perceived control (for a discussion about cohort effects on well-being, see also Sutin et al., 2013). A final limitation is that, as ESAW did not assess cognitive functioning, it is unknown whether obtained findings would vary by cognitive status.

Conclusion

The current study sets a new direction for research on the reminiscence bump, investigating its adaptive value in the context of adult development and aging. We showed that for those in midlife, life satisfaction was related to looking back on their bump years with the feeling that they had control over what had transpired. If validated, these findings may have applied relevance. Creating personal meaning when recalling past events is a key element of effective reminiscence interventions (Westerhof et al., 2010). Future research could test whether guiding individuals to feel a greater sense of control over the important life events that occurred in their youth could influence their current satisfaction with life. Future work might also examine the various other ways of looking back at one's life that may relate to older well-being. For example, gaining insights or learning a lesson, forging redemption regarding negative events (for a review, see McAdams & McLean, 2013), or other forms of autobiographical reasoning (Habermas & Bluck, 2000) may have consequences for late-life well-being. Together, we suggest that our findings support the examination of additional characteristics of bump memories, in relation to positive aging, as a fruitful line of future research.

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