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The Reminiscence Bump Effect in Autobiographies

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The reminiscence bump effect refers to the tendency for older adults to recall more life events from their teens, twenties, and early thirties than from other decades of life. Participants in laboratory studies are often encouraged to recall events quickly and spontaneously, with the intention of eliciting those life events that come most easily to mind. The purpose of this study was to determine if a reminiscence bump is observed in accounts of life events that are carefully organized and narrated over prolonged periods of time; specifically, those presented in published autobiographies. 1742 life events were collected from the published autobiographies of 20 authors. Six authors were female and 14 were male. The mean age of authors at the time of publication was 70.95 (*SD* = 12.50). 39.21% of life events reported in autobiographies occurred when authors were between 18 and 32 years of age, a value significantly higher than expected by chance [Chi-square (1, *N* = 1942) = 713.31, $p < .001$] and consistent with those found in laboratory studies supporting the reminiscence bump effect. In addition, the 15-year reminiscence bump period represented an average of 21.43% of the authors' lives at the time they published their autobiographies; however, events from the reminiscence bump period took up an average of 36.89% of the pages in these autobiographies. These data provide evidence for a reminiscence bump effect in carefully considered life story narratives which required months or years to complete.

Keywords: reminiscence bump; autobiography; forgetting

One of the most robust findings in the cognitive aging literature is that events from the late teens, 20s, and early 30s are significantly more likely to be recalled than are events from middle age (e.g., Rubin, et al., 1998; Rubin, et al., 1986). This pattern, commonly referred to as the "reminiscence bump," is of particular interest to the field of aging and memory function because of its divergence from Ebbinghaus' classic "forgetting curve" (1885), in which the probability of recalling information that is not personally important (e.g., lists of nonsense syllables) declines steeply over time (Rubin & Wenzel, 1996; Wixted, 1990). A representation of Ebbinhaus' forgetting curve is presented in Figure 1, illustrating a loss of the ability to recall material within the first few days or weeks after it has been learned but then the relatively stable retention of remaining material for years and decades after that. In contrast, as a visual example of the reminiscence bump, Figure 2 reproduces a frequency distribution from our lab of 273 life events reported by 25 older adults between the ages of 64 and 93 (Carle et al., 2024). Clearly, enhanced recall of personally relevant events occurring when older adults were in their teens, 20s, and early 30s is difficult to explain by a continuous decay of stored information, but other causal mechanisms have been proposed. Not only does the reminiscence bump period oppose the traditional forgetting curve, but it further reveals how memory, identity, and culture interact to shape a sense of self, and thus it continues to be of interest to scholars in the field. Understanding the reminiscence bump is important because it provides insight into identity formation, autobiographical memory processes, and how individuals construct meaning across the lifespan. These insights have implications for cultural studies of life narratives and for applied contexts such as reminiscence therapy in older adults.

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Theories for the Reminiscence Bump

While the cause of the reminiscence bump in autobiographical memory has not been determined definitively, Rubin et al. (1998) outlined four sets of theoretical mechanisms to account for the enhanced recall of life events from this period: a cognitive account, a cognitive abilities account, an identity formation account, and a genetic fitness account. Although Rubin and colleagues indicated that all four perspectives have something to offer, the authors also suggested that, ultimately, all may eventually come to be understood within a more general cognitive framework.

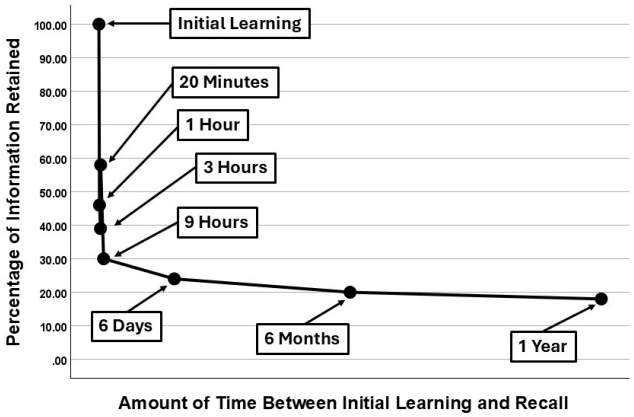

Figure 1. Ebbinghaus' forgetting curve showing the percentage of initially memorized nonsense syllables recalled up to a year after initial learning.

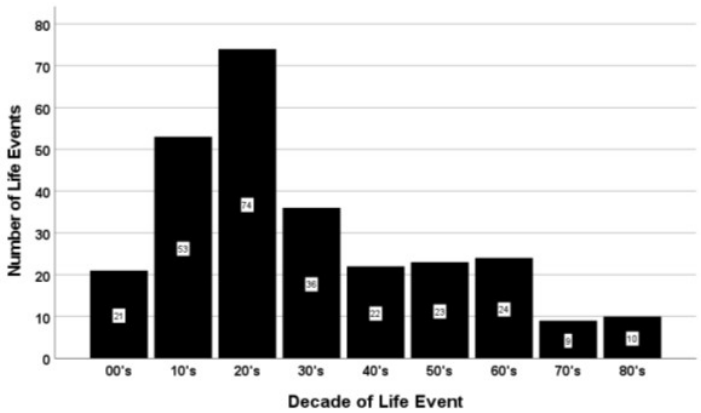

Figure 2. The reminiscence bump observed in life events reported by older adults.

The authors' proposed *cognitive account* is based on the observation that adolescence and early adulthood, the time of life comprising the reminiscence bump period, is characterized by rapid changes and novel experiences, e.g., new relationships, living in new places, new schools, new jobs, birth of first children, etc. It also happens that this period falls at the beginning of a period of stability where long-term behavior patterns are established. This combination of a high frequency of novel situations and the establishment of a stable lifestyle creates ideal conditions for enhanced retrieval of events from the reminiscence bump period. Specifically, novelty benefits long-term retrieval because it increases the cognitive effort employed to understand an event and decreases proactive interference due to the event's unfamiliar nature. A novel event's distinctiveness further increases the attention that is paid to its details (Hunt & Einstein, 1981; Hunt & McDaniel, 1993; Hunt & Smith, 1996). Stable life patterns set during the reminiscence bump period may also provide initial instances of situations that are encountered periodically as life progresses through established adulthood, midlife, and later life. Subsequent encounters with these types of events act as reminders, functioning much like spaced retrieval schedules, which are known to strengthen the likelihood of successful later recall.

Rubin et al.'s (1998) second account of the reminiscence bump period emphasized variations in cognitive abilities across the life span. The authors argued that differences in scores on laboratory measures of processing speed (e.g., Cerella, 1985; Salthouse, 1996), memory function (e.g., Dobbs & Rule, 1989), and fluid intelligence (e.g., Horn & Cattell, 1967) provide evidence for changes in cognitive abilities, such that cognitive abilities rapidly rise and peak during early adulthood and are followed by a slow decline in later periods of life. Changes in neural activity in midlife and later life, such as the decline of neurons in the cortex (Pakkenberg & Gunderson, 1997), may form a physiological basis for enhanced recall of events occurring during young adulthood, compared to those occurring at later periods of life (Rubin et al., 1998). Lastly, the authors argued that memory-forming processes like encoding may simply function more effectively during early adulthood, thus producing stronger and more damage-resistant memories (Rubin et al., 1998).

The authors' third explanation for the occurrence of the reminisce bump period was based on the effects of *identity formation*, a crucial developmental task that takes place during adolescence and early adulthood (Erikson, 1950). During this time, which corresponds to the reminiscence bump period, adolescents and young adults develop their sense of self and merge their social, vocational, and ideological aspirations into one identity (Rubin et al., 1998). Considering the significance of one's identity on the development of their life story, Rubin and colleagues argued that memory for identity-shaping events is more likely to be incorporated within a network of associations comprising one's life story.

Rubin et al.'s fourth and final account of the reminisce bump effect was motivated by observed differences in genetic fitness across the lifespan. According to Darwin's principle of natural selection, early adulthood is the period of life in which reproduction is at its highest potential, and increased memory may serve cognitive functions related to finding ideal mates and caring for one's children. Rubin and colleagues proposed that adults' varying levels of cognitive functioning may be directly correlated with fertility, and that high levels of cognitive abilities are more beneficial during earlier periods of adulthood, as compared to later ones when a person's function in society is less directly involved in survival. Instead, older adults' recall of events experienced during the reminiscence bump period serves to provide information to younger generations, thereby indirectly influencing the survival of future generations (Mergler and Goldstein, 1983; Rubin et al., 1998). Although Rubin and colleagues provided a

variety of explanations for the existence of the reminiscence bump period, with each account being grounded in theoretical foundations from different areas of psychology, the authors concluded that these explanations could prove to be mutually compatible, thus providing a robust theoretical framework for explaining the increased recall of events occurring during emerging and early adulthood.

Individual Differences and the Reminiscence Bump

Investigators have examined the influence of a variety of factors on the degree to which a reminiscence bump is observed, including the age and gender of participants and the affect (positive or negative) associated with the events being recalled. Assink & Schroots (2010), for example, obtained the number of life events included in lifelines provided by younger, middle-aged, and older adults, and found that life events that occurred during the reminiscence bump period were reported most frequently by all three age groups. The peaks of frequency distributions for participants in the three age groups occurred between the ages of 20 and 25 for younger adults and between the ages of 25 and 30 for middle-aged and older adults. A reminiscence bump effect was present in data obtained from both men and women. The authors also reported that participants recalled approximately as many negative as positive life events.

Berntsen and Rubin (2002) prompted 1241 participants to recall memories for life events in each of five categories: happiest memory, saddest memory, most important event, a traumatic event, and an event involuntarily recalled. Participants ranged in age from 20 to 93 years. When frequency distributions for age at the time of reported life events were obtained separately for participants in their 20s, 30s, 40s, 50s, 60s, and 70 years of age or more, the presence of a reminiscence bump was dependent on the type of event prompted, with the affect associated with the event playing an important role. The pattern of the reminiscence bump effect was present for all age groups when participants provided the age at which they experienced both their "happiest" and their "most important" life events. For life events categorized as "saddest" or "most traumatic," patterns closer to Ebbinghaus' (1885) forgetting curve were observed for all age groups, with the most recent events in these categories recalled most often and the frequency declining at an approximately steady rate as more time passed. For life events reported as being recalled involuntarily or without a specific cue there was no indication of a reminiscence bump effect for any age group, but a strong recency effect was observed for all age groups in which events occurring within the most recent 10 years were much more likely to be recalled than events occurring in earlier decades of their lives. This study indicates that persons at different stages of life display similar patterns of recall, but that the specific pattern observed varies as a function of the type of life event recalled. Specifically, the pattern of a reminiscence bump was observed for life events categorized broadly as positive, but there was no indication of a reminiscence bump for negative life events.

Methods to Investigate the Reminiscence Bump

A variety of strategies have been used to assess the frequency with which events are recalled from the various decades of life, including prompting participants for memories of specific events using cue words (e.g., Fitzgerald, 1988), asking participants to list their most important memories (e.g., Fromholt, 2003), and asking participants to list their most vivid memories (e.g., Webster & Gould, 2007).

An additional important source of information about recalled life events is the life-line technique (Assink & Schroots, 2010; Carle, et al., 2024; de Vries, 2013; de Vries & Watt, 1996; Rappaport et al., 1985, Schroots & Assink, 2005), which asks participants to place significant life events on a line leading from birth to their current age. Lifelines studies provide clear evidence for the presence of a reminiscence bump, with participants providing more points on their lifelines from the reminiscence bump period than from other phases of life (e.g., Rappaport et al., 1985; de Vries & Watt, 1996; Carle et al., 2023; Schroots & Assink, 2005). Lifelines also contain more life events rated as positive than negative, consistent with findings using other methods (e.g., Schroots & Assink, 2005).

We place special emphasis on the lifeline technique in this introduction because it shares the greatest similarity to the method for investigating life events employed in this study—identifying life events described in published autobiographies. Unlike other methods noted above (cued recall, most important memories, most vivid memories), lifelines display those life events selected as most significant across the entire course of a participant's life, and participants locate these events on blank lines that do not contain a scale labeling specific locations along the line with specific ages. This property means that participants can place a life event at the location along the line that corresponds to their subjective impression of the timeline of events rather than to their objective chronological age at the time of the event. For example, a participant could place an event 50% of the distance across the lifeline when the event actually occurred 25% of the way through the chronological length of their life (e.g., an 80-year-old reports an event that occurred when they were 20). This feature of lifelines allowed Carle (2015) to observe that, on average, the reminiscence bump period (defined in his study as ages 11-19) comprised 24% of participants' lives between birth and their current age, but that, on average, life events from the reminiscence bump period for these same participants occupied 43% of the distance along lifelines between birth and their current age.

Autobiographies as Records of Life Events: The Present Study

One feature of laboratory methods for investigating the reminiscence bump is that they prompt participants to recall as many events from their lives as they can within a period of minutes, within a single session, or across a series of more in-depth interviews lasting several hours (Pierce & Elliott, 2019). Participants in these studies are often encouraged to recall events quickly and spontaneously (e.g., Schroots, 2003), with the intention of eliciting those life events that come most easily to mind. The purpose of the present study was to determine if a reminiscence bump is observed in narrative accounts of life events that are carefully organized and constructed over prolonged periods of time; specifically, those presented in published autobiographies.

Autobiography has been a part of Western literary tradition since at least the publication of the first volume of Augustine's *Confessions* in 397 CE. An autobiography is understood as a reflective self-account in which the author narrates the trajectory of their life, the circumstances influencing its course, and the motivations for and consequences of their actions as they perceive them (Parsons, 2020). Autobiographies have long been employed in research as well. They serve as a means of understanding how individuals construct and interpret their own life stories, as autobiographies provide qualitative data that can identify how people form and maintain their sense of identity over time. For instance, McAdams (2001) emphasizes that autobiographical narratives reveal patterns of self-concept and identity development, showing how cultural, social, and personal factors shape the interpretation of life events. Similarly, autobiographies offer insight into memory processes and life review, allowing researchers to examine which experiences are deemed significant and how they are recalled and integrated into a coherent life story (Berntsen & Rubin, 2002). Beyond individual cognition, these narratives also provide a window into the historical and cultural contexts in which lives are lived, revealing the interplay between personal experience and broader social conditions (Plummer, 2001). Research on autobiographies frequently employs thematic, discourse, or structural analyses to identify pivotal events, recurring motifs, and narrative coherence, making autobiographies a versatile tool for investigating both personal and social dimensions of human experience.

An autobiography can be distinguished from a diary by the time in one's life in which it is written. Diaries are recollections of events, but they record events and reactions to those events within a day or so of their occurrence, often before it is possible to know the ultimate outcomes or consequences of those events. A diary is a valuable record of a life as it is being lived, while an autobiography offers the chance to reappraise the impact of events taking place many years before and to reprise accounts of them with the benefit of hindsight—within the expanded context of a life already lived. An autobiography is a carefully curated account of one's life—the lucky breaks, the tragic accidents, the stupid mistakes, the acts of sacrifice—the things we wish we could say to the people we care about, the people we've lost, and the people in some unknown future whom we'll never meet. Autobiography represents a chance to sum up for ourselves and for others what our life has been and meant. The act of telling one's own life story is serious business. If a writer spends time talking about a life event in their most comprehensive reflection on what their life has meant, it's something we as readers should take equally seriously. The set of life events presented in an autobiography is not accompanied by a request to name events quickly, as with lifelines (e.g., Schroots & Assink, 2010), or to cite only those life events prompted by a standardized set of memory cues (e.g., Fitzgerald, 1988). The life events described in autobiographies are solely under the writer's control (apart from the influence of book editors), and they are subject to a careful and prolonged process of selection and exclusion. If authors of autobiographies choose to spend more of their works discussing events from their late teens through their early thirties—if the reminiscence bump is present in the life events cited in autobiographies—it will be because these events hold a special place in each author's memorialized sense of self.

In the current study, we identified the major life events described in 20 autobiographies. For each life event, we recorded the age of the author at the time of the event, the page on which the description of the event began, and whether the event was perceived by the author as positive, negative, or neutral. We hypothesized that authors of autobiographies would report more events during their late teens, twenties, and early thirties than other periods of life, and that the description of events taking place during the reminiscence bump period would occupy a greater percentage of the length of the book than the percentage of the person's chronological age over which these events took place.

Method

Life events were collected from the published autobiographies of 20 authors. Six of the authors were female and 14 were male. The mean age of authors at the time of publication was 70.95 (SD = 12.50). As inclusion criteria, each author had to be at least 50 years of age at the time the book was published, and the autobiography had to describe events taking place throughout the author's life, not just events from one or more selected periods of their life. Autobiographies included in this study were selected based on the accessibility of the text through public libraries, local bookstores, or online booksellers. Given that autobiographies are frequently authored by publicly recognized individuals, works by authors representing diverse professional backgrounds and social identities were intentionally included to enhance the representativeness of the sample. Two autobiographies were written by musicians (Gordon Sumner, Sting; Eric

Clapton); six were written by people known for their work in politics or activism (Jimmy Carter, Nelson Mandela, Nancy Reagan, Ada Deer, Ma-Nee Chacaby, Alice Saloman); three were in the entertainment industry (Steve Martin, Cybil Shepard, Bill O'Reilly); two were writers (Lio Lionni, Tom Robbins); five were scientists or physicians (Nikola Tesla, Alice Beck Kehow, Edwin Boring, Guenter Schmoelders, Oliver Sacks, Elliot Aronson); and one led an active life in the American West of the 1800s (Theodore Edgar Potter). Of these authors, only Theodore Edgar Potter did not achieve a reasonable amount of fame in his lifetime.

Throughout each autobiography, the page number on which the author first spoke about a life event was recorded. Life events were defined as experiences that shaped the author's life, were central to the narrative of the autobiography, and functioned as milestones or pivotal moments in personal development. Such events could be either significant and impactful or relatively neutral in nature. Examples included being caught eating a stolen lunch at the age of three (Tom Robbins), a 24-year-old Jimmy Carter experiencing a bad storm at sea, or Potter's purchase of a farm on the Watonwan River at the age of 33. While the definition of life events may differ across cultural contexts and historical periods, here, we adopted a broad definition that allowed both normative and idiosyncratic events to be included. Life events, furthermore, did not have to be listed in chronological order; they were documented whenever the author spoke of a new event. Reinterpretations of past experiences also counted as new events. In addition, for each identified life event, we recorded the person's age at the time of the event and whether the author perceived the life event to be positive, negative, or neutral. Neutral events referred to those described factually without clear affective language or for which emotional tone could not be reliably inferred.

Results

Frequency Distributions of Life Events Recorded in Autobiographies

1742 events were identified across the 20 autobiographies, an average of 89.4 life events per autobiography. Grouping events by decade of life, the following frequencies were observed: 113 events (6.49%) from 0-10 years; 263 events (15.10%) from 11-20 years; 504 events (22.93%) from 21-30 years; 317 events (18.20%) from 31-40 years; 200 events (11.48%) from 41-50 years; 204 events (11.71%) from 51-60 years; 71 events (4.08%) from 61-70 years; 49 events (2.81%) from 71-80 years, 19 events (1.09%) from 81-90 years, and 2 events (.11%) from 91-100 years. The frequency distribution for the ages of life events obtained from autobiographies is displayed in Figure 3 and is consistent with the frequency distributions obtained from laboratory studies of the reminiscence bump (e.g., Rubin, 1995).

When frequency distributions for age at event were examined separately for each author, a reminiscence bump was clearly evident in the distributions of 13 of the 20 authors (Eric Clapton, Steve Martin, Cybil Shepard, Bill O'Reilly, Lio Lionni, Sting, Nikola Tesla, Theodore Potter, Tom Robbins, Oliver Sacks, Alice Beck Kehow, Elliot Aronson, and Guenter Schmoelders). A greater percentage of life events from middle age and later life than is consistent with a reminiscence bump effect was present in the autobiographies of seven authors (Nelson Mandela, Nancy Reagan, Edwin Boring, Ma-Nee Chacabyu, Ada Deer, Alice Saloman, Jimmy Carter). For these seven authors, the greater treatment of events later in life than the reminiscence bump period may be attributed to their being particularly well-known for events occurring in midlife or later life.

Regression Analyses Predicting the Percentage of Pages Through an Autobiography by the Percentage of Years between Birth and Current Age

A set of regression equations was obtained predicting the percentage of pages through autobiographies for life events from the percentage of years between birth and current age for these life events. Percentage values were used for these analyses instead of (1) page number or (2) age at time of life events because the autobiographies examined differed greatly in the number of pages, and the writers of these autobiographies differed greatly in terms of their age at the time the autobiographies were written. Separate regression equations were obtained using life events from three phases of life: before the reminiscence bump period (0-17 years), during the reminiscence bump period (18-32 years), and after the reminiscence bump period (greater than 32 years of age).

A scatterplot displaying the percentage of the way through the autobiography for each life event (y-axis) by the percentage of the way through life for each life event (x-axis) is presented in Figure 4. This figure displays

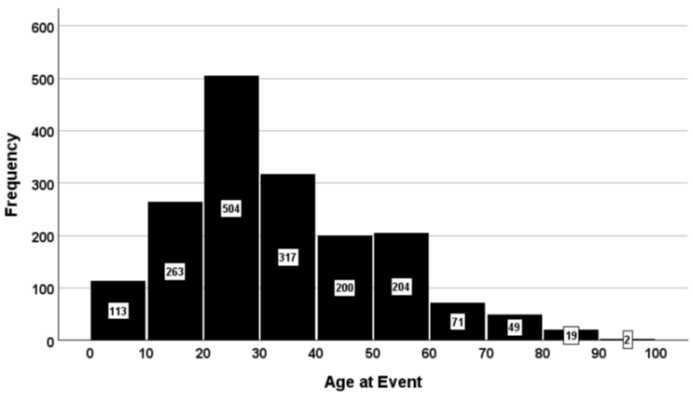

Figure 3. Frequency distribution displaying chronological ages at the time of each life event described in an autobiography.

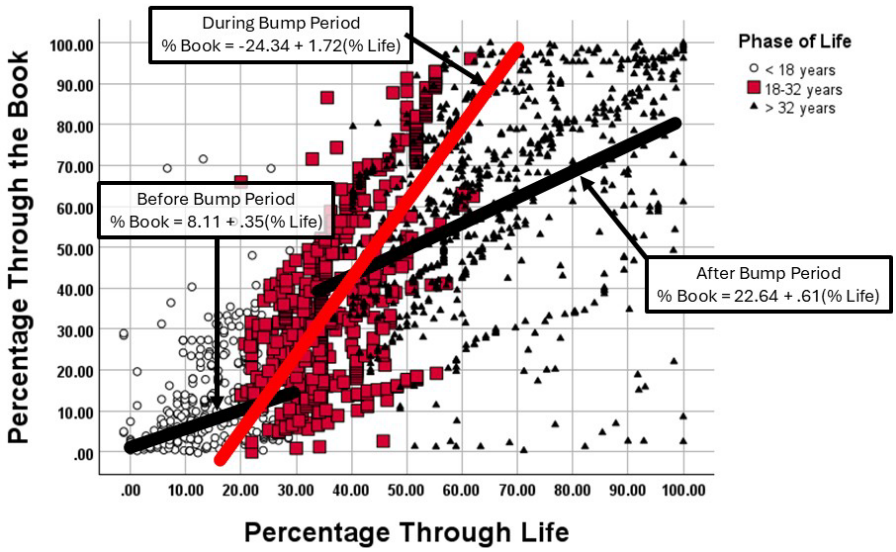

Figure 4. Scatterplot of regression analyses predicting the percentage of pages through an autobiography for life events from the percentage of the time through life for life events, with separate regression equations for life phases before, during, and after the reminiscence bump period.

separate regression equations for life events collected before, during, and after the reminiscence bump period.

For life events occurring before the reminiscence bump period, the regression equation predicting the percentage of the way through the autobiography from the percentage of the way through the life of the autobiographer had a y-intercept of 8.11 and a slope of the regression line of 0.35. This indicates that every 10% of the autobiographer's life before the age of 18 occupied only 3.5% of their autobiography, notably less than its fair share of the book.

For life events occurring during the reminiscence bump period, the regression equation predicting the percentage of the way through the autobiography from the percentage of the way through the life of the autobiographer had a y-intercept of -24.30 and a slope of the regression line of 1.72. This indicates that for every 10% of the autobiographer's life that occurred during the reminiscence bump period (18-32), their autobiography devoted 17.2% of the pages in their autobiography to it, approaching double its fair share. Across the 20 autobiographies analyzed in this study, the 15-year reminiscence bump period from 18-32 years of age represents an average of 21.43% of the length of the authors' lives at the time they published their autobiographies; however, events from the reminiscence bump period described in their autobiographies took up an average of 36.89% of the pages in their books. This finding represents further evidence for the importance of events from the reminiscence bump period in the lives of these authors.

For life events occurring after the reminiscence bump period, the regression equation predicting the percentage of the way through the autobiography from the percentage of the way through the life of the autobiographer had a y-intercept of 22.64 and a slope of the regression line of 0.61. This indicates that every 10% of the autobiographer's life after the age of 32 occupied only 6.1% of their autobiography—again, notably less than its fair share of the book.

Scatterplot and Regression Analysis at the Level of a Representative Single Autobiographer

Because Figure 4 contains 1742 points, and because, across authors, the use of percentage values for distance through the book and the percentage through life results in different starting and ending locations for the three life phases examined, we think it is useful to examine the same type of scatterplot presented in Figure 4, but with data from only a single autobiographer displayed. Figure 5 displays the scatterplot of life events reported in Alice Beck Kehow's autobiography, with the percentage distance through the book on the y-axis and the percentage distance through her life on the x-axis. We selected her autobiography for this figure because the slope values for the three life phases (before, during, and after the reminiscence bump period) most closely approximated the slope values found using life events from all 20 autobiographies. In her autobiography the slope of the regression equation predicting the percentage of the way through the book for life events from the percentage of the way though her life was 1.85, indicating that the 15-year reminiscence bump period took up 16.47% of her life (she was 85 at the time of publication), but that reminiscence bump life events occupied 30.47% of the length of her autobiography.

Positive and Negative Life Events in Autobiographies

Each life event was assigned to one of three categories: positive, negative, or neutral/unclear. Out of 1742 total life events, 43.5% (n = 758) were rated as positive, 19.3% (n = 336) were rated as negative, and 37.2% (n = 648) appeared to be neutral in affect or not enough information was provided to determine emotional significance. Of life events described clearly as positive or negative, 69.28% were described as positive and 30.72% were described as negative, a ratio of 2.26 positive events for every one negative event.

Discussion

Previous studies of the reminiscence bump have elicited recall of life events within periods of time ranging

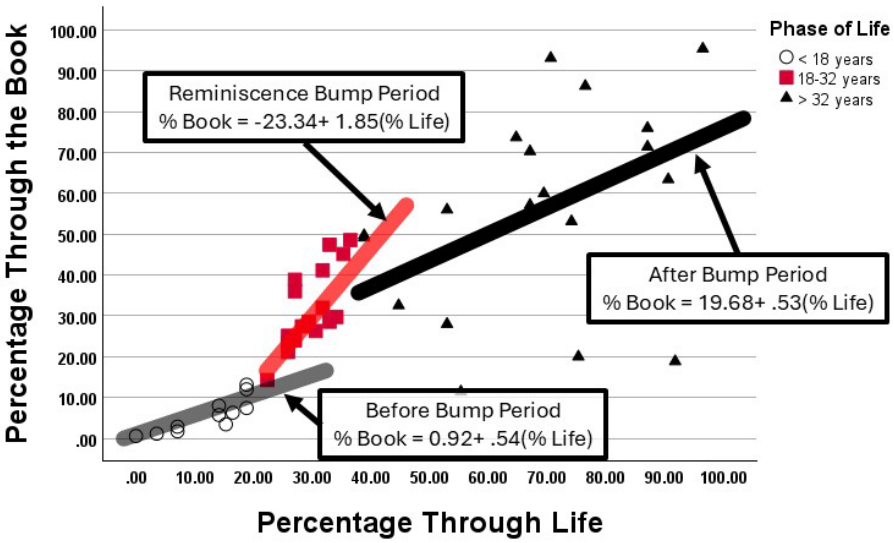

Figure 5. Scatterplot of regression analyses predicting the percentage of pages through an autobiography for life events from the percentage of the time through life for life events, with separate regression equations for life phases before, during, and after the reminiscence bump period.

from minutes to a few hours. The purpose of this study was to assess the degree to which a reminiscence bump is observed among life events carefully selected and curated over the course of the months or years required to write an autobiography. 1742 life events were collected from 20 autobiographies, with authors varying in terms of gender, race, country of residence, career path, and political orientation. Each life event was coded in terms of the age at which it took place, the page of the book on which the author first began describing the life event, and whether the event was characterized by the author as positive, negative, or neutral.

When life events were organized by decade, the frequency distribution of all 1742 life events clearly showed that strikingly more life events were observed in the decades corresponding to the reminiscence bump period (teens, twenties, 30s) than in periods of life occurring before or after. When frequency distributions were generated for each author separately, the reminiscence bump pattern was evident for 13 of 20 authors, with most of the remaining seven authors reporting a large number of life events from middle age or later life when they were well-known for events occurring in those periods. Jimmy Carter, for example, described a large number of events occurring when he was President of the United States between the ages of 52 and 56.

In regression analyses based on plotting the percentage of pages through an autobiography for life events against the percentage of the authors' ages when they occurred, events from the reminiscence bump period described in these autobiographies occupied a notably higher average percentage of pages of autobiographies (42.5%) than the average percentage of authors' lives occupied by the reminiscence bump period (24%). Taken together, the frequency distribution and regression analyses provide compelling evidence that authors of these published autobiographies not only included more events from the reminiscence bump period than other parts of their lives, but they devoted more space in their autobiographies to describing and reflecting on reminiscence bump period events than was commensurate with its relatively brief 15-year span. These results are consistent with those of other studies examining the reminiscence bump effect (e.g., Rubin et al., 1996), even though these other studies elicited recall of life events using laboratory procedures and settings very different from the private, long-term process of writing an autobiography. Still, the prominence of early adulthood in these autobiographies aligns with Rubin et al.'s (1998) identity formation account. Authors appeared to devote disproportionate space to events that defined their careers, relationships, and sense of self, suggesting that the reminiscence bump in autobiographical writing reflects the centrality of these experiences to life story construction.

When life events described in autobiographies were categorized as positive, negative, or neutral/can't tell, the ratio of life events clearly described as positive to those clearly described as negative was 2.26:1, indicating that authors chose to describe more than twice as many positive as negative events. This pattern is consistent with frequency counts of positive and negative life events recalled by participants in studies using laboratory methods to elicit life events. From our lab, we found that 76% of life events contained in lifelines were positive and 24% were negative, a ratio of 3:1 (Carle et al., 2024). De Vries et al. (2001) found that 53% of life events were rated as positive, 25% were rated as negative, and 22% were rated as neutral, yielding a ratio of positive to negative life events of 2.12:1. However, Schroots and Assink (2010), reported that the ratio of positive to negative life events in their study of 100 adults residing in the Netherlands was 1.01:1.00, reflecting an equal number of positive and negative life events. It appears that, overall, not only is the frequency distribution of ages for reported life events similar when they are obtained from autobiographies and traditional laboratory methods, but the ratio of positive to negative life events is similar across the two settings.

Limitations of the Current Study

There are a number of limitations or challenges when using autobiographies to study memory for personal history. First, autobiography is not an activity designed specifically for the study of memory. An autobiography is

a literary creation, and the writing style, length, order of time periods described, and target audience can vary greatly, as works of literature frequently do. One autobiographer will describe events using a strict chronological order, while another will begin by flash-forwarding to a critical event occurring in their 50s and then go back to describe events from their childhood. Memories in autobiographies are the result of internal prompts arising within the mind of the author, while much of autobiographical memory research is based on the use of standardized, external prompts. This makes the study of life events recalled in autobiographies less subject to experimental control but more likely to yield a set of life stories that fully reflects the purpose and functions of reminiscence (Webster, 1993) most important to the provider of those memories.

Second, we collected life event data from only a small sample of the population of published autobiographies. It is possible that a sample of 20 or more different autobiographies would have revealed a different pattern of results. It is difficult to estimate the number of autobiographies that have been published (the website Goodreads states that 444 autobiographies were published in 2023) because content accepted as autobiographical may be published under the headings of "autobiography," "memoir," "personal narrative," or even as highly personalized fiction.

Third, publishers almost always only invest resources in publishing autobiographies of persons of interest to large groups of readers. The autobiographies of famous people may sell a lot of books, but one may question the degree to which the lives of famous people are representative of the lives of most people. In addition, these famous people may feel compelled to describe events from the periods of their lives for which they are best known. In the case of people famous for events occurring in midlife or later life, their autobiographies may not accurately represent the frequency with which they draw on memories from the reminiscence bump period in their personal, daily life; the curation of events for publication may skew events reported in their autobiography in favor of periods of fame rather than periods of identity formation (Rubin et al., 1998). Still, in spite of possible external pressures in favor of reporting events from midlife and later life, autobiographies in this study consistently displayed the presence of a reminiscence bump in reported life events. Autobiographies written by non-famous people may show an even more pronounced reminiscence bump effect.

Additionally, the publication era may affect how life events were selected and presented. Autobiographies published in the 1970s differed in tone, style, and audience expectations compared to those published in the 2010s, which may have influenced how life events were selected and presented.

Opportunities for Future Research

The limitations of the current study offer several opportunities for future research. First, it would be useful to conduct the same analyses using autobiographies written only by non-famous persons to serve as a control for the effects of leading a life of public fame on the selection of life events to include and exclude. As mentioned at the end of the last section, it is possible that autobiographies by persons not famous for events occurring in middle age or later life may display a reminiscence bump for events centered around their 20s that may be more pronounced than that observed in this study.

Second, another comparison population against which autobiographies can be evaluated is that of biographies. It would be interesting to know if authors of biographies, writing about the life of another person, contain a reminiscence bump for events in the teens, 20s, and early 30s, or whether the distribution of life events described in biographies is relatively flat, reflecting relatively equal treatment of every phase of the biographical subject's life, or whether a reminiscence bump is present but shifted to events centered around midlife or later. If the reminiscence bump is a product of identity formation in young adulthood (as one of four influences proposed by Rubin et al., 1998), are biographers similarly as preoccupied with this period of the lives of their subjects as their subjects appear to be themselves? Comparing the frequency distribution of life events described in biographies and autobiographies would be especially effective when the subjects of biographies are paired with autobiographies by those same persons.

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