Distribution Agreement

In presenting this thesis as a partial fulfillment of the requirements for a degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis in whole or in part in all forms of media, now or hereafter now, including display on the World Wide Web. I understand that I may select some access restrictions as part of the online submission of this thesis. I retain all ownership rights to the copyright of the thesis. I also retain the right to use in future works (such as articles or books) all or part of this thesis.

Emma Simpson April 13, 2021

Event Characteristics and Autobiographical Memory Consistency in Adolescence

by

Emma Simpson

Dr. Patricia Bauer
Adviser

Department of Psychology

Dr. Patricia Bauer

Adviser

Dr. Robyn Fivush

Committee Member

Dr. Marshall Duke

Committee Member

2021

Event Characteristics and Autobiographical Memory Consistency in Adolescence

By

Emma Simpson

Dr. Patricia Bauer

Adviser

An abstract of
a thesis submitted to the Faculty of Emory College of Arts and Sciences
of Emory University in partial fulfillment
of the requirements of the degree of
Bachelor of Arts with Honors

Department of Psychology

2021

Abstract

Event Characteristics and Autobiographical Memory Consistency in Adolescence
By Emma Simpson

Autobiographical memories serve important aspects of development in adolescence, contributing to a stable sense of self and identity and comprising one's life story. However, these memories are subject to change, as individuals may be inconsistent in the details they recall over time. The present research examined event characteristics as potential predictors of memory consistency in adolescents' (12- to 14-year-olds) autobiographical memory narratives. Event characteristics and consistency were also assessed as a function of the time period in which the event occurred, as participants provided memories for early and recent events, as well as a "most significant" event. The event characteristics emotion, duration, culturally shared, location change, and impact showed significant main effects of time period. Consistency also showed significant main effects of time period, such that early memories were more consistent than those occurring more recently. This finding is in line with previous research and suggests that the details of early memories are perhaps more fixed than recent memories, as there is more opportunity for rehearsal. Finally, only two event characteristics, emotion and location change, were significant predictors of consistency in one time period, ages 6 to 10. These findings suggest that, for adolescents, event characteristics may not be predictive of consistency in autobiographical memories. The relevance of these memories to one's sense of self, especially during adolescence, further supports this interpretation, suggesting that factors salient to self-identity may be more predictive of consistency in autobiographical memories.

Event Characteristics and Autobiographical Memory Consistency in Adolescence

By

Emma Simpson

Dr. Patricia Bauer

Adviser

A thesis submitted to the Faculty of Emory College of Arts and Sciences
of Emory University in partial fulfillment
of the requirements of the degree of
Bachelor of Arts with Honors

Department of Psychology

2021

Acknowledgements

First and foremost, I would like to express my deepest gratitude to my adviser, Dr. Patricia Bauer. Over the course of this year, her insight, knowledge, and support has been invaluable to my learning and the successful completion of my thesis. Furthermore, I am thankful for her kindness and patience with me throughout this process. The quality of her mentorship is exceptional, and I am so grateful for the opportunity I had to work with her during my time at Emory.

I would also like to extend my gratitude to the additional members of my committee, Dr. Robyn Fivush and Dr. Marshall Duke. I am appreciative of their helpful contributions and participation in my oral defense.

I must also express my sincere gratitude to Katie Lee. I am grateful for her assistance on every aspect of this project from its beginnings nearly one year ago. Her knowledge and support were instrumental, and I owe her a great deal of thanks for her guidance and investment into this project. Additionally, I must also express my special thanks to the additional members of the Bauer Memory Development Lab for their kindness and support from my start there during my second year at Emory. I am so thankful that I was able to learn from an exceptional group of researchers during my undergraduate career.

Finally, I must also express my thanks to my family and friends. The encouragement I have received has been so meaningful. I would especially like to acknowledge the support of my parents, who have never wavered in their support of my aspirations.

Table of Contents

List of Tables

List of Figures

Introduction

Our ability to remember past events consistently over time seems as though it would be rather adept; after all, the details and one's experience remain static. The consistency of autobiographical memories is important, as these memories make up one's personal past and life story, as well as being important to our sense of self (Fivush, 2011; Habermas & Bluck, 2000). However, in the retelling of autobiographical memories, both children and adults are inconsistent in the details they recall at different times (Bauer et al., 2014; Fivush et al., 1991; Larkina et al., 2017; Peterson et al., 2011). Consistency in adolescents, though, is relatively unexplored. Adolescence is an important period in the development of autobiographical memory, as individuals have quite sophisticated narrative abilities in recalling past events, and they are developing the ability to link these events into their life story (Bauer 2015b; Habermas & Bluck, 2000). Examining memory consistency during this period is important, as this life story is closely related to identity development and self-understanding, making the memories and details included or excluded an interesting topic of study (Habermas & Bluck, 2000). To add to the limited knowledge on memory consistency and the potential effects of event type or characteristics, in the present work I aimed to examine the effects of multiple types and characteristics of events on consistency of details in autobiographical memories of adolescents. Additionally, participants provided memories from different periods of life, ranging from earliest memories to those occurring in the previous year of life, so event characteristics and consistency could be assessed as a function of when the event occurred.

Conscious, or explicit, memories can be divided into two types: semantic memory is thought of as the organized knowledge a person possesses, whereas episodic memory accounts for temporally dated episodes or events (Tulving, 1972). It is episodic memory that allows for

"mental time travel," or conscious re-experiencing of past events (Tulving, 2002). Autobiographical memory is a form of episodic memory that is distinguished from the other types of memory in its personal nature and significance to one's self (Fivush, 2011; Nelson, 1993). Autobiographical memories can be defined as memories of events or experiences about one's self, and there is a personal, subjective, or evaluative perspective placed on the memory. These personal memories are different from, and often contrasted with, other types of declarative memory (Bauer, 2015a; Bauer, 2015b; Fivush, 2011). These memories are especially important for the development, continuity, and stability of one's sense of self (Fivush, 2011). In other words, autobiographical memories make up one's personal history and are instrumental in defining self, as individuals can draw self-knowledge from past experiences. Additionally, autobiographical memory serves social functions through shared experiences and forming connections with others (Fivush 2011; Waters et al., 2014).

Autobiographical memory develops throughout childhood and into adolescence. Even preschoolers share autobiographical narratives. Yet early childhood is characterized by accelerated rates of forgetting followed by gradual increases in the quality of memory traces (Bauer, 2015b). In other words, over childhood, memories take on more autobiographical features that are better elaborated and more tightly integrated (Bauer, 2015b). As well, throughout the preschool years, children develop a more self-oriented or subjective perspective on their experiences, and they include more evaluative language in their memory narratives (Bauer 2015a; Fivush, 2011). More improvement in narrative ability occurs throughout the school years, as children's autobiographical narratives become longer and more complex (Bauer 2015b).

In adolescence, individuals are better able to sequentially order memories and create links between distant memories and self-identity and personality (Fivush et al., 2011; Habermas, 2010). With more mature understandings of time and biography coupled with the motivation to create an identity, adolescents begin linking past personal memories into an overarching life story, or an organized collection of narratives interwoven within the context of self-understanding and personal development (Fivush et al., 2011; Habermas & de Silveira, 2008). This ability to integrate memories into an extended life narrative, contributing to a stable self-identity, continues into later adolescence and into early adulthood (Habermas & Bluck, 2000; McAdams, 2001). In addition to beginning to form a life story, adolescents also select and incorporate into their life stories what they consider to be personally significant memories, or self-defining memories (Fivush et al., 2011).

As implied by this literature review, much research has focused on the developmental changes in autobiographical memories. In contrast, little work has explored the consistency of these memories over time. Consistency refers to whether or not the same information is reported across time, and, for the purpose of the current research, can be defined in two ways. One level of consistency is whether individuals are consistent in nominating the same event on repeated recall and is referred to as consistency at the level of the event. The second level is whether there is variation in the content or details included between two memory reports and is referred to as consistency at the level of details. Consistency is important because the events one is more or less consistent in remembering may affect self-development, how one views themselves, or the memories one includes in their life story. Memory consistency also has implications in legal settings, as it is an important indicator of reliability and believability for jurors (Berman et al., 1995; Ghetti et al., 2002; Myers et al., 1999).

There is reason to expect both the consistency and inconsistency at the level of the event and at the level of details described above. Since the ability to integrate memories into a life story is still developing during adolescence, inconsistencies in the events and experiences they nominate is to be expected. Since adults have a more stable life story over time, they should be quite consistent at the level of the event (Habermas & Bluck, 2000; Kober & Habermas, 2017). Variability in details is to be expected when individuals, regardless of age, retell a memory on repeated recall. This can be attributed to the reconstructive nature of memory and the dynamic, living representations associated with autobiographical memory (Bauer et al., 2014; Larkina et al., 2017). These expectations are largely in line with findings from previous research on autobiographical memory consistency which are described below.

Changes in the consistency of autobiographical memories at the level of the event have been demonstrated when individuals are asked to report the same event on repeated recall. Studies of adults' earliest memories reveal that they are relatively consistent on repeated recall at the level of the event. Jack and Hayne (2010) found that five of six young adults identified the same earliest memory with one week between sessions. In a longitudinal study by Bauer and colleagues (2014), adults nominated the same earliest memory twice (82%), three times (72%) and four times (82%) with nearly one year between reports. This was also one of few studies that also examined consistency at the level of details, and the findings reveal that, regardless of the time between sessions, the details of the memory reports were somewhat inconsistent, ranging from 52-55%, even though the event described was the same (Bauer et al., 2014). Furthermore, in a similar study, young adults were approximately 90% consistent at the level of the event (Larkina et al., 2017). This study also examined event recency. For adults, the time period in which the event occurred (ages 1-5, ages 6-10, or the previous year of life) had no significant

effect on consistency at the level of the event. At the level of details, however, the age at which the event was experienced seemed to have an effect. Overall, more distant memories were more consistent at the level of details. Memories from ages 1-5 and 6-10 were more consistent (approximately 43% and 35%, respectively) than those from the previous year of life (30%) (Larkina et al., 2017). These findings are largely in line with those of aforementioned studies. Adults are quite consistent at the level of the event, nominating the same memories on repeated recall, especially earlier or more distant memories. At the level of details, however, there appears to be variability in the way adults describe events over time.

Studies of consistency have also been performed with children, and, in comparison with studies of adults, they suggest that there are changes in performance over developmental time. In one study, Peterson and colleagues (2011) asked children (aged 4 to 13 years) to report their three earliest memories. After a two-year delay, 4- to 5-year-olds rarely reported the same event – only 7% of the events were reported at both sessions, indicating very low consistency at the level of the event. In the same study, 12- to 13-year-olds nominated the same event as their earliest memory 39% of the time (Peterson et al., 2011). Peterson and colleagues also examined consistency at the level of detail, and it revealed a similar pattern. Information reported between the two interviews was 34% consistent in the 4- to 5-year-olds and increased to 56% among the 12- to 13-year-olds (Peterson et al., 2011). In a comparable age group (12- to 14-year-olds), Larkina and colleagues (2017) also explored consistency at both the level of the event and details and compared adolescents and young adults. At the level of the event, adolescents were approximately 90% consistent, though the time period in which the event occurred had no significant effect on consistency at this level. Much like the adults, adolescents also showed relatively low levels of consistency at the level of details, and event recency also had an effect. Again, more distant memories were more consistent: 35% of the information was consistent between

sessions for memories from ages 1 to 5, 30% for memories from ages 6 to 10, and 24% for memories from the previous year of life (Larkina et al., 2017).

Since Larkina and colleagues (2017) had both adolescent and young adult participants, the consistency of their memories can be directly compared. While age group (adolescents versus young adults) or the time period in which the event occurred was not a significant predictor of consistency at the level of the event, age group remained a significant predictor of consistency the level of details after controlling for other potential predictors of consistency, namely narrative quality and subjective ratings of the events (valence, arousal, uniqueness, significance then and significance now) (Larkina et al., 2017). In addition to examining differences between age groups and event recency, the study also examined what participants considered to be their "most significant memory." At the level of the event, adults were nominally more consistent than adolescents in nominating the same event as their most significant memory, 94% and 81%, respectively. Adults' most significant memories were also nominally more consistent at the level of details, 35% compared to adolescents near 27%. For both adolescents and young adults, memories from ages 1 to 5 were more consistent at the level of details than most significant memories (Larkina et al., 2017). In summary, at the level of the event, adults perform better on repeated recall relative to children and adolescents, and performance increases over developmental time. Research on the consistency of content, or at the level of details, however, reveals substantial variability in both children's, adolescent, and adult's autobiographical memory reports (Bauer et al., 2014; Fivush et al., 1991; Larkina et al., 2017; Peterson et al., 2011).

While age and event time period appear to be predictors of memory consistency, factors like participants subjective ratings of the experience were not predictive of consistency at the level of details (Larkina et al., 2017). Though there is existing research concerning memory consistency, there has been no work to my knowledge that examines event characteristics, or

qualities of the events themselves, as predictors of memory consistency. Therefore, based on review of the literature, I nominated nine event characteristics as potential predictors based on previous literature. These characteristics were included in the coding scheme developed for the current research and are described below. Predictions are made for the characteristics in terms of their potential predictive power of memory consistency, as well as how they might differ across the time period in which the event occurred. Given how inconsistent children are in recalling early memories (e.g., Peterson et al., 2011), it may be expected that more recent events would be more consistent. However, when comparing distant and recent memories, Larkina and colleagues (2017) found that distant memories were more consistent than recent memories. It is expected that, again, more distant memories will be more consistent when comparing them to recent memories.

The first two dimensions of the coding scheme concern recurring and extended events. To date, most research has focused on discrete, one-time events. Yet individuals often nominate recurring and extended (happening over a period of days) events as personal memories infused with meaning (Peterson et al., 2014; Waters et al., 2014). These recurring events may occur during a specific period of time or across the lifetime and can be considered as self-defining memories, as they become represented as "personal scripts," or what one usually does (Fivush et al., 2011). One might expect that certain types of events are remembered more consistently than others. For example, events that are recurring in nature, or that are experienced on somewhat of a regular basis and follow relatively the same pattern on each occurrence, might be remembered more consistently due to the multiple opportunities for rehearsal and consolidation of the memories. There is also reason to believe recurring events may be remembered less consistently depending on the extent of varying details between experiences. Reexperiencing the same event

multiple times may cause varying details to "run together" and interfere with one another in one's memory, making it hard to provide consistent details over time (Price et al., 2006). The same can be said for extended events. However, since both recurring and extended events constitute substantial periods of one's life, they are likely to summarize more of our experiences and potentially more of our personal identity, making them an interesting topic of study (Fivush et al., 2011; Waters et al., 2014).

Both children and adolescents spend thousands of hours at school, making memories of schooling an interesting subset of autobiographical memories (Rothenberg, 1994; Walls et al., 2004). It could be inferred, then, that some of these memories are of learning new concepts or ideas, making them educational events. Lesson learning, learning a specific lesson from an event that could direct future behavior, can also be characterized as an educational event. Memories of lesson learning are more prevalent in adolescence memories than those of childhood; research suggests that this is because adolescents may interpret past experiences in terms of either insights or lessons (McCabe et al., 1991; Thorne et al., 2004). McCabe and colleagues cited lesson learning examples such as "people will get hurt when racing cars" or "it is important to learn whom to trust" (McCabe et al., 1991). Furthermore, memories of lesson learning are important in guiding future behavior, giving individuals guidelines for how to act in similar or upcoming situations. Experience of failure, for example, may provide positive motivations in future events (Pillemer, 2003). It is expected, then, that memories of learning will be more frequent in memories of the adolescents' previous year of life rather than the more distant time periods. It is also expected that these memories will be more consistent because of their meaningful nature and importance for guiding future behavior.

Culturally shared events were defined as events that invoke a sense of "togetherness" or community. For example, holidays, traditions, and team sports are all indicative of feelings of belonging within a group, whether it is being a member of a small dance group or participating in familiar religious traditions. It is expected that these shared experiences and events will be more consistent, as they are often widely known and talked about. For example, the procedure of a baptism is likely to be very similar across individuals. Thus, the consistency of one's experience is likely to be stable.

Narrative elements for "who" and "where" were also included in the coding scheme and were conceptualized as scope and location change. Events that include one or more location change across the experience, such as visiting multiple locations over a weekend vacation, are expected to be less consistent because of the high degree of varying details across the experience. Scope was defined as who was present or involved at the event, whether it be close family and friends or a community-wide event. Events that are personal in nature or only involve close friends and relatives may be more consistent than those involving more members of the community if they are especially personally significant. However, there is also reason to speculate that they would be inconsistent, as perhaps more people present may convolute details.

To a certain degree, the experiences over an individual's lifetime can be predictable. Through cultural transmission, children learn how life is ideally lived within their culture and learn what events and experiences are expected as they grow up (Bohn & Berntsen, 2008). It is expected, then, some narratives provided from adolescents will be of events that have predictable qualities, such as recalling the first day of school. It is also expected that a number of predictable events would require advanced planning to some degree, which would require one to think about the future and perhaps anticipate needs. This ability is known as episodic foresight, and it

develops gradually over developmental time along with the tools needed, such as working memory, the ability to structure narratives, and event knowledge (Hudson et al., 1995; Hudson et al., 2011; Suddendorf & Redshaw, 2013). It is expected that these predictable events, especially those that require planning, would have greater consistency, as knowledge of the event and what it will entail is known before it happens, allowing for rehearsal and anticipatory thoughts and talk beforehand.

Recall of emotional events, whether positive or negative, seems to be better than recall for non-emotional, or neutral, events for both adults and children (Van Bergen et al., 2015). Emotions from the event could be attached to one's personal experience, making the memory vivid and emotionally charged and allowing for more narrative rehearsal and accuracy (Pezdek, 2003). Thus, it is expected that emotional events (positive or negative) will be more consistent than neutral events.

Finally, impact was included in the coding scheme, as it is during adolescence when individuals begin to nominate what they consider to be personally significant or self-defining memories (Fivush et al., 2011). These memories are often infused with meaning and rated as being highly impactful (Wood & Conway, 2006). Additionally, participants were asked to provide their "most significant memory," so it is expected that those events will receive the highest impact scores. Events with higher impact scores are also expected to be more consistent, as they are likely to be more important or self-defining life events (for example, the birth of a sibling), thus important to one's life story and continuity of self.

In summary, in the present research I addressed the effects of event types and characteristics on the consistency of adolescents' autobiographical memories. Narratives were obtained from previous research by Bauer, Hättenschwiler, and Larkina (2016) on adolescents'

and adults' autobiographical memories. Participants provided a total of 10 narratives from different periods of life (1-5 years, 6-10 years, the previous year of life, and one most significant memory) at two time points. In subsequent research by Larkina, Merrill, and Bauer (2017), the narratives were evaluated on their consistency of details between reports, thus receiving consistency scores. For the purpose of the current study, the narratives were coded on event type and used in analyses with the consistency scores. In summary, it is expected that events with emotional, predictable, cultural, educational, and impactful elements in the narratives will be more consistent, while events including changes in location will be less consistent. It is expected that the event characteristics recurring, extended, and scope may lead to more or less consistency, so no predictions were made regarding their predictive power.

Methods

Participants

Participants were 51 adolescents who took part in the study at two time points (25 females, 26 males; *M* age = 13.06 years at Time 1, *SD* = 0.79, range = 12-14 years). Participants were recruited from an existing pool of volunteer families who had previously expressed interest in participating in child development research, namely the Emory Child Study Center Database. No specific data on socio-economic status was collected, but the pool is largely comprised of middle- to upper middle-class families with one or two college-educated parents. Based on self-report, the racial composition of the sample was 19% African American, 17% Asian, 57% European American, and 2% mixed race; the remaining 5% did not report. Three percent self-identified as Hispanic. All participants met inclusion criteria of having English as their first language (this requirement was included in recruitment materials). Three adolescents participated in the Time 1 survey but were excluded from the final sample because they did not

complete the second survey. Parents provided online written informed consent for their child's participation; adolescents provided online written assent to take part in the study. After completing the study, participants received a gift certificate. All original procedures were reviewed and approved by the Emory University Institutional Review Board (IRB) and approval for the use of this data has been maintained for the current research study.

Materials and Procedure

Descriptions of procedures and surveys are based on descriptions provided in Bauer, Hättenschwiler, and Larkina (2016) and Larkina, Merill, and Bauer (2017). Data were collected via an online survey using Survey Monkey (www.surveymonkey.com). All participants completed two surveys, approximately one month apart (M = 31 days, SD = 4.55, range = 27-47 days). The parents of the participants were sent direct links to the surveys using electronic mail. Parents were encouraged to review the entire survey before consenting to their child's participation. Upon receiving parental consent, the adolescents were asked for their assent to participate. They were instructed to complete the survey independently. In the consent form, participants were informed that they would be asked to provide memories at two different time points, four weeks apart. However, they were not informed they would be asked about the same memories in the second survey. At the beginning of the first survey, participants provided demographic information of birthdate, survey date, gender, and race and ethnicity. Participants were not limited by time, but it was estimated that each survey could take 45-90 minutes to complete.

Time 1 Survey

Participants were prompted to provide written narratives about specific events that occurred in one place at one time in their lives and were asked to include as much detail as they

could. The adolescents provided 10 memory reports, three from each of the following time periods: 1-5 years, 6-10, years, the previous year of life, and one "most significant" event of their lives. After completing the memory reports, participants recorded their age at the time of the event (in years and months), a descriptive title, and rating-scale measures to assess various properties of autobiographical memory, adapted from previous research (Talarico & Rubin, 2003; West & Bauer, 1999). Examples of questions asked include 'How clearly did you recall the details of the memory?", How important was this event at the time when it happened?", and whether or not the participant's memory of the event was experienced in first or third person. Although presented to participants in the previous research, the rating scales were not analyzed for the present research. The prompts for memories of events from different periods of life were presented to participants in one of four pseudo-random orders, so that events from the same time period were not prompted in immediate succession. The prompt for "most significant" event was always shown last. Each of the four pseudo-random orders were used approximately equally often across all participants. The questions in the rating scales were presented in the same order for all events and for all participants.

Time 2 Survey

Approximately one month after completing the first survey, parents of the adolescents were sent a direct link to the second survey, designed specifically for each participant. In the second survey, participants reported on the events they wrote about in the first survey and then dated and rated the events as they did in the first survey. Each participant was prompted by the title they provided in the first survey and asked to "… write as much detail as you can about this memory. If you cannot remember the event, please make a best guess." No other cues to identify

the targeted events were provided. For each participant, the order of events in the second survey was different from the first survey.

Coding and Data Reduction

Consistency

Consistency between the two memory reports was examined at two levels of analysis, as explained by Larkina, Merrill, and Bauer (2017). First, the reports were examined at the level of the event (whether participants reported the same event at Time 2 as they did at Time 1). Then they were also examined at the level of details (whether the participants provided the same information about the event at Time 2 as they did at Time 1).

For the target event to be considered recalled at Time 2, the participant had to provide two unique pieces of information about the event (criterion used in, for example, Bauer & Larkina, 2016; Fivush & Schwarzmueller, 1998; Reese et al., 1993). If fewer than two pieces of information was provided, or the participant explicitly indicated they could not remember the event, it was considered not recalled. If the participant provided two unique pieces of information, but it was not sufficient enough to determine whether the same or a different event was being recalled, the event was considered "non-specific." Finally, if the participant provided two or more unique pieces of information, but there was no overlap in details with the event reported at Time 1, then it was considered to be a "different event." One primary coder scored all narratives. To determine the reliability of coding, a different individual coded 20% of the narratives. Reliability between the raters was 100%.

Memory reports that were considered recalled, or consistent at the level of the event, were then coded for consistency of details by comparing the information provided at both time points for the same event. Consistency was assessed for each of the following seven Wh-

narrative categories: information about (1) who participated *(who),* (2) the actions involved *(what-action),* (3) the objects involved *(what-object,)* (4) where the event took place *(where),* (5) when the event took place *(when),* (6) why the event occurred or unfolded as it did *(why),* and (7) evaluation or subjective perception of the event *(how-evaluation)*. The narrative categories are a subset of those used in prior-related research (Bauer & Larkina, 2014a, 2016; Bauer et al., 2007). Information from each category was scored as inconsistent, partially consistent, or consistent. The coding was based on guidelines from previous research (Drivdahl & Hyman, 2014; Neisser & Harsch, 1992; Talarico & Rubin, 2003). For each category, the narrative was coded as inconsistent when less than 25% of the information was the same between the two reports. The narrative was coded as partially consistent when between 25% and 75% of the details provided were the same between the two reports. Finally, the narrative was coded as consistent when more than 75% of the information was the same between the two reports. A primary coder scored all the narratives. A reliability coder coded 20% of the narratives, and average reliability between the coders was 86% (range 76-93%). The primary coder's judgements were used in all analyses.

For each event recalled at Time 2, a consistency of details measure was calculated by dividing the number of narrative categories coded as consistent by the total number of Wh-categories included in the narratives, either at Time 1 or Time 2 (maximum 7). This measure provides a conservative estimation of consistency at the level of details and also controls for the different number of Wh- categories that could be included in each memory report. The same individuals who coded for consistency at the level of the event also coded for omission and commission. Average reliability between the coders was 90% (range 78-100%) The primary coder's judgments were used in all analyses.

Event Characteristics

For purposes of the present research, an event type coding scheme was developed by the author and lab collaborator Katie Lee to evaluate specific characteristics of the events (memory reports) that the participants recorded. Event characteristics were captured in nine categories, and each memory report received a score in each of the categories (see Appendix A). (1) *Predictability* of the event was measured on three levels: event was unable to be predicted, planned event with no preparation, or a planned event with preparation. (2) *Emotional valence* of the event was measured on three levels: negative, neutral, or positive. (3) *Recurring* events were measured on three levels: a one-time event, an event that recurs over a short period of time or is temporary, or an event that recurs over a long period of time. (4) *Scope* (size of the audience at the event) was measured on four levels: personal event, event with friends or family, community event, or a global event. (5) *Duration* (how long the event occurred) was measured on three levels: short-term (confined to 24 hours), intermediate (1 day to 6 months), or long-term (over 6 months). (6) *Culturally shared* (extent to which the event provokes a sense of togetherness within a community) was measured on three levels: not cultural, culturally shared on a small scale (e.g., Emory traditional coke toast), or culturally shared on a large scale. (7) *Education of* events was measured on two levels: non-educational or educational. (8) *Location change* was measured on two levels: no location change or more than one location. (9) *Impact* (significance of the event) was measured on three levels: no impact, short-term impact, or long-term impact that was influential to the participant. After 94% reliability was reached, the author coded the remaining narratives for Event characteristics. The coding scheme can be found in Appendix A and examples of coded narratives can be found in Appendix B.

Data Analytic Plan

To determine if event characteristics described in the narratives differed across time period, I conducted a one-way repeated measures ANOVA for each of the nine characteristics. For characteristics with significant mean differences, I conducted post hoc Tukey tests to determine exactly which time periods differed significantly. I also conducted a one-way repeated measures ANOVA and post hoc Tukey test for consistency to determine its mean differences across time period. Finally, to determine if event characteristics are related to the consistency of the memory for that event, a Pearson's correlation coefficient was calculated between each of the nine event type categories and the consistency score to determine their linear relation. Statistically significant categories were then analyzed using regression analysis.

Results

In the original dataset of narratives (see Bauer et al., 2016), participants provided 10 total narratives. For the purpose of this research, for each participant one narrative was randomly selected from each time period: ages 1 to 5, 6 to 10, and the previous year of life. Participants provided only one most significant event, and it was also included in analyses. Narratives were precluded from the selection process if they were inconsistent at the level of the event and received no consistency score at the level of details. Thus, analyses were based on 177 narratives out of 204 possible narratives (51 participants x 4 narratives per participant). Fifteen (7.4%) participants did not recall any of the three memories at Time 2 for a given time period, therefore those narratives did not receive a consistency score at the level of details. Ten (4.9%) of the "most significant" events were not recalled at Time 2 and two (1%) described participants' own birth, precluding these narratives from receiving consistency scores. Thus, twelve (5.9%) total narratives were missing in the most significant event category.

Event characteristics

Table 1 presents the means and standard deviations of each event characteristic for narratives of events occurring from ages 1 to 5, 6 to 10, the previous year of life, and the most significant event. Descriptively, narratives for events from ages 1 to 5 tended to be one-time events, short in duration, and not impactful. None of the narratives from ages 1 to 5 were coded as cultural. Narratives for events from ages 6 to 10 tended to be one-time events and included nominally more cultural events than the period of 1 to 5 and the previous year of life. Narratives for events from the previous year of life tended to be predictable and included more events lasting longer than one day. Finally, most significant memories tended to be cultural, impactful events. Overall, only a small portion of the narratives were educational or included changes in location, but they tended to be neutral to positive in emotional valence and include friends or family.

Table 1

Means and Standard Deviations of Event Characteristics

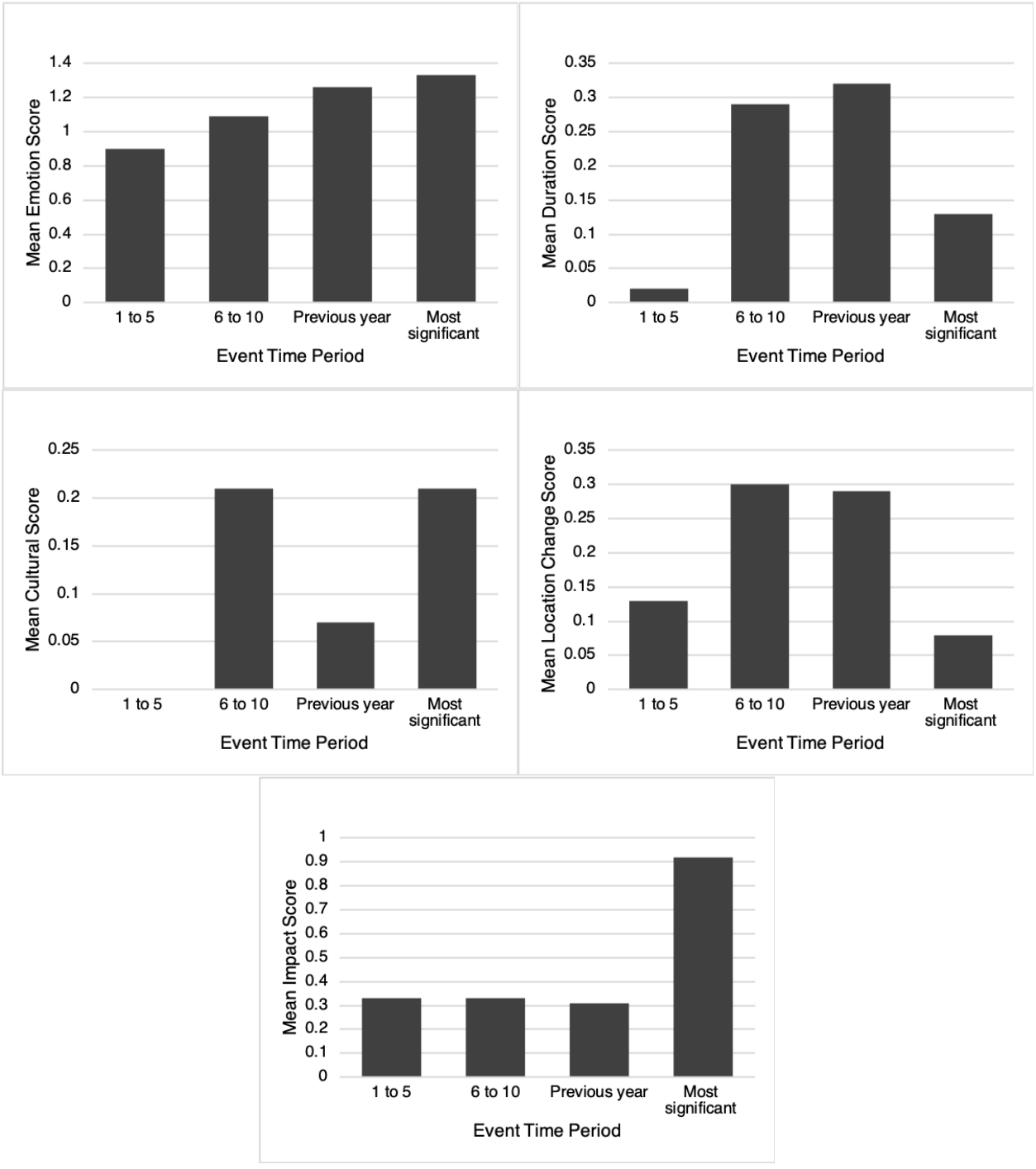
Event characteristics	Event time period							
	1 to 5		6 to 10		Previous year		Most significant	
	n	*M (SD)*	*n*	*M (SD)*	*n*	*M (SD)*	*n*	*M (SD)*
Predictability	44	.70 (.8)	46	.91(.9)	41	1.17 (.74)	35	1.06 (.87)
Emotion	48	.9 (.56)	47	1.09 (.75)	42	1.26 (.66)	39	1.33 (.7)
Recurring	46	.07 (.25)	48	.06 (.32)	42	.1 (.37)	39	.08 (.35)
Scope	46	1.02 (.58)	45	1.09 (.67)	42	1.12 (.67)	39	.92 (.81)
Duration	43	.02 (.15)	45	.29 (.55)	41	.32 (.47)	38	.13 (.34)
Cultural	48	0 (-)	48	.21 (.54)	42	.07 (.26)	39	.21 (.57)
Educational	48	.15 (.36)	48	.13 (.33)	42	.17 (.38)	39	.1 (.31)
Location change	47	.13 (.34)	47	.3 (.46)	41	.29 (.46)	39	.08 (.27)
Impact	48	.33 (.63)	48	.33 (.6)	42	.31 (.6)	38	.92 (.75)

For each of the nine event characteristics, I conducted a one-way repeated measures ANOVA to determine whether the characteristics differed across time periods. The ANOVAs revealed significant main effects of time period for the following event characteristics: emotion $F(3, 172) = 3.779$, $p = .012$, duration $F(3,163) = 4.805$, $p = .003$, cultural $F(3, 173) = 2.872$, $p = .038$, location change $F(3, 170) = 3.528$, $p = .016$, and impact $F(3, 172) = 8.522$, $p = <.001$. Figure 1 depicts the event characteristics with significantly differing means across time periods. The event characteristics predictability $F(3, 162) = 2.544$, $p = .058$, recurring $F(3, 171) = .092$, $p = .964$, educational $F(3, 173) = .261$, $p = .853$, and scope $F(3, 168) = .661$, $p = .577$ showed no significant mean differences across time period.

To determine which time periods differed for each event characteristic, I conducted post hoc Tukey tests. The Tukey test revealed significant mean differences across one or more time periods for the following event characteristics: emotion, duration, location change, and impact. For emotion, narratives for events from ages 1 to 5 ($M = .90$, $SD = .555$) were statistically more emotionally neutral than narratives for events from the previous year of life ($M = 1.26$, $SD = .665$) and the most significant event ($M = 1.33$, $SD = .701$), p-values .05 and .015, respectively. For duration, narratives for events from ages 6 to 10 ($M = .29$, $SD = .549$) and the previous year of life ($M = .32$, $SD = .471$) are both significantly longer (in duration) events than narratives for events from ages 1 to 5 ($M = .02$, $SD = .152$), p-values .015 and .007, respectively. For location change, narratives for events occurring from ages 6 to 10 had significantly more location changes ($M = .30$, $SD = .462$) than the most significant event ($M = .08$, $SD = .27$), p-value .05. Finally, the most significant event was significantly more impactful ($M = .92$, $SD = .749$) than all other time periods: 1 to 5 ($M = .33$, $SD = .630$), 6 to 10 ($M = .33$, $SD = .595$), and the previous year of life ($M = .31$, $SD = .604$), p-values all <.001.

Figure 1

Event Characteristics with Significant Mean Differences Across Time Periods

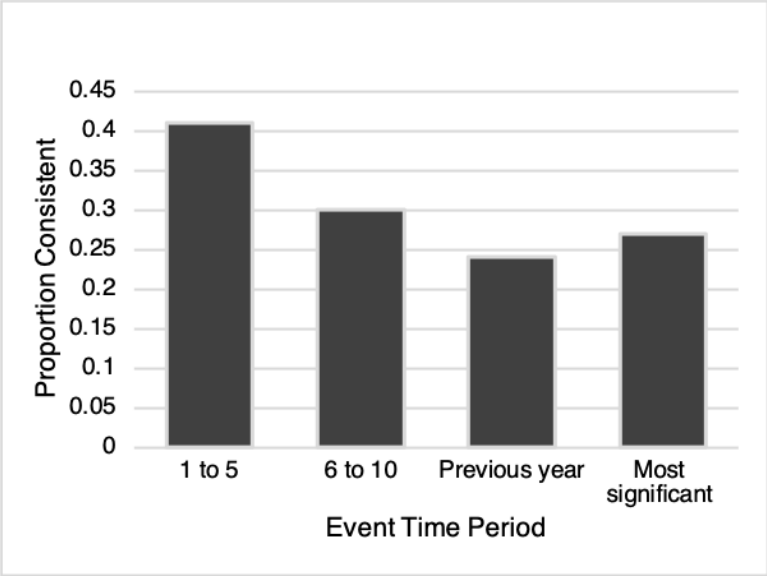


Consistency

Narratives for events from each time period received a mean consistency score: ages 1 to 5 (n = 48, M = .41, SD = .26), ages 6 to 10 (n = 48, M = .30, SD = .26), the previous year of life (n = 42, M = .24, SD = .23), and the most significant event (n = 39, M = .28, SD = .24). Figure 2 depicts the mean proportion of consistent details across time periods. A one-way repeated measures ANOVA revealed a significant main effect of time period $F(3, 173) = 4.059$, $p = .008$.

Figure 2

Mean Proportion of Consistent Details of Narratives Across Time Periods



A post hoc Tukey test showed that, at the level of details, overall (across characteristics) the details included in narratives for events from ages 1 to 5 (M = .41, SD = .255) were significantly more consistent than narratives from the previous year of life (M = .24, SD = .233), p-value .007. Consistency did not differ significantly across any other time period, although narratives from ages 1 to 5 (M = .41, SD = .255) were nominally more consistent than narratives for the most significant event (M = .28, SD = .242), which approached significance, p = .055.

Predicting consistency

To examine the event characteristics as possible predictors of memory consistency, zero order correlations were conducted with each of the nine event characteristics and consistency scores within each time period. For the time period from ages 6 to 10 the event characteristics emotion, $r(45) = -.316$, $p = .03$ and location change, $r(45) = -.352$, $p = .015$, were significantly correlated with consistency, while duration approached significance $r(43) = -.277$, $p = .065$. For events from the previous year of life, duration also approached significance $r(39) = -.298$, $p = .058$. No event characteristics were significantly correlated with consistency in the time periods from ages 1 to 5 and the most significant memory.

A regression was conducted within the time period from ages 6 to 10 with both emotion and location change in the model to determine if they predicted consistency. Emotion and location change each predicted consistency, $b = –.413$, $t(43) = - 3.19$, $p = .003$ and $b = –.430$, $t(43) = - 3.12$, $p = .002$, respectively. In the over-all model, emotion and location change explained a significant proportion of variance in consistency, $R^2 = .297$, $F(2, 43) = 9.1$, $p = <.001$.

Discussion

The present research aimed to examine event characteristics as potential predictors of memory consistency in adolescents' autobiographical memory narratives. Consistency in adolescent memories is a relatively unexplored topic. This is surprising, considering both the importance of and developmental changes in autobiographical memory during adolescence. Autobiographical memories make one's personal past and are important to self-identity, especially in adolescence, as individuals link past events together to form a life story (Fivush, 2011; Habermas & Bluck, 2000). Memory consistency during this period is important then, as

this life story is closely related to identity development and self-understanding, making the memories and details included or excluded an interesting topic of study (Habermas & Bluck, 2000). In the current study, participants provided memory narratives from three periods of their lives: ages 1 to 5, 6 to 10, the previous year of life, and one most significant event. Therefore, I was able to assess both consistency and the event characteristics as a function of when the event occurred.

Out of the nine event characteristics included in the coding scheme, five of them had significant differences between time periods. In other words, some event characteristics varied significantly as a function of when the event was experienced. Although few predictions were made regarding the event characteristics and time period, it is still worthwhile to examine these differences. It was predicted that the most significant events would have the highest impact scores, and this was confirmed. The most significant event was significantly more impactful than all other time periods, likely due to their meaningful nature and potential importance in regard to self-definition (Fivush et al., 2011).

Cultural events also varied significantly across time periods, such that narratives for events from ages 1 to 5 contained no cultural events. Narratives coded as cultural also varied across time period in the global model, but this did not hold true in the post hoc Tukey test, likely due to a weaker global effect. Cultural events included memories of being on a team, holiday traditions, or religious experiences. None of the narratives from ages 1 to 5 were coded as cultural, but narratives from 6 to 10 and the most significant event contained nominally more cultural events than the other time periods.

Narratives from events occurring between ages 6 and 10 and the previous year of life included significantly more extended events than earlier life periods. Narratives from events

from ages 6 to 10 also included significantly more location changes than the most significant event. Furthermore, events from these two more recent time periods had nominally more extended events and events with changes in location than the time periods 1 to 5 and most significant. Narratives from these time periods included more memories of vacationing, or extended trips. In particular narratives from ages 6 to 10 included more memories of moving; thus, entailing changes in location.

Narratives for events from ages 1 to 5 were significantly more neutral in emotion scores than events from the previous year of life or the most significant event. Events that occurred more recently may perhaps be more salient, thus potentially infused with more emotion. It is possible that this is why as events became more recent, they also became more positive in emotion.

In examining consistency, previous work by Peterson and colleagues (2011) suggests that more distant events, or earlier memories, would be less consistent than those experienced more recently. Their research showed that, at the level of details, adolescents included just over half of the same information between two memory reports when asked to describe their earliest memory. Research by Larkina and colleagues (2017) offered a direct comparison of consistency in distant and recent memories. When comparing distant and recent memories of adolescents, Larkina and colleagues (2017) found that more distant memories were more consistent at the level of details than events experienced as more recent memories. It was expected that the consistency data in the current study would replicate that of Larkina et al. (2017), with more distant memories being more consistent, as the narratives were drawn from the same dataset and includes the same comparison of distant and recent events. As predicted, the results showed a significant main effect of event time period. In the present research, narratives for events

occurring between ages 1 and 5 were significantly more consistent at the level of details than narratives for events from the previous year of life. Narratives for events from ages 1 to 5 were also nominally more consistent at the level of details than any other time period.

Reasons for this pattern of lower consistency among more recent memories may be due to more recent memories being remembered with more detail, allowing for reconstruction and changes between two reports of the same memory. In Larkina et al. (2017), memories that were more elaborated had lower consistency on the second memory report. Furthermore, more distant memories likely have more opportunities for rehearsal as they are reflected upon or talked about with friends and family. This rehearsal could potentially aid in the solidification of details told across time.

In predicting consistency, only two characteristics from one time period were significant predictors in regression analysis. In the time period 6 to 10 both location change and emotion predicted consistency. As predicted, more changes in location resulted in lower consistency. Additionally, events with neutral to positive emotion scores were less consistent. Perhaps this pattern is related to, or explained by, more elaborative narratives. Events including more changes in location or positive emotions may have been more elaborative. In Larkina et al. (2017), narratives that were highly elaborative were less consistent.

Why were characteristics of events themselves not more predictive of consistency at the level of details? One possibility is that event characteristics may be more related to consistency in terms of the accuracy of a memory than its autobiographical significance. That is, characteristics of an event may make it easier or more difficult to report details such as who, what, and where, for example. In contrast, in autobiographical memory (as the name itself implies) relation to the self and identity is important. Perhaps, then, consistency in

autobiographical memory is also more important in terms of this relationship to the self and individual identity. This is not a feature captured by event type, but rather the meaning of the event. Further, this could explain why memories of more recent events, those in the previous year of life, and most significant event did not have higher consistency scores relative to memories of distant events. These recent events are likely more closely related to an adolescent's self-identity, as this is the time period in which individuals are constructing their identity and life story. This could also be why some event characteristics were predictive of consistency for events from the time period of ages 6 to 10. These more distant events would not be as salient to the self and identity as more the recently experienced events and significant events, so event characteristics may hold more predictive power for earlier periods. Moreover, as young adolescents are experiencing a period of exploration related to identity development, inconsistency in autobiographical memories may be expected. As self-identity is undergoing development, thus changing over time, both the memories considered personally salient and the details recalled may also change.

Limitations and Future Directions

A few limitations to the current research concern the coding scheme and lack of details provided in some narratives. For example, some of the event characteristics were only coded on two to three levels, which doesn't provide much variability for statistical tests. Furthermore, some narratives lacked the amount of detail required to code each characteristic. Thus, some narratives did not receive a score for each dimension of the coding scheme. While two coders came to 94% reliability in the initial stages of coding, only one person coded the remaining narratives. Because of this, there may have been some drift in the coding, though all coding happened over a two-month period, so any drift was likely small. Additionally, only a portion of

the narratives from the original dataset were coded. Coding and including all of the narratives in analyses may yield more fruitful results. Finally, the length of time between memory reports was short (only one month separated the two surveys), and all of the reports were written. It is difficult to generalize results across alternate contexts, as consistency may differ when reporting conditions differ, too. For example, longer spaces of time between reports or narrating memories to a listener may lend to different findings. Future directions for research include examining other age groups, as there are variations in memory consistency that are linked to age (Larkina et al., 2017). Perhaps the consistency of childrens' and adults' memories may look different than adolescents when also examining event characteristics.

Conclusion

In summary, the present research examined event characteristics as potential predictors of memory consistency in adolescents' autobiographical memory narratives. Early and recent memories were compared in both terms of their event characteristics and consistency. Over half of the characteristics differed as a function of time period in which the event occurred, and, consistent with previous findings by Larkina et al. (2017), distant memories were more consistent that recent memories. The findings on event recency suggest that the details of earlier memories are more "fixed" than more recent events. Finally, only two of the event characteristics were significant predictors of consistency in one time period, ages 6 to 10. Events with multiple location changes and events that were neutral to positive in emotion both resulted in lower consistency. These findings suggest that, for adolescents, characteristics of events may not be so predictive of autobiographical memory consistency, as this is the time in which autobiographical memories take on an important role in the development of self and identity. Therefore, the

characteristics of the event may not be as important as the event's meaning in predicting consistency.

References

Bauer, P. J., Burch, M. M., Scholin, S. E., & Güler, O. E. (2007). Using cue words to investigate the distribution of autobiographical memories in childhood. Psychological Science, 18, 910–916.

Bauer, P. J., Tasdemir-Ozdes, A., & Larkina, M. (2014). Adults' reports of their earliest memories: Consistency in events, ages, and narrative characteristics over time. *Consciousness and cognition*, *27*, 76-88.

Bauer, P. J., & Larkina, M. (2014). Childhood amnesia in the making: Different distributions of autobiographical memories in children and adults. Journal of Experimental Psychology: General, 143(2), 597–611. doi:10.1037/a0033307

Bauer, P. J. (2015a). Development of episodic and autobiographical memory: The importance of remembering forgetting. *Developmental Review*, *38*, 146–166. https://doi.org/10.1016/j.dr.2015.07.011

Bauer, P. J. (2015b). A complementary processes account of the development of childhood amnesia and a personal past. *Psychological Review*, *122*(2), 204–231. https://doi.org/10.1037/a0038939

Bauer, P. J., Hättenschwiler, N., & Larkina, M. (2016). "Owning" the personal past: Adolescents' and adults' autobiographical narratives and ratings of memories of recent and distant events. Memory, 24 (2), 165–183. doi:10.1080/09658211.2014.995673

Bauer, P. J., & Larkina, M. (2016). Predicting remembering and forgetting of autobiographical memories in children and adults: A 4-year prospective study. Memory, 24(10), 1345–1368. doi:10.1080/09658211.2015.1110595

Berman, G. L., Narby, D. J., & Cutler, B. L. (1995). Effects of inconsistent eyewitness statements on mock-jurors' evaluations of the eyewitness, perceptions of defendant culpability and verdicts. *Law and Human Behavior*, *19*(1), 79-88.

Bohn, A., & Berntsen, D. (2008). Life story development in childhood: the development of life story abilities and the acquisition of cultural life scripts from late middle childhood to adolescence. *Developmental Psychology*, *44*(4), 1135.

Drivdahl, S. B., & Hyman, I. E., Jr. (2014). Fluidity in autobiographical memories: Relationship memories sampled on two occasions. Memory, 22(8), 1070–1081. doi:10.1080/09658211.2013.866683

Fivush, R., & Schwarzmueller, A. (1998). Children remember childhood: Implications for childhood amnesia. Applied Cognitive Psychology, 12, 455–473.

Fivush, R. (2011). The development of autobiographical memory. *Annual Review of Psychology*, *62*, 559–582. https://doi.org/10.1146/annurev.psych.121208.131702

Fivush, R., Habermas, T., Waters, T. E., & Zaman, W. (2011). The making of autobiographical memory: Intersections of culture, narratives and identity. *International Journal of Psychology*, *46*(5), 321-345.

Fivush, R., Hamond, H. R., Harsch, N., Singer, N., & Wolf, A., (1991) Content and consistency in young children's autobiographical recall, Discourse Processes, 14:3, 373-388, DOI: 10.1080/01638539109544791

Ghetti, S., Goodman, G. S., Eisen, M. L., Qin, J., & Davis, S. L. (2002). Consistency in children’s reports of sexual and physical abuse. Child Abuse and Neglect, 26, 977–995.

Habermas, T., & Bluck, S. (2000). Getting a life: The emergence of the life story in adolescence. *Psychological Bulletin*, *126*(5), 748–769. https://doi-org.proxy.library.emory.edu/10.1037/0033-2909.126.5.748

Habermas, T., & de Silveira, C. (2008). The development of global coherence in life narratives across adolescence: Temporal, causal, and thematic aspects. *Developmental psychology*, *44*(3), 707.

Hudson, J. A., Shapiro, L. R., & Sosa, B. B. (1995). Planning in the real world: Preschool children's scripts and plans for familiar events. *Child Development*, *66*(4), 984-998.

Hudson, J. A., Mayhew, E. M., & Prabhakar, J. (2011). The development of episodic foresight: Emerging concepts and methods. *Advances in child development and behavior*, *40*, 95-137.

Jack, F., & Hayne, H. (2010). Childhood amnesia: Empirical evidence for a two-stage phenomenon. *Memory*, *18*(8), 831-844.

Köber, C., & Habermas, T. (2017). How stable is the personal past? Stability of most important autobiographical memories and life narratives across eight years in a life span sample. *Journal of Personality and Social Psychology*, *113*(4), 608–626. https://doi-org.proxy.library.emory.edu/10.1037/pspp0000145

Larkina, M., Merrill, N. A., & Bauer, P. J. (2017). Developmental changes in consistency of autobiographical memories: Adolescents' and young adults' repeated recall of recent and distance events. *Memory*, *25*(8), 1036–1051. https://doi.org/10.1080/09658211.2016.1253750

McCabe, A., Capron, E., & Peterson, C. (1991). The voice of experience: The recall of early childhood and adolescent memories by young adults. In A. McCabe & C. Peterson

(Eds.), *Developing narrative structure.* (pp. 137–173). Lawrence Erlbaum Associates, Inc.

McAdams, D. P. (2001). The psychology of life stories. *Review of general psychology*, *5*(2), 100-122.

Myers, J. E., Redlich, A. D., Goodman, G. S., Prizmich, L. P., & Imwinkelried, E. (1999). Jurors' perceptions of hearsay in child sexual abuse cases. *Psychology, Public Policy, and Law*, *5*(2), 388.

Neisser, U., & Harsch, N. (1992). Phantom flashbulbs: False recollections of hearing the news about challenger. In E. Winograd & U. Neisser (Eds.), Affect and accuracy in recall: Studies of "flashbulb" memories (pp. 9–31). New York, NY: Cambridge University Press.

Nelson, K. (1993). The psychological and social origins of autobiographical memory. *Psychological science*, *4*(1), 7-14.

Peterson, C., Warren, K. L., & Short, M. M. (2011). Infantile amnesia across the years: A 2-year follow-up of children's earliest memories. *Child Development*, *82*(4), 1092–1105. https://doi.org/10.1111/j.1467-8624.2011.01597.x

Peterson, C., Morris, G., Baker-Ward, L., & Flynn, S. (2014). Predicting which childhood memories persist: Contributions of memory characteristics. *Developmental Psychology*, *50*(2), 439.

Pezdek, K. (2003). Event memory and autobiographical memory for the events of September 11, 2001. *Applied Cognitive Psychology: The Official Journal of the Society for Applied Research in Memory and Cognition*, *17*(9), 1033-1045.

Pillemer, D. B. (2003). Directive functions of autobiographical memory: The guiding power of the specific episode. *Memory, 11*(2), 193. https://doi-org.proxy.library.emory.edu/10.1080/741938208

Price, H. L., Connolly, D. A., & Gordon, H. M. (2006). Children's memory for complex autobiographical events: Does spacing of repeated instances matter?. *Memory*, *14*(8), 977-989.

Reese, E., Haden, C. A., & Fivush, R. (1993). Mother–child conversations about the past: Relationships of style and memory over time. Cognitive Development, 8, 403–430.

Rothenberg, J. J. (1994). Memories of schooling. *Teaching and Teacher Education*, *10*(4), 369-379.

Suddendorf, T., & Redshaw, J. (2013). The development of mental scenario building and episodic foresight. *Annals of the New York Academy of Sciences*, *1296*(1), 135-153.

Thorne, A., McLean, K. C., & Lawrence, A. M. (2004). When remembering is not enough: Reflecting on self-defining memories in late adolescence. *Journal of personality*, *72*(3), 513-542.

Tulving, E. (1972). Episodic and semantic memory. *Organization of memory, 1, 381-403.*

Tulving, E. (2002). Episodic memory: From mind to brain. *Annual Review of Psychology, 53*(1), 1–25. https://doi-org.proxy.library.emory.edu/10.1146/annurev.psych.53.100901.135114

Van Bergen, P., Wall, J., & Salmon, K. (2015). The good, the bad, and the neutral: The influence of emotional valence on young children's recall. *Journal of Applied Research in Memory and Cognition, 4*(1), 29–35.

Walls, R. T., Sperling, R. A., & Weber, K. D. (2001). Autobiographical memory of school. *The Journal of Educational Research*, *95*(2), 116-127.

Waters, T. E. A., Bauer, P. J., & Fivush, R. (2014). Autobiographical memory functions served by multiple event types. *Applied Cognitive Psychology*, *28*(2), 185–195. https://doi.org/10.1002/acp.2976

Wood, W. J., & Conway, M. (2006). Subjective impact, meaning making, and current and recalled emotions for self-defining memories. *Journal of personality*, *74*(3), 811-846.

Appendix A

Event Characteristics Coding Scheme

1. Predictability
    a. 0 – unable to predict (e.g., car crash)
    b. 1 – planned, no preparation (e.g., dentist appointment)
    c. 2 – planned and prepared (e.g., a big move, dance recital, sporting game, vacation)
2. Emotional valence/tone
    a. 0 – negative (e.g., death of a pet)
    b. 1 – neutral (e.g., a trip to the grocery store)
    c. 2 – positive (e.g., birthday party)
3. Recurring
    a. 0 – does not recur
    b. 1 – recurring over a short period of time/is temporary (e.g., I broke my ankle and went to the doctor 3 times)
    c. 2 – recurring over a long amount of time/ongoing (e.g., my family goes apple picking every year)
4. Scope
    a. 0 – personal (only you) (e.g., made an "A" on a school project)
    b. 1 – family/friends (e.g., family dinner)
    c. 2 – community (e.g., school, church, city events)
    d. 3 – global (global pandemic)
5. Duration
    a. 0 – confined to 24 hours
    b. 1 – intermediate (1 day to 6 months)
    c. 2 – long-term (over 6 months)
6. Culturally shared (to what extent does the event evoke a sense of "togetherness")
    a. 0 – not cultural
    b. 1 – culturally shared, small scale (Emory coke toast, being on a team-dance or sport)
    c. 2 – culturally shared, large scale (Mardi Gras)
7. Educational
    a. 0 – not educational (e.g., a sleepover with friends)
    b. 1 – educational (e.g., something learned in school, learned to change a tire)
8. Location change
    a. 0 – no (event takes place at only one location)
    b. 1 – yes (event takes place at two or more locations)
9. Impact
    a. 0 – not impactful (e.g., routine doctor visit)
    b. 1 – short-term impactful (e.g., injury, first day of school, winning a championship, getting all As or failing a class)
    c. 2 – long term impactful (influences your person) (e.g., death in the family, birth of a sibling, "and that's when I realized I never wanted to dance ever again")

Appendix B

Example Narratives and Coding

Sample Narrative from Time Period 1-5

"In the early fall of kindergarten my dad was going to build a treehouse for my brother and I. He started building it with one bar between two oaks. the he eventually put a lot of squares across the main platform. I used to pull myself up through the squares with the help of one tree. It was very fun to walk around on and my brother and I would play a game to try to stay on the perimeters of the squares without loosing our balance."

Predictability	1
Emotional valence/tone	2
Recurring	0
Scope	1
Duration	1
Culturally shared	0
Educational	0
Location change	0
Impact	0

Sample Narrative from Time Period 6-10

"In 5th grade we went outside to go shoot bottle rockets with our teacher. I loved science in 5th grade a lot. We set up the rockets. It was very bright and hot outside. We stood in the front lawn of our school. We stepped back and miraculously watched the rocket shoot up higher then our school! It was awesome! I remember being very amazed at what we had done."

Predictability	2
Emotional valence/tone	2
Recurring	0
Scope	2
Duration	0
Culturally shared	0
Educational	1
Location change	0
Impact	0

Sample Narrative from Time Period Previous Year of Life

"For my 12th birthday i went with my best friend to White Water. We rode all the rides and my sister was there with her friend to. I remember being very excited when we got there in the parking lot and my favorite ride was the Tornado. there was also a ride that went straight down called the cliff hanger or something like that and that was the only ride that we didn't ride."

Predictability	1
Emotional valence/tone	2
Recurring	0
Scope	1
Duration	0
Culturally shared	0
Educational	0
Location change	0
Impact	0

Sample Narrative from Most Significant Event

"The most significant event in my life (of many) was out family reunion a few summers ago. We had the WHOLE family from my mom's side there. We had dinner at a park in West Virginia, All of my aunts uncles and cousins were there, even people I had never met before. We took family photos that we would cherish forever and played on the playgrounds. It was a life changing experience for me, learning how many important people there are in my life and how significant each one of them is."

Predictability	1
Emotional valence/tone	2
Recurring	0
Scope	1
Duration	0
Culturally shared	1
Educational	0
Location change	0
Impact	2