ANTICIPATING FUTURE EVENTS: DESCRIBING THE FUTURE

IN RELATION TO REMINISENCE THEORY

By

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Abstract

The "reminiscence bump" is a frequently reported effect in autobiographical memory in which older adults recall significantly more events from their teens, twenties, and early thirties than from any other period of life. This study examined the degree to which this same "bump effect" is observed in college-age students as they anticipate life events from their current age until their expected age of death. Sixty-five younger adults (17-20 years, $M = 18.88$, $SD = 1.63$) drew life-lines depicting the "ups and downs" in the anticipated course of their life in terms of positive and negative events. Participants indicated the location of each anticipated event and provided their age at the time of the event. The distance above or below the line provided a measure of the degree to which each event was perceived as positive or negative. A total of 651 life events were recorded. In addition, the differences and relationships seen in anticipated future life events with regard to past life events, generative concern, personality, locus of control, and balanced time perspective were investigated. Consistent with the presence of a reminiscence bump in older adults as they recall events in their past, younger adults in this study displayed a strong "anticipation bump" in which events from the late teens, twenties, and early thirties were identified as encompassing a larger percentage of future life events than from middle age or later life. Fifty-seven percent of all anticipated events fell in this young adult period, compared with 16.9% falling in the 40s and 50s and 26.1% of events falling above the age of 60.

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Chapter 1: Introduction

Statement of the Problem

Across numerous studies investigating autobiographical memory, researchers have commonly noted the presence of a reminiscence bump in which adults recall a greater proportion of life events from their teens, twenties, and early thirties than from any other period of their lives (e.g., Bernsten & Rubin, 2002; Conway & Pleydell-Pearce, 2000; Jansari & Parkin, 1996; Leist, Ferring, & Filipp, 2010). One method for investigating the reminiscence bump is the lifeline interview technique, in which people are asked to draw a line representing their life story while indicating the location of important events along the lifeline (de Vries, 2013). The lifeline method has been used to assess not only past life events, but also, more recently, life events that are anticipated in the future (Assink & Shroots, 2010; Shroots, Dijkum, & Assink, 2004). The current study evaluates lifelines of college-aged adults (18-22 years) to examine the distribution of anticipated life events occurring before the anticipated age at the time of death. Specifically, the study assessed the degree to which an "anticipation bump" is present, as reflected by the presence of more anticipated life events during the reminiscence period (18-32 years of age) than in other age periods. To investigate individual differences in anticipated lifelines, variables thought to be related to a person's conception of their future self, such as generativity (McAdams, 2001), personality (Busseri, 2013), locus of control (Parkes, 1984), and balanced time perspective (Webster, 2011) have been evaluated in the current study.

Reminiscence Theory of Autobiographical Memory

Autobiographical memory is defined as the recollection of events from one's

personal history. One of the most robust findings in the autobiographical memory literature is the existence of a reminiscence bump, in which events from the late teens to early thirties are significantly more likely to be recalled than events from childhood or middle age (Bernsten & Rubin, 2002; Jansari & Parkin, 1996). The presence of this reminiscence bump in older adults is important because it is inconsistent with patterns found in a traditional forgetting curve (Copeland, Radvansky, & Goodwin, 2009). The forgetting curve reflects a steady decline in the ability to recall learned material over time, which suggests that older adults should recall fewer events from earlier decades of life than from more recent decades (Ebbinghaus, 1885; Rubin & Wenzel, 1996). One notable exception to the forgetting curve is that memories that are vivid and stronger are most likely to be recalled, even if the information was presented further back in time (Bernsten & Rubin, 2002). The reminiscence bump period seems to contain many of the most important memories of a person's life course, resulting in more recalled past events from the period of time when the person was in their late teens, twenties, and early thirties (Bernsten & Rubin, 2002; Leist et al., 2010; Webster & Gould, 2007).

Not only are people able to recall more events from the reminiscence bump period, they are also able to recall the emotional impact of those past life events. Because memories from the late teens to early thirties are so vivid, it is easy for people to relive those moments (Webster & Gould, 2007). Critical to determining the content of autobiographical memory is knowing what events occurred and whether or not those events were perceived as positive or negative.

There are a number of techniques for prompting recall of different emotional memories. One example is the cue-word method. For example, Bernsten and Rubin

(2002) examined the age of a person's most important, happiest, saddest, and most traumatic personal memory. They simply asked participants to recall a memory when prompted with one of these emotions. Findings from this study suggested that the most important and happiest memories are more prevalent from late adolescence through the early thirties, indicating that people generally recall life events from the reminiscence bump period as more positive than negative in valence. Another common technique for investigating emotions from autobiographical memory is to prompt specific events when recalling memories. Liest et al. (2010) gave participants a list of common events that happen in most people's lives, including both generally positive (e.g., marriage, birth of first child, and vacation) and negative events (e.g., death of loved ones, loss of job, and serious accident). Results from this study also indicated that most of the positive life events were reported during the reminiscence bump period, while the negative life events were found to occur largely during other periods of life. Thus, studies investigating positive and negative memories conclude that positive or happy life events are most commonly reflected in the reminiscence bump period (Bernsten & Rubin, 2002; Leist et al., 2010).

Lifeline Interview Method

Numerous researchers have also investigated life stories using graphical representations of an individual's life, such as line graphs (e.g., Bourque & Back, 1977), life drawings (e.g., Whitbourne & Dannefer, 1986), and the lifeline (e.g., de Vries, 1988). The lifeline approach to understanding a person's life story allows the individual to paint a picture of their affective evaluations of life events (de Vries, 2013). Schroots (1998) developed a specific lifeline technique which he referred to as Lifeline Interview Method

(LIM) to better understand recollections of life events in a clear, systematic, and standardized way (Assink & Shroots, 2010). Data collected using the lifeline interview method includes general information about life events such as the age of participants at the time of the event, whether or not that event was perceived as affectively positive or negative, and what the recalled life event involved. Assink and Shroots (2010) use the metaphor of a life "footpath" which can easily be reflected in a graphical representation of time as a line with peaks and dips representing ups and downs associated with their life "footpath."

When investigating past life events using the lifeline, the participant draws their life path in a line-graph fashion from birth to their current age, recording the chronological age and emotional affect (e.g., life's ups and downs) at each point. This is, in essence, a subjective recollection of how they perceive events throughout their lives. The lifeline can be used not only to look retrospectively at the past but also to look forward at the future (Assink & Shroots, 2010). To investigate the future, the participant draws their life path from their current age to their anticipated age of death, also reporting their anticipated age at each event and the affect associated with each event. Once the participant draws their lifeline, they also report what the event consists of at each point on the line. The past or future lifelines both yield information about the number of events, the emotional valence of each event, and the nature of each event.

There are age-related differences seen in lifelines from previous studies. Most studies employing the lifeline interview method examine the life events of older adults (McAdams, 2001; Schroots & Assink, 2005; Webster & Gould, 2007), but lifelines have also been used in some studies to access life events of younger adults (Schroots &

Assink, 1998; Schroots et al., 2004). Generally, results from studies using the lifeline to explore age-related inquiries conclude that older adults report more past life events than younger adults and that the reverse holds true for the future; younger adults report more future life events than older adults (Shroots & Assink, 1998; Schroots et al., 2004). Literature using other measures to look at life events suggests the same trend of life stories; young people anticipate more future events and older people recall more past life events (de Vries & Watt, 1996).

In the present study, the lifeline was used to look at life events of younger adults. It was employed to investigate past life events as well as anticipated future events. By examining both the past and the future, a complete life story was acquired from each participant, as well as information from the past that may have influenced their perception of the future.

Future Life Events

Researchers have noted the importance of investigating the future from many different points of view (McAdams, 2001; Schroots & Assink, 1998; Webster, Bohlmeijer, & Westerhof, 2010). Anticipated future events are essentially the continuation of a person's life-story and represent what a person perceives the future course of their life to be. Different personal components of an individual, such as self-identity (McAdams, 2001), the conception of a future-self (Coleman, Herzberg, & Morris, 1976), and past life events (Webster et al., 2010) have been suggested to affect the way people anticipate future events in their life. First, McAdams (2001) has noted that a person will anticipate events and form life goals that are representative of their self-identity. Second, a person's prediction of their future-self is thought to drive the

emotional valence of the type of events that people imagine (Coleman et al., 1976). Finally, research suggests that past life events are generally representative of how a person's life has developed and is associated with how they view the self at present and how they perceive their future (Webster et al., 2010). When investigating the number and types of events that people predict for their future, it is important to understand the implications of the elements of an individual's previous life course in order to make sense of and interpret the events they imagine.

Future life events research has become a prominent approach to studying the self and perceptions of life (Schroots & Assink, 2005). When people are asked to imagine their lives and specific events that will happen in the future, researchers have found that people envision a set of events that is in line with their social identity (McAdams, 2001; Schoots & Assink, 2005; Schoots, 2003). People generally imagine that their future will be representative of how they currently view themselves. With regard to social identity, McAdams (2001) suggests that an emerging theme in the literature is that imagining future events across a life story depicts aspects of the self while at the same time helps to orient the person toward future goals. This suggests that the types of life events that are anticipated are dependent on the person's view of the self, as well as the goals they have established for the future. Rathbone, Moulin, & Conway (2008) suggest that memories are more accessible when they are from a period in which a self-construct was formed, and that this view of the self is extended and easily applied to what they expect the future to hold. This suggests that events are formulated or planned to reflect those perceived aspects of a person's current self-identity. For example, a person with a generative view

of the self should anticipate more future events that relate to a self-construct that includes such things as helping, teaching, or promoting future generations.

The concept of an anticipated "future-self" is related to how an individual views the self. Researchers suggest that past experiences provide life lessons and determine what an individual wants their future to hold and how that individual views their future-self (McLean & Thorne, 2003). In adolescence, according to Erikson (1963), thoughts begin to form about an individual's past, present, and future selves in order to construct a life narrative of events that have already happened and of the events that feel tangible in the future. As aging takes place, people develop constantly changing future selves that maintain consistency between how their life story has unfolded in the past and their aspirations for the future. Future selves are believed to be constructed in ways that parallel how people remember their past selves; specifically, close future selves are evaluated more positively than distant future selves, and close future selves have a greater impact on present identity (Strahan & Wilson, 2006). These researchers also suggest that possible future selves have an impact on motivations to behave in ways that will allow for achievement of future goals. One would assume that people will anticipate future life events that are representative of life goals working in parallel with influences from the past.

A person's past provides a foundation on which their current self-concept is based and it influences what they anticipate for the future. Differences in past life events can affect the way people think about life and the goals that become associated with the future. Researchers have demonstrated that those who recall more intense negative past life events than positive life events are more likely to predict negative events in the future

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(Webster et al., 2010) and that the way people remember the past is extended to predict images of possible futures (Williams et al., 1996). A specific study involving holocaust concentration camp victims investigated perceptions of past and future events (Lomranz, Shmotkin, Zechovoy, & Rosenberg, 1985). The results signified that this specific population of holocaust survivors was more past-oriented, less future-oriented and had a generally more pessimistic attitude toward life events. Participants in this study had a traumatizing and difficult past, which was theorized to inhibit their ability to think about the future. This study by Lomranz et al. (1985) exemplifies that the events that happen in a person's past greatly influence how individuals perceive their current lives and anticipate the future. Accessing past life events can be a valuable factor in helping to explain people's views of the self and the future.

In addition to past life events, there are other individual differences that can potentially affect the way people anticipate the future. Imagined life events differ across individuals. To better understand these patterns of life events, the present study investigated individual differences in core aspects of the self and differences in anticipated life events. After surveying the literature surrounding life events, it appears that generativity, personality attributes, and locus of control appear to be central to understanding how the self is viewed and how this view can potentially influence the patterns observed in future-oriented lifelines.

Individual Differences Related to Self-Concept and Anticipated Futures

   Generativity. Erik Erikson (1963) defined generativity as a desire to promote the advancement and well-being of the next generation through parenting, teaching, community involvement, and/or engaging in a wide range of behaviors aimed at leaving

behind a positive legacy of the self for the future. Erikson first developed the notion of generativity in 1963 as part of a life stage in his psychosocial theory of development: generativity versus stagnation, a conflict seen in midlife. Literature on generativity has expanded immensely in subsequent decades to include more specific dimensions of the concept of generativity. Recently, researchers have suggested that generative behavior is more complex and includes a composition of individual and social factors intended to provide for future generations and to improve the world in which we live (Cox, Wilt, Olsen, & McAdams, 2010), which are activated by a desire to benefit future generations at points in life when societal concerns are present (e.g. raising children; Peterson & Stewart, 1993).

The degree to which someone demonstrates generative qualities and behaviors varies according to the individual's stage of life. Across numerous studies investigating generativity across the life span, generativity is suggested to include age related differences and become more prevalent in the adult years or midlife (e.g., 30-40), because of a person's new social roles in life, such as child rearing (McAdams & de St Aubin, 1992; Peterson & Stewart, 1993). Successful generative acts are thought to be carried out at all ages, influenced by developmental tasks, religious affiliations, or specific societal demands (McAdams & de St Aubin, 1992). Developmental tasks include life stages that most people go through at some point in life, such as child rearing. At this point in life, many people ponder leaving behind something lasting for their children's future, something considered to be a generative action (Peterson & Stewart, 1993). Societal demands have been similarly thought to inspire behaviors that promote the welfare of generations to come. Societal concern is defined by Peterson (1993) as a sacrifice made

in the service of unknown others. This appears to be a gray area because some religious activities also involve sacrifices in the service to the greater good. Over the life span, age-related individual and social differences are highly related to a person's current developmental stage and the societal demands that are of greatest concern. The degree to which someone behaves in a generative way is in large part associated with their age in life but is also dependent on goals manifested by the individual's life experiences and self-processes. Jones and McAdams (2014) suggest that a person's inner desire and individual demands work in parallel to produce a conscious concern for the next generation. When reinforced by a belief in the worthiness of humankind, this concern will be realized through specific commitments or goals to do something helpful and significant for future generations. Jones and McAdams (2014) specify that these commitments typically lead to planned generative actions in the future. Thus, when exploring anticipated future events, one would assume that a generative person will imagine more helping and promoting events in the future.

Personality. Another variable that can influence the way people recall or imagine life-events is the overarching construct of personality. This is related to previous references to the concepts of "self" and "identity," in that past life events or imagined future events reflect aspects of the self that differ across types of people. People formulate their strongest memories during those stages of life in which they are developing their sense of self-identity (McAdams, 2001; Rathbone et al., 2008). When people anticipate future events, they predict events that are in line with how they view the self (McAdams, 2003). In turn, the way people perceive the self is directly related to personality (Assink & Schroots, 2010) and can be explained in terms of three non-

overlapping levels of personality. The first level includes stable personality traits that are constant throughout the lifespan. The second level involves personal concerns and self-constructs that are present in certain times, roles, and places. Assink and Schroots (2010) describe the third level as the identity that they express in their life stories. A common and reliable method for exploring some of these aspects of personality is the five-factor model, also referred to as the "big five" personality factors (McAdams & Pals, 2006; McCrae & Costa, 1990). The three levels suggested by Assink and Schroots (2010) are embedded within the five-factor model.

The five-factor model of personality includes the dimensions of openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism (McCrae & Costa, 1990). These categories of personality are suggested to account for different traits of personality cross-culturally and to have relatively little overlap with each other (McCrae & Costa, 1990; McCrae & John, 1992; Assink & Schroots, 2010). Atkinson, Atkinson, Smith, Bem, and Nolen-Hoesema (2000) explain the five-factor model in the following way: openness to experience is reflected in traits that include curiousness, creativity, and imaginativeness. The personality factor of conscientiousness is associated with being self-aware and organized; people who score high on the factor of conscientiousness are known to plan events aimed at achievement. Extraversion, in contrast to introversion, is the extent to which someone is seen as highly sociable and to display positive emotions. Agreeableness reflects the tendency to be cooperative and to possess a willingness to be helpful to others. Lastly, neuroticism is associated with negative feelings, vulnerability, and low emotional stability (Atkinson et al., 2000). Based on this literature regarding specific tendencies of people to display certain

personality characteristics, with regard to anticipating future events, it may be anticipated that those who score high on openness to experience would imagine more life events overall, those who score high on conscientiousness would anticipate more conventional planned events, those who score high on extraversion would anticipate more positive events, those who score high on agreeableness would predict more helpful events in the future, and that those who score high on neuroticism would anticipate more negative life events overall.

      Locus of Control. The definition given to locus of control is the degree to which a person feels that they can control events that happen in their life. Researchers suggest that locus of control is a personality attribute reflective of how control over events is perceived (Phillips & Gully, 1997) and that it is a constant feature of a person's self-construct (Parkes, 1984). Embedded within this idea of control is the distinction between internal and external locus of control (Johnson, Rosen, Chang, & Lin, 2015; Parkes, 1984; Phillips & Gully, 1997). Persons with an internal locus of control believe that the environment is responsive to their actions and that rewards are contingent on their behavior (Johnson et al., 2015). External locus of control encompasses appraisal of the environment and feeling powerless to control it (Johnson et al., 2015). There are many differences between people who exhibit internal locus of control and those who exhibit external locus of control; for example, those with an internal locus of control believe they can determine and accomplish their life's goals in the future (Phillips & Gully, 1997).

      Some researchers have investigated the relationship between perceived locus of control and anticipated future events (McAdams, 2003) or future goals (Johnson et al., 2015; Parkes, 1984; Phillips & Gully, 1997). Favorable outcomes and life events are

viewed as more positive and satisfying by those who exhibit an internal locus of control (Johnson et al., 2015). Parkes (1984) suggests that people with an internal locus of control are more adaptive and resilient in appraisals when faced with specific stressful situations. This resilience extends into the future, where positive life aspirations are still present even when negative life events arise. Another characteristic of an internal locus of control is that it involves goal orientation associated with greater need for achievement and strong internal levels of self-control (Phillips & Gully, 1997). With regard to anticipated life events, it was hypothesized that those who are goal oriented in general would anticipate achievement in the future involving important positive life events (McAdams, 2001 & 2003; Phillips & Gully, 1997).

   Balanced Time Perspective. Webster (2011) proposed the notion of balanced time perspective to describe the way people think about their lives and defined it as a consistent and equal tendency to think about both the past and the future in positive ways. He suggested that there are four types of time perspectives that people can unknowingly adopt, which ultimately affects the way they think about the past and the future (see Figure 1). Webster believes that this outlook on life is a stable, attitudinal, and behavioral preference for a past, present, or future time perspective. The first of the four types is referred to as *Time Restrictive* which is associated with the tendency to think little about the past and little about the future. The second includes the *Reminiscer* which is characterized by primarily thinking about the past and little about the future. Third, are the *Futurists* who think primarily about the future and little about the past. The fourth type of time perspective put forward by Webster (2011) is *Time Expansive*, which is characterized by thinking a great deal about both the past and the future.

Past

High ———————————————————— Low

High

Time Expansive	Futurist
Reminiscers	Time Restrictive

Future

Low
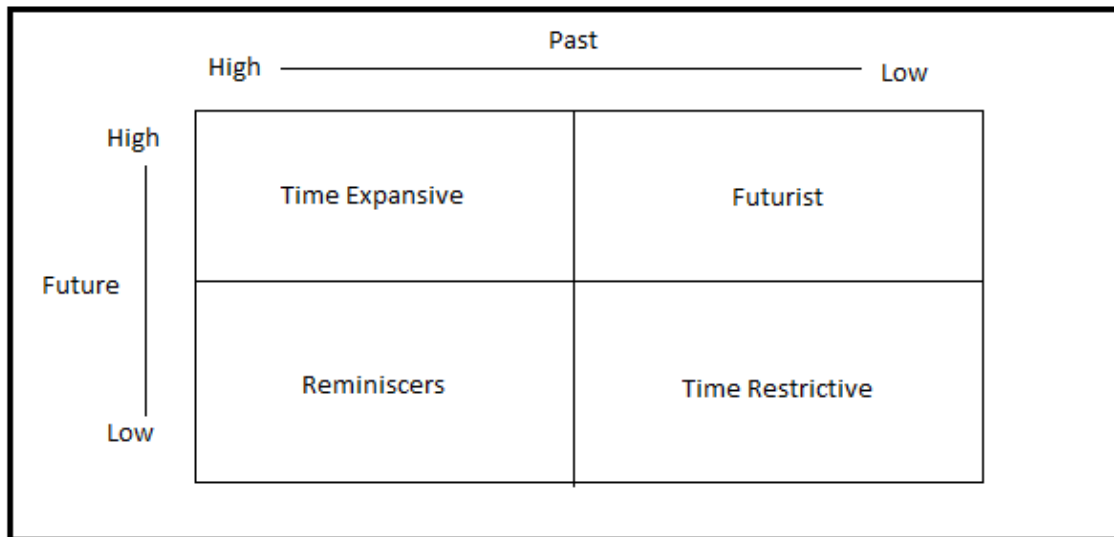
Figure 1. Webster (2011) Time perspective types

Webster's construct of a balanced time perspective is not just about thinking more or less about the past and future, it includes a level of positivity towards these points in life. Webster operationalized his ideas about time perspective through the development of the Balanced Time Perspective Scale (Webster, 2011). This questionnaire provides separate measures of future and past time perspectives within the same scale. Webster advocates using a median split on both scales to form the four types of time perspectives described in the previous paragraph, however, the present study conducted correlation analyses using the two continuous measures of past and future time perspectives; a two-fold future versus past time perspective.

The Current Study

The current study extends the research on anticipated future events by investigating individual differences in anticipated life stories. College-aged students completed two lifelines; a past lifeline displayed the participant's life course from birth to their current age, and a future lifeline displayed the anticipated life course of the participant's life from their current age to their projected age of death. The study also

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collected measures of generativity, personality, locus of control, and balanced time perspective. Frequency distributions were generated for both the ages of life events and the distance across the lifelines where each event occurred. A series of correlational analyses were also conducted, examining the relationship between individual difference variables and life event data obtained from the lifelines.

Hypotheses

Based on previous work surrounding the reminiscence theory of autobiographical memory and future life events, the following primary hypothesis and secondary hypotheses were developed regarding anticipated future events in college students.

Primary Hypothesis: (1) It was predicted that anticipated future events would show a trend similar to the reminiscence bump found in autobiographical memory. Specifically, it was hypothesized that when people list anticipated future events, most of those events would be during the ages of 18-32, representing an 'anticipation bump.'

Secondary Hypotheses: (2) It was predicted that the nature of the past that an individual had would be related to the number and affective evaluation of events they anticipate in the future, such that those who displayed a greater number of future life events and a greater proportion of positive past life events would anticipate a greater number of future life events and a greater proportion of positive life events in the future, respectively.

(3) The degree to which someone displays generative qualities was hypothesized to be related to the number of anticipated future events reported, specifically, those who display qualities of generativity would anticipate an overall greater number of positive and negative life events in the future than those who do not.

(4) The type of personality a person displays, as assessed by means of the big five, was hypothesized to be related to both the affective evaluation and number of events that are anticipated; specifically, it was hypothesized that (a) those who display more qualities of *openness to experience* would anticipate a greater number of life events, (b) those who display more qualities of *extraversion* would anticipate a greater proportion of positive future life events, (c) those who display more qualities of *agreeableness* would anticipate a greater proportion of positive future life events, and lastly, (d) those who display more qualities of *neuroticism* would anticipate a smaller proportion of positive future life events.

(5) It was predicted that perceived locus of control would be related to the number of anticipated events, such that those who perceive themselves as having an internal locus of control would anticipate a greater number of positive and negative events overall, while those who have an external locus of control would anticipate a smaller number of positive and negative life events.

(6) Time perspective was also predicted to be related to the proportion of life events that appeared in future-oriented lifelines, compared to the total number of life events recorded in both the past- and future-oriented lifelines. Specifically, (a) higher scores on the future time perspective subscale of the BTPS will be associated with a larger proportion of total life events present in future-oriented lifelines, and (b) higher scores on the past time perspective subscale of the BTPS will be associated with a smaller proportion of total life events present in future-oriented lifelines.

Chapter 2: Method

Participants

Prior to data collection, a G*power analysis, using a moderately sized anticipated correlation coefficient of .30 and the alpha level set at .05, revealed that a sample size of 64 participants should be sufficient to achieve a value for power of .80. Recruitment of participants was done through Radford University's SONA recruitment system. SONA (Fidler, 2002) is an online system that allows undergraduate students to view and sign up for ongoing studies in exchange for credits that either fulfill class requirements or are used as bonus credits. The sample included 65 (24 male, 41 female) undergraduate students from Radford University. Because the study primarily investigated younger adults' perception of their futures with regard to the reminiscence bump period, which usually begins in late adolescence, only students from 17-20 years of age participated ($M = 18.88$, $SD = 1.63$).

Measures

 Lifeline. The lifeline method developed by Schroots and Assnik (1998) was used as the primary measure to collect information about anticipated future events. Participants were asked to draw a "future lifeline" that traces the path of the ups and downs of their life from their current age to their anticipated age of death. A blank future lifeline consists of a horizontal line in the middle of the graph that is labeled at the far left with the term "Current Age" and on the right with the term "Age at Death" (see Appendix A). The horizontal line axis therefore represents time. As participants draw their lifeline from left to right, the proportion above and below the horizontal line represents the degree to which the participant anticipates that time of their life to be positive or negative, respectively. The horizontal line represents a neutral position where they did not consider their life to be either positive or negative. After participants drew the line, they were

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asked to mark the line with specific events that are especially meaningful to them and to indicate their age at the time of the event. Using the lifeline method, we can learn whether the same type of reminiscence bump effect is observed in anticipated future events obtained from younger adults as that obtained for recalled past events by older adults. The lifeline is a valid and reliable measure of autobiographical memory (McAdams, 2001; Webster & Gould, 2007; Schoots & Assnik, 2005) and anticipated future events (Schoots & Assnik, 2005; Schoots, 2003). Scores that were obtained after analyzing the future lifeline consisted of the (a) number of total events, (b) number of positive events, (c) number of negative events, (d) age at each event, (e) proportion of positive or negative affect at each event, (f) distance across the lifeline at each event, and (g) the average affective evaluation of life events for each participant.

In addition to collecting information about future events, the lifeline was also used to investigate participants' past life events. Instead of a "future lifeline," participants were asked to draw a "past lifeline" that traces the path of the ups and downs of their life from birth to their current age. Much like the future lifeline, a blank past lifeline consists of a horizontal line in the middle of the graph that is labeled at the far left with the term "Birth" and on the right with the term "Current Age" (see Appendix B). After participants drew the lifeline, they were again asked to mark the line with specific events that are especially meaningful to them and to indicate their age at the time of the event. There were no guidelines as to how many events they should recall, but participants were instructed to complete the lifeline however they thought about it at that time. The past lifeline consists of a subjective recollection of events that have happened in people's lives so far. Scores that were obtained after analyzing the past lifeline consisted of the number

of total events, number of positive events, number of negative events, age at each event, proportion of positive or negative affect at each event, and the proportion across the lifeline at each event.

Loyola Generativity Scale. One of the most commonly used measures of generativity is the Loyola Generativity Scale (LGS). Developed by McAdams and de St. Aubin (1992), the LGS measures generative concern in which subjects indicate the extent to which 20 statements describe them, on a numerical rating scale of 1(never applies to you) to 4 (nearly always applies to you). The LGS covers concern, action, and narration aspects of generativity with an emphasis on concern (McAdams & de St. Aubin, 1992). McAdams & de St. Aubin (1992) suggest that positively scored items in the LGS involve themes such as concern for passing along knowledge (e.g., I try to pass along the knowledge I have gained through my experiences), concern for making significant contributions to society (e.g., have a responsibility to improve the neighborhood in which I live), concern with leaving a lasting impact (e.g., I feel as though I have made a difference to many people), being creative and productive (e.g., I try to be creative in most things that I do), and caring for other people (e.g., I have made many commitments to many different kinds of people, groups, and activities in my life). These researchers assert that the themes within the LGS are highly effective in accurately evaluating a person's level of generative concern.

The final version of the LGS was highly correlated with external measures of generativity, indicating convergent validity as well as high discriminant validity against social desirability, specified by high and low correlations, respectively (McAdams & de St. Aubin, 1992). Also, McAdams and de St. Aubin (1992) reported high internal

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consistency with adults (α = .83) and with college students (α = .84). According to Einolf (2014), the LGS measures a stable construct or a trait-like characteristic of generativity that is largely unchanging across the life course. A ten year longitudinal study using the LGS was done evaluating the degree to which generative concern is a stable construct (Einolf, 2014). Results from the validation study suggest that the LGS measure encompasses high test-retest reliability (r = .61) and is measuring a stable construct. In the original validation study, a similar correlation was found following a three-week test-retest assessment (r = .73), indicating that this test can be taken by the same person more than once and produce similar scores. (McAdams & de St. Aubin, 1992). This is a self-report survey that results in a final score ranging from 0-60, the higher the score the higher the level of generative concern. Some of the items are reverse scored and then all of the items are summed to acquire a total score.

50 Item International Personality Item Pool. Derived using factors within the Big-Five model of personality, the 50 item International Personality Item Pool (IPIP) is a self-report assessment of personality (Goldberg, 1992). The IPIP measures personality traits within the five-factor model of personality, including openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism. However, Goldberg (1992) uses the term emotional stability instead of neuroticism, and the term intellect/imagination instead of openness to experience. Included in this version of the IPIP are fifty statements in which participants are asked to rate each statement based on how accurately it describes them right now. The scaling consists of a numerical rating scale ranging from 1 (very inaccurate) to 5 (very accurate).

According to Goldberg (1992), at the individual factor level, correlation coefficients supported the convergent validity of each personality scale, openness to experience ($\alpha = .84$), conscientiousness ($\alpha = .85$), extraversion ($\alpha = .88$), agreeableness ($\alpha = .88$), and neuroticism ($\alpha = .88$). Results from the initial validation study also suggest that the IPIP has high test-retest reliability (Goldberg, 1992). The items have good discriminant validity against other factors within the Big Five with an average correlation of $r = .27$. In addition, the 50-item IPIP has good reported internal consistency reliability ranging from $r = .90$ to $r = .92$. All in all, the IPIP is a valid and reliable measure for investigating personality characteristics based on the Big-Five model of personality. The five subscales within the 50 items each represent a factor of personality. Scores are summed for each subscale and higher scores for each subscale represent a greater chance of a person having those personality characteristics.

Rotter's Locus of Control Scale. Julian Rotter was the first to conceptualize the theory of internal and external locus of control (Halpert & Hill, 2011). Rotter made the first attempt at identifying these separate internal and external factors using a self-report measure. His internal/external scale measures the extent to which someone experiences an internal or external sense of control. Within 20 items, each item includes two statements in which the respondents pick the statement they agree with the most. The two statements within each item reflect either an internal factor focus (e.g. Becoming a success is a matter of hard work, luck has little or nothing to do with it) or an external factor focus (e.g. Getting a good job depends mainly on being in the right place at the right time) (Joe, 1971). To this day, Rotter's Locus of Control Scale remains one of the

most reliable measures of locus of control. It will be used in this study to evaluate the extent to which people have an internal or external perception of control.

In the original validation study, Rotter reported overall high reliability and validity associated with his scale (Joe, 1971). It was reported that the scale has good discriminant validity against other constructs such as intelligence, social desirability, and political affiliation (Rotter, 1966). Internal consistency within the measure was reported to have high correlation coefficients ranging between $r = .65$ and $r = .79$ (Rotter, 1966). Test-retest reliability was reported by Rotter (1966) to vary between $r = .49$ and $r = .83$. It was proposed that the reason behind the variation within the test-retest coefficients was due to differing samples (Joe, 1971). More recently, investigators have noted that the Rotter scale been successfully validated in many situations such as use over time and in young adults (Halpert & Hill, 2011). Scores on Rotter's I/E Scale are calculated by summing the 29 items, some reverse scored. Higher scores indicate higher levels of internal locus of control and lower scores indicate higher levels of external locus of control.

Balanced Time Perspective Scale. Subjective awareness of the past, present, and future has psychosocial outcomes that are reflected in attitudes and behaviors (Webster, 2011). The Balanced Time Perspective Scale (BTPS) was developed to determine an individual's subjective awareness with regard to time. Webster (2011) proposes that there are a few different ways that people can think about time in their life and he conceptualizes them as falling into four categories. He developed this scale to describe and interpret people's tendency to think about one's past and future to an equivalent degree and in an affectively positive way. Information collected by the BTPS includes a

subjective 40-item self-report measure of cognitive, emotional, and motivational dimensions (Webster, 2011). Within the BTPS, respondents are asked to rate each of 28 statements on a numerical-rating scale ranging from 1 (strongly disagree) to 6 (strongly agree). There are two subscales embedded within the BTPS; even-numbered items are from the future subscale (e.g., I look forward to my future) and odd-numbered items are from the past subscale (e.g., Reviewing events from my past helps give my life meaning) (Webster, 2011).

The BTPS has been validated by Webster (2011). Reported in the validation study, both the future (α = .88) and the past (α = .92) subscales have excellent scale reliability. The BTPS was compared to a parallel measure, the Zimbardo Time Perspective Inventory and was found to have good concurrent validity for both the future subscales (r = .32; p < .001) and past subscales (r = .43; p < .001). Finally, the BTPS measure was found to have good discriminate validity, such that the measure was not correlated with social desirability (r = -.04) (Webster, 2011). Scores obtained from the BTPS were summed for the two subscales. Odd-numbered items are from the past subscale and even-numbered items are from the future subscale. Instead of doing a median split as Webster (2011) suggests, this study is simply looking at the scores on each subscale; i.e., scores represent a person's tendency to think more or less about the past and the future.

Procedure

Initially, participants signed up to take part in this research study on Radford University's psychology department's SONA recruitment system. Upon enrolling in the

study, participants agreed to complete an assessment of life events and several questionnaires that took approximately one hour.

Participants who came into the lab were provided with an informed consent form from a researcher (see Appendix C). They had the opportunity to ask any questions and to discontinue participation at any time. After participants provided their informed consent, they were shown completed sample lifelines to make sure they understood the lifeline task. At this time, the researchers left the participant alone in the lab room. Participants then completed two packets. The first consisted of a brief demographic section (see Appendix D) and the past and future lifelines. The second packet included the LGS, the IPIP, Rotter's I/E scale, and the BTPS. The second packet measures were counterbalanced into five different orders. Once the packet was completed, the study was concluded. The participants were thanked for their participation and the SONA credits were awarded.

Data Reduction

The lifelines were analyzed using the WebPlotDigitizer (Rohagi, 2015). The WebPlotDigitizer was developed to facilitate accurate data extraction from images. The lifelines were scanned and uploaded into the WebPlotDigitizer. Once uploaded, the system allows the user to specify the axes of the image (e.g., x-axis and y-axis). The horizontal line that indicates a neutral position on the x-axis was specified to have data points from 0 to 100, representing the percentage across the lifeline. The vertical axis of the lifeline indicating the most positive and most negative on the y-axis were assigned data points from 100 to -100, respectively, representing the percentages above and below the horizontal axis line. Once the axes were calibrated, the WebPlotDigitizer allows for

data point extraction. For a given lifeline, each place where a participant indicated a life event was marked along the axes. Once all of the life events were accounted for, the WebPlotDigitizer was able to extract the coordinates for each data point in terms of the horizontal and vertical axes. The horizontal value for each data point represented the percentage across the lifeline for that life event and each vertical value represented the percentage of positivity or negativity for that same life event. Data was reduced for the past and future lifeline of all 65 participants.

Chapter 3: Results

Preliminary Analyses

Descriptive statistics for life events. Across 65 participants, a total of 651 future

life events were reported on the lifelines ($M = 10.03$, $SD = 2.26$). For each lifeline, the

mean number of positive ($M = 5.34$, $SD = 1.74$) and negative life events ($M = 4.14$, $SD =$

1.34) as well as the mean percentages of these life events were calculated (see Table 1).

The number of future life events reported for men ($M = 10.08$, $SD = 2.92$) was similar to

the number of future life events reported for women ($M = 10.00$, $SD = 1.80$).

Table 1. Number and Type of Future Events

Number of Life Events			Positive Life Events			Negative Life Events		
N	*M*	*SD*	*M*	*SD*	*%*	*M*	*SD*	*%*
651	10.03	2.26	5.34	1.74	53.46	4.14	1.34	39.32

Primary Analyses: Assessing the Presence of an Anticipation Bump

Distributions of the number of future life events. To evaluate the primary

hypothesis, a frequency distribution of the ages at each event was generated to see

whether a greater proportion of anticipated life events was observed during the

'anticipation bump' period (e.g., 18-32 years of age). The frequency distribution (see

Figure 2) displays the predicted trend of response in which a greater proportion of future

life events (43.99%) were seen in the 20's when compared to any other decade of life.

Fifty-seven percent of all anticipated life events fell between the late teens and the 30's,

compared with 16.9% falling in the 40's and 50's, and 26.1% of events falling above the

age of 60. The observed frequencies of the age at anticipated life events is significantly

different from expected frequencies of the age at anticipated life events for a perfectly flat

distribution, χ^2 (9, $N = 641$) = 887.57, $p < .001$, Cohen's w = 1.18. This frequency

distribution thus displays an 'anticipation bump' where a disproportionately high number of life events are anticipated by young adults to occur in the reminiscence bump period. The same trend was found with both positive and negative life events (see Figures 3 and 4, respectively). Participants recorded 348 positive future events and 256 negative events, both of which display a greater percentage of life events during the 20's. Life events that were less than 5% above or below the neutral horizontal lifeline axis were categorized as neutral ($N = 47$).
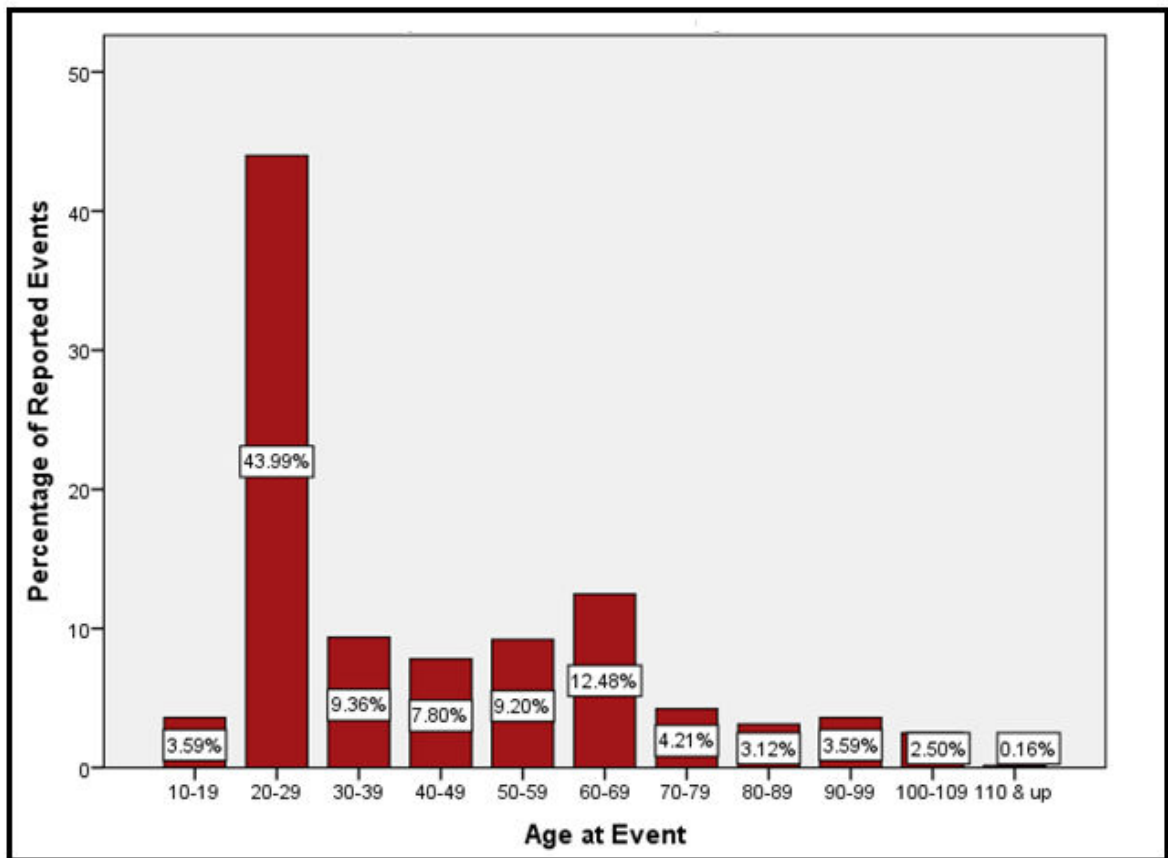

Figure 2. Frequency distribution of the ages at anticipated life events by decade
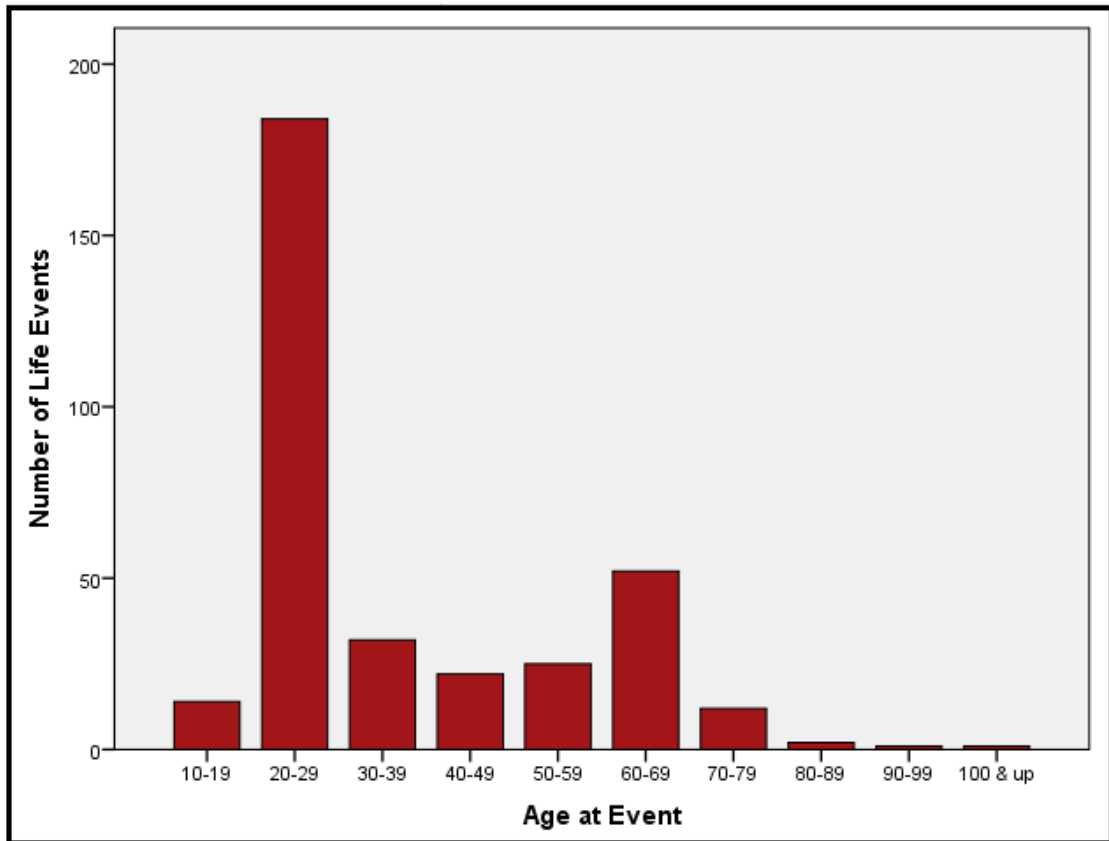
Figure 3. Frequency distribution of the ages at positive life events by decade
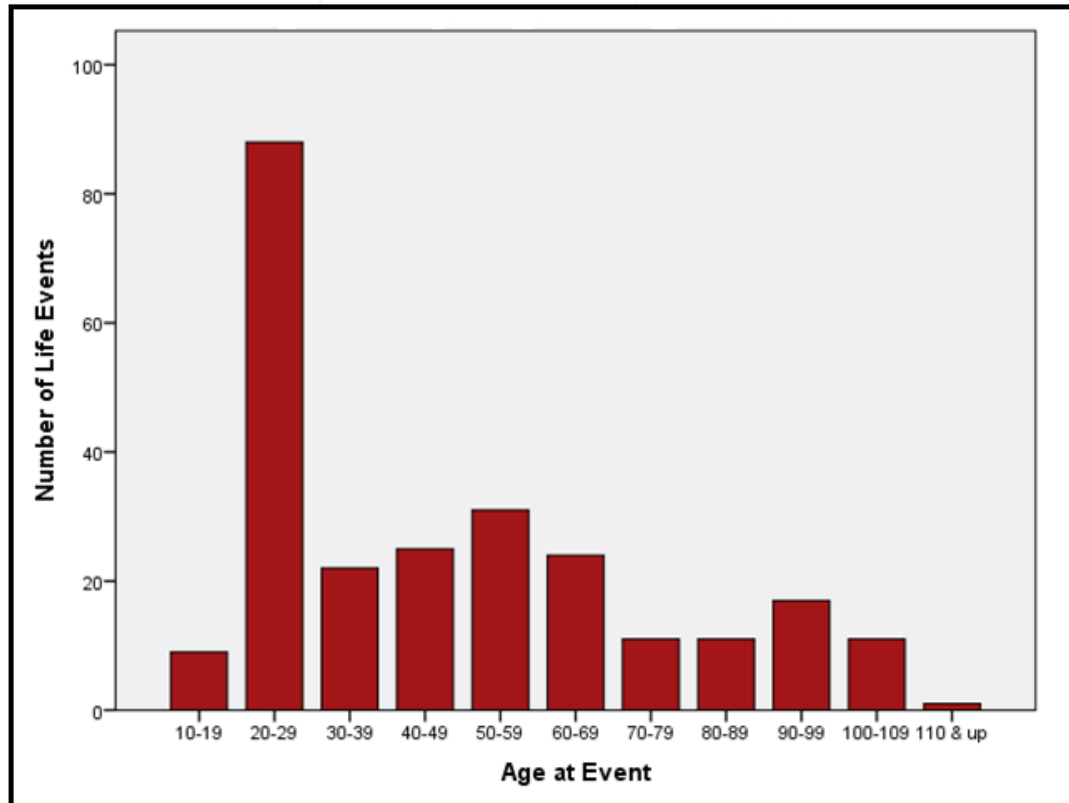
Figure 4. Frequency distribution of the ages at negative life events by decade

Distribution of distances of events across the lifeline. Frequency distributions of the distance of future events across the lifeline and of the age at anticipated events were generated to examine whether events occurring during the anticipation bump period occupy a disproportionately larger percentage of space in the future lifeline. By generating these two frequency distributions, life events can be compared in terms of the location of events on the lifeline and the ages reported at those events. Life events across the lifeline were organized into 10 equal intervals of distance across the horizontal length of the lifeline (e.g., 10% across in incremental intervals). A frequency distribution was generated that displays life events spread out across the lifelines, with a peak in the number of reported events near the end of the lifeline (see Figure 5). This relatively flat

distribution with a peak near the end indicates that participants reported all of their future life events across the whole lifeline but physically marked the presence of more life events toward "Anticipated Age at Death" (see Figure 6). The observed frequencies of the distance across the lifeline were found to be significantly different from expected frequencies of a flat distribution for the distance across the lifeline, χ^2 (9, $N = 641$) = 48.35, $p < .001$, Cohen's w = .274. Because there was a visible peak in the distribution of distance across the lifeline of anticipated life events, a second Chi-square test excluding the pre-death interval was conducted and indicated that the observed frequencies of distance across the lifeline were not significantly different from expected frequencies of a flat distribution (χ^2 [8, $N = 529$] = 9.35, $p = .314$, Cohen's w = .133). Thus, when the decile preceding anticipated age at death was not considered, the frequency distribution of the location of anticipated life events was not significantly different from a flat distribution.

The frequency distribution of the ages of life events by decades of life shows that anticipated life events during the 20's appear to be imagined more frequently than life events in other decades (see Figure 2). In addition, events in the anticipation bump period cover a disproportionately larger amount of space and distance across the lifeline than any other period of life. A representative lifeline illustrating this pattern is displayed in Figure 6. This peak in the distribution, when the ages at future life events are reported in the 20's, indicates that within this sample of subjects, the anticipation bump is visibly present. A Chi-square test indicated that the pattern of frequencies in age at the time of anticipated events is significantly different from the pattern of spatial locations of these events along the lifeline, χ^2 (9, $N = 641$) = 294.22, $p < .001$, Cramer's V = .479.

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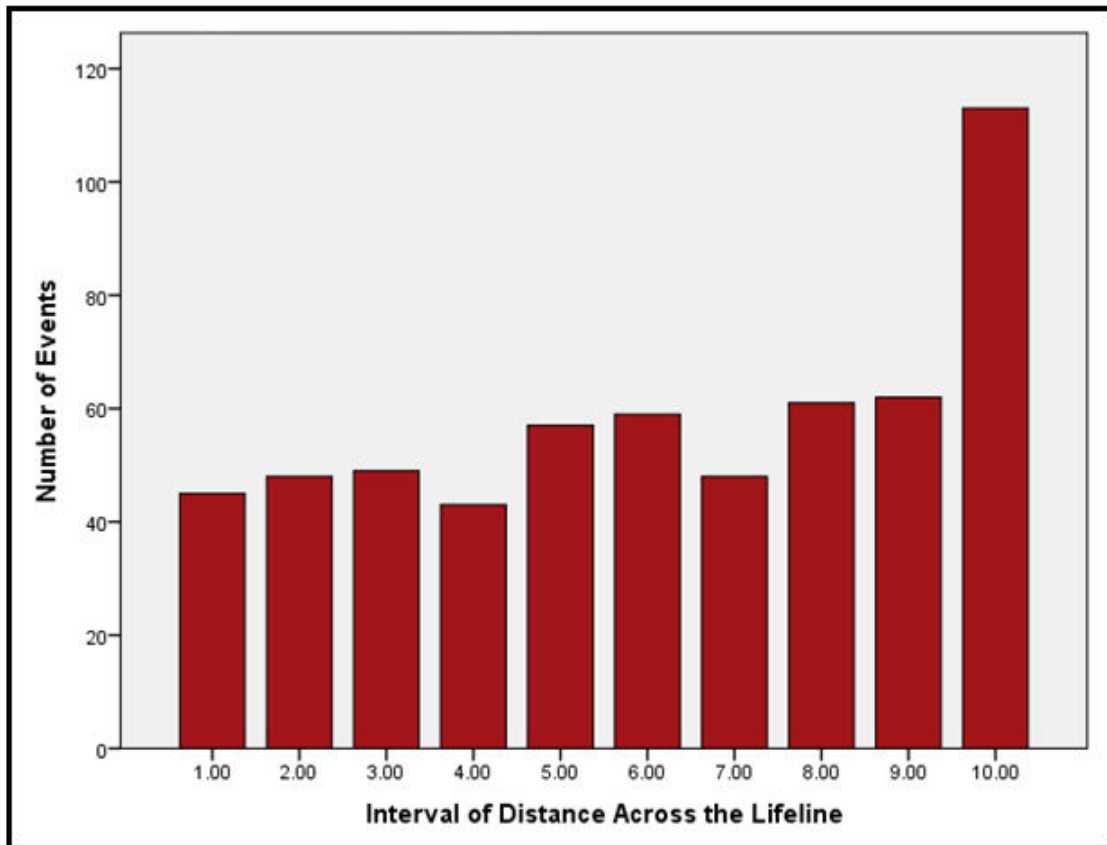
Figure 5. Frequency distribution of the number of life events across the lifeline in ten equal intervals
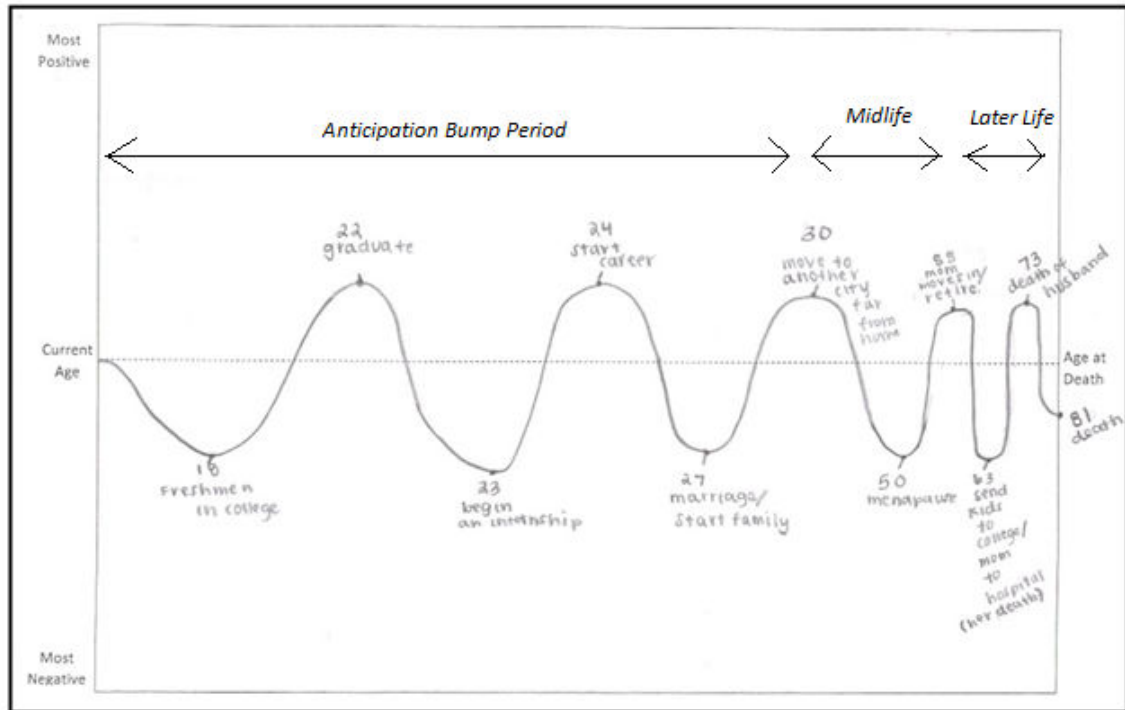
Figure 6. A completed future lifeline example

Secondary Analyses

Associations between past and future life events. It was predicted that the types of past life events an individual had would be related to the type of life events they anticipate in the future, such that those who displayed a greater proportion of positive past life events would anticipate a greater proportion of positive life events in the future and those who displayed a greater proportion of negative past life events would anticipate a greater proportion of negative life events in the future. The proportion of positive life events above the horizontal axis of the lifeline was calculated for each participant for both the past and future lifelines. The correlation between the proportion of positive past and positive future life events did not reach significance, $r = .22$, $p = .060$.   In addition to the proportion of positive life events, the average affective evaluation of positive and negative life events above and below the horizontal axis of the lifeline was calculated for

each participant. This represents the average intensity or salience of positive and negative life events for each participant. A significant correlation was observed between the average affective evaluation of past and future life events, $r(65) = .48$, $p < .001$. This indicates that those who reported greater evaluations of positive life events in the past also predicted greater evaluations of positive life events in the future and those who reported greater evaluations of negative past life events also tended to predict greater evaluations of negative events in the future.

Associations between generativity and future life events. Generativity is associated with planning generative actions in the future; people who display generative concern have more goals for the future than those who do not have that concern (Jones & McAdams, 2013). The degree to which someone displays generative qualities was hypothesized to be related to the number of anticipated future events reported; specifically, it was hypothesized that those who display qualities of generativity would anticipate an overall greater number of life events in the future than those who do not by means of the LGS. However, the correlation between scores on the LGS and the number of future life events did not reach significance ($r = .11$, $p = .378$). The scores on the LGS and the proportion of positive life events also did not reach significance ($r = -.07$, $p = .610$).

Associations between personality factors and future life events. Personality was assessed by correlating scores of the big-five personality factors with both the total number of positive and negative anticipated events and the proportion of positive future life events. Using the IPIP, it was hypothesized that those who scored higher on the subscale of openness to experience would anticipate a greater number life events overall,

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those who scored higher on the subscale of extraversion would anticipate a greater number and proportion of positive life events, those who scored higher on the subscale of agreeableness would anticipate a greater number and proportion of positive life events, and lastly, those who scored higher on the subscale of neuroticism would anticipate a greater number and proportion of negative future life events. A series of correlation analyses revealed that none of the personality subtypes was correlated with the total number of future life events (openness to experience: $r = -.06$, $p = .625$; extraversion: $r = .01$, $p = .945$; agreeableness: $r = -.03$, $p = .815$; neuroticism: $r = .23$, $p = .060$) or the proportion of positive life events (openness to experience: $r = -.12$, $p = .356$; extraversion: $r = .02$, $p = .850$; agreeableness: $r = -.07$, $p = .555$; neuroticism: $r = -.06$, $p = .631$).

Associations between locus of Control and future life events. It was predicted that perceived locus of control would be related to the number of anticipated future life events such that those who scored lower on Rotter's I/E Scale, indicating internal locus of control, would anticipate a greater total number of events, while those who scored higher on Rotter's I/E Scale, indicating external locus of control, would anticipate fewer positive and negative life events. Scores on Rotter's I/E Scale were not significantly correlated with the total number of future life events ($r = -.19$, $p = .124$) or the proportion of positive life events ($r = -.05$, $p = .680$).

Associations between balanced time perspective and future life events. It was predicted that a person's tendency to think more or less about the past and the future would be related to the number of events imagined in the future. Specifically, it was predicted that higher scores on the BTPS future subscale would be associated with a

greater proportion of life events being reported on future-oriented lifelines. The proportion of future life events in comparison to all future and past life events was obtained for each participant. Correlations of the future subscale and the past subscale with the proportion of future life events indicated a nonsignificant correlation between the future subscale and proportion of future life events reported ($r = .09$, $p = .953$) and a nonsignificant correlation between the past subscale and the proportion of future life events ($r = .09$, $p = .467$). For correlations among all of the individual differences variables, refer to Table 2.

Table 2. Correlations of Individual Difference Variables

		1.	2.	3.	4.	5.	6.	7.	8.	9.
1.	LGS	α = .92	.135	.360**	.438**	.234	.404	.299	.276*	.241
2.	RCLS		α = .84	.034	-.057	-.071	.059	-.363**	.02	.014
3.	Openness to Experience			α = .64	.342**	.27	.398**	.058	.186	.070
4.	Conscientiousness				α = .79	-.120	.306	-.104	.061	.243
5.	Extraversion					α = .88	.181	.268**	.089	.221
6.	Agreeableness						α = .71	.093	.220	.311**
7.	Neuroticism							α = .79	.070	.242
8.	BTPS-Past								α = .92	.332**
9.	BTPS-Future									α = .92

Note. Alpha levels of each measure are reported on the diagonal. *p < .05. **p < .01.

Chapter 4: Discussion

The primary focus of the current study was to investigate views of the future in young adults in relation to previous findings in the fields of reminiscence theory and autobiographical memory. Specifically, the study aimed to investigate the presence of an 'anticipation bump,' indicated by the presence of a greater number of anticipated life events reported during the late teens through early thirties than any other period of life. In addition to investigating more life events during the anticipation bump period, the current study further investigated the anticipation bump by examining the amount of space on the lifeline allocated to life events from the late teens to the early thirties. In an attempt to explore variables thought to be related to one's conception of the future, the study also sought to relate an individual's level of generativity, personality, perceived locus of control, and balanced time perspective to the number and types of events imagined in the future. This study was designed to extend the literature on younger adults' anticipated futures and implications regarding the results of this study will be explored and discussed.

As predicted, an anticipation bump was present in the lifelines of young adults. Not only were there more future life events noted during the decade of the 20's, more lifeline space was allocated to these life events than any other period of life. It was found that the proportion of positive life events individuals recalled in the past was related to the proportion of positive life events anticipated in the future, such that those who recalled more positive life events in the past also anticipated a greater number of positive life events in the future. In an attempt to explore other variables in relation to anticipated

futures, the LGS, IPIP, Rotter's I/E Scale, and the BTSP were correlated with the number and affect of future life events but significant associations were not observed.

Presence of an Anticipation Bump

Existing literature on future life events has not fully explored the tendency for people to think about a particular period in life more than others. This study demonstrates that when younger adults are looking forward at life, they tend to think about the same period of life as older adults do when looking back at their past. Life during the 20's seems to be more important than any other period of life for both affectively positive and negative events. This is interesting because a finding has emerged that was otherwise only suggested in older adults when reminiscing about the past. This result, based on the present study and previous autobiographical memory literature, suggests that individuals of all ages appear to systematically remember and anticipate life events when they are in or around the decade of the 20's. Findings of the study show that younger adults anticipate a greater number of life events in this period. This may be due to a greater proximity in time because the population was young adults from 17 to 20 years of age, or it may be due simply to them thinking about important life events that happen to be during their 20's. However, the results also showed that younger adults use a greater proportion of the lifeline space to report life events in this period. This finding reinforces the suggestion that people think more about life events around their 20's than any other period of life. Even though the entire future, from current age to anticipated age at death, was to be expressed in the lifeline, participants used a disproportionately large amount of lifeline space to report life events in the anticipation bump period.

Literature on the reminiscence bump period of autobiographical memory commonly suggests that older adults recall life events in the late teens to early thirties more than any other period of life (Bernsten & Rubin, 2002; Jansari & Parkin, 1996; Leist et al., 2010; Webster & Gould, 2000). The current study extends the literature on the reminiscence bump effect to those looking forward into the future, as indicated by the presence of an anticipation bump effect. The same general period of life seems to be recalled and anticipated more abundantly by people of all ages. Previous research suggests an emerging theme that people anticipate future life events that are critical in formulating self-identities (Rathbone et al., 2008; Strahan & Wilson, 2006). The anticipation bump period consists of the period of life when people start to formulate their personal identities and when they start thinking about tangible goals for the future (Erikson, 1963). This suggests that a reason people anticipate more life events during this time is that this period of life is representative of saliently important life events that will allow people's desired futures to become real.

Past Life Events Predictive of Future Life Events

Individuals who recalled a greater proportion of positive life events in the past did not anticipate a significantly greater proportion of positive life events in the future. This finding approached significance, which means that the general trend is suggestive, but that a larger sample was required to achieve confidence in the result. However, it was found that the average affective rating of past life events was positively correlated with the affective rating of future life events. The average distance above or below neutral affect for past lifelines was correlated with the average distance above or below neutral affect for future lifelines. This is an important finding because the kind of life events that

younger adults had in the past effect the way they imagine the future. Based on the results of the current study, positivity in past life experiences appears to set up a positive view of the future and negative past experiences seem to set up a negative view for the future.

Previous research shows that a person's past provides a foundation for what to expect in life and influences the way people think about themselves in the future (Webster et al., 2010; Williams et al., 1996). In addition, a person's self-concept, whether it is positive or negative, plays a role in the way people anticipate the future. It has been suggested that a person's self-concept facilitates the goals associated with the future (Williams et al., 1996). As previously stated in the introduction, those who have had a positive past are more likely to predict events in the future which are representative of a positive future self (Webster et al., 2010). The same holds true for those who have had a negative past; they are more likely to predict negative life events in the future because that is the way their life has developed and those experiences are what they have on which to base their possible selves (Lomranz et al., 1985; Williams et al., 1996). Results from this study support findings of previous research in that the dominant affect of life events in the past is related to the dominant affect of life events in the future.

Generativity in Relation to Future Life Events

There was no evidence that the level of generative concern was related to the number of anticipated future events for younger adults. Generative concern involves a tendency for people to want to leave a lasting legacy to promote and help future generations. The Loyola Generativity Scale was validated with older adults, which could be a reason there were no significant results. According to Erikson (1963), this construct of generativity emerges in midlife and is seen as a conflict competing against stagnation.

Because generativity is much more prevalent in adults in midlife or later life, these nonsignificant findings could be attributed to the possibility that generativity has not yet developed as a salient life goal in these young adults. Researchers have noted that generativity is connected to an individual's stage in life and depends on certain social roles which facilitate thinking about what will happen when they are gone (McAdams & St. Aubin, 1992; Peterson & Stewart, 1993). Even though some of the participants scored high on the LGS, it could also be possible that when instructed to anticipate life events, they could have just thought about life in general, not about anticipating a greater number of generative life events. Additionally, level of generative concern may simply not be related to the number of anticipated life events at all. Generative concern might be better studied in terms of the context of the types of life events anticipated.

Relating Personality Factors to Future Life Events

Personality was hypothesized to be related to the total number of anticipated life events and to the proportion of positive life events. Using the International Personality Item Pool, the Big-Five factors of openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism were correlated with the total number and proportion of positive future life events. None of the five factors were related to either facet of future life events. Previous research on these personality factors suggests subtle tendencies for people displaying higher scores on certain personality variables such as imaginativeness (e.g., openness to experience), planning events (e.g., conscientiousness), displaying positive emotions (e.g., extraversion), and negative feelings (e.g., neuroticism) (Atkinson et al., 2000). However, this study did not find evidence to support the exploratory hypothesis that individuals displaying certain personality characteristics

would anticipate a larger or smaller number of life events in the future or that these events would be more likely to be positive or negative in nature. The 50-item IPIP is advocated as a valid and reliable measure for personality tendencies (Goldberg, 1992); however, it seems that these characteristics are not reflected in the way that individuals anticipate future life events on the lifeline.

Locus of Control Related to Future Life Events

Scores on the locus of control measure failed to yield significant correlations with the total number of life events and the proportion of positive life events. It was hypothesized that individuals with higher levels of internal locus of control would anticipate more events in the future and that they would be more likely to evaluate those life events as positive. Previous research has suggested that those with an internal locus of control feel as if life events are controllable and that they tend to believe that they can readily determine what goals and life events they want to accomplish in the future (Phillips & Gully, 1997). Other researchers also suggested that those who exhibit an internal locus of control view life events more positively than those who exhibit an external locus of control (e.g., Johnson et al., 2015).

Balanced Time Perspective: Two-fold Consideration of Future Life Events

The BTPS provided separate scores for the degree to which a person thinks about events in their past and in their future. Webster (2011) suggests that a person's subjective awareness of life for the past or future has implications involving their attitudes and behaviors. He described a balanced time perspective as the tendency for people to have a stable outlook on life that includes a preference for thinking about the past and the future in roughly equal degrees. One would assume a preference for future thinking over past

thinking would result with a greater proportion of future life events. However, in the current study it was found that this preference for past or future thinking is not reflected in the way individuals imagined life events. Scores on both past and future subscales were found to be unrelated to the proportion of life events reported in the future. This indicates that a propensity to think about either the past or the future was unrelated to the number of positive or negative life events reported on the lifelines focusing on a person's future.

Study Limitations

There are a number of shortcomings of this study that may have implications regarding generalizability. Firstly, participant's ethnicity was not collected and thus the study was unable to investigate any cultural considerations of college students when analyzing the data. It is unclear if comparable results would be obtained from non-college students of the same age.

There may be other limitations regarding methodology. The content of life events reported was not used in the analyses of the lifelines. This study investigated the frequency and affective evaluation of anticipated life events without reference to the specific content of events. The exploratory individual difference variables had no relationship with the number or type of life events, but they potentially could be better studied utilizing the content of each life event. The construct of generativity implies the promotion of future generations and could be represented by planning helping positive actions in the future (Jones & McAdams, 2014) in which the content of life events might serve as a superior variable to relate to the level of generative concern. Literature surrounding locus of control suggests that setting goals in the future targeted at

achievement are characteristic of those with an internal locus of control (Phillips &

Gully, 1997), which might also be better studied by considering the content of life events.

Future research would benefit from assessing the content of lifeline events. There

have been other studies employing the lifeline that classify life events into different

domains of life based on the content (McAdams, 2001, Schroots & Assnik, 2005,

Webster & Gould, 2007), but these studies have not evaluated the extent to which the

exploratory variables in this study are related to the content of life events reported.

Additionally, it would be interesting to evaluate the content of future life events during

the anticipation bump period. It has been suggested that the tendency for older adults to

report more past life events during their young adult years (e.g., 18-32) could be because

important life events occurring in this period of life involve formation of self-identities

(Bernsten & Rubin, 2002; Webster & Gould, 2007). Studies in the future could benefit by

investigating the content of life events reported during the anticipation bump period to

explore why this phenomenon occurs.

Concluding Statement

In summary, the current study was successful in assessing the presence of an

anticipation bump in younger adults, represented by a greater number of future life events

reported in the decade of the 20's and a disproportionate amount of space dedicated to

this age period on the lifeline. Results of this study extend the literature on future life

events and the reminiscence bump effect of autobiographical memory such that the

likelihood of reporting life events in this young adult period of life not only occurs in

older adults looking back at the past, but also in younger adults looking ahead to the

future. Although there were nonsignificant findings relating the number of future life

events and affective evaluation of future life events on the lifeline to individual

differences hypothesized to influence the way individuals anticipate the future, the results

of this study offer insight into how these relationships could be further investigated in the

future.

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Appendix A: Future Lifeline

Starting from your current age, please draw the lifeline from left to right until age of expected death ("Current Age" to "Age at Death"). Also, please label each point with the anticipated age at the event, and briefly describe what event is predicted during the indicated period.

Most
Positive

Current
Age - Age at
Death

Most
Negative

Appendix B: Past Lifeline

Starting from the point of birth, please draw the lifeline from left to right ending at the age you are now ("Birth" to "Current Age"). Please also label each point dip with the age you were at the event, and briefly describe what happened at that moment or during the indicated period.

```
Most
Positive ┌─────────────────────────────────────────────┐
         │                                             │
         │                                             │
         │                                             │
         │                                             │
Birth    ┆ - - - - - - - - - - - - - - - - - - - - - - ┆ Current
         │                                             │ Age
         │                                             │
         │                                             │
         │                                             │
Most     │                                             │
Negative └─────────────────────────────────────────────┘
```

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Title of Research: Anticipating Future Events

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Cara Ganoe (cganoe@radford.edu), and Courtney Hurley (churley3@radford.edu)

We ask you to be in a research study designed to: explore college students' perceptions of anticipated future events. If you decide to be in the study, you will be asked to complete two lifeline tasks and several questionnaires. The two lifeline tasks involve indicating life's ups and downs and personal events that are anticipated (future life events) and events that have already happened (past life events). It will take approximately up to an hour of your time. There is an expected 80 students from Radford University that will be asked to participate in this study.

This study has no more risk than you may find in daily life.

There is no compensation from being in this study.

There are no direct benefits to you for being in the study.

You can choose not to be in this study. If you decide to be in this study, you may choose not to answer certain questions or not to be in certain parts of this study.

If you decide to be in this study, what you tell us will be kept private unless required by law to tell. If we present or publish the results of this study, your name will not be linked in any way to what we present.

If at any time you want to stop being in this study, you may stop being in the study without penalty or loss of benefits by contacting: Dr. Thomas Pierce, tpierce@radford.edu, (540) 831-5444.

If you have questions now about this study, ask before you sign this form.

If you have any questions later, you may talk with Dr. Thomas Pierce, tpierce@radford.edu, (540) 831-5444 or Grace Flood, gflood@radford.edu.

This study has been approved by the Radford University Institutional Review Board for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Dennis Grady, Dean, College of Graduate and Professional Studies, Radford University, dgrady4@radford.edu, (540) 831-7163.

It is your choice whether or not to be in this study. What you choose will not affect any current or future relationship with Radford University.

If all of your questions have been answered and you would like to take part in this study, then please sign below.

_____   _____   _____
Signature   Printed Name(s)   Date

I/We have explained the study to the person signing above, have allowed an opportunity for questions, and have answered all of his/her questions. I/We believe that the subject understands this information.

_____   _____   _____
Signature of Researcher(s)   Printed Name(s)   Date

Note: A signed copy of this form will be provided for your records.

Appendix D: Demographics

Demographics

Age _____

Gender _____