

Forks in the Road: Memories of Turning Points and Transitions

KARALYN F. ENZ^{1,2,*} and JENNIFER M. TALARICO¹

¹Lafayette College, Easton, USA

²University of New Hampshire, Durham, USA

Summary: Turning points and transitions are both life events marked by significant change. Whereas turning points are personal changes in life direction, transitions are external changes in daily circumstances. Transition-linked turning points are events that fit both of these definitions. Although transitions and turning points have been examined separately, the current study is the first empirical comparison of these types of events and their overlap. Differences in the characteristics of adults' autobiographical memories of turning points, transitions, and transition-linked turning points were compared using a within-subjects design. Memories of transition-linked turning points and turning points were more central to participants' life stories than transitions, whereas memories of transitions had more similarities in content, particularly location, with related memories. These results suggest that transitions organize autobiographical memory whereas turning points anchor the life story. Copyright © 2015 John Wiley & Sons, Ltd.

We all can identify events that we consider to be moments of significant change in our lives. Turning points can be useful in helping us develop an organized understanding of ourselves amidst the many events we experience in a lifetime. When a person says, 'That was a real turning point for me', it implies a certain amount of personal growth. Yet, we do not necessarily think of every change that we experience as a turning point. A person might also say, 'I'm just going through a transitional time right now'. We go through many transitions in our lives that may or may not acquire the sense of meaning and growth that seems so special to turning points. Although turning points appear to be distinct from transitions, there is likely to be some overlap in how we remember and associate turning points and transitions with other events from our lives. If both turning points and transitions are marked by change, what is it that distinguishes these two types of events as we look back on our lives?

To date, autobiographical memory (AM) researchers have only tangentially addressed this question. The terms 'turning point' and 'transition' are often employed to help explain the nature and organization of AM, but there has been no empirical research directly comparing memories for turning points and transitions. Moreover, when the terms 'turning point' and 'transition' are applied in the literature, they are frequently ill defined or used interchangeably. If turning points and transitions are integral to current theory and understanding of AM, an effort should be made to differentiate these terms in order to apply them more uniformly and to clarify their respective roles in AM.

The current study was driven by both theoretical and empirical research goals. First, we aimed to devise theoretically informed operational definitions for turning points and transitions. Then, by prompting participants to recall AMs of a turning point, a transition, and a transition-linked turning point, we gathered empirical evidence for whether or not people could recall such events from their own lives, and if they could, how memories of these events might differ in phenomenology and organization with regard to other memories.

*Correspondence to: Karalyn F. Enz, University of New Hampshire, 468 McConnell Hall, 15 Academic Way, Durham, NH 03824, USA.
E-mail: kfe1@wildcats.unh.edu

TURNING POINTS

Logically, there appear to be two key features of turning points corresponding to the two components of the term 'turning point'. The first half, 'turning', implies changing direction. The event itself seems to trigger a shift in direction, thereby influencing the series of events that follows it, although this causal relationship may be subjective rather than objective. The second half of the term, 'point', implies that it is a specific moment in time or, in AM terms, a single event. Although perceived turning points may consist of several linked events within a temporally extended unit of time (e.g., college or a trip to another country), one must cite specific episodic experiences within the larger time frame in order to create causal links between the turning point and one's current life direction. Thus, turning points may be defined as specific events that are perceived to change the direction of one's life.

Existing definitions of turning points in the theoretical literature support the definition proposed earlier. According to Rutter (1996), turning points are a complicated interaction of events and life circumstances. He argues that major life experiences cannot be viewed as turning points unless such experiences promote a change in direction or a discontinuity in one's life. This is in line with the life trajectory model of turning points (Cohen, 2008). However, in addition to discontinuities that appear to change the direction of one's life, 'sometimes continuity *accentuated* is seen as a turning point' (Clausen, 1995, p. 369, original emphasis). Although choice might seem to be a defining feature of turning points, sometimes people perceive events over which they had little or no control to be turning points as well (Rönka, Oravala, & Pulkkinen, 2003).

Moreover, many definitions of turning points stress the need for temporal distance in the evaluation of the event, suggesting that turning points can only be subjectively identified once a new life path has been established (Hareven & Masaoka, 1988; Wheaton & Gotlib, 1997). In other words, turning points are not always identifiable as such at the time of occurrence (Clausen, 1995). Pillemer (1998) terms this phenomenon 'retrospective causality'. As Wheaton and Gotlib (1997) point out, small decisions can lead to big

differences in the long term, differences which might not be noticeable until long after the original decision has been made. In reality, the causal connection between the turning point event and major life change may be weak or even illusory, despite a strong subjective perception of causality (Pillemer, 1998). Once a turning point has been identified, it may continue to exert influence over the life course, for example, as a reference point for setting goals for the future (Pillemer, 1998).

TRANSITIONS

Unlike turning points, transitions may not be as strictly tied to single events, as the term transition implies a passage from one time to another. One can just as readily refer to a transitional period as to a transitional event. In order to demonstrate the passage from one period (or event) to another, one would need to compare the transition with the previous period (or event) and identify distinct differences between the two, signifying that a change has occurred. Thus, a transition may be defined as an event or life period that is marked by changes in external circumstances from the previous period (or event).

According to Brown and colleagues (2012), transitional events 'alter the fabric of daily life' (p. 167) by 'bring[ing] about a marked change in a person's material circumstances' (p.168). They operationally define this change as the addition or subtraction of temporally delineated event components (i.e., people, places, things, or activities that have been repeatedly associated with multiple events within a given time period) from one's current life situation. For example, moving to a new town would shift many event components, including one's place of residence, friends and neighbors, and daily activities such as commuting to work.

Some researchers incorporate social and cultural components to the concept of transitions, defining them as normative status changes (Rutter, 1996) or movements within socially constructed time tables (Hareven & Masaoka, 1988). Normative transitions are often expected, socially prescribed transitions that usually occur within a certain limited time frame (e.g., marriage, retirement). On the other hand, non-normative transitions are often unexpected experiences unique to the individual that may occur at any point throughout the lifetime (e.g., loss of a loved one). According to Rutter (1996), unlike turning points, transitions do not necessarily promote long-term change. Based on these definitions, it seems that transitions are based more on a change in external or social circumstances than a perception of change within the individual.

COMPARING TURNING POINTS AND TRANSITIONS

The defining criteria for both turning points and transitions require change. Despite the ostensible overlap between turning points and transitions, researchers seem to agree that turning points consist of *personal changes* that can only be identified after the individual has had sufficient time to perceive a long-lasting change in his or her life whereas

transitions are marked by *external changes* that can be identified at the time of occurrence or soon after they occur. Given this, a transition can only be considered a turning point if, in addition to situational changes, the individual subjectively perceives long-term change in his or her life course. Graber and Brooks-Gunn (1996) speculate that there is an additive relationship between turning points and transitions such that the salience is enhanced when turning points are embedded within transitions (i.e., transition-linked turning points) compared with turning points that are not transition-linked. Consistent with the idea of transition-linked turning points, Clausen (1995) found that more than half of the turning points participants recalled were of role transitions, two thirds of which were expected transitions such as getting married or having a child. The cueing procedure for turning point experiences (e.g., first class) embedded within a transitional period (e.g., first year in college) also assumes a hierarchical conception of turning points and transitions (Palmer, O'Kane, & Owens, 2009; Talarico, 2009).

In terms of phenomenology, or the experience of remembering, memories of transitions and turning points are likely to be emotionally intense and vivid. Pillemer and colleagues (1988) found that students rated the emotional intensity of their memories for the transition to college higher than the life impact of the event. Pillemer, Rhinehart, and White (1986) and Talarico (2009) also found that memories of events during the transition to college were rated as highly vivid. Pillemer (1998, 2001) further suggested that memories for 'momentous events' (consistent with turning points as defined here) tend to be highly vivid, and momentous novel events (which Pillemer called 'originating events') could serve a directive function in AM. Because we do not yet have scripts or schemas for dealing with novel events, it would be important to remember specific perceptual details of the event in order to be able to identify and respond appropriately to similar events in the future. In Brown and colleagues' (2012) event-component interpretation, it would also be important to create a vivid and detailed memory of the transitional event in order to identify event components associated with future events in the new time period. Although both turning points and transitions may be remembered with enhanced emotional intensity and vividness, based on Graber and Brooks-Gunn's (1996) hypothesis, memories of transition-linked turning points might be even more vivid and emotionally intense than memories solely of transitions or turning points.

Turning points and transitions may also differ in how they function within the organization of the AM system. There are several existing models for how AMs are organized. In Conway's (2005; Conway & Pleydell-Pearce, 2000) hierarchical model of AM, the working self integrates new memories into the autobiographical knowledge base, which consists of a hierarchy of events, lifetime periods, and life themes. Within this framework, transitions could be viewed at either the event (e.g., moving to college) or the lifetime period (e.g., adolescence) level. Turning points, on the other hand, might be more likely to be represented at the event level, consisting of event-specific knowledge that helps to unify one's life themes. In another view, AMs are organized

into narrative reconstructions of the personal past, called life stories, which provide continuity and meaning for our lives (McAdams, 2001). In this case, events comprising the life story, likely including turning points, would be most central to one's identity.¹ Grysman and Hudson (2010) showed that life story narratives of turning points tend to be more complex and causally coherent than narratives of high and low points, an indication that turning points are used to form causal links among life events in order to form a unifying concept of self identity.

Whereas turning points might be more important for organizing AM themes, transitions may help us to locate our AMs in time. Shum (1998) cued participants for memories of events that they considered to be temporal landmarks. Many of the events reported were considered transitions: high school graduation, acceptance to college/university, went on a vacation, and so on. Freely recalled autobiographical events from within an academic calendar time frame also tend to cluster around periods of transition to and from semesters (Pillemer, Rhinehart, & White 1986; Pillemer, Goldsmith, Panter, & White, 1988; Robinson, 1986). Kurbat, Shevell, and Rips (1998) found enhanced recall only for the ends of terms when followed by a break period, suggesting that the transitional nature of these periods [i.e., shifting from one situation (school) to another (vacation)], is necessary for the effect to occur. The importance of transitions for the temporal organization of AM is consistent with Brown and colleagues' (2012) transition theory. Temporal landmarks and academic calendar breaks could mark changes in event components, thereby creating two distinct categories of memories based on the event components associated with each period of time.

THE CURRENT STUDY

In order to empirically examine the relationship between turning points and transitions, we asked participants about three different types of events from their lives: a turning point, a transition, and an event that could be considered both a turning point and a transition (i.e., a transition-linked turning point). Our first key question was whether participants could generate turning point memories outside the context of transitions. In the case that turning points can either be transition-linked or not, we expected that participants would be able to identify turning points from their lives that were not transitions. On the contrary, if turning points are a

¹ The centrality of an event refers to the importance of a given event to a person's conception of identity or meaning in his or her life (Berntsen & Rubin, 2006). Highly central memories are related to one's broad views and beliefs as well as other specific events in one's life. They are also perceived as having lasting impact, which will continue to influence the person into the future. Turning points have been implicitly adopted by investigators interested in measuring centrality. One of the key items on Berntsen and Rubin's (2006) CES is 'This event was a turning point in my life' (p. 30). Similarly, the item measuring personal significance on Rubin and colleagues' (2003) AMQ also refers to turning points reading, 'This memory is significant for my life because it imparts an important message for me or represents an anchor, critical juncture, or a turning point'. However, it is important for investigators interested in memories of turning points to avoid this tautology. Aside from inter-item correlations on the CES, there has been little empirical investigation of turning point memories to verify that they are indeed more central than other similar events, such as transitions.

special subset of transitions, we expected that participants would not be able to identify such turning point-only events. Regardless, we expected that participants would be able to identify both transitions and transition-linked turning points from their lives.

Another aim of the current study was to examine and compare the phenomenological experience of remembering turning points, transitions, and transition-linked turning points. Of particular interest were emotional characteristics, such as intensity and valence (positive/negative), and perceptual qualities, such as vividness and reliving. Based on Graber and Brooks-Gunn's (1996) hypothesis, we expected that memories of transition-linked turning points would be the most emotionally intense and the most vivid of the three event types. Although there was no prior evidence to support phenomenological differences between turning points and transitions, we also aimed to explore whether or not sole transition memories would differ from sole turning point memories in phenomenological characteristics.

Last, we examined how memories of turning points, transitions, and transition-linked turning points related to the organization of other AMs. Accessibility of related AMs can serve as a proxy for organizational function in order to empirically test the hypothesis that we use our memories of turning points and transitions to organize our other memories around themes and time periods, respectively. Brown and Schopflocher (1998a,b) used an event cuing procedure in which one event from a person's life was used to cue another related event. Both events were then re-presented to participants who were asked to report how the two events were related. We used a similar procedure to assess both the quantity (number of related memories) and the quality (types of similarities between the two events) of connections between transitions/turning points/transition-linked turning points and other events in AM. Memories judged as related to transitions should share more temporal and physical features, whereas memories related to turning points should have more thematic connections.

METHOD

Participants

Forty-four participants (34 women and 10 men; aged 30–64 years, mean age 47.82 years) were recruited from the faculty and staff at a small liberal arts college via email advertisement. Most participants completed the study in less than 45 minutes. Participants were compensated with a chance to win a \$50 gift card. All procedures were approved by the Institutional Review Board at Lafayette College.

Materials and procedure

At the outset of the study, participants read and signed an informed consent form that ensured complete anonymity and confidentiality of their responses. At this time, participants were also provided with the following descriptions of turning points and transitions on a sheet of paper, to which they were able to refer throughout the study:

A turning point is any event that you have personally experienced which you feel has had a major impact on the course of your life. Turning points can be decisions, such as choosing a major, or they can be forced upon you, such as getting laid off from a job. Turning points are not always accompanied by changes in your outside circumstances, and you may or may not have recognized the impact of the event at the time. What matters is that you feel the event has impacted the course of your life as you look back on that event now.

A transition is any event that you have personally experienced which marks a distinct shift in your outside circumstances. Transitions can be a long-term change, such as moving to a new town, or a short-term change, such as going home for summer break. As you look back on the transitional event now, you may or may not feel it has had a major impact on your life course as you look back on it now. What matters is that the event marks a distinct change in your outside circumstances at the time.

All subsequent materials were programmed into MEDIALAB (Jarvis, 2012) and presented to participants on a computer screen. Participants were asked to recall memories of three different autobiographical events (presented in a random order): a transitional event, a turning point, and an event they consider to be both a turning point and a transition (a transition-linked turning point). Participants were also asked to provide a memory that was 'neither a transition nor a turning point' as a control, but these data were excluded from the analysis owing to low response rates.²

For each of the three memory categories, participants were first asked if they could think of an event from their lives that fit the category. If yes, participants provided a short title for the event and completed the Centrality of Event Scale (CES; Berntsen & Rubin, 2006). Our adapted CES included 19 of 20 items from the original scale, with the only exclusion being item number 18 because it contains an explicit use of the term 'turning point'. The centrality score for each memory type was calculated by taking the average of all 19 items on the adapted CES.

For each memory, participants were also asked to rate the personal significance of the event, the emotional intensity and valence of the memory, the amount of vividness and reliving associated with the memory, the specificity of the memory, and how old participants were when the event occurred with questions adapted from the Autobiographical Memory Questionnaire (Rubin, Schrauf, & Greenberg, 2003). For the significance item, the reference to a 'turning point' was omitted. Age of the memory was calculated by subtracting age at the time of the event from age at the time of recall. See Appendix A for the full text of these questions.

Then, mnemonic accessibility was measured by asking participants to recall memories related to the initial event. Participants were asked to recall as many events as possible, providing short titles for each. The total number of related memories for each event was counted. Finally, participants rated the ways in which the initial event (i.e., the transition-

² Based on post-study conversations with participants, this was likely due to a misunderstanding of the instruction. Unlike the other three categories, the control event was defined in the negative: 'neither a transition nor a turning point'. Based on the instructions provided, participants tended to think we were only interested in important life events and thus had difficulty recalling events that were 'neither transitions nor turning points'.

linked turning point, turning point, or transition) and the first related event that they generated were similar, selecting any and all applicable items from a checklist of 12 items. In addition to an open-ended 'other, specify' option, there were three content items (people who were there, location where it took place, and activity you were doing), three temporal items (time of year, time of day, and how old you were), two phenomenological items (significance of the event/memory and emotions you felt), and three thematic items (both events have a similar theme, one event caused the other, and both events are part of a larger story). If they could not think of a way in which the two events were related, participants were instructed not to make any selections and to simply move on to the next task. The instructions and materials for this task are provided in Appendix B.

This procedure was repeated for all memory categories for each participant. Finally, participants were asked a series of demographic questions and fully debriefed.

Analysis

First, we examined whether participants were able to generate memories of each type. Next, we assessed whether the specificity of the memories differed as a function of memory type. Last, we computed one-way repeated measures analyses of variance in order to determine the effects of memory category on the measures of centrality, accessibility, age of the memories, significance, emotional valence, emotional intensity, vividness, and reliving. Owing to the number of comparisons, we adjusted the α level to a more conservative .01.

RESULTS

Memory generation

Of the 44 participants, one was unable to generate a transition-linked turning point, and one was unable to generate a transition-only memory. These two memory types seem to be readily accessible to individuals naïve to AM categorization. In contrast, six participants were unable to generate a non-transition turning point (i.e., an 86% response rate). Therefore, although transition-linked turning points appear to be more accessible than turning point-only memories, it does appear that turning points can exist outside the context of transitions. Because participants were asked to provide short descriptions ($M=3.74$ words) as titles for their events, we were only able to do a limited categorical analysis of memory content. The most-cited events in each memory category were as follows: getting married ($n=9$) for transition-linked turning point; job change ($n=6$) for turning point; and relocation ($n=13$) for transition (Table 1).³

³ We questioned whether participants generated memories that were clearly derived from the examples given in the descriptions, so we did a secondary coding of event titles. Event titles were randomized and de-identified from participant ID and memory category for coding purposes. Two independent coders (the first author and a naïve research assistant) categorized the event titles into one of five groups: turning point example, transition example, both examples, not an example, or unable to determine, with 89.5% agreement. (Disagreements were resolved by discussion.) The most prevalent category was 'not an example' ($n=86$; 69.4% of titles). Less than a quarter of memories were transition examples ($n=20$; 23.3%), and less than 5% were either turning point examples ($n=4$; 3.2%) or both ($n=1$; 0.8%). Therefore, we do not believe that event generation was unduly influenced by the examples provided in the instructions.

Table 1. Frequencies (f) and rank orders (RO) for events recalled in each memory category

| Event | Memory category | | | | | |
|---------------------------|-----------------|----|---------------|----|------------|----|
| | T-linked TP | | Turning point | | Transition | |
| | f | RO | f | RO | f | RO |
| Marriage | 9 | 1 | 2 | | 2 | |
| Divorce | 2 | | | | | |
| Meeting significant other | 1 | | 2 | | | |
| Death of loved one | 2 | | 5 | 2 | 1 | |
| Having child | 8 | 2 | 2 | | 3 | |
| Child going to school | 1 | | | | 2 | |
| Relocation | 4 | | | | 13 | 1 |
| Job change | 5 | 3 | 6 | 1 | 6 | 2 |
| Academic change | 1 | | 5 | 2 | 3 | |
| Buying a house | 2 | | | | 2 | |
| Making a decision | 1 | | 3 | | | |
| Traveling abroad | 1 | | | | 6 | 2 |
| Vacation | | | | | 2 | |
| Other | 6 | | 13 | | 4 | |
| Total # of memories | 43 | | 38 | | 43 | |

Note: One transition memory specified two events, marriage and relocation. It was included in the frequencies for both events but only counted once for the total number of transition memories.

Event specificity

Owing to the repeated measures design, for all subsequent analyses, only the data from the 36 participants who were able to generate memories of all three memory types were included. This sample, all between ages 30 and 64 years ($M=46.83$ years old) included eight men. When asked whether their memories represented an event that occurred once at one particular time and place, a summary or merging of many similar or related events, or events that occurred over a fairly continuous extended period of time lasting more than a day, participants were more likely to say that turning point memories were of specific events ($n=16$) than that they were of extended periods ($n=9$). This is consistent with turning points as 'points', being represented at the event-specific knowledge level of Conway's (2005) model. In contrast, transitions were more likely to be of extended periods of time ($n=18$) than of specific events ($n=10$). This is consistent with the idea that transitions can be more extensive than turning points. Transition-linked turning points included both specific events ($n=13$) and extended periods ($n=17$).

Centrality

Mauchly's test showed that the assumption of sphericity was violated for the CES scores by memory type, $\chi^2(2, N=36) = 6.39, p = .04$; therefore, we adjusted the degrees of freedom using the Greenhouse–Geisser correction ($\epsilon=0.85$). The resulting one-way analysis of variance revealed a significant effect of memory category on mean centrality score, $F(1.71, 59.76) = 10.69, p < .01$. Memories of transition-linked turning points ($M=3.89, SD=0.82$) and turning points ($M=3.78, SD=0.92$) were both rated as more central than memories of transitions ($M=3.03, SD=1.14$) according to Bonferroni comparisons (both $p < .01$) but were not significantly different from one another ($p > .01$). The psychological attribution of an event as a turning point (in the

presence or absence of an external transition) seems more relevant to the attribution of an event as central to one's life story and/or identity (as measured by the CES) than does an events' transitional nature.

Accessibility and organization

Again, Mauchly's test showed that the assumption of sphericity was violated for the total number of related memories participants produced, $\chi^2(2, N=36) = 10.99, p < .01$; therefore, we adjusted the degrees of freedom using the Greenhouse–Geisser correction ($\epsilon=0.78$). There was no significant effect of memory category on the number of related events, $F(1.57, 54.85) = 1.38, p > .01$. Participants recalled a similar number of related memories for transition-linked turning points, turning points, and transitions ($M=4.06, 3.28, \text{ and } 3.31$, respectively), with a large degree of variability in the number of related memories recalled ($SD=3.72, 3.49, \text{ and } 3.50$, respectively).

Memory category did affect the mean number of content similarities between the cued memory and the first related-event memory, $F(2, 70) = 6.09, p < .01$. Bonferroni comparisons showed that transitions ($M=1.78, SD=0.87$) had more content similarities than turning points ($M=1.11, SD=1.12$), $p < .01$. Transition-linked turning points ($M=1.33, SD=1.10$) were marginally different from transitions, $p = .02$, but not different from turning point-only memories, $p > .01$. Transitions included more overlap in event features than the other two memory types.

In order to examine the nature of the overlap in memory content for transitions, we examined the three constituent items comprising the content similarities item (i.e., people, location, and activity) separately. There were no significant differences across memory categories for similarities in people or activities, both $F(2, 70) < 1.90, p > .01$; however, there was a significant effect of memory category on location similarity, $F(2, 70) = 7.06, p < .01$. Bonferroni comparisons revealed that a higher proportion of participants' first related-event memories took place in a similar location for transitions ($M=0.72, SD=0.45$) than for turning points ($M=0.36, SD=0.49$), $p < .01$. Transition-linked turning points ($M=0.47, SD=0.51$) were not significantly different from transitions or turning points, both $p > .01$. Thus, location, specifically, appears to be the key component of overlap between transitions and related memories.

There were no significant differences among memory types for temporal, phenomenological, or thematic relationships between the initial memories and first related memories, all $F(2, 70) < 3.43$, all $p > .01$. Likewise, there were no significant effects of memory category on any of the individual items that comprised these larger categories, all $F(2, 70) < 3.03$, all $p > .01$. No participant used the 'other' option to provide another way in which the two memories were related. Contrary to our prediction, turning points were not thematically related, and transitions were not temporally related to their associated memories using this measure.

There was also no significant effect of memory category on age of the memories, $F(2, 70) = 0.91, p > .01$. Transition-linked turning points, turning points, and transitions were all relatively remote ($M=19.81, 16.86, \text{ and } 16.75$ years ago,

respectively), and furthermore, there was a large degree of variability in the age of the memories ($SD=12.82, 13.24,$ and 11.18 years, respectively). Thus, our data neither support nor disconfirm the hypothesis that turning points (whether linked to transitions or not) require more temporal distance for evaluation, but we at least know that differences in the age of the memories cannot account for other differences seen here.

Significance and emotionality

There was a significant effect of memory category on ratings of personal significance, $F(2, 70)=8.51, p < .01$, such that transition-linked turning point memories ($M=5.44, SD=1.30$) were rated significantly higher than transition memories ($M=4.11, SD=1.67$) according to Bonferroni comparisons, $p < .01$. However, there was no difference between turning points ($M=5.03, SD=1.42$) and either transitions or transition-linked turning points on ratings of memory significance, both $p > .01$. As for emotionality, there was a marginally significant effect of memory type on intensity, $F(2, 70)=4.82, p = .01$. Bonferroni comparisons showed that transition-linked turning points ($M=5.28, SD=1.47$) were rated as marginally more intense than transitions ($M=4.19, SD=1.60$), $p = .02$, and turning points ($M=4.72, SD=1.49$) were not different from the other two memory types, both $p > .01$. There was no effect of memory category on emotional valence, $F(2, 70)=3.92, p > .01$. Personal significance and emotional intensity seem to be closely linked to one another and to be equally influenced by the memory category, but emotional valence does not.

Phenomenology

For both vividness and reliving, there was no significant effect of memory category, $F(2, 70)=0.59, p > .01$, and $F(2, 70)=1.86, p > .01$, respectively. The way in which these important, emotional events are recalled does not seem to differ as a function of the memory type, even though we have seen systematic differences in AM organization and metacognitive attributions of the event.

DISCUSSION

Our results suggest that although turning points and transitions share phenomenological features, they serve different organizational functions in AM. Turning points, especially when transition-linked, anchor the life story as indicated by high centrality ratings for these events in the current study. Transitions, in contrast, serve to organize memories that share content details, especially location. These findings both support and extend existing theoretical models of AM, especially McAdams' (2001) life story account and Brown and colleagues' (2012) transition theory.

Importantly, the current study showed that it is possible to recall memories of turning points outside the context of transitions. Although there were fewer turning point-only memories than memories of transition-linked turning points (or transition-only memories), the majority of participants did report having a turning point-only event in their lives. This suggests that non-transitional turning points do occur,

but maybe not as often as those embedded in transitions. Because we were interested in comparing the phenomenology and organizational function of the three memory types, we only asked participants for one turning point-only memory, one transition-only memory, and one transition-linked turning point memory. Future research may better address the question of the relative frequency of these types of memories by requesting that participants recall multiple memories of each type.

Because participants recalled turning points both within and without the context of transitions, we were able to test Graber and Brooks-Gunn's (1996) hypothesis that the salience of a turning point is enhanced when it is embedded within a transition. As expected, memories of transition-linked turning points were rated the highest overall for personal significance, emotional intensity, and centrality, but the statistical differences among the group means only partially supported the enhanced salience hypothesis. Consistent with the hypothesis, only transition-linked turning point memories were rated as statistically higher than transitions for personal significance and emotional intensity. However, both transition-linked and non-transition-linked turning points were rated as more central to participants' life stories. Although the latter finding is inconsistent with the enhanced salience hypothesis, it does support assumptions made by Berntsen and Rubin (2006) that turning points are inherently central to our life stories.

Surprisingly, our results did not support the hypothesis that turning points organize AM thematically (i.e., by theme, cause, or a larger story). Although previously turning point memories have been shown to have more causal coherence than other life story memories (Gryzman & Hudson, 2010), there were no differences in thematic similarities to related events among transitions, turning points, and transition-linked turning points in the current study. Our study may have been limited in its ability to capture thematic connections in that we only asked participants to select the ways in which their memories were related from a list, whereas Gryzman and Hudson (2010) found greater causal coherence for turning points by analyzing participants' narratives. It is also possible that our results differed from the previous findings because Gryzman and Hudson (2010) compared turning points with high points and low points, events which may not be associated with as much life change as our comparison events of transitions and transition-linked turning points. A comparison of memory narratives for turning points, transitions, and transition-linked turning points could help researchers determine how these memories function in the thematic organization of AM within a life story context.

Although there was no evidence for the predicted difference in thematic organization for turning point memories, transition memories did seem to serve the predicted role in organizing AM by event components. Although transition memories did not differ from the other memory types in temporal similarities to related memories (i.e., time of day, year, or age), the associated memories generated from transitions were more likely to share content similarities, specifically location details, than were memories generated in response to turning points or transition-linked turning points. This finding supports Brown and colleagues' (2012) theory that transitions demarcate boundaries between lifetime periods based on temporally delineated event components

(i.e., content changes in memory that mark transitional shifts in time). Situated in time between two different lifetime periods, transitional events may share event components with both periods, thus making them more useful cues for generating memories of shared content features. Our results extend this theory by suggesting that location may be a more important temporally delineated event component for organizing AM than people or activities.

Despite the functional differences between turning point and transition memories, there was some overlap in the content of participants' turning point and transition memories. In the current study, getting married, having a child, and changing jobs were cited by multiple participants in all three of the memory categories, supporting previous research that the most common events considered to be turning points can also be classified as role transitions (Clausen, 1995). However, our data also provide preliminary evidence that turning points and transitions do not overlap entirely. Events whose meaning is usually garnered after the fact, such as meeting a significant other for the first time, making an academic change, or making a decision, were uniquely considered to be turning points; on the other hand, relocation, buying a house, traveling abroad, and going to college were uniquely considered to be transitions.

Overall, transitions and turning points have generally been confused in the AM literature, and reasonably so, as the current study empirically demonstrated that there is overlap in the content and experience of remembering these types of change-related events. Nonetheless, participant-generated memories of turning points, transitions, and transition-linked turning points did show functional differences in AM organization. Turning points were highly central to people's lives and may serve to anchor the life story. Transitions did not appear to be as central to people's lives, but they appeared to organize AM by increasing the accessibility of memories with similar content, particularly memories that took place in the same location. Finally, the emotional intensity and personal significance of turning points may be enhanced when they are embedded within transitions. As change-related memories seem to serve important functions within AM, further study of participant-generated turning point and transition memories should enhance our understanding of AM organization, especially in terms of the narrative life story and temporally delineated lifetime periods.

REFERENCES

- Berntsen, D. & Rubin, D.C. (2006). The Centrality of Event Scale: A measure of integrating a trauma into one's identity and its relation to post-traumatic stress disorder symptoms. *Behaviour Research and Therapy*, *44*, 219–231. DOI: 10.1016/j.brat.2005.01.009
- Brown, N.R., Hansen, T.G.B., Lee, P.J., Vanderveen, S.A., & Conrad, F.G. (2012). Historically-defined autobiographical periods: Their origins and implications. In D. Berntsen & D.C. Rubin (Eds.) *Understanding autobiographical memory: Theories and approaches*, (pp. 160–180). New York: Cambridge University Press.
- Brown, N.R. & Schopflocher, D. (1998a). Event clusters: An organization of personal events in autobiographical memory. *Psychological Science*, *9*(6), 470–475. DOI: 10.1111/1467-9280.00087
- Brown, N.R. & Schopflocher, D. (1998b). Event cueing, event clusters, and the temporal distribution of autobiographical memories. *Applied Cognitive Psychology*, *12*(4), 305–319. DOI: 10.1002/(SICI)1099-0720(199808)12:4<305::AID-ACP569>3.0.CO;2-5

- Clausen, J.A. (1995). Gender, context, and turning points. In P. Moen, G. Elder, & K. Lüscher (Eds.), *Examining lives in context*, (pp. 365–389). Washington, DC: American Psychological Association. DOI: 10.1037/10176-010
- Cohen, P. (2008). *Applied data analytic techniques for turning points research*. New York: Routledge.
- Conway, M.A. (2005). Memory and the self. *Journal of Memory and Language*, *53*(4), 594–628. DOI: 10.1016/j.jml.2005.08.005
- Conway, M.A. & Pleydell-Pearce, C.W. (2000). The construction of autobiographical memories in the self-memory system. *Psychological Review*, *107*, 261–288. DOI: 10.1037/0033-295X.107.2.261
- Graber, J.A. & Brooks-Gunn, J. (1996). Transitions and turning points: Navigating the passage from childhood through adolescence. *Developmental Psychology*, *32*, 768–776. DOI: 10.1037/0012-1649.32.4.768
- Grysmann, A. & Hudson, J.A. (2010). Abstracting and extracting: Causal coherence and the development of the life story. *Memory*, *18*, 565–580. DOI: 10.1080/09658211.2010.493890
- Hareven, T.K. & Masaoka, K. (1988). Turning points and transitions: Perceptions of the life course. *Journal of Family History*, *13*, 271–289. DOI: 10.1177/036319908801300117
- Jarvis, B. G. (2012). *MEDIALAB (Version 2012.4.117) [Computer Software]*. New York, NY: Empirisoft Corporation.
- Kurbat, M.A., Shevell, S.K., & Rips, L.J. (1998). A year's memories: The calendar effect in autobiographical recall. *Memory and Cognition*, *26*, 532–552. DOI: 10.3758/BF03201161
- McAdams, D.P. (2001). The psychology of life stories. *Review of General Psychology*, *5*, 100–122. DOI: 10.1037/1089-2680.5.2.100
- Palmer, M., O'Kane, P., & Owens, M. (2009). Betwixt spaces: Student accounts of turning point experiences in the first-year transition. *Studies in Higher Education*, *34*, 37–54.
- Pillemer, D.B. (1998). *Momentous events, vivid memories*. Cambridge: Harvard University Press.
- Pillemer, D.B. (2001). Momentous events and the life story. *Review of General Psychology*, *5*, 123–134. DOI: 10.1037/1089-2680.5.2.123
- Pillemer, D.B., Goldsmith, L.R., Panter, A.T., & White, S.H. (1988). Very long-term memories of the first year in college. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *14*(4), 709–715. DOI: 10.1037/0278-7393.14.4.709
- Pillemer, D.B., Rhinehart, E.D., White, S.H. (1986). Memories of life transitions: The first year in college. *Human Learning*, *5*, 109–123.
- Robinson, J. A. (1986). Temporal reference systems and autobiographical memory. In D.C. Rubin (Ed.), *Autobiographical memory* (pp. 159–188). Cambridge: Cambridge University Press.
- Rönka, A., Oravala, S., & Pulkkinen L. (2003). Turning points in adults' lives: The effects of gender and the amount of choice. *Journal of Adult Development*, *10*, 203–215. DOI: 10.1023/A:1023418414709
- Rubin, D. C., Schrauf, R. W., & Greenberg, D. L. (2003). Belief and recollection of autobiographical memories. *Memory & Cognition*, *31*, 887–901. DOI: 10.3758/BF03196443
- Rutter, M. (1996). Transitions and turning points in developmental psychopathology: As applied to the age span between childhood and middle-adulthood. *International Journal of Behavior Development*, *19*, 603–626. DOI: 10.1080/016502596385712
- Shum, M.S. (1998). The role of temporal landmarks in autobiographical memory processes. *Psychological Bulletin*, *124*, 423–442. DOI: 10.1037/0033-2909.124.3.423
- Talarico, J.M. (2009). Freshman flashbulbs: Memories of unique and first-time events in starting college. *Memory*, *17*, 256–265. DOI: 10.1080/09658210802595570
- Wheaton, B. & Gotlib, I.H. (1997). Trajectories and turning points over the life course: Concepts and themes. In B. Wheaton & I. Gotlib (Eds.), *Stress and adversity over the life course* (1–25). New York: Cambridge University Press. DOI: 10.1017/CBO9780511527623

APPENDIX A

The Autobiographical Memory Questionnaire (AMQ)

- As I remember the event, I feel as though I am reliving the original event. [Scale: 1 (*not at all*) to 3 (*vaguely*) to 5 (*distinctly*) to 7 (*as clearly as if it were happening right now*)]

2. As I remember the event, I can see, hear, or otherwise perceive in my mind what happened. [Scale: 1 (*not at all*) to 3 (*vaguely*) to 5 (*distinctly*) to 7 (*as clearly as if it were happening right now*)]
3. This memory is significant for my life because it imparts an important message for me or represents an anchor or a critical juncture. [Scale: 1 (*not at all*) to 3 (*vaguely*) to 5 (*distinctly*) to 7 (*as much as any memory*)]⁴
4. Since it happened, I have thought or talked about this event. [Scale: 1 (*not at all*) to 7 (*as often as any event in my life*)]
5. At the time of the event, the emotions that I felt were pleasant. [Scale: 1 (*neutral*) to 3 (*somewhat pleasant*) to 5 (*pleasant*) to 7 (*extremely pleasant*)]
6. At the time of the event, the emotions that I felt were unpleasant. [Scale: 1 (*neutral*) to 3 (*somewhat unpleasant*) to 5 (*unpleasant*) to 7 (*extremely unpleasant*)]
7. At the time of the event, the emotions that I felt were intense. [Scale: 1 (*not at all*) to 3 (*hardly*) to 5 (*somewhat*) to 7 (*extremely intense*)]
8. While remembering the event now, the emotions that I feel are pleasant. [Scale: 1 (*neutral*) to 3 (*somewhat pleasant*) to 5 (*pleasant*) to 7 (*extremely pleasant*)]
9. While remembering the event now, the emotions that I feel are unpleasant. [Scale: 1 (*neutral*) to 3 (*somewhat unpleasant*) to 5 (*unpleasant*) to 7 (*extremely unpleasant*)]
10. While remembering the event now, the emotions that I feel are intense. [Scale: 1 (*not at all*) to 3 (*hardly*) to 5 (*somewhat*) to 7 (*extremely intense*)]
11. To the best of your knowledge, is the memory of an event that occurred once at one particular time and place, a summary or merging of many similar or related events, or for events that occurred over a fairly continuous extended period of time lasting more than a day?
12. How old were you at the time of the event? ____ years old

APPENDIX B

Now, I would like you to think about an event that you have personally experienced that is related to [original event title].

I am interested in any and all events that are related to

[original event title], so please report the first event that comes to mind.

Please provide a short (3–5 word) title for the related event. This title will be used to remind you of this event at a later time.

Can you think of any other events that you have personally experienced that are related to [original event title]? Yes No

IF YES:

Please list any additional events from your life that you feel are related to [original event title]. Keep in mind that we are only interested in events that are directly related to [original event title]. For example, an event that is related to a related event is not directly related to [original event title].

For each related event, provide a short (3–5 word) title in the space below.

Please indicate how [first related event title] and [original event title] are similar or related. Select all that apply. When you have finished making selections, click Continue. If you cannot think of a way in which these two events are related, do not make any selections and simply click Continue. If one of your selections is Other, you can specify after clicking Continue.

- People who were there
- Location where it took place
- Activity you were doing
- Time of year
- Time of day
- How old you were
- Significance of the event/memory
- Emotions you felt
- Both events have a similar theme
- One event caused the other
- Both events are part of a larger story
- Other, specify: _____

⁴ The original item read, ‘...or represents an anchor, critical juncture, or turning point’. It was changed for the current study to omit explicit reference to the term ‘turning point’.