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Autobiographical memory functions as a stable property of narrative identity

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Abstract

The functionalist approach claims that autobiographical memory functions could be part of narrative identity. If so, the use of memory functions in personal narratives should be as stable as other properties of narrative identity. Testing this claim, the present study elicited repeated narratives and functional self-ratings for turning point and low point memories from 145 undergraduates (68.90 % female) in a two-wave eight-month longitudinal study. Stability of memory functions in specific memories was conceptualized in terms of mean-level and rank-order stability. Results showed little mean-level stability, yet substantial rank-order stability for memory functions regardless of assessment. The later use of the same memory functions in repeated narratives was predicted by baseline of functions at T1, age of event, valence, and frequency of rehearsal. Combining these results with theories on autobiographical memory and narrative identity suggests that memory functions might be a stable property of narrative identity hitherto overlooked.

Keywords

functions of autobiographical memory, turning points, low points, narrative identity, stability of personality

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In the field of personality psychology, narrative identity is acknowledged as the process by which people make sense of their lives and give meaning to their experiences by weaving them into a coherent life story (McAdams & Adler, 2010). Life stories contain vivid and important autobiographical scenes that are cast into meaningful personal narratives to create a sense of purpose and continuity for the self. Hence, narrative identity is not merely mirroring one's autobiographical past, but is subject to individual differences in the selective and interpretative nature of autobiographical memory (Conway et al., 2019; McAdams & Adler, 2010). The outstanding life events that are remembered as central to one's life story such as high point, low point, or turning point memories are different from more mundane personal experiences because of greater goal-relevance, personal importance, emotional intensity, and more frequent rehearsal (Singer & Salovey, 1993; Thomsen et al., 2012). These life events commonly constitute narrative identity.

Different features of both autobiographical memories and narrative identity show moderate intra-individual stability over time. Properties such as content, vividness, emotion, personal importance, narrative coherence, autobiographical meaning making, and emotional tone are stable properties of autobiographical memories and personal narratives, persisting from as short as one week to as long as several years (Köber et al., 2019; Köber & Habermas, 2017; McAdams et al., 2006; Rubin, 2021; Thomsen et al., 2015). Several studies found moderate rank-order stability of narrative coherence (*r*'s ranging

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from .13 to .51; Camia et al., 2022; Waters et al., 2019) and autobiographical meaning making across time (*r*'s ranging from .21 to .53; Camia et al., 2022; McLean et al., 2022). While this research supports the view that autobiographical memory and narrative identity reflect a stable feature of adult personality, it neglects the purposes or functions for which individuals recall and craft autobiographical events into life stories. Therefore, we expand previous research on the stability of different properties of autobiographical memory and narrative identity by investigating the stability of autobiographical memory functions. More specifically, this longitudinal study takes a first step of studying the stability of autobiographical memory functions within the same memories over time. We aimed to find out whether the same life event keeps serving memory functions to similar extents over time.

The interplay of narrative identity and autobiographical memory functions

Narrative identity in daily life often consists of naturally occurring accounts of life experiences, organized, stored, and recounted in personally meaningful ways. This retrieval and storying of autobiographical memories is guided by current goals and therefore usually serves a purpose, or in other words, a function to help humans to navigate their social environment and themselves (Bluck et al., 2019; Conway & Pleydell-Pearce, 2000). The three main functions for which individuals engage in remembering and self-storytelling are the self, social, and directive functions (Bluck, 2003).

The self function involves recalling autobiographical memories to provide a coherent sense of self over time or to update the self while maintaining continuity (Bluck, 2003). Although memories can simultaneously serve multiple functions, the self function is often the most employed when recalling specific memories (Camia et al., 2023; Rasmussen & Berntsen, 2009; Waters et al., 2014), probably because the maintenance of self-continuity is inherent to autobiographical memory (Conway & Pleydell-Pearce, 2000). Yet, research on the stability of life stories suggests that the personal importance of memories fades over time (Thomsen et al., 2015) and that only a moderate amount of memories keep their central status to personal identity throughout the lifespan (Köber & Habermas, 2017). This may be especially true in emerging adulthood when identity is still forming. In samples of emerging adults, memories once considered highly important and even viewed as turning points in life have been found to wane in centrality for the self (e.g., McAdams et al., 2006) and to be replaced by new life events (Camia & Habermas, 2020). This suggests that the self function may be the most employed but, over time, the least stable function. Older memories previously high on self function may diminish in self-relevance and new memories may become central for the self to maintain self-continuity.

The social function refers to the use of memories to develop and sustain social bonds (Alea & Bluck, 2003; Waters et al., 2014). Because narrative identity is not only the story of the narrator themselves, but also includes the stories of significant others and describes how important relationships have formed the self (Fivush & Merrill, 2016), life stories provide a suitable context to explain the development and value of important relationships, and to create and maintain feelings of proximity and relatedness with significant others. Indeed, using autobiographical memories for relationship development and maintenance is their most fundamental use at all ages (Alea & Bluck, 2003) in both individualistic and collectivistic cultures (Camia et al., 2023; Wang & Singer, 2021). Over time, the social function could be stable in both specific memories and individuals because cross-sectional research on memories of relationship events found it to be unaffected by age of event and by age of individuals, and reinforced by frequent rehearsal and sharing with others (Alea & Bluck, 2007; Kulkofsky et al., 2010).

The directive function denotes the use of personal memories for problem solving or as a guide for future behavior (Bluck, 2003). Directive functions are not merely instrumental for the future but also self-related when past experiences are used to motivate self-relevant thinking and action (Pillemer, 2003). Often, directive memories are negative and stressful (Rasmussen & Berntsen, 2009), which makes the rehearsal of these experiences painful (Burnell et al., 2020). As a result, the directive function tends to be employed to lesser extents than self- and social functions (Rasmussen & Berntsen, 2009; Waters et al., 2014). Yet, directive functions, especially when drawn from negative memories, might be stable over time as bitter insights and lessons are likely to be retained. Individuals would be motivated to avoid re-experiencing past hurtful events and to maintain beneficial future thinking and behavior (Burnell et al., 2020; Pillemer, 2003).

Cultural differences in narrative identity and autobiographical memory functions

Originally, the notion of narrative identity was conceptualized for the "Western adult" (McAdams, 1995, p. 382) as was the functional framework of autobiographical memory (Bluck, 2003). The little available cross-cultural research, however, demonstrated that the construction of narrative identity and the self, social and directive

functions of memory can also be observed in non-Western cultures (Alea & Wang, 2015; Wang & Singer, 2021). One common result of comparative cross-cultural research on memory functions is that compared to European Americans, individuals from non-Western cultures including Japan (Maki et al., 2015), Trinidad and Tobago (Alea et al., 2015), and the United Arab Emirates (Camia et al., 2023) use their autobiographical memories less frequently for the self and social functions. This might be because individuals in these cultures tend to define the self and maintain interpersonal connections based on established social structures like family, kin, or tribe. As a result, they may not depend on creating a unique life story to maintain self-continuity (self function) and to present themselves to others (social function) as heavily as Western individuals (Nelson, 2003). We here aim to contribute to cross-cultural research by examining the stability of autobiographical memory functions in one Western and one underrepresented Middle Eastern subsample.

The present study

Merging research on autobiographical memory with the research on personality and narrative identity, this preregistered study (https://osf.io/bjcfp/) draws on the claim that life story accounts in everyday contexts serve the three basic functions of self-definition, social connection, and guidance of future behavior (Bluck, 2003). While previous research established how individuals use autobiographical memories and how these uses differ across cultural context and developmental period (e.g., Alea & Bluck, 2007; Camia et al., 2023; Wang & Singer, 2021; Wolf & Zimprich, 2015), we are not aware of any studies that investigated the stability of autobiographical memory functions within the same event over time.

Common research designs to investigate autobiographical memory functions often elicit personal narratives or ask individuals to report on the reasons behind their reminiscing. The advantage of the former approach is that narrative prompts naturalistically obtain narratives that are pertinent to the lives of participants. Problematic, however is, that even trained coders cannot fully ascertain what function a particular narrative really serves unless it is confirmed by the narrator (Beike et al., 2020). The more prominent methodology therefore has been to simply ask individuals to report on how they generally use their autobiographical memory via questionnaire (Bluck & Alea, 2011). While this questionnaire approach might tap into the general functionality of autobiographical memory, it overlooks the fact that life stories are based on specific memories recalled and narrated in specific contexts for specific reasons (McLean et al., 2007). Consequently, researchers increasingly argued for a functionalist approach to narrative identity and to complement the questionnaire approach with narratives (Beike et al., 2020; Bluck et al., 2019) especially in regard to non-Western cultures (Alea & Wang, 2015). Addressing these calls, this study collected personal narratives that were rated by the culturally diverse participants themselves (self-rated on questionnaires) and by trained coders (other-rated based on narratives) for the self, social, and directive functions. More importantly, this procedure was repeated for the same life events around eight months later to determine the stability of autobiographical memory functions for key life events and not for the general use of functions.

Analogously to research on stability of personality traits, we conceptualized stability of functions in terms of mean-level stability and rank-order stability. Mean-level stability implies that the average group level of a function in specific memories remains stable over time, while rank-order stability implies that individuals maintain their relative standing on a function in specific memories relative to others over time. Both kinds of stability were examined while controlling for age and valence of events, and frequency of rehearsal as these were found to be associated with autobiographical memory functions (Alea & Bluck, 2007; Burnell et al., 2020; Kulkofsky et al., 2010). To make sure to assess stability in repeated events, we additionally controlled whether participants remembered and re-narrated the same key life event at Time 2.

The here investigated research questions and hypotheses of this study were preregistered (https://osf.io/bjcfp/). Based on previous cross-sectional and cross-cultural research (Camia et al., 2023; Rasmussen & Berntsen, 2009; Wang & Singer, 2021; Waters et al., 2014), we hypothesized and preregistered that the self function would be the most prevalent and unstable of all functions (Hypothesis 1), while the social (Hypothesis 2) and directive functions (Hypothesis 3) may be used to lesser but more stable extents over time. If autobiographical memory functions are an integral part of narrative identity, as claimed by the functional approach (Bluck et al., 2019), all three functions, regardless of self or researcher rating, should be as moderately stable as other properties of narrative identity (Camia et al., 2022; Köber et al., 2019; Köber & Habermas, 2017; McLean et al., 2022; Waters et al., 2019).

Method

Participants and procedure

Participants were 180 undergraduate students (*mean* age = 20.47, *SD* = 3.35, 68.90 % female) from two different universities. One-half of the participants (n = 88, *mean age* = 20.06, *SD* = 1.17) were recruited in an U.S. American university in the United Arab Emirates (UAE) and the other half (n = 92, *mean age* = 20.87, *SD* = 4.51) in

an U.S. American university in the pacific northwest of the USA. The majority (54.40%) self-identified as Caucasian, 23.30% as Asian, 11.10% as African or Hispanic, 8.90% as Arabic or Indian, and 2.20% as Mixed. While the subsample from the UAE was more ethnically diverse than the subsample from the USA ($\chi 2$ (4) = 42.98, $p < .05$), there were no significant differences between both subsamples regarding age or gender distribution. About eight months later (range 6–12 months, $M = 8.25$ months, $SD = 1.32$), 145 students (44 male, 30.34 %) participated again; 68 undergraduates from the UAE and 77 undergraduates from the USA. Attrition was not associated with gender, ethnicity or subsample from participants who completed both measurement times.

Data collection took place in two waves, the first wave spanning from November 2016 to May 2017, and the second wave from September 2017 to January 2018. At each measurement time, participants provided informed consent and completed the survey via Qualtrics. Once finished, participants were debriefed, thanked, and compensated with 25 USD for participation at each measurement time. Sessions took an average of 1 hour. The study was approved by the institutional review board at both involved universities, New York University Abu Dhabi (#087–2016) and Western Washington University (#17–012).

Measures

Narrative prompts. Participants completed two narratives, telling a turning point and a low point. Turning point events depict times of change or experiences that brought a transition in the understanding of self or of life. Low point events are episodes in which participants experienced something extremely negative (McAdams, 1993). As noted above, both these kinds of events commonly constitute narrative identity due to their greater goal-relevance, personal importance, emotional intensity, and more frequent rehearsal (Singer & Salovey, 1993; Thomsen et al., 2012), and thus seem appropriate for the purpose of this study.

After writing each narrative, participants generated a key word, which they deemed sufficiently specific to unambiguously cue the narrated event at Time 2. In total, participants provided 649 answers across both measurement times. However, some responses contained no narratives, but rather explanations for the inability or unwillingness to provide narratives fitting the narrative prompts. This reduced the number to 625 narratives, 320 turning points and 305 low points, across both measurement times.

Autobiographical memory functions

Narrative coding of functions. Using the memory functions coding presented by Waters et al. (2014), each narrative was coded on three continuous scales (ranging from zero to 3) assessing the expression of self, social, and directive functions. The self function coding scheme focused on content relating to themes of identity, self-esteem, and self-understanding. The social function coding scheme focused on content valuing specific social relationships or conveying a sense of enhanced closeness when recalling the event. The directive function coding scheme focused on content describing changes in behavior as a result of the narrated event. Interrater reliability was established on 25.00 % of provided narratives. For the three functions, reliabilities (absolute agreement) were ICC = .85 for self function, ICC = .88 for social function, and ICC = .78 for directive function. Table 1 shows excerpts of turning and low point narratives of participants with diverse ethnic backgrounds who scored differently on all three functions.

Questionnaires assessing functions. After each narrative, participants completed three questionnaires to assess to what extent the narrated memory serves the three different memory functions. The self function was assessed with the centrality of events scale (Berntsen & Rubin, 2006). Participants rated on seven items like "I feel that this event has become a central part of my life story" on a Likert-scale from 1 (totally disagree) to 5 (totally agree) to what extent the narrated event has become central to one's understanding of self. The social and directive functions were measured by the questionnaires developed by Waters et al. (2014). Participants indicated on six items like "When I think about this event I feel closer to my friends, family, or community" on a Likert-scale from 1 (totally disagree) to 5 (totally agree) to what extent the memory enhanced the appreciation or facilitated the intimacy/closeness of social relationships. Similarly, on six items like "Thinking about this event has influenced my goals in life" participants indicated their agreement to the extent to which the memory led to a change in behavior or influenced decision making.

Control variables

Age of event. At Time 1, participants provided information on how long ago the event occurred in months. Age of event at Time 2 was computed by summing the age of event indicated at Time 1 with the exact time difference between both measurement dates, yielding age of event at Time 2 measured in months.

Valence. Although narratives of low point events, and perhaps also of turning point events, might imply a negative valence, we coded for the valence conveyed in the narratives to assess the emotional tone of the event at the time of telling. Narratives were coded based on the three categories positive, neutral or ambivalent, and

Table 1. Narrative examples for the highest scores on each function coding scheme.

Narrative excerpts	Scoring on autobiographical memory functions
Turning point, black or Hispanic ethnicity, 21 years old, male:	
Throughout my two years at my high school in Tel Aviv, I was able to truly engage with issues concerning the Israeli-Palestinian conflict. I Had many Israeli and Palestinian friends, along with friends from all over the world as well. … I remember I got very attached to my friends during that time, and it was extremely hard to leave. I Remember crying a lot in the airplane, because the high school experience shaped my life completely. I Became a much more open-minded person, able to understand and navigate through different cultural settings, while ensuring that I follow most of my ethical principles. Furthermore, my high school had such a significant impact that, nowadays, I consider going back to Tel Aviv in the future, as I miss the place a lot, along with my dear friends. I Hope to be able to help solving the Palestinian-Israeli conflict; hence, my high school provided me with a life goal.	Self: 3 Social: 2 Directive: 3
Turning point, Caucasian ethnicity, 22 years old, female:	
I was 11 years old when my only sibling, an older brother, left for university in another country. I Was not close to my parents and he was my best friend. Enjoying being at home became hard and for several months I felt alone and cried. After a while, I decided to try and change my relationship with my parents because my brother was only getting older and was not coming back home. I Left my room more, engaged with my parents more, got to know them and let them know me. I Have since gotten closer and closer to my parents and family reunions when my brother does come home are all the better.	Self: 0 Social: 3 Directive: 0
Low point, Asian ethnicity, 18 years old, female:	
I once had a desk-mate in junior high school. She was my best friend, a really cute and quiet girl. But I noticed there was a special period when she was super depressed. She did not listen to class and kept using a ruler to rub her wrist. I Felt extremely strange. And one night she did not show up in our evening study session. Without knowing specific reason, I started looking for her. And I went over the whole school. Finally found her on the top floor. She was about to commit suicide. I Stopped her and talked to her whole night. We sat on the stairs and talked. I Found out that although I thought we were best friends, actually I hadn't made much effort to know her, to understand her, to take care of her. Thus, I began to change.	Self: 2 Social: 1 Directive: 1
Low point, Caucasian ethnicity, 19 years old, male:	
My parents divorced when I was in third grade. … Of course, it was hard for me to understand the situation at that time due to my age, but as I grew, I learned more and more about the cause and why it was the right decision on their part. I Learned a lot about my parents; who they were, their faults and qualities, and their love for me and my brother. I Was able to develop separate relationships with my mother and father, forever changing who we are together and who I am depending on who I am with. As a result, I'm sure that I've learned a vast amount of lessons on how NOT to do marriage… In general, I've learned how to go about things differently as well. I grew to understand all the mistakes my parents made, which has developed my belief about nurture and its importance. I Have a lot of qualities different from my parents, coincidentally in the same areas where they needed the most work. Today, I Love my parents very much, though some of their personal issues are no different. I've only come to accept them and learn to deal with them, furthering the benefits and lessons I've gained from the whole experience. … I'm happy they got divorced, as would I have missed the chance to mature in many areas.	Self: 2 Social: 3 Directive: 2

negative. We assigned −1 to negative events, zero to neutral and ambivalent narratives, and +1 to positive events. Interrater reliability was Cohen's $\kappa = .85$.

Frequency of rehearsal. At Time 2, participants were asked whether and how often they have shared the narrated events since Time 1 in an open-ended format. Answers mostly contained a simple "No" or the number of how often the event was shared (e.g., "Yes, I shared the event. Thrice I think."). The answer "No" was transformed into zero, and answers indicating the frequency of sharing in words were changed into continuous numbers. For example, the answer "I have only shared this event with two people, it was my friend Lara, and my ex (then, boyfriend) Marc" was transformed into a 2, and the answer "Yes, I shared the event. Thrice I think" was transformed into a 3.

Ambiguous answers like "I am not sure" were discarded. In total, 274 (87.90 %) out of 281 open answers could be transformed into numbers, reflecting participants' estimate of how often they had discussed their turning point and low point events with others between measurement times.

Correct recall. To assure the stability of memory functions in specific events, we controlled whether the same events narrated at Time 1 were repeated at Time 2. Narratives of Time 2 were identified as either correctly remembered (code 1) or incorrectly remembered (code 0).

Results

In line with the pre-registration of this study, results are presented in three brief sections. In a first exploratory step, the other- and self-rated autobiographical memory functions were compared between subsamples and ethnic groups. Second, mean-level and rank-order stability of the autobiographical memory functions were assessed. Third, regression analyses determined whether the initial use of functions predicts their future use in the same memory eight months later.

Comparing subsamples and ethnic groups

A series of MANOVAs for repeated measures revealed no significant differences in the use of autobiographical memory functions assessed via narratives and questionnaires between subsamples or ethnic groups (all *p*s > .05). We therefore merged both subsamples in all subsequent analysis. As predicted, the self function was the most prevalent in both narratives and questionnaires, followed by the social function and finally the directive function (Table 2). Turning point experiences served all functions more than low point events. Turning point events and low point events were equally old, but low point events were more negative than turning point experiences. Both kinds of life events were shared with others similarly often throughout the course of the study, approximately two times respectively (Table 2).

Stability of autobiographical memory functions

The autobiographical memory functions coded in narratives showed little mean-level stability (Table 1). In line with hypothesis one, the self function was unstable, yet not the most unstable function. Unexpectedly, the social function assessed via narratives was more unstable than the self function as indicated by the greater F value and effect size of time $\eta_p^2 = 0.23 > \eta_p^2 = 0.08$, Table 2). The directive function showed small mean-level stability when assessed in narratives as evidenced by the non-significant F value and small effect size of time ($\eta_p^2 = 0.01$, Table 2). The mean levels of self-rated autobiographical memory functions were also unstable (Table 2). As predicted, the self function was the most unstable, unexpectedly followed by the directive function and last by the social function as indicated by the effect sizes of time (Table 2). Conversely, valence showed mean-level stability throughout the course of the study (Table 2).

In contrast, correlations of the autobiographical memory functions revealed substantial rank-order stability (Table 3). When assessed in and averaged across narratives, the self and social functions showed high rank-order stability. The directive function, however, showed limited rank-order stability likely due to the low values and variability yielding a floor effect (Tables 2 and 3). When self-rated via questionnaires and averaged across memories, all three autobiographical memory functions showed moderate to large rank-order stability (r's ranging between .58 and 6.8, Table 3). The same pattern held true when correlating each function separately by narratives (Appendix A).

Later use of autobiographical memory functions

To determine the later use of autobiographical memory functions, we conducted a series of hierarchical regressions. In a first step, we entered the baseline of T1 of the respective function to then control for age of event, valence, frequency of rehearsal since T1, and correct recall (dummy variable) as additional potential predictors in a second step. Table 4 shows that all autobiographical memory functions, regardless of assessment method and kind of memory, were significantly predicted by their initial use eight months earlier. Only the directive function when assessed in narratives was not significantly predicted by the baseline, probably due to the observed floor effect (Table 2). Additional predictors were found significant for functions of low point events only when assessed in questionnaires (Table 4). Age of event contributed minimally yet significantly to the self function of low points indicating that increasing time helps to employ a low point event for greater self-understanding. Frequency of rehearsal related significantly to the social function of low points suggesting that the more often the low point event was discussed with others throughout the course of the study, the more the low point memory was employed to maintain or construct social closeness. Last, emotional valence significantly predicted the directive function of low points. This implies that the more positive a low point was evaluated, the more it could be employed for guidance of future behavior.

Interestingly, correct recall did not show significant effects on the use of autobiographical memory functions. This might be due to the low number of cases of incorrect recall. Only 12 turning point memories (8.28 %) and 16 low point memories (11.03 %) were incorrectly remembered.

Table 2. Descriptive and inferential statistics of autobiographical memory functions and control variables for total sample.

Event type		Turning point memories				Low point memories				ANOVA main effects			
		Time 1		Time 2		Time 1		Time 2		Time		Kind of memory	
Variable		M	SD	M	SD	M	SD	M	SD	*F*	η_{p2}	*F*	η_{p2}
Narrative functions (Range 0–3)	Self	1.99	0.82	1.61	0.97	1.10	1.02	1.03	0.96	10.29*	0.08	89.00*	0.41
	Social	0.76	0.92	0.28	0.63	0.43	0.73	0.34	0.68	37.49*	0.23	4.23*	0.32
	Directive	0.50	0.89	0.41	0.87	0.35	0.73	0.30	0.57	1.07	0.01	3.82	0.29
Questionnaire functions (Range 1–5)	Self	4.10	0.58	3.87	0.74	3.53	0.89	3.38	0.99	19.89*	0.14	38.83*	0.24
	Social	3.75	0.73	3.62	0.68	3.49	0.89	3.39	0.87	5.05*	0.04	9.70*	0.07
	Directive	3.77	0.59	3.57	0.65	3.41	0.79	3.27	0.83	15.64*	0.11	20.43*	0.14
Control variables	Age of event (months)	54.04	49.02	62.19	49.08	48.17	46.66	56.32	46.57	4916.34*	0.98	1.27	0.01
	Valence (Range -1–1)	−0.13	0.90	−0.28	0.91	−0.93	0.34	−0.89	0.42	1.43	0.01	84.84*	0.40
												t	*Cohen's d*
	Frequency of rehearsal	–	–	1.73	2.74	–	–	1.50	2.64	–	–	0.79	0.07

Discussion

This study investigated the stability of autobiographical memory functions in memories of turning points and low points. Memory functions were assessed twice over an average period of eight months via narrative coding and self-report questionnaires. We found little mean-level but high rank-order stability, which we discuss here in terms of autobiographical memory, personality, and narrative identity per function.

Although all memories served all functions, we found the typical pattern that the self function was the most employed in turning point and low point memories (Table 2). This result is consistent with past research corroborating the claims of the Self-Memory System and Narrative Identity theory. Individuals recall key life events to inform and understand their current selves (Conway et al., 2019), and this is sustained in life stories (McAdams & Adler, 2010), as showed in this study at least for some time and at an individual level. It might be for this reason that we found no mean-level stability for the self function in the entire sample, but moderate rank-order stability in individuals regardless of assessment method (Tables 3 and 4). Interestingly, when self-rated in questionnaires, event age positively contributed to the stability of the self function in low points (Table 4). This finding coincides with recent cross-sectional results showing that time passed since the negative event does not decrease the self function of negative events in young adults (Pociunaite et al., 2022). This implies that it needs temporal distance to the occurrence of the low point event before it is used to create lasting meaning about the self. With passing of time, individuals may increasingly integrate the low point into the broader life story and make meaning out of it, which may help them to understand and accept the function of the low point for the self (Lilgendahl, 2015). In the longer run, however, increasing time since the event and increasing age of individuals may reduce the self function of negative events as middle-aged and older adults experience negative events as less central to their identity the longer ago the events have happened (Pociunaite et al., 2022).

Unexpectedly, the social function was less stable at mean-level than the self function when assessed in narratives, but not when assessed in questionnaires (Table 2). Rank-order stability of both assessments, however, was large and the baseline of the social function substantially predicted its later use in turning point and low point memories (Tables 3 and 4). Further, frequency of rehearsal supported the later use of the social function in low points (Table 4). Our results indicate that sharing key life events in form of narratives contributes to individuals' sense of proximity to significant others and that reflects in their narratives as well as in their self-ratings. The social sharing of low point events might be especially functional to strengthen close relationships, as sharing negative events is one form to seek social support to help with coping, which, if received, increases the proximity to the listeners (Nils & Rimé, 2012).

Table 3. Correlation of autobiographical memory functions averaged across event type.

	Self T1	Self T2	Social T1	Social T2	Directive T1	Directive T2
Self T1	–	**.408****	.128	.054	.157*	.098
Self T2	**.675****	–	.071	.189*	.018	.354**
Social T1	.078	.036	–	**.598****	.101	-.002
Social T2	.060	.196*	**.576****	–	.041	.146
Directive T1	.561**	.393**	.180*	.160	–	**.114**
Directive T2	.453**	.628**	.051	.180*	**.599****	–

Note. Correlations of functions coded in narratives are above the diagonal, correlations of functions rated in questionnaires are below the diagonal. Rank-order stability of functions in bold.
*$p < .05$. **$p < .01$ (Bonferroni corrected).

The directive function was the only autobiographical memory function that showed minimal mean-level stability when assessed in narratives (Table 1) and high rank-order stability when self-rated in questionnaires (Table 2). Accordingly, only the self-rated directive function at T1 predicted its later use at T2. In low point events, the stability of the directive function was additionally facilitated by positive valence (Table 3). This finding supports studies showing that finding a silver lining in negative events may reduce the negative emotional impact and enables to personal growth (e.g., Nils & Rimé, 2012; Pals, 2006), which in turn might be helpful to discern the valuable guidance negative events can offer for the future (Wolf et al., 2021).

Limitations

Although we believe that our study makes an important contribution, it also has several limitations. First, we restricted the longitudinal assessment of memory functions to the same event in order to observe the stability of functions within repeated memories. While our results show that memories keep serving the same functions to moderate degrees, our study cannot attest to the stability of memory functions when individuals recall dissimilar events. It remains hence to future research to explore whether memory functions constitute a stable property of individual reminiscing and narrative style across several narratives and across time.

Second, despite our global sample we found no cultural or ethnic differences between our two subsamples in their use of autobiographical memory functions. It is possible that the student subsample recruited from an U.S.-American university in the UAE was too similar to the student subsample located in the USA, or that the whole sample was not sufficiently ethnically diverse to detect cultural differences typically found in previous research (Alea & Wang, 2015; Camia et al., 2023). More stratified samples in terms of age, education and culture may yield more refined results regarding the stability of autobiographical memory functions. For now, our findings add to the limited previous cross-cultural findings that autobiographical memory functions are not only a common (Bluck, 2015) but also a stable phenomenon.

Implications for research on autobiographical memory and personality

Overall, we found moderate stability of autobiographical memory functions. Our effect sizes of rank-order stability (r's ranging from .11 to .68, Table 3) are similar to the ranges reported for other properties of narrative identity such as narrative coherence (r's ranging from .13 to .51; Camia et al., 2022; Waters et al., 2019) or autobiographical meaning making (r's ranging from .21 to .53; Camia et al., 2022; McLean et al., 2022). This suggests that individuals keep recalling the same events for the same purposes, at least for a medium-term. Importantly, it also implies that autobiographical memory functions are not only a memory characteristic but also a stable intra-individual difference in narrative style, hence a characteristic of personality/narrative identity. As evidenced in the high rank-order stability of both narrative-coded and self-rated memory functions, individual differences in the use of autobiographical memories for self-, social, and directive functions seem fairly robust and can be reliably assessed via other- and self-ratings. Hence, our study strengthens both methodological approaches that consider the use of

Table 4. Hierarchical regression models predicting later autobiographical memory functions in narratives and questionnaires.

Assessment	Narratives								Questionnaires							
Function	Self function															
Event type	Turning point				Low point				Turning point				Low point			
Predictors	*B*	*SE B*	*ß*	R^2	*B*	*SE B*	*ß*	R^2	*B*	*SE B*	*ß*	R^2	*B*	*SE B*	*ß*	R^2
Step 1				.10				.05				.56				.53
Constant	.87	.20			.87	.13			.90*	.38			.50	.26		
Baseline	.36	.09	.32*		.20	.08	.21*		.72	.09	.56*		.82	.07	.73*	
Step 2				.14				.09				.57				.56
Constant	.55	.34			1.09	.40			.92*	.41			.61	.37		
Baseline	.37	.10	.33*		.17	.09	.18*		.75	.10	.58*		.81	.07	.71*	
Age of event	.00	.00	.11		−.00	.00	−.06		.00	.00	.03		.01	.00	.15*	
Valence	.17	.09	.16		.48	.26	.17		.04	.06	.05		.10	.19	.03	
Frequency of rehearsal	.02	.03	.05		.02	.03	.06		−.02	.02	−.09		.04	.02	.10	
Correct recall	.20	.28	.06		.30	.27	.10		−.13	.19	−.05		−.19	.20	−.06	
Social function																
Step 1				.33				.18				.52				.56
Constant	.01	.06			.18	.07			1.78*	.26			1.45*	.27		
Baseline	.38	.05	.57*		.40	.08	.42*		.49	.07	.52*		.55	.08	.56*	
Step 2				.36				.22				.55				.62
Constant	.09	.16			−.03	.27			1.92*	.32			1.49*	.43		
Baseline	.38	.05	.56*		.42	.08	.44*		.47	.07	.50*		.56	.07	.57*	
Age of event	−.00	.00	−.05		.00	.00	.05		.00	.00	.01		.00	.00	.09	
Valence	.09	.05	.12		.12	.17	.10		.09	.06	.12		−.04	.20	−.01	
Frequency of rehearsal	−.02	.02	−.08		.02	.02	.07		.03	.02	.14		.08	.03	.23*	
Correct recall	−.00	.16	.00		.36	.18	.16		−.14	.18	−.06		−.32	.21	−.11	
Directive function																
Step 1				.01				.00				.33				.39
Constant	.36*	.08			.33*	.06			1.15*	.30			1.02*	.26		
Baseline	.08	.08	.08		−.05	.07	−.06		.64	.08	.57*		.66	.08	.63*	
Step 2				.05				.02				.35				.45
Constant	−.19	.27			.37	.25			1.03*	.35			1.30*	.38		
Baseline	.11	.08	.12		−.05	.07	−.07		.67	.08	.60*		.66	.08	.63*	
Age of event	.00	.00	.11		.00	.00	.03		.00	.00	.09		.00	.00	−.02	
Valence	.03	.08	.03		.13	.16	.07		−.03	.05	−.04		.52	.17	.21*	
Frequency of rehearsal	.03	.03	.09		.02	.02	.08		−.02	.02	−.07		.00	.02	.01	
Correct recall	.43	.26	.15		.04	.17	.02		−.04	.17	.02		.24	.18	.09	

Note. *$p < .05$.

autobiographical memories in context-dependent narratives (Waters et al., 2014) and in a more general sense (Bluck & Alea, 2011).

These findings of narrative-coded and self-rated memory functions call for a stronger interconnection of research on autobiographical memory and narrative identity. It is likely that the goals for which a memory is (repeatedly) recalled and told might shape its narrative focus, form, and structure. For example, future studies could investigate if coherent narratives serve the self function better than incoherent narratives, if positive narratives enhance the social function because these are more pleasant to share, or if low point events serving the directive function contain more autobiographical reasoning that depicts personality change compared to non-directive low point events. This study suggests that autobiographical memory functions are a moderately stable property of narrative identity, which we hope encourages even more to interconnect research on autobiographical memory with research on narrative identity.

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Notes

Not applicable.

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Appendix A

Table 1. Correlation of memory functions assessed in narratives and questionnaires separated per event type and measurement time.

		Self				Social				Directive			
Function		Turning Point T1	Turning Point T2	Low Point T1	Low Point T2	Turning Point T1	Turning Point T2	Low Point T1	Low Point T2	Turning Point T1	Turning Point T2	Low Point T1	Low Point T2
Self	Turning Point T1	–	**.318****	.208*	.197*	.120	-.036	.123	.130	.179*	.112	.001	.089
	Turning Point T2	**.563****	–	.267**	.280**	.051	.061	.071	.216*	.005	.383**	-.070	.230*
	Low Point T1	.179*	.104	–	**.240***	.121	.024	-.037	.057	.033	.072	.158*	-.019
	Low Point T2	.181*	.176*	**.717****	–	.095	.152	-.011	.020	.024	.171	.085	.172
Social	Turning Point T1	.141	.067	.005	-.145	–	**.564****	.213**	.258**	.069	.003	.004	-.025
	Turning Point T2	.107	.212*	-.121	-.038	**.533****	–	.196*	.126	-.009	-.010	-.069	-.017
	Low Point T1	-.059	-.031	.119	.179*	.199**	.154	–	**.382****	.066	-.005	-.030	-.026
	Low Point T2	-.056	-.155	.201*	.368**	.160	.210*	**.522****	–	-.011	.180*	.065	.172*
Directive	Turning Point T1	.475**	.235*	.146	.107	.119	.110	.119	.062	–	**.077**	.061	.150
	Turning Point T2	.299**	.539**	.182*	.119	-.051	.108	-.011	-.124	**.560****	–	.008	.136
	Low Point T1	.138	.050	.583**	.489**	.050	.006	.135	.195*	.240**	.109	–	**-.041**
	Low Point T2	.027	.111	.478**	.631**	-.069	.003	.232*	.370**	.122	.151	**.635****	–

Note. Correlations of functions coded in narratives are above the diagonal, correlations of functions rated in questionnaires are below the diagonal. Correlations between same functions in repeated narratives in bold.
*$p < .05$. **$p < .005$ (Bonferroni corrected).