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Why does the adolescence bump differ from the emergent adulthood bump in autobiographical memories?

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Abstract

Koppel and Berntsen (2015) discuss the differing temporal locations of the reminiscence bump arising from different instructions. We suggest that identity, life script, life story and novelty need not be discussed as alternative explanations. Rather, they may be integrated into an explanation which also includes a motivational dimension. We sustain that an exclusive use of the life script for retrieval would predict a homogenous and stable set of memories across individuals of the same subculture. An exclusive use of self-concept and explicit motives would predict a highly heterogeneous and volatile set of memories. An exclusive use of the life story schema would predict an only somewhat heterogeneous set of memories slowly changing as life is being lived. This, we suggest, may be closest to what is to be expected from longitudinal findings. Additional explanations for the smaller earlier bump created by word cues are suggested.

We applaud Jonathan Koppel and Dorte Berntsen for picking up a neglected finding (Rubin & Schulkind, 1997) on different temporal locations of the reminiscence bump depending on the kind of instructions used, providing empirical support by reviewing the evidence which has accumulated in the meantime. The reminiscence bump is one of the most stable findings on autobiographical memory in adults over age 40 (Rubin, Wetzler, & Nebes, 1986). The bump is relatively small compared to the recency effect when memories are elicited by cue-words, but rather large when memories are elicited that are significant for one's life or the self. In addition, cued recall produces a slightly earlier bump in adolescence compared instructions asking for important memories which lead to a bump in emerging adulthood. Despite the variation between studies, the trend is convincing and poses interesting questions. The authors discuss the explanatory power of five approaches to the bump. They basically conclude that none explains the different timing of the two bumps. However the authors advocate the life script as the best account, because it is contradicted least by the findings by virtue of not making any claims about encoding factors.

We contribute three arguments, couching them in terms of theoretical elements needed for an explanation of the differences in the temporal location of the bump. First we underline the need to model how differing instructions evoke different retrieval paths. Second we discuss the principal theoretical elements which need to be involved in a satisfactory explanation. Third we suggest ideas for explaining the adolescence bump produced by cue word-elicited memories.

First, the two instructions activate two different retrieval paths. We find Conway's (1992) model of top-down versus lateral access to the hierarchically structured autobiographical memory knowledge base helpful. Environmental cues remind of experiences via an associative network at the level of perceptions, emotions, persons, places, and actions. Cues in any of these categories may directly evoke mnemonic details which are then used to reconstruct an entire memory. Being asked for most important or self-defining memories, in contrast, requires a directed process of comparing and selecting, which enters the autobiographical knowledge base not laterally at the bottom level, but from the top, i.e. through the self-concept and the life story schema as its uppermost level. The story schema overrepresents events from adolescence and emergent adulthood because they are the time when adult identity emerges in the form of a life story (Erikson, 1968). Therefore the much stronger reminiscence bump which results from intentional retrieval using the life as a frame of reference compared to cue word-induced memories is congruent with Conway's model of retrieval. We suggest this to be a useful model of the relation between instructions and retrieval modes.

Second, we suggest that identity, the cultural life script, and the life story do not offer alternative accounts of the reminiscence bump only because they may differ in how much they stress encoding or retrieval processes. Rather we suggest that they can be considered different facets of an explanation first sketched by Fitzgerald (1988). Following Erikson (1968), Cohler (1982), and McAdams (1985), Habermas and Bluck (2000) suggested that identity development took the form of the life story, a cognitive-communicative format that emerges only in adolescence (Köber, Schmiedek, & Habermas, in press). The life story is most fully realized in entire life narratives and mentally represented by the life story schema. In essence it contains biographically salient events which are organized in a globally coherent way. One of the ways to create coherence is using a cultural concept of biography. At its core it consists of a skeleton of normative transitions which have normative ages and transform identity. This skeleton is similar to the life script, only that it does not include non-normative or non-transitional events such as illness or death (Habermas, 2007). Normative transitions achieve identity transformations and related changes in living, thereby marking transitions between life periods (Thomsen, Pillemer & Ivcevic, 2011). A first sexual intercourse and a marriage, for example, mark transitions to being a mature sexual agent and a married person with accompanying social and legal consequences. In contrast to the life script, the life story schema consists of the most biographically salient events of one's individual life and of central connections between them. The life story schema is

also structured by the cultural life script and forms a mnemonic core structure of psychosocial identity. Thus the life story model integrates the concepts of identity and life script.

If we still want to compare the role of different schemata as alternatives for guiding intentional retrieval leading to the later reminiscence bump around age 20, differences become apparent when considering their prediction of interindividual variation and change over time. If only the cultural life script, which is highly standardized within (sub-)cultures (Hatiboğlu & Habermas, 2014), guided the selection of personal important memories, the selected memories should vary little more than the individual conceptions of the life script. Furthermore the selection of important personal memories should remain stable over time except for a possible rare addition of a life script event that had not yet been personally experienced at an earlier measurement.

If, in contrast, only the self-concept, a central element in Conway's (2005) model, guided the selection of personal memories consistent with the current self, the selected personal important memories should vary widely between individuals. Also they should change over time with the evolving self-concept and goals. Memories inconsistent with the current self would be dropped and consistent memories would be added.

If, finally, only the life story schema guided the selection of personal memories, the selected important memories should to some degree reflect the normative biographical salience of events experienced by the individual (homogeneity, stability). At the same time the selected memories should also reflect events that exemplify central personality characteristics and values as well as the life story also includes non-normative and highly idiosyncratic experiences. The need to create coherence in the life story does exert a certain pressure to select events in accordance with one's identity (heterogeneity, flexibility). But identity includes more than the present self-concept, namely important milestones of one's personal development.

The life story schema is thus individual and semi-flexible, changing more slowly than the synchronous self-concept. It gains stability from being structured by the life script and by including the personal past. On the other hand it gains flexibility from new events as life is being lived as well as from reinterpreting the past in light of new events. Past events are dropped or added to create a more or less coherent story leading up to the present self. To bridge this tension, the life story schema includes central autobiographical arguments which help create continuity across biographical disruptions (Habermas & Köber, 2014), allowing to keep events in the life story although they are no longer consistent with the present self. These different predictions by the rival accounts require longitudinal data to be tested.

Conway's model adds a dimension to the process of autobiographical remembering which is lacking in the life script and life story accounts, namely a motivational dimension which goes beyond the need to create personal consistency and continuity, by highlighting the role of current motives, goals, and values for selecting memories (Conway & Pleydell-Pearce, 2000). Thus memories are also selected in concordance with dominant life goals and values as well as with implicit motives.

Third, Koppel and Berntsen (2015) explain the earlier temporal location of the weaker reminiscence bump of cued autobiographical memories by novelty and cognitive development. While the timing of the peak of fluid intelligence around age 20 is not really distinct for the earlier bump, we agree with the idea that there is a concentration of novel events, sometimes called "first times" in the memory literature, in middle to late adolescence. In terms of identity development, novelty of events corresponds to the transition between childhood and adulthood and the corresponding increase in peer orientation and autonomy. Most importantly, an adolescent moratorium phase offers the possibility to try out new roles and identities, generating many "first times". From this developmental perspective, the later location of the bump of important memories corresponds to the end of the exploration phase. This involves making lasting commitments, which, if they really last, remain consistent with the present

self of middle-aged to older adults. They are thus still self-defining for the age group that shows the reminiscence bump.

Another contribution to the slightly earlier bump of cued memories might come from motives playing a mediating role for the selection of memories. While conscious life goals and values are formed in adolescence and can be assumed to influence intentional recollection of important memories, implicit motives are formed in childhood and influence the less intentional processes of being reminded of past events by stimuli such as word cues (Woike, 2008). If explicit and implicit motives stay linked to memories of the time when they first were formed, the lag between their ontogenetic origins might also contribute to the different temporal locations of the reminiscence bump depending on the instructions used. We propose that both factors (first times versus commitments in identity development, earlier formation of implicit and later formation of explicit motives) may fulfill the criterion suggested by Koppel and Berntsen (2015) for a good explanation, namely that they address both temporal peaks.

References

- Bluck, S., & Habermas, T. (2000). The life story schema. *Motivation & Emotion, 24*, 121-147. doi: 10.1023/A:1005615331901
- Cohler, B. J. (1982). Personal narrative and life course. *Life span development and behavior, 4*, 205-241.
- Conway, M. A. (1992). A structural model of autobiographical memory. In M. A. Conway, D. C. Rubin, H. Spinnler, & W. A. Wagenaar (Eds.), *Theoretical perspectives on autobiographical memory* (pp. 167-192). Dordrecht, The Netherlands: Kluwer Academic.
- Conway, M. A. (2005). Memory and the self. *Journal of Memory and Language, 53*, 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.
- Erikson, E. H. (1968). *Youth and Crisis*. New York: Norton.
- Fitzgerald, J. M. (1988). Vivid memories and the reminiscence phenomenon: The role of a self narrative. *Human Development, 31*, 261-273. doi:10.1159/000275814
- Habermas, T. (2007). How to tell a life: The development of the cultural concept of biography across the lifespan. *Journal of Cognition and Development, 8*, 1-31. Doi 10.1080/15248370709336991
- Habermas, T., & Köber, C. (2014). Autobiographical reasoning in life narratives buffers the effect of biographical disruptions on the sense of self-continuity. *Memory*. Advance online publication. doi: 10.1080/09658211.2014.920885
- Hatiboğlu, N., & Habermas, T. (2014). The normativity of life scripts and their relation with life story events across cultures and sub-cultures. Manuscript submitted for publication.
- Köber, C., Schmiedek, F., & Habermas, T. (2015). Characterizing lifespan development of three aspects of coherence in life narratives: A cohort-sequential study. *Developmental Psychology, 51*, 260-275. doi: 10.1037/a0038668
- Koppel, J., & Berntsen, D. (2015). The peaks of life: The differential temporal locations of the reminiscence bump across disparate cueing methods. *Journal of Applied Research on Memory and Cognition, 4*, 66-80.
- McAdams, D. P. (1985). *Power, intimacy, and the life story*. Homewood, IL: Dorsey.
- Rubin, D. C., & Schulkind, M. D. (1997). Distribution of important and word-cued autobiographical memories in 20-, 35-, and 70-year-old adults. *Psychology and Aging, 12*, 524-535. doi:10.1037/0882-7974.12.3.524
- Rubin, D. C., Wetzler, S. E., & Nebes, R. D. (1986). Autobiographical memory across the adult lifespan. In D. C. Rubin (Ed.), *Autobiographical memory* (pp. 202-221). Cambridge, UK: Cambridge University Press.
- Thomsen, D. K., Pillemer, D. P., & Ivcevic, Z. (2011). Life story chapters, specific memories, and the reminiscence bump. *Memory, 19*, 167-279.
- Woike, B. A. (2008). A functional framework for the influence of implicit and explicit motives on autobiographical memory. *Personality and Social Psychology Review, 12*, 99-117.