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# Lifespan trends of autobiographical remembering: Episodicity and search for meaning



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#### ABSTRACT

Autobiographical memories of older adults show fewer episodic and more non-episodic elements than those of younger adults. This semantization effect is attributed to a loss of episodic memory ability. However the alternative explanation by an increasing proclivity to search for meaning has not been ruled out to date. To test whether a decrease in episodicity and an increase in meaning-making in autobiographical narratives are related across the lifespan, we used different instructions, one focussing on specific episodes, the other on embedding events in life, in two lifespan samples. A continuous decrease of episodic quality of memory (memory specificity, narrative quality) was confirmed. An increase of search for meaning (interpretation, life story integration) was confirmed only up to middle adulthood. This non-inverse development of episodicity and searching for meaning in older age speaks for an autonomous semantization effect that is not merely due to an increase in interpretative preferences.

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## 1. Introduction

The ability to remember learned verbal material decreases across adulthood. A similar decrease is apparent in autobiographical event memory. This trend has been described as autobiographical memory becoming less episodic and more semantic with age. In terms of Conway's model of autobiographical memory (Conway & Pleydell-Pearce, 2000), this would mean that basic event-specific memories become less accessible, especially in terms of temporally sequenced actions and events. This in turn would lead to an increased use of higher level knowledge of repeated or extended events and life phases. There is a reverse age difference between young and old adults in interpretative efforts to render memories more meaningful. This increase might serve as an alternative explanation for the decrease of episodic memory. We present a study that attempts to replicate these two hitherto independent findings and to test their possible inverse interrelatedness in the same data set. Furthermore we compare instructions that maximize specific episodic narrating versus narrating with a focus on search for biographical meaning. Finally we go beyond the simple comparison of young and old adults by using two lifespan samples with four and six age groups respectively to explore the relationship between age, episodicity, and search for meaning in more detail.

# 1.1. Semantization of autobiographical memory

In laboratory studies of verbal learning, working memory and episodic memory decrease in older adulthood. In a large longitudinal study with 35-80-year-olds, Rönnlund, Nyberg, Bäckmann, and Nilsson (2005) found that short-term episodic

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memory for verbal material and simple actions began to gradually decrease at age 60, accelerating after age 70. Cultural knowledge (semantic memory) decreased at a more moderate pace in the same age range.

Learning studies interpret the concept of episodic memory as originally conceived, i.e. as memory for experimental stimuli (Tulving, 1972). Episodic memory was later reinterpreted to cover autobiographical remembering of personal experiences. This more recent concept refers to the subjective experience of reliving past events in a vivid fashion, including details of the scene (Tulving, 2002). Several studies (reported below) demonstrated that this kind of episodic, i.e. autobiographical episodic memory, also decreases in later adulthood. A further claim is that with age, episodic memories are increasingly reduced to semantic memories, i.e. that remembering *how* events unfold is transformed into merely knowing *that* an event happened.

To compare remembering *how* to knowing *that* something happened, these studies interpret the amount of detail in a memory report as indicating the degree of re-experiencing, or of the episodicity of the memory. All information that does not regard the specific event is termed 'external' information and interpreted as resulting from semantic memory. Levine, Svoboda, Hay, Winocur, and Moscovitch (2002) asked 15 young and 15 older adults (24 and 74 years) to freely narrate an event from each of five life periods, followed by a series of probes to elicit more detail. The number of event-related details was counted for each narrative, including happenings, physical, temporal, and locational information as well as cognitive and emotional reactions. In addition, each of these aspects was rated on four-point scales, as were the overall episodic richness and the degree of integration of the episode into the wider context of life. Young adults reported more information internal to, and older adults more information external to the event. Additional probing reduced age differences, especially in the ratings. However older adults still provided more information about things other than the event itself, and still integrated the event more with other parts of life.

In related studies Addis, Wong, and Schacter (2008) and Addis, Musicaro, Pan, and Schacter (2010) asked young (early 20s) and older (70s) participants to think of a total of eight recent memories in response to cues and to generate as many details as possible within three minutes. Again, young adults produced more details of the episode itself and less information about anything outside the specific episode.

These findings were confirmed by Piolino, Desgranges, Benali, and Eustache (2002) in a sample of 52 40–79-year-olds. The more continuous age distribution age groups allowed a better location of age changes. Participants were asked for personal biographical knowledge and for detailed accounts of four specific episodes for each decade of their lives. Accounts were classified either as specific memories with detail, specific memories without detail, generic memories, or as vague answers. Beginning in the age range of 60–69 years, increasing age lead to a lower percentage of specific memories, both with and without detail. Piolino et al. (2006) replicated this finding with questionnaires in adults aged 25, 62, and 75 years. Again, specific memories, both with and without detail, showed a decrease between all three age groups. Corresponding age decreases in ratings of remembering versus knowing, and of visual field versus observer perspective confirmed a decline in the episodic quality of autobiographical event memories. Age differences were largest in memories from the past 5 years.

# 1.2. Exceptions to a decrease in episodicity

These studies claim that episodic memory for events from the personal past declines between early and late adulthood. Other than two studies which did not find differences in episodic autobiographical memory between middle aged and older adults (Berna, Schönknecht, Seidl, Toro, & Schröder, 2012; Howes & Katz, 1992), there are two major concerns with the scope of the semantization effect of aging. We briefly discuss the first concern and then turn to the second concern which motivated our study.

For one, some memories may be spared from the semantization effect. In some flashbulb memory studies that similarly ask for as many details as possible, older adults provided no less detail than younger adults. For example, Bluck, Levine, and Laulhere (1999) found no differences between 20- and 62-year-olds in the amount and accuracy of remembered information about the television news of the O.J. Simpson verdict. Also, older adults remembered historical events as well as younger adults in several studies of events of extraordinary significance (Kvavilashvili, Mirani, Schlagman, Erskine, & Kornbrot, 2010). Memories of highly significant historical events stabilize after about a year (Hirst et al., 2009) and retain a high level of accuracy and detail (Berntsen & Thomsen, 2005). The long-term stability and missing age differences in these memories are probably due to two factors. One factor is that cultural practices of commemorating stabilize memories (Berntsen & Thomsen, 2005; Campbell, Nadel, Duke, & Ryan, 2011; Hirst et al., 2009). The other factor is the personal significance of events in terms of self-reference (Amami, Serbun, & Gutchess, 2011; Howes & Katz, 1992), social identity (Berntsen & Thomsen, 2005), and emotionality (Kensinger, 2009; Kvavilashvili et al., 2010). Every day practices of remembering often involve the repeated sharing of memories which are both personally significant and emotional (e.g., Boden & Bielby, 1983; Kelly, Bohanek, & Fivush, 2008).

### 1.3. Increase of preference for search for meaning in autobiographical narrating

We now turn to the other major concern with the semantization thesis. An alternative explanation for the decrease in the episodic nature of autobiographical memory reports is the increase of the preference for searching for meaning. This shows in an increase in contextualizing and relating memories to other parts of life and oneself, and in a decrease of elaborating the unravelling of the episode itself.

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