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A matter of focus: Detailed memory in the intentional autobiographical recall of older and younger adults



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ABSTRACT

The intricately interwoven role of detailed autobiographical memory in our daily lives and in our imaginative envisioning of the future is increasingly recognized. But how is the detail-rich nature of autobiographical memory best assessed and, in particular, how can possible aging-related differences in autobiographical memory specificity be most effectively evaluated? This study examined whether a modified interview, involving fewer and time-matched events for older and younger adults, yielded age-related outcomes similar to those that have been previously reported. As in earlier studies, modest age-related changes in the specificity of autobiographical recall were observed, yet the largest most robust effect for *both* age groups was the substantial proportion of specific details retrieved. Both age groups rated recent memories as significantly less important and as less emotional than more temporally distant events. Our findings counter conceptions of older adults' autobiographical memories as invariably less episodically rich than those of younger adults.

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1. Introduction

1.1. Abstraction and specificity in autobiographical memory

Autobiographical memory (ABM) involves the retention and retrieval of experiences from one's personal past. Although ABM typically is construed as predominantly falling within the domain of episodic memory, it encompasses not only specific (episodic) memories, but also semantic or generalized autobiographical knowledge (e.g., Conway, 2001, 2005; Moscovitch & et al., 2005; Prebble, Addis, & Tippett, 2013). Several theories of ABM construe self-related memories as organized hierarchically, with generalized conceptual information about the self at higher hierarchical levels and specific information at lower levels (Conway & Pleydell-Pearce, 2000; Reiser, Black, & Abelson, 1985; Rubin, 1996; see also Williams, 1996).

Just as for other forms of memory recall (e.g., Ackerman & Goldsmith, 2008; Brainerd, Reyna, & Mojardin, 1999; Goldsmith, Koriat, & Pansky, 2005), retrieval from ABM may occur at any of several levels of specificity: event-specific details and images, complete memories for particular events, and also conceptual knowledge concerning broader life-time periods, life themes, or even one's entire life story. Several accounts of autobiographical memory (e.g., Tulving, Schacter, McLachlan, & Moscovitch, 1988) thus propose distinguishing between an episodic subcomponent of ABM that involves specific personal events that are situated in a particular time and place, vs. a semantic subcomponent relating to the retention of general knowledge of one's personal past, such as the names of one's acquaintances, personal addresses, or generic/repeated events

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(see also Conway & Pleydell-Pearce, 2000; Conway, Singer, & Tagini, 2004; Williams et al., 2006). Additionally, spontaneous or involuntary retrieval of autobiographical memories has typically been seen as involving a form of direct retrieval, in which internal or external cues trigger an automatic and effortless retrieval. In contrast, intentional ABM retrieval has predominantly been characterized as involving effortful generative retrieval. Such effortful retrieval includes deliberate search and reconstruction, and often begins with semantic or comparatively general aspects of one's past, such as lifetime themes (e.g., Bernsten & Hall, 2004; Conway & Pleydell-Pearce, 2000; but see also Uzer, Lee, & Brown, 2012).

Findings from neuroimaging and neuropsychological investigations also provide support for a possible functional neuroanatomical distinction between episodic and semantic components in ABM (e.g., Rosenbaum, Gilboa, Levine, Winocur, & Moscovitch, 2009; Svodoba & Levine, 2009; for reviews, see Moscovitch et al., 2005; Svodoba, McKinnon, & Levine, 2006). For instance, individuals affected by amnestic mild cognitive impairment (Murphy, Troyer, Levine, & Moscovitch, 2008), and patients with unilateral temporal lobe damage (Viskontas, McAndrews, & Moscovitch, 2000) show intact recall of general facts regarding autobiographical events, whereas their recall of specific episodic information for personal events is reduced. In addition, findings suggest that working memory executive processes play an important role in episodic memory specificity (Hill & Emery, 2013; Ros, Latorre, & Serrano, 2010).

1.2. Specificity in autobiographical memory—why it matters

Given that individuals might draw upon either comparatively semantic (generalized) or episodic (specific) information from their personal past, what factors determine which type of information predominates in their recollection? Equally important, why and how does the specificity of autobiographical memory matter?

We are often asked to retrieve detailed memories in various situations, such as when we need to remember a physician's recommended treatment, or if we are asked to provide eyewitness testimony (e.g., García-Bajos, Migueles, & Aizpurua, 2012). Other circumstances may require that we flexibly recall both specific and general features from our experiences (e.g., Aizpurua & Koutstaal, 2010; Koutstaal, 2006). For example, flexible recollection of both specific and general experiences contributes to effective interpersonal problem-solving. Becoming stuck at a more categorical level of episodic or autobiographical memory retrieval—involving the retrieval of a broad class of similar past events rather than specific instances—has been shown to impede the generation of effective solutions to a problematic situation (e.g., Beaman, Pushkar, Etezadi, Bye, & Conway, 2007; Williams et al., 2006). Contextually induced changes in the predominant level of specificity that individuals adopt also have been found to be somewhat "sticky," such that a given level of specificity may be implicitly carried over to subsequent classification and problem-solving tasks (e.g., Ülkümen, Chakravarti, & Morwitz, 2010).

More generally, the specificity of autobiographical memory and detailed episodic memory may contribute to an individual's richly nuanced self-understanding and their experiences of phenomenological continuity over time (Prebble et al., 2013). Specificity is likewise important to imagining and planning forward in time. Research has demonstrated strong positive correlations between the specificity of recollection of past events and the specificity of imagined prospective future events (e.g., Addis, Wong, & Schacter, 2008; Madore, Gaesser, & Schacter, 2014).

The predisposition to retrieve ABMs at differing levels of specificity has been found to systematically vary as a function of a number of individual and group characteristics. For example, a tendency to describe comparatively overgeneral memories has been observed in individuals with emotional disorders (Williams et al., 2007), such as major depression (e.g., Raes et al., 2005; Söderlund et al., 2014; Williams, 2004; for a meta-analysis, see Sumner, Griffith, & Mineka, 2010) and suicidal patients (e.g., Arie, Apter, Orbach, Yefet, & Zalzman, 2008; Taylor, Gooding, Wood, & Tarrier, 2010), and in individuals with schizophrenia (e.g., Riutort, Cuervo, Danion, Peretti, & Salamé, 2003) and with Parkinson's disease (Smith, Souchay, & Conway, 2010). A tendency toward comparatively generalized ABM has also been observed in men compared with women (Fivush, 1998; Niedzwienska, 2003; Pillemer, Wink, Didonato, & Sanborn, 2003). Additionally, the specificity of distant AM during unprompted recall can be reduced following a gist- or categorically-based retrieval orientation manipulation; healthy adults recalled more specific autobiographical memories after describing in detail unrelated photographs than after describing them at a broad categorical level (Rudoy, Weintraub, & Paller, 2009).

1.3. Older adults and the specificity of autobiographical memory

The existence of a long-term episodic memory deficit in older adults is well supported by many studies (for reviews, see Balota, Dolan, & Duchek, 2000; Craik & Grady, 2002; Nyberg et al., 2003). Episodic memory retrieval of older adults often demonstrates reduced access to contextually specific details (e.g., Hashtroudi, Johnson, & Chrosniak, 1989; Spencer & Raz, 1995) and a heightened reliance on automatic or habitual memory responses (e.g., Hay & Jacoby, 1999). Although relatively fewer researchers have examined semantic memory functioning in aging, the majority of the studies that did evaluate this aspect found that semantic functioning is preserved or even facilitated among older adults (Park, 2000). Compared with younger adults, older adults show, for example, preserved or enhanced vocabulary (e.g., Dixon, Bäckman, & Nilsson, 2004; Singer, Verhaeghen, Ghisletta, Lindenberger, & Baltes, 2003) and conserved semantically- or categorically-based episodic recognition (e.g., Aizpurua & Koutstaal, 2010; García-Bajos et al., 2012; Koutstaal, 2003, 2006; Reder, Wible, & Martin, 1986; see also Luo & Craik, 2009).

A parallel pattern has been observed for ABM. Older adults, on average, produce fewer episodic details but more semantic information during ABM retrieval than younger adults (e.g., Ford, Rubin, & Giovanello, 2014; Jacques & Levine, 2007; Levine,

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