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Target Article

The peaks of life: The differential temporal locations of the reminiscence bump across disparate cueing methods

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ABSTRACT

The reminiscence bump has generally been assessed through either (1) the *cue word method*, or (2) several related methods which we refer to under the umbrella of the *important memories method*. Here we provide a review of the literature demonstrating that the temporal location of the bump varies systematically according to cueing method, with the mean range of the bump located from 8.7 to 22.5 years of age for word-cued memories, versus 15.1 to 27.9 for important memories. This finding has hitherto been underacknowledged, as existing theoretical accounts of the bump generally hold its location to be stable across cueing methods. We therefore re-evaluate existing theoretical accounts of the bump in light of these varying locations, addressing each account's consistency with (1) the respective bumps found through each method taken individually, and (2) the sensitivity of the bump's location to cueing method.

1. Introduction

The *reminiscence bump* refers to the disproportionate number of autobiographical memories, in middle-aged and older adults, dating from adolescence and early adulthood (Rubin, Wetzler, & Nebes, 1986). Because this distribution breaks away from the standard forgetting function (e.g., Ebbinghaus, 1885/1964; Rubin & Wenzel, 1996), it has been considered a distinctive feature of autobiographical memory and one of its defining characteristics. Indeed, the bump is mentioned in most, if not all, introductory textbooks covering the field (e.g., Eysenck & Keane, 2010; Goldstein, 2008; Rathbone, Moulin, Conway, & Holmes, 2012).

The distribution of autobiographical memories across the lifespan has most often been assessed through one of two broad classes of cueing techniques. We will refer to the first technique, developed by Crovitz and Schiffman (1974) as a modification of a procedure used by Galton (1879), as the *cue word method*. Here, participants generate memories in association to cue words (for subsequent studies employing this technique, see, e.g., Janssen, Rubin, & St. Jacques, 2011; Rubin & Schulkind, 1997a, 1997b; Schuman & Corning, 2014). In the second technique, which we will refer to under the umbrella of the *important memories method*, participants are asked to report particularly notable memories. Examples of memory assessments focusing on important memories include, for instance, queries for important memories (or the most important memories) from participants' lives (e.g., Cuervo-Lombard et al., 2007; Glück & Bluck, 2007; Rubin & Schulkind, 1997b) and queries for especially vivid memories (e.g., Benson et al., 1992; Fitzgerald, 1988; Robinson & Taylor, 1998). We also include in this category cases in which participants were asked to simply freely recall autobiographical memories, with no explicit instruction that these memories should be important (e.g., Conway & Holmes, 2004; Demiray, Gülgöz, & Bluck, 2009; Rabbitt & Winthorpe, 1988), as we suspect that the search process triggered through such free-recall methods is far more similar to the search process triggered through the important memory method than the cue word method (see below).

The salient distinction between these two classes of cueing techniques concerns the retrieval strategies required by each. The cue word method is held to instigate an associative, bottom-up search process (Crovitz & Schiffman, 1974), while the important memories method involves a strategic, top-down search, structured around important memories in particular. This has implications for the nature of the autobiographical memories produced through each method, with the cue word method yielding a putatively unbiased sampling of autobiographical memories over the lifespan (Crovitz & Schiffman, 1974), while the important memories method yields a focus on the most significant memories of one's life.

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Memories elicited through the important memory method are, correspondingly, more closely related to meaning-making processes and personal identity (e.g., Glück & Bluck, 2007).

It is perhaps unsurprising, then, that neither the bump, nor the broader distribution of memories across the lifespan, is identical across these two cueing methods. First, the bump is larger in the important memories method. Second, word-cued memories, correspondingly, exhibit a sizable recency effect which is, at best, drastically attenuated in important memories (Fitzgerald, 1988; Fromholt et al., 2003; Rubin & Schulkind, 1997b). Here we draw attention to another difference between the bumps found through each method, one which has been little studied. This difference concerns the temporal location of the bump. As we will document in the current review, the location of the bump varies across the cue word and important memories methods. These disparate locations of the bump hold implications for theoretical accounts of the effect. Therefore, we will go on to re-evaluate existing accounts in light of this under-acknowledged sensitivity of the location of the bump to cueing method.

The disparate locations of the bump across cueing methods has generally gone unrecognized or unacknowledged in the literature, as authors of textbooks in cognitive psychology (e.g., Eysenck & Keane, 2010; Goldstein, 2008; Rathbone et al., 2012) and academic articles (e.g., Bohn & Berntsen, 2011; Dickson, Pillemer, & Bruehl, 2011; Habermas, 2007; Koppel & Berntsen, 2014; Morrison & Conway, 2010; Schrauf & Hoffman, 2007; Shimizu, Anderson, & Takahashi, 2012; Thomsen, Pillemer, & Ivcevic, 2011; Webster & Gould, 2007) usually describe the bump as a unitary phenomenon, most often citing the ages of approximately 15–30 as representing the bump period.

To be sure, there has been some acknowledgement of the divergent locations of the bump. Most notably, Rubin and Schulkind (1997b) culled autobiographical memories through both cue words and by asking participants to report five of the most important events of their lives. They found that, while the bump for word-cued memories stretched from ages 10 to 29, the bump for most important memories was concentrated in the 20–29 range (for other references to this finding, see also Janssen, Gralak, & Murre, 2011; Janssen & Murre, 2008; Janssen, Rubin, et al., 2011; Kawasaki, Janssen, & Inoue, 2011; Maki, Janssen, Uemiya, & Naka, 2013).

However, to this point, no systematic reviews have followed up on these isolated findings and observations. The lack of a systematic review illustrating the sensitivity of the bump's location to cueing method may be why most researchers fail to note this effect.

Additionally, prior researchers have not precisely isolated the age ranges over which the individual bumps in each method have been found across the literature, nor have they fully grappled with the theoretical implications of these divergent bumps. In light of these considerations, there is a need for: (1) A corrective to the widespread oversimplification of the bump's location as being unitary, including a systematic demonstration of the actual location of the bump as found through both the cue word and important memories methods, and (2) a thorough reckoning of the implications of the varying locations of the bump for existing theoretical accounts of the effect.

2. The temporal location of the reminiscence bump

As a means of identifying the temporal location of the reminiscence bump according to the two methods reviewed above, we have listed all the relevant papers which, to our knowledge, have probed for the bump thus far (Tables 1 and 2). Table 1 lists articles in which the cue word method was employed, and Table 2 lists articles employing the important memories method. Table 1 illustrates the type of cue word used in each study (with the most common being nouns; e.g., *bar*, *factory*, *chair*), the number of memories participants were asked to generate, the age range over which the bump was found in each case (e.g., from ages 15 to 30), and the midpoint of this range. Table 2 lists the analogous information for studies using the important memory method.

In reporting the age range of the bump in each study, we adhered as much as possible to the authors' own characterization of the location of the bump they attained. Given that the bump often takes the form of a continuous curve, there is often a subjective component to the precise age range at which authors place the bump, and our method of reporting the authors' characterization of the range of the bump with as much fidelity as possible means we were constrained by the specific age bins and analyses used by the original authors. However, this method represented the most conservative way of reporting the range of the bump in each study, in that it minimized our reliance on our own judgement.

We are interested here in the location of the bump in the general population. Therefore, where articles report data from both clinical and non-clinical samples (Cuervo-Lombard et al., 2007; Fromholt & Larsen, 1991; Fromholt et al., 2003; Raffard et al., 2009, 2010), we included only the data from the non-clinical sample. Similarly, there have been several investigations of the distribution of autobiographical memories in immigrant samples (Conway & Haque, 1999; Larsen, Schrauf, Fromholt, & Rubin, 2002; Schrauf & Rubin, 1998, 2001), in which researchers have examined how the experience of immigration affects this distribution. We excluded these papers as well, under the reasoning that the distribution of autobiographical memories in these samples is not necessarily indicative of that of the general population.

Turning to papers which we did include in Tables 1 and 2, we list several types of studies in which the authors report not one overall distribution, but two or more distributions. First, there are a number of studies, which we classified as employing a variant of the important memories method, in which the researchers had participants report specific types of memories (e.g., their happiest and/or saddest memory; Berntsen & Rubin, 2002; Berntsen, Rubin, & Siegler, 2011; Davison & Feeney, 2008; Dickson et al., 2011; Haque & Hasking, 2010; Rubin & Berntsen, 2003; Thomsen et al., 2011). In these cases, though we note each of these individual bumps in Table 2 (i.e., for each specific type of memory), we also calculated the mean range and midpoint of the bump across the different types of memories, as found in each paper.

Similarly, there are two studies in which the authors report the temporal distributions of memories of differing emotional valences separately (i.e., though the authors did not ask participants to separately report memories of different valences, they divided the memories by valence in analyzing the data), rather than the distributions of all memories taken together (Alea, Ali, & Marcano, 2014; Bohn, 2010). In these cases, we likewise report the individual bumps for memories of each valence, as well as the mean range and midpoint of the bump across the memories of each valence, as found in each paper.

Additionally, there are several studies in which the authors individually report the results of multiple samples or age groups (e.g., Benson et al., 1992; Davison & Feeney, 2008; Janssen, Chessa, & Murre, 2005). Here, in addition to reporting the individual age ranges and midpoints of the bump for each group, we likewise also calculated the mean range and midpoint of the bump as found in each paper. However, where the authors present the data for individual samples or age groups, but nonetheless include these groups in the same analyses or refer to an aggregate bump across all groups (e.g., Berntsen & Rubin, 2002; Conway, Wang, Hanyu, & Haque, 2005, regarding the free recall data; Rubin & Schulkind, 1997b), we follow the authors in simply reporting this aggregate bump. Lastly, Rubin et al. (1986) report the location of the bump as found through a combination of original data and through a