

Book reviews

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Dorthe Berntsen, *Involuntary autobiographical memories: An introduction to the unbidden past*. Cambridge: Cambridge University Press, 2009. 228 pp. ISBN: 9780521866163

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When talking about the phenomenon of involuntary autobiographical recollection, it is customary to mention that famous passage in Proust's *Remembrance of Things Past*. Upon tasting a cup of tea with a petit madeleine, the narrator is suddenly invaded by a powerful yet unexpected childhood memory. This all too common phenomenon, beautifully illustrated in Proust's work, has received surprisingly little attention in experimental settings. Fortunately, Dorthe Berntsen—probably the world's leading expert in research on involuntary autobiographical memory—has undertaken the task of collecting, reviewing, and systematizing foundational studies in this underappreciated area of study, while also providing her own theoretical account of the main results.

This important book is divided into eight chapters. In Chapter 1, Berntsen begins with a clear introduction to the subject matter of involuntary autobiographical memories, which she operationalizes as “memories that come to mind with no preceding conscious attempt at retrieval” (p. 2). Notice that unlike other definitions, Berntsen's does not make use of the term “intentional”; this is deliberate. She wants to rescue Ebbinghaus' distinction between consciously versus non-consciously retrieved memories on the one hand, and intentionally versus unintentionally retrieved memories on the other. For it is precisely the kinds of memories that are unintentionally yet consciously retrieved that constitute the phenomenon of involuntary autobiographical recollection. The first chapter also includes a brief overview of some influential historical ideas about involuntary autobiographical memories, which in unsystematic ways managed to produce some critical insights into the nature of these mental processes.

The second chapter is both critical and constructive. It is constructive because it concisely offers the view Berntsen will be defending for the remainder of the book. It is critical because it puts forth a series of counterarguments against alternative theories currently in the offing. Roughly stated, Berntsen's view is that involuntary autobiographical memories are produced by the same cognitive systems in charge of voluntary autobiographical memories. She proposes that voluntary and involuntary memories are subject to the same constraints and processes as memory encoding and maintenance; many of the explanatory principles that apply to voluntary autobiographical memories also apply to their involuntary counterparts. The main differences between the two, she argues, are related to retrieval. If correct, the advantages of Berntsen's view are undeniable. First, it is more parsimonious than the alternative views, according to which involuntary autobiographical memories depend on different cognitive mechanisms than their voluntary counterparts. Second, it helps make sense of a large number of similarities in the role that conscious encoding play in both voluntary and involuntary recollections. For instance, neither in voluntary nor in involuntary autobiographical recollection can one remember an event one did not consciously attend to during encoding. Subjecting both kinds of memories to the same encoding and maintenance mechanisms

is an elegant explanation of the many similarities in processing and phenomenological experience between voluntary and involuntary memory retrieval. Berntsen explains this at length in Chapter 4, following a comprehensive review of the available methods for studying involuntary autobiographical memories (Chapter 3).

Another great advantage of the simplicity of her view is that it clearly states the conditions under which it can be falsified, generating further experimental predictions. One such prediction is that the difference in retrieval processes between involuntary and voluntary memories may be partly explained by differences in the involvement of attentional mechanisms supported by the parietal cortices. Recent evidence suggests that the involuntary capture of perceptual attention by external targets engages different regions of the parietal cortex than those engaged during voluntary allocation of perceptual attention (for a review, see Chun et al. (2011)). Similarly, it may be that the attentional processes involved in retrieving episodic autobiographical memories show a parallel effect, with involuntarily autobiographical recollection recruiting similar mechanisms as those involved in involuntary attentional capture during perception (Cabeza et al., 2008; De Brigard, 2011).

This hypothesis is further supported by Berntsen's own description of the differential processes involved during retrieval of involuntary versus voluntary autobiographical information, discussed at length in Chapter 5. She mentions that as with voluntary autobiographical recollection, "most involuntary autobiographical memories are activated by cues consisting of specific overlapping of features between the current situation and the remembered event" (p. 93), and that attention demanding activities tend to hamper the activation of involuntary autobiographical memories. This parallels the effect of material-congruent distraction tasks during voluntary episodic retrieval (De Brigard, 2011). Additionally, her theory suggests that an individual's current appraisal of her close past and future—what she dubs one's "life situation"—influences whether or not a particular cue would activate a relevant involuntary autobiographical recollection.

Caution is needed when interpreting some of the results that, according to Berntsen, support this claim. The way in which such studies allegedly establish connections between a particular event of involuntary recollection and the cue that elicited the memory presupposes that the participants' assessments of the relevant cue is accurate. After all, participants are simply asked to state what they *think* elicited their involuntary recollections, and then researchers treat their responses as evidencing the cues that in fact triggered their memories. Participants, however, may be inferring the cause from the effect, while the actual cause may be hiding consciously inaccessible. Without studies controlling for this possibility (which is not easy, of course), Berntsen's claim needs to be taken with a grain of salt.

Still, as Berntsen reminds us in Chapter 6, it is important to realize that the above is only a partial explanation of what may be going on during involuntary autobiographical retrieval. Many autobiographical memories that come to mind without prior intent do not appear to us as being relevant to our current purposes or life situations. A just-so story can perhaps be given as to why every single involuntary autobiographical memory may actually be relevant to our future purposes. In reality, as Berntsen eloquently suggests, the brain may just not know, for truth be told our brains do not know what the future holds. Making certain memorial contents conscious may be a probabilistic process, both during involuntary and voluntary autobiographical recollection. Not even emotion appears to be a good predictor. Research suggests that not only do people tend to involuntarily recall a similar number of positive and negative memories, there also does not seem to be a difference in valence during voluntary as opposed to involuntary retrieval of autobiographical information. Emotional effects reported during involuntary autobiographical recollection seem to have to do more with poor strategies for emotion regulation after retrieval than with the process of involuntary recollection per se.

There is, however, at least one population for which involuntary autobiographical retrieval substantially differs from its voluntary counterpart: individuals with post-traumatic stress disorder (PTSD). In order to support her own view—namely, that the involuntary recollection of traumatic autobiographical memories is the product of the same basic mechanisms underlying the involuntary retrieval of non-traumatic memories—Berntsen devotes Chapter 7 to a critical discussion of several theories positing special mechanisms for traumatic memories. Notwithstanding the explanatory virtues of this view, I find it ultimately unsatisfactory. Why do so many people who experience traumatic events not go on to develop PTSD, despite the fact that they experience events of ordinary involuntary autobiographical recollection? Further research may be able to tell us why some people are prone to develop PTSD, but it seems likely that the answer will involve a reference to some underlying mechanism(s).

The book ends with an attractive speculation that the mechanisms by means of which we experience sudden involuntary episodic future thoughts are the same as those engaged during involuntary autobiographical memory. This idea dovetails with recent models suggesting that our capacity to mentally simulate personal futures depends on episodic memory, as this memory system evolved in the service of producing a beneficial simulation of the future versus keeping a faithful record of the past (Schacter and Addis, 2009). Moreover, Berntsen goes as far as to suggest that false memories and involuntary episodic future thoughts may be closely related. Indeed, after reading her book, I thought of the other types of simulations that come to us involuntarily, such as hypothetical and counterfactual imaginings. I wonder whether they form, along with involuntary memory retrieval, a unitary cognitive faculty whose function might be, as Berntsen suggests (p. 197), to prevent us from living in the present (De Brigard, 2014).

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Moshe Naveh-Benjamin and Nobuo Ohta (eds)

Memory and aging: Current issues and future directions. New York: Psychology Press, 2012. 439 pp. \$80(hbk). ISBN: 9781848729186

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The edited book, *Memory and Aging: Current Issues and Future Directions*, largely delivers on the promise of its title. Across 14 chapters, the book covers a breadth of topics, incorporating experimental, applied, cognitive neuroscience and genetics research addressing the effects of aging on memory. The book reflects a current approach to the study of cognitive aging, complementing behavioral research with diverse methods such as multimodal neuroimaging (Chapter 11), computational and neurochemical approaches (Chapter 12), and individual differences approaches