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Distinguishing involuntary autobiographical memories and déjà vu experiences: Different types of cues and memory representations?

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Abstract

Although involuntary autobiographical memories (IAMs) and déjà vu have important shared characteristics, in this commentary we focus on potential differences that may question the argument that two phenomena lie on a continuum. We propose that differences in their frequency and autonoetic consciousness could be explained by different types of cues and memory representations involved in experiencing IAMs and déjà vu.

The target article proposes that the basic retrieval mechanisms involved in involuntary autobiographical memories (IAMs) and déjà vu may be more similar than previously thought. While we do not disagree with this premise and find the proposed framework useful in stimulating future research, in this commentary, we focus on two key aspects that differentiate IAMs from déjà vu – the temporal orientation of the phenomenological experience of the two phenomena (while IAMs involve recalling and re-living past experiences, déjà vu is characterised by a feeling of re-living the present moment) and the frequency of their occurrence (while IAMs occur very frequently, déjà vu occurs very rarely). We argue that these differences may be explained by two crucial differences in the memory processes involved: the triggering conditions and the types of events being recalled.

In the target article, one of the key similarities between IAMs and déjà vu refers to autonoetic consciousness – the sense of re-living a past experience or traveling back in time when recalling a past event. While this definitely applies to IAMs, in cases of déjà vu, a person experiences an intense feeling of familiarity that they have been in the current situation before, in other words, they experience a sense of re-living the present moment as if it had already occurred (without recalling a past event). This means that while IAMs refer to a form of conscious recollective memory, déjà vu experiences refer to an unusual form of recognition memory where the intense feeling of familiarity never gets resolved (unlike a 'butcher-on-the-bus' example). This core phenomenological difference raises some doubts about the two phenomena being on a continuum. Moreover, if the two phenomena rely on the same basic recall mechanisms, then why do IAMs occur multiple times a day (Gardner & Ascoli, 2015) while déjà vu experiences are so rare? Below we address these issues by examining the role of triggers in eliciting the two phenomena and the types of memory representations that may be activated.

It is well established that simple and easily identifiable cues, which map onto a previously experienced - and recallable - event, trigger IAMs (Mace, 2004; Schlagman et al., 2007). Cues can be objects (a broken window), individuals (an old lady), or places (a street corner), or they can have a verbal form (a written word or a conversation) (Berntsen & Hall, 2004). Such simple cues have been successfully used to elicit IAMs in laboratory vigilance tasks (Schlagman & Kvavilashvili, 2008; Vannucci et al., 2015). The literature reviewed in the target article, however, suggests that déjà vu experiences are elicited by being in a particular situation or scene that features an ensemble of multiple (and possibly subtle) cues, that create a sense of re-living this very same situation in the present moment as something that had already occurred in the past. Thus, while an easily identifiable and rather isolated cue in the environment can trigger an IAM and transport us back to some past event that occurred in a very different context (e.g., seeing a candle on TV eliciting a memory of romantic dinner last weekend), in déjà vu, the feeling of familiarity is triggered by a current situation as a whole, with multiple contextual cues present. These differences in cueing conditions make it highly unlikely that standard vigilance tasks using incidental verbal cues to study IAMs will elicit instances of déjà vu as suggested in the target article. These differences, however, are not sufficient to explain why déjà vu experiences are so rare compared to the frequent occurrences of IAMs.

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The second and perhaps more critical factor as suggested in the target paper is that a particular constellation of cues in a scene or situation only partially activates traces of some previously encountered scene or situation. This may occur if there is only a subtle resemblance between the current and the previous scene, as demonstrated by Cleary and colleagues' work described in the target paper. Consider, for example, that you walk down a street in a new city and see a beautiful glass ball in an art gallery window. The colour and the texture of this ball may elicit a fond memory of swimming with dolphins in Hawaii.

However, a strong déjà vu could be experienced if the situation of encountering this glass ball has a some resemblance to a situation of seeing a beach ball in a sports shop window when walking along a street in London some time ago. The resemblance between the balls is too weak to activate a memory of seeing the beach ball in London, however, there may be several other subtle overlapping cues such as the presence of an ice-cream stall near both shops or a strong wind blowing in your face that may create, in this particular constellation, this intense feeling of familiarity and re-living the present moment.

Importantly, this hypothetical example suggests that memory traces that get partially activated in déjà vu are not fragments of sensory-perceptual experiences that have become part of one's autobiographical knowledge system (Conway, 2009), and can be easily recalled in response to simple cues. Instead, partially activated representations of previously encountered scenes may be part of one's long-term perceptual-representation system. Although this system was originally proposed to explain implicit memory phenomena (Tulving & Schacter, 1990), there is growing evidence from multiple strands of research (Brewin, 2014) that people can retain a large amount of incidentally encountered information (scenes, stimuli), that may even get accessed consciously under certain circumstances. This has been demonstrated by research using SenseCam pictures to cue memories (Sellen et al., 2007) and in studies testing recognition memory for hundreds and even thousands of pictures and scenes (Delorme et al., 2018; Standing 1973). It is therefore possible that IAMs and déjà vu experiences differ also in types of representations that get activated. One interesting prediction that emerges from this proposition is that participants scoring high in such experiments may be prone to more frequent self-reported déjà vu.

Competing interest statement

The authors have no competing interests to declare.

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