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Meta-awareness and the Involuntary Memory Spectrum: Reply to Meyer, Otgaar, and
Smeets (2015).

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Abstract

In their commentary, Meyer, Otgaar, and Smeets (2015) raise several important issues about the definitions, characteristics and applications of various involuntary cognitive phenomena. Here we respond to the comments of Meyer et al. in ways that we hope will advance understanding of these issues, and inform future research. In particular, we have focused on the characteristics of involuntary phenomena—particularly in relation to meta-awareness—and the clinical relevance of mind-wandering.

Keywords: Involuntary cognition; Mind-wandering; Meta-awareness; Trauma

Meta-awareness and the Involuntary Memory Spectrum: Reply to Meyer, Otgaar, and Smeets (2015).

Meyer, Otgaar, and Smeets (2015) extended Kvavilashvili's (2014) provocative and potentially important idea of an involuntary memory spectrum by adding mind-wandering to the lower end of a spectrum running from involuntary memories to intrusive memories to traumatic flashbacks. One fascinating question, with no clear empirical answer to date, is whether it is possible to have a flashback without meta-awareness that one is having a flashback. Meyer et al. suggested, and we agree, that it may be possible. However, Meyer et al. also argued that "PTSD re-experiencing symptoms... do not include phenomena akin to unnoticed intrusions" (p. 25) because they are established by retrospective questioning (e.g., structured interviews, questionnaires), which requires retrospective meta-awareness.

But, *becoming* aware of a thought after it occurs does not mean a person was meta-aware at the time the thought appeared in consciousness. By definition, mind-wandering without awareness is established retrospectively (if at all; Smallwood & Schooler, 2015). Indeed, a lack of meta-awareness might well be a hallmark of the most extreme form of flashback, in which the individual appears not to be having an experience of remembering but rather one of re-living.

We suspect that unnoticed intrusions are *not* always established via retrospective meta-awareness. On the contrary, we suspect that people are frequently reminded of past episodes without becoming meta-aware of such reminders (see Hintzman, 2011). It seems plausible to us that people may ruminate without being meta-aware that they are ruminating. Hence, we disagree with the idea that for a thought to be considered

involuntary and/or unwanted it must be noticed as such. We thus also do not agree with the assertion that “trauma-film intrusions require meta-awareness” (p. 25).

Meyer et al. (2014) argued that mind-wandering involves a “smooth transition” from thinking about the ongoing task to thinking about something else. Although an interesting possibility, we do not know of any relevant data. To us it seems likely that the onset of mind-wandering is often abrupt: one moment a person is consciously engaged with the intended task and the next moment they are daydreaming, ruminating, etc., and only at some later point do they become meta-aware of that shift. Our intuitions suggest that the onset of meta-awareness itself is abrupt, but intuition can be mistaken. Further, it is interesting to speculate about the possibility that the underlying processes that give rise to trauma-related intrusions are gradual, yet trauma-exposed people subjectively experience them as a “sudden popping to mind” (see Bowers, Farvolden & Mermigis, 1995). In short, we are not convinced that the suddenness of occurrence reliably differentiates “mind-wandering” from “intrusions.”

Meyer et al. described the intrusive thoughts subjects report in relation to a trauma analogue as verbal, in contrast to flashbacks, which they characterized as perceptual. Although it seems likely that memories of an analogue film and trauma memories *do* differ in terms of their average perceptual richness or intensity, anyone who has experienced intrusive images from a horror film knows that those intrusions are not necessarily verbal. In addition, trauma-exposed participants sometimes do report intrusive verbal thoughts (e.g., Ehlers & Steil, 1995). Thus, we suggest that differentiating lab-based versus real-world involuntary phenomena on this basis is too simplistic.

Meyer et al. raised the important question of which of these phenomena are clinically relevant. Future work on this topic would benefit from considering how the proposed spectrum fits with the nature and function of involuntary and intrusive phenomena, as proposed by leading PTSD theorists (Brewin, Dalgleish, & Joseph, 1996; Brewin, Gregory, Lipton, & Burgess, 2010; Ehlers & Clark, 2000). However, we believe that meta-awareness may still play an important clinical role. For example, it is interesting to speculate that an important therapeutic goal might involve a shift in meta-awareness toward remembering the horrific experiences with awareness of remembering (such as in exposure techniques used in Cognitive Behavior Therapy; Harvey, Bryant & Tarrier, 2003; and Eye Movement Desensitization and Reprocessing treatment; Shapiro & Maxfield, 2002).

The model proposed by Meyer et al. characterizes mind-wandering without awareness as the least disruptive and least negative phenomenon of the proposed spectrum. Meyer et al. claimed that the intensity of negative affect is low in mind-wandering. This is an empirical question. There is evidence that experiencing negative mood increases the likelihood of mind-wandering—in both naturalistic and lab settings (e.g., Killingsworth & Gilbert 2010; Smallwood & O'Connor, 2011), and that mind-wandering often focuses on a “current concern” and mind-wandering on negative content can exacerbate negative affect (Poerio, Totterdell, & Miles, 2013). As we have discussed previously (Takarangi, Strange & Lindsay, 2014), it is possible that *unaware* intrusions could have similar effects to rumination, which is related to the development of PTSD and is also, like intrusive thoughts, a strong feature of depression (Nolen-Hoeksema, 2000; Watkins, 2008). Indeed, Deng, Li, and Tang (2012) reported that people with more symptoms of

depression were more likely to mind-wander without awareness. Taken together, these findings suggest that it may be premature to dismiss the link between unaware mind-wandering and clinical symptoms and disorders; non-meta-aware thoughts could be quite disruptive and affect ongoing mood.

Meyer et al.'s thought provoking commentary leaves us with a number of important empirical questions. Transient or permanent failings in meta-awareness raise potential limitations and questions relating to the proposed spectrum if phenomena are differentiated on the basis of meta-awareness. For example, if mind-wandering becomes an “involuntary autobiographical memory” at the point of meta-awareness, do involuntary autobiographical memories then represent the same underlying process as mind-wandering *with* awareness?

In summary, we agree that future research should seek to specify whether the same or different mechanisms underlie the different involuntary phenomena and whether they can be differentiated on Meyer et al.'s suggested criteria. It may be that the phenomena are better captured by an umbrella-style model—rather than a continuum—in which unwanted or traumatic intrusions are a subset of involuntary memories, which can be positive, negative, or even neutral.

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