



# Distractibility and individual differences in the experience of involuntary memories <sup>☆</sup>

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## Abstract

The present study explored the idea that the tendency to experience intrusive memories might be associated with relatively weak cognitive control in general as indexed by the general propensity to become distracted by irrelevant information. A sample of undergraduate students ( $N = 413$ ) filled in self-report measures of involuntary memories, distractibility, depression and repressive coping. The results showed a significant relation between involuntary memories and distractibility, independent of both trait depression and repressive coping, indicating a general vulnerability factor. As cognitive control may be sensitive to circadian variation, time of day effects in the experience of intrusions were also explored. No significant relation emerged. A proposed relationship between deficient inhibitory mechanisms of working memory and vulnerability for developing and maintaining intrusive memories after experiencing a stressful event is also discussed.

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*Keywords:* Involuntary memories; Distractibility; Inhibitory mechanisms

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## 1. Introduction

Intrusive memories are involuntary recollections of specific events in the past that are hard to control (American Psychiatric Association, 1994). These memories are the hallmark symptom of posttraumatic stress disorder (PTSD), but they are also found together with other pathologies like depression (Brewin, 1998; Reynolds & Brewin, 1999). Apart from memories of trauma, involuntary memories of past events occur also in the normal population (e.g., Berntsen & Hall, 2004; Brewin, Christodoulides, & Hutchinson, 1996). Intrusive traumatic memories and involuntary memories in the normal population have in common that they are primarily visual and are mainly triggered by specific cues in the external physical environment, but also by internal cues (present only in thoughts) (Ehlers, Hackmann, & Steil, 2002).

Although involuntary memories are a normal everyday phenomenon, it appears that people differ in the frequency of experiencing these memories (Horowitz, Wilner, & Alvarez, 1979). There is some evidence that differences in working memory capacity may help to explain inter-individual differences in experiencing involuntary memories. For example, Klein and Boals (2001) found that the frequency of experiencing involuntary memories and attempts to avoid such memories are relatively high in individuals who are relatively low in working memory capacity (WMC). WMC is the ability to keep information quickly retrievable and usable under conditions in which there is interference from information that is strongly elicited by task context but that nevertheless would lead to inappropriate responding on a current task (Engle, 2002). The assumption is that it depends on the ability to keep irrelevant information out of working memory (Rosen & Engle, 1998). In line with this, it has been shown (Brewin & Beaton, 2002; Brewin & Smart, 2005) that individuals who are relatively high in working memory capacity are better able to suppress unwanted thoughts. Perhaps, a general inability to keep distracting information out of awareness could be seen as a personality trait which is also responsible for inter-individual differences in involuntary memories.

The main purpose of the present study is to investigate this possibility using self-report measures of involuntary memories and cognitive failures. The degree to which people report cognitive failures has been assumed to be an index of the inability to keep irrelevant information out of awareness (Friedman & Miyake, 2004). Earlier research showed that depression is associated with both increased distractibility and the occurrence of involuntary intrusions (Ellis, 1990, 1991). Therefore, in the current study we also measured trait depression (Spielberger, 1995) to see if any relation between distractibility and involuntary memories would not be an artifact of variations in the tendency to react with high levels of negative feelings in a wide variety of contexts. In addition, the present study explored a number of variables that may shed light on the nature of the association between weak cognitive control and the occurrence of involuntary memories.

The first variable was repressive coping (Weinberger, 1990). People with a repressive coping style appear to be particularly adept at using protective strategies to avoid self-threatening material from entering awareness (Myers & Derakshan, 2004). Thus, it is possible that having a repressive coping style lowers individuals' distractibility, thereby moderating the relation between distractibility and involuntary memories. Second, the role of valence was explored. Since distractibility was hypothesized to be a general and stable vulnerability trait, it was expected that valence of reported memories would not play a moderating role in the relationship between distractibility and involuntary memories. Third, earlier research (Hasher, Zacks, & May, 1999; Yoon, May, &

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