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## Current concerns in involuntary and voluntary autobiographical memories

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### ABSTRACT

Involuntary autobiographical memories are conscious memories of personal events that come to mind with no preceding attempts at retrieval. It is often assumed that such memories are closely related to current concerns – i.e., uncompleted personal goals. Here we examined involuntary versus voluntary (deliberately retrieved) autobiographical memories in relation to earlier registered current concerns measured by the Personal Concern Inventory (PCI; Cox & Klinger, 2000). We found no differences between involuntary and voluntary memories with regard to frequency or characteristics of current concern-related contents. However, memories related to current concerns were rated as more central to the person's identity, life story and expectations for the future than non-concern-related memories, irrespective of mode of recall. Depression and PTSD symptoms correlated positively with the proportion of current concern-related involuntary and voluntary memories. The findings support the view that involuntary and voluntary remembering is subject to similar motivational constraints.

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### 1. Introduction

Involuntary autobiographical memories are conscious memories of personal events that come to mind spontaneously – that is, with no preceding attempt at retrieval (e.g., Berntsen, 1996, 2009). Such memories have received little attention in cognitive psychology compared to voluntary memories – that is, memories retrieved deliberately. Nonetheless, during the last 10–15 years, memory research has witnessed a marked increase in studies of involuntary autobiographical memories (e.g., Ball & Little, 2006; Berntsen, 1996, 1998; Berntsen & Hall, 2004; Kvavilashvili & Mandler, 2004; Mace, 2005, 2006, 2007; Rubin, Boals, & Berntsen, 2008; Schlagman & Kvavilashvili, 2008), demonstrating that such memories are common in daily life and that they often arise during moments of unfocused attention and often in response to specific features of the external environment that function as cues for the memories (see Berntsen, 2009, for a review). Previous studies have also shown that involuntary memories have many characteristics in common with voluntary memories. For example, both types are predominantly positive and follow standard functions of forgetting. At the same time, involuntary memories have been found to differ from their voluntary counterparts with regard to level of specificity, emotional impact and relevance to life story and identity (Berntsen, 2009, for review).

In the present study, we examine whether involuntary autobiographical memories are more frequently related to current concerns (i.e., uncompleted personal goals) than their voluntary counterparts. The assumption of an intimate relation between involuntary memories and current concerns has a long history in psychology, rooted in a psychodynamic view of the mind (e.g., Pope & Singer, 1978; Singer, 1970) and restated in modern theories of spontaneous thought processes

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(e.g., Smallwood & Schooler, 2006). Nonetheless, the present study is the first to examine whether involuntary memories to a greater extent than their voluntary counterparts are perceived to be related to self-defined current concerns. A second purpose of the present study is to examine differences between memories that are perceived to be concern-related versus memories that are not. Although self-relevance and goal-relatedness are central in major autobiographical memory theories (e.g., Conway, 2005; Conway & Pleydell-Pearce, 2000), the effects of specific current concerns on autobiographical memory have been little studied (Johannessen & Berntsen, 2009). In the following, we review the relevant literature.

### 1.1. Spontaneous thought processes and current concerns

By definition, involuntary memories belong to a superordinate category of thought processes that arise in the absence of specific situational demands, such as spontaneously arising daydreams during a dull lecture or ideas for dinner running through one's mind while driving home from work. Such spontaneous thought processes are related to James' (1890) notion of a constantly changing private 'stream of thought' and modern brain imaging research on cognitive processes during resting states (e.g., Mazoyer et al., 2001). Spontaneous thought has been variously referred to as daydreaming (Singer, 1966), fantasy (Klinger, 1971), task-unrelated thought (Giambra, 1989), stimulus independent mentation (Singer, 1970), and mind wandering (Antrobus, Singer, Goldstein, & Fortgang, 1970; Smallwood & Schooler, 2006), to mention some.

Contemporary theories of mental processes underlying spontaneous thought (e.g., Smallwood & Schooler, 2006) are largely consistent with the original theoretical framework put forward by Singer and colleagues. According to this view, the organism has two competing sources of stimulation: an external and an internal source. The external source is the sensory inputs and demands that meet us from the environment. The internal source is a constantly active private stream of thought whose content is motivated by 'current concerns, unfinished business and unresolved stress' (Pope & Singer, 1978, p. 122). Both sources of stimulation are competing for the limited capacity of working memory. The stimulation from the environment normally has an advantage over the internal stream of thought. However, to the extent that the external situation becomes less attention demanding, dull and barren, the internal stream of thought tends to take over. This view has at least two implications. First, the frequency of spontaneous thoughts should vary systematically with the level of demands posed by an ongoing task. Second, the content of spontaneous thought would often be perceived as related to current concerns.

The first implication has received substantial empirical support. Many experiments have shown that the frequency of spontaneous thoughts varies systematically with the level of demands posed by an ongoing task (for review see Kane et al., 2007; Singer, 1966; Smallwood & Schooler, 2006). Also, diary studies have documented that involuntary autobiographical remembering and spontaneously arising images of future events predominantly occur when the person's attention is not focused on an ongoing task (e.g., Berntsen, 1998; Berntsen & Jacobsen, 2008; Schlagman, Kvavilashvili, & Schulz, 2007). The second implication (which is of particular interest in the present context) that spontaneous thought processes are motivated by current concerns has received less support. A few studies have shown that an experimental induction of a current concern increases the frequency of subsequent spontaneous thoughts related to this particular concern. For example, Klos and Singer (1981) had undergraduates simulate parental conflicts under various conditions prior to a thought sampling task. They found that the effects on subsequent repetitive thoughts were mediated by whether the undergraduates had long-standing conflicts with their parents in their personal lives, thus, suggesting a central role for current concerns regarding the content of spontaneous thoughts. In a study by Antrobus, Singer, and Greenberg (1966), subjects in a thought sampling experiment overheard a forged news broadcast announcing a serious escalation of the Vietnam War, which led to a substantial increase in spontaneous thoughts about possible implications of the news during a subsequent signal detection task. Likewise, in a number of experiments, Horowitz and colleagues (e.g., Horowitz, 1975) demonstrated that watching a stressful film increased intrusive thoughts about the film during a subsequent thought-sampling, relative to watching a neutral film.

However, all of these studies suffer from the lack of a voluntary memory condition. For that reason, it is not clear whether these effects pertain specifically to spontaneous thoughts (as typically assumed) or whether the induction of a pressing concern would have similar effects on intentionally initiated memory processes. Autobiographical memory theories rooted in a cognitive tradition (e.g., Berntsen, 2009; Conway & Pleydell-Pearce, 2000), assume that personal goals influence the content of both voluntary and involuntary autobiographical memories. Following such alternative view, we would have no reason to predict that memories related to current concerns would be more (or less) pronounced for involuntary than for voluntary recall. However, we would expect memories related to current concerns to differ from other memories on a number of variables, such as relevance to the self, life story and identity (Singer & Salovey, 1993), which will be reviewed in the next section.

### 1.2. Current concerns and autobiographical memories

In Conway and Pleydell-Pearce's (2000) self-memory system theory, goal states play a central role for the construction of autobiographical memories. In this theory (see also Conway, 1996), memories are brief dynamic constructions that are formed in the light of present goals. The working self controls the process of memory construction so that dissonance between goal states of the self and autobiographical memories can be avoided. There is a reciprocal relationship between the long-term memory base and the current goals of the working self, by current goals influencing what will be stored, and at the same time long-term memory influences the formation of goals.

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