

Rumination and Cognitive Inhibition

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ABSTRACT

The focus of the thesis is the investigation of the causal nature of the established association between rumination and that ability to resolve interference from task-irrelevant information, and prepotent responses. Rumination is a term used to refer to both unhelpful dwelling on negative moods and depressive symptoms (e.g., Nolen-Hoeksema, 1991), and repetitive intrusive thoughts around the theme of unresolved personal goals (Martin & Tesser, 1996).

It has been proposed that rumination occupies working memory resources, thereby depleting cognitive control capabilities necessary for the performance of concurrent effortful tasks (Hartlage, Alloy, Vasquez, & Dykman, 1993; Hertel, 2004; Watkins & Brown, 2002). This model constitutes one possible account of the considerable data demonstrating an association between depressive rumination and deficits on tasks invoking inhibitory processes (Joormann, Yoon, & Gotlib, 2007).

An inhibition construct is invoked to account for the empirical observation of interference; however there are few instances where inhibition is unambiguously driving interference (MacLeod, 2007). Moreover, there is evidence that inhibition is not a unitary construct (Friedman & Miyake, 2004).

Five experiments manipulated rumination on depressive symptoms and on personal goals in dysphoric and unselected samples in order to test Watkins and Brown's (2002) hypothesis that state rumination impairs interference control capabilities. The causal impact of state rumination was examined on interference control tasks that implicate different inhibitory sub-types: resistance to proactive interference from positive and negative material (Studies One, Two, and Five), and prepotent response inhibition on a go/no-go paradigm (Studies Three and Four).

No evidence was found to support the prediction that state rumination about depressed mood (Studies One and Two) or on-going personal goal discrepancies (Study Five) causes difficulties resolving interference from irrelevant emotional material relative to non-ruminative control conditions in both dysphoric (Studies One and Two) and unselected (Study Five) samples.

No evidence was found to support the prediction that state rumination about personal goal discrepancies impairs prepotent response inhibition relative to non-ruminative control conditions (Studies Three and Four). There was some tentative evidence to suggest that ruminating on personal goal discrepancies increased efficiency in holding a single goal active in working memory without reinforcement (Study Four).

The implications of these findings for existing models of the causal nature of the relationship between rumination and interference control processes is discussed (Chapter Nine). It is concluded that models proposing a causal impact of state rumination on available working memory capacity are insufficient to fully account for the established association between the trait tendency to ruminate and increased susceptibility to interference from irrelevant material.

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