

# Enhanced perceived responsibility decreases metamemory but not memory accuracy in obsessive–compulsive disorder (OCD)

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Received 28 February 2006; received in revised form 8 March 2007; accepted 8 March 2007

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## Abstract

Mixed findings have been obtained in prior research with respect to the presence and severity of memory and metamemory deficits in obsessive–compulsive disorder (OCD). We tested the hypothesis that experimentally induced increments of subjective responsibility would lead to a disproportionately strong decline of memory confidence and enhanced response latencies in OCD while leaving memory accuracy unaffected. Twenty-eight OCD patients and 28 healthy controls were presented a computerized memory test framed with two different scenarios. In the neutral scenario, the participant was requested to imagine purchasing 15 items from a do-it-yourself store. In the recognition phase, the 15 needed items were presented along with 15 distractor items. The participant was asked to decide whether items were on his or her shopping list or not, graded by subjective confidence. In the responsibility scenario, the general experimental setup was analogous except that the participant now had to envision that he or she was a helper in a region recently struck by an earthquake, dispatched to provide 15 urgently needed goods from a nearby town. In line with prior work by our group, samples did not differ in either condition on memory accuracy in a subsequent recognition task. As hypothesized, OCD participants were less certain in their responses for the high responsibility condition than controls. Whereas patients and controls did not differ in their *subjective* estimates for memorized items, patients expressed stronger doubt that their earthquake mission was successful. The findings indicate that low memory confidence in OCD may only be elicited in situations where perceived responsibility is high and that patients may share higher performance standards (“good is not good enough”) than controls when perceived responsibility is inflated.

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*Keywords:* Obsessive–compulsive disorder; Memory; Metacognition; Responsibility

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## Introduction

It is almost commonplace that actions are performed more thoroughly and sometimes almost compulsively when negative consequences for ourselves are either deemed likely or especially dramatic in case of negligence.

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For example, at the airport we may check for our passport several times although we *know* that it is in our pocket. Similarly, many humans act more carefully and hesitantly when being responsible for others. For example, we do not disregard a red light when children are around and we may drive more carefully when other people are in the car compared to when we drive alone.

A number of studies have confirmed and further qualified the impact of perceived responsibility on behavior in healthy participants. These investigations have shown that perceived personal influence, particularly in conjunction with expected failure, may elicit thoughts and behavior that are reminiscent of obsessive–compulsive disorder (OCD) like checking, hesitations, and doubt (Bouchard, Rheaume, & Ladouceur, 1999; Ladouceur, Rheaume, & Aublet, 1997; Ladouceur et al., 1995; Mancini, D'Olimpio, & Cieri, 2004). Although such subclinical symptoms are relatively minor compared to full-blown OCD rituals, which are often performed for hours and are accompanied by substantial stress and social interference, these findings lend support to the claims that perceived responsibility and OCD, particularly compulsive checking, are functionally interwoven (Rachman, 2002; Salkovskis et al., 1990). In this view, a lowered threshold for perceived personal responsibility contributes to the establishment of OCD symptoms. Put differently, in situations, which might not bother most people, OCD patients overestimate their share of responsibility and hence feel the need to prevent some catastrophe by means of certain rituals and precautions.

The hypothesized association between perceived responsibility and obsessionality has been affirmed by several studies using self-report questionnaires. For example, using the Responsibility Questionnaire, Rheaume and colleagues (Rheaume, Ladouceur, & Freeston, 2000) found responsibility as well as perfectionism to be associated with symptom severity in a non-clinical sample. In a study by Wilson and Chambless (1999), responsibility predicted symptom severity in healthy college students. There is additional evidence that responsibility cognitions (interpretations and attitudes) are linked with self-rated obsessive–compulsive symptomatology in OCD patients, anxiety patients, and healthy individuals, even when depression and anxiety are controlled for (Salkovskis et al., 2000). However, in the aforementioned study the amount of variability of obsessionality accounted for by responsibility varied between 4% (responsibility attitudes) and 28% (responsibility interpretations).

Responsibility is a heterogeneous concept with multiple facets (Rachman, Thordarson, Shafran, & Woody, 1995). Whereas some aspects of responsibility were strongly associated with obsessionality, particularly thought–action fusion, other aspects, such as a positive outlook towards responsibility, were not (Rachman et al., 1995).

Experimental manipulations of responsibility have shown that enhanced perceived responsibility increases the urge to perform compulsions in OCD patients (Lopatka & Rachman, 1995; Shafran, 1997). While enhanced perceived responsibility is traditionally seen as a characteristic feature of compulsive checking, some evidence links this belief with other OCD syndromes (Ladouceur, Bouvard, Rheaume, & Cottraux, 1999). Still, others challenge the view that inflated perceived responsibility is specific to OCD and assume it to be present in other disorders (e.g., Woods, Tolin, & Abramowitz, 2004).

One implicit claim in experimental studies on subclinical OCD behavior and questionnaire-based studies on OCD is that OCD behavior manifests an exaggeration of perceived responsibility. However, items from responsibility scales are often formulated rather broadly and circular interpretations cannot be entirely dismissed. It thus remains unclear whether patients have OCD-related versus (OCD-unrelated) every-day situations in mind when responding to such items (e.g., “I often believe I am responsible for things that other people don't think are my fault”, item from the Obsessive Beliefs Questionnaire; Obsessive Compulsive Cognitions Working Group, 2001). To the best of our knowledge, the ubiquity of an inflated sense of responsibility (i.e., beyond OCD-related scenarios) is not yet fully established.

Another seemingly unrelated research question in experimental OCD research is whether patients share a global memory or metamemory deficit or whether such dysfunctions are only elicited when certain conditions are met. For example, memory confidence for the recall of objects rated “unsafe” decreased for obsessional patients when tested repeatedly, whereas memory confidence of anxiety and healthy controls did not change over repeated testing (Tolin et al., 2001). In their meta-analysis of memory and compulsive checking Woods and Vevea (2002) conclude that poor memory confidence is a robust finding among OCD checkers and carries larger effect sizes than poor memory accuracy. However, other studies have not detected decreased memory confidence in OCD (e.g., Moritz, Jacobsen, Willenborg, Jelinek, & Fricke, 2006).

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