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Behaviour Research and Therapy 41 (2003) 1311–1323

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**BEHAVIOUR  
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## Anxiety and selective attention in obsessive–compulsive disorder

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Received 12 July 2002; received in revised form 28 January 2003; accepted 2 February 2003

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### Abstract

Recently, there has been increasing evidence for information-processing deficits in individuals with obsessive–compulsive disorder (OCD). While impairments in selective attention have been identified to be central to the symptomatology of OCD, the role that situational anxiety plays in attentional processes has not been fully explored. Previous research findings were limited to tasks containing anxiety-relevant materials, only permitting for the evaluation of the impact of anxiety on simultaneous cognitive processing. Furthermore, it has not yet been determined whether the impact of anxiety is limited to selective attention or is indicative of a more general cognitive impairment. This study was designed to examine the role that situational anxiety plays in selective attention impairments. OCD participants and controls were presented with an anxiety producing statement and a neutral statement, followed by the Stroop Task. Results indicated that situational anxiety plays a significant role in the performance of tasks that require selective attention in OCD. A significant deterioration was detected in performance on selective attention tasks for the OCD participants after confronting anxiety-provoking scenarios, as compared to neutral scenarios. Anxiety did not impair performance on simple reading tasks. Possible explanations are discussed.

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*Keywords:* Obsessive–compulsive disorder; Selective attention; Anxiety; Stroop; Information processing

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Information processing deficits have been identified as a dominant feature in the symptomatology of obsessive–compulsive disorder (OCD). Individuals with OCD experience specific biases in selective attention, which make it difficult for them to attend to multiple simultaneous stimuli

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(e.g. Martinot, Allilaire, Mazoyer, Hantouch, Huret, Legaut-Demare et al., 1990). A deficit in the ability to selectively attend to relevant stimuli, while simultaneously ignoring irrelevant competing stimuli, is central to the symptomatology of OCD (Clayton, Richards, & Edwards, 1999; Enright & Beech, 1990).

Cognitive theories have attempted to explain why attentional biases occur in OCD. Salkovskis (1999) argued that when intrusive cognitions are interpreted by individuals with OCD as potentially harmful or dangerous, negative automatic thoughts are triggered, eliciting anxiety and impairing their ability to attend to competing stimuli in the environment. Foa and McNally (1986) suggested that attentional deficits in individuals with OCD are a result of oversensitivity to the detection of threats. Because most of their attentional resources are allocated to threat cues, individuals with OCD are limited in their ability to attend to multiple competing stimuli simultaneously. This results in neglect or distortion of important information in the environment due to either excessive focus or avoidance of relevant stimuli (Enright & Beech, 1993).

Several methods have been used for detecting attentional deficits in OCD. In a review of the literature, Cox (1997) concluded that adults with OCD show consistent impairments in allocation of attention as documented by a variety of measures, such as evoked potential, eye movement, and reaction time paradigm. More specifically, relative to normal controls, OCD patients were shown to exhibit a significant impairment in visual (Nelson, Early, & Haller, 1993), but not in sustained attention (Millierey, Bouvard, Aupetit, & Cottraux, 2000).

Foa and McNally (1986) utilized a dichotic listening task and found significantly greater detection of fear-relevant targets than neutral targets in the unattended channel. Tata, Leibowitz, Prunty, Cameron and Pickering (1996) used the dot-probe task to demonstrate that OCD patients with contamination fears show biases in attentional processing (i.e. interference and vigilance) when presented with a threatening stimulus. Individuals with OCD exhibited greater selective attentional biases for contamination threat-words than for social threat-words, whereas normal individuals, who were high on trait anxiety, showed a greater bias for social threat-words.

The most common instrument for measuring selective attention in OCD is the Stroop Task (Williams, Mathews, & MacLeod, 1996; Hartston & Swerdlow, 1999). Studies utilizing the Stroop Task to evaluate attention in OCD have primarily used a modified version of the task in which arousal-provoking words were substituted for color-words. The substituted words consisted of either fear-related or concern-related words. Both types were found to be associated with increased interference in OCD participants. For instance, OCD patients, who were characterized as “washers”, showed longer response latencies to contamination words than to neutral words. OCD patients who were “checkers” experienced longer latencies to general threat words than non-words or contamination words (Foa, Ilai, McCarthy, Shoyer, & Murdock, 1993). It was concluded that the similarity of the presented words to the specific concerns of each patient would increase the interference effect on the Stroop Task. However, it was argued that the presented words on such tasks may not only instill fear but also be more emotional than non-threat control words. The oversensitivity of OCD patients to emotional cues may have been the reason for their biased performance, instead of solely a fear reaction (Martin, Williams, & Clark, 1991; Mathews & Klug, 1993). A study by Lavy, van Oppen, and van den Hout (1994) provided evidence for the original, fear-related explanation. By showing that concern-related (emotionally charged) stimuli were less effective than threat-related (fear inducing) stimuli in increasing attentional biases in OCD.

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