



## Fear activation and distraction during the emotional processing of claustrophobic fear

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Received 26 August 2003; received in revised form 12 February 2004; accepted 12 March 2004

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### Abstract

We tested several hypotheses derived from the emotional processing theory of fear reduction by manipulating claustrophobic participants' focus of attention during in vivo exposure. Sixty participants displaying marked claustrophobic fear were randomized to one of four exposure conditions. Each participant received a total of 30-min of self-guided exposure 2-weeks after pretreatment testing. One group attended to threatening words and images during exposure (TW) and was compared to a control group that attended to neutral words and images (NW). A third group performed a demanding cognitive load task—a modified Seashore Rhythm Test during exposure (SR) and was compared to an exposure only (EO) control group. Contrary to prediction, the threat word manipulation was not associated with lower levels of fear following treatment. Consistent with prediction, the distraction manipulation resulted in less fear reduction at post-treatment. Treatment process analyses revealed that the negative effects of distraction on treatment outcome manifested early as slower between-trial habituation. These results and their relevance to emotional processing theory are discussed.

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## **1. Fear activation and distraction during the emotional processing of claustrophobic fear**

Evidence accumulated over several decades and numerous domains of situationally bound fear has demonstrated the potency of exposure-based methods in the treatment of phobic disorders (Barlow, 1988; Marks, 1987; Rachman & Wilson, 1980). Nevertheless, considerable debate still exists regarding the mechanisms governing the reduction of pathological fear. Rachman (1980) proposed a theoretical account of fear reduction based on emotional processing. He defined emotional processing as the decline of emotional disturbance to the extent that other experiences and behaviors proceed without disruption, and as a process that was dependent upon direct experiencing of the emotional disturbance. In a revised account of emotional processing theory, Foa and Kozak (1986) proposed that fear activation is dependent upon a close match between the information presented and elements in the fear structure. Particularly salient to this process is information about feared stimuli, fearful responses, and the meaning associated with those responses. Through generalization of activation, information matching a part of the memory network activates other parts of the fear structure, particularly in cohesive networks representative of specific phobias.

In support of this view of fear activation, individuals trained to process response information as well as stimulus information experienced more physiological arousal during imagery (Lang, 1985). Zander and McNally (1988), however, found that individuals with panic disorder were equally fearful and physiologically reactive to scripts containing stimulus information alone, stimulus and response information, or stimulus, response, and meaning information. Thus, evidence that fear activation depends upon attention to specific stimulus, response, or meaning information is equivocal. Further, the provision of response and meaning information has not been linked to greater fear reduction.

Both Rachman's original account of emotional processing theory (Rachman, 1980) and the Foa and Kozak (1986) revised account proposed that more complete initial fear activation is related to greater fear reduction. Support for this hypothesis has been mixed. For instance, while findings from several studies (Borkovec & Sides, 1979; Kozak, Foa, & Stekette, 1988; Lang, Melamed, & Hart, 1970; Watson, Gaiend, & Marks, 1972) suggested that those displaying higher fear activation responded more favorably to imaginal and in vivo exposure, more recent studies have shown that greater fear activation during in vivo exposure was not related to treatment outcome (Kamphuis & Telch, 2000) or was associated with a poorer outcome (Telch, Valentiner, Ilai, & Young, 2000).

Foa and Kozak (1986) suggested that distraction (overt or covert) is likely to interfere with both fear activation and modification of the fear structure. Empirical examination of the role of distraction is warranted not only for conceptual reasons, but because cognitive and covert distraction is commonly used strategy to cope with the experience of fear (Craske, Street, & Barlow, 1989). Borkovec and Grayson

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