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Manipulating perceptions of spider characteristics and predicted spider fear: Evidence for the cognitive vulnerability model of the etiology of fear

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Abstract

The present study reports on an attempt to experimentally manipulate perceptions of uncontrollability, unpredictability and dangerousness related to an imaginal encounter with a spider in order to determine whether there is an effect on self-rated predicted spider fear. Experimental manipulations involved differing information in relation to both the spider and the imaginal task. The control, predictability and dangerousness manipulations all had significant main effects on task-related spider fear (TRSF). Measures of the perception of the spiders as uncontrollable, unpredictable and dangerous were also significantly associated with TRSF and accounted for 42% of the variance in predicted fear beyond that accounted for by the experimental manipulations. Results are discussed in terms of their implications for better understanding the etiology and maintenance of fear. The overall findings are consistent with the cognitive vulnerability model, with cognitive perceptions of an object or situation seen as causal determinants of the fear associated with the stimulus.
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1. Introduction

It is now widely acknowledged that cognitive factors must be taken into account to adequately understand anxiety disorders. However, the legacy of behaviorist theories remains influential in regards to specific phobias. For example, it is still commonly assumed that the processes

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underlying these disorders and their treatment are non-cognitive, leading to behavioral techniques being considered the psychological treatments of choice (Brown, Abrahams, & Helbert, 2003). This is perhaps not surprising given that much of our knowledge of fear and emotion is based on an extensive animal literature which has subsequently been tested and applied to humans (Delgado, Olsson, & Phelps, 2006).

Despite scientific predilection for neo-behavioral etiological theories, hundreds of studies have now investigated cognitive aspects of specific phobias and subclinical fears. One area of study relates to perceptions of stimulus characteristics. Armfield and Mattiske (1996), for example, found that fear of spiders was strongly associated with perceptions of spiders as dangerous, uncontrollable, unpredictable and disgusting. These stimulus characteristics, termed cognitive vulnerability perceptions, were found to account for more than half of the variance in spider fear beyond that accounted for by a number of classical conditioning, informational and vicarious conditioning experiences. Indeed, the majority of negative beliefs of spider phobics have been found to center on the uncontrollable and unpredictable behavior of spiders, as well as the possibility of harm (Arntz, Lavy, van den Berg, & van Rijsoort, 1993). Consistent with these studies, Riskind, Kelley, Harman, Moore, and Gaines (1992) found that beliefs about the danger, probability of harm, imminence, uncontrollability, and unpredictability of spiders were highly correlated with fear of spiders.

Armfield (2006) has proposed a model of the etiology of specific fears which asserts that an individual's fear of a given stimulus is a result of cognitive perceptions of the stimulus as uncontrollable, unpredictable, dangerous and disgusting, and that these contribute to an overall perception of vulnerability related to any given stimulus. Rather than place emphasis on the occurrence of an adverse learning event, it is the perception of the stimulus, based on the learning experiences, which is seen as pre-eminent in fear determination. While not a repudiation of prior learning experiences, human cognitions are placed at the forefront of fear determination rather than viewing them as merely a symptom of fear.

The cognitive vulnerability model (CVM) advanced by Armfield (2006) can be differentiated from a number of other cognitive models advanced to date. Beck and Emery's (1985) seminal work, for instance, focuses principally on danger cognitions yet advances learning theory and biological preparedness as the primary factors in 'causing' fear. Riskind's (1997; Riskind, Williams, Gessner, Chrosniak, & Cortina, 2000) looming vulnerability model proposes that a looming maladaptive style focussed on the temporal and spatial progression of potential threat lies at heart of anxiety responses. This looming vulnerability model differs from the CVM due to its emphasis on the importance of the dynamic process of increasing imminence of danger rather than on other stimulus perceptions. Barlow's (2000, 2003) triple vulnerability theory shares more conceptual similarities to the CVM, proposing that a sense of unpredictability and uncontrollability related to possible future threat is at the core of anxiety. In contrast, however, the CVM proposes that unpredictability and uncontrollability are negative states in and of themselves, and along with perceptions of dangerousness and disgustingness comprise a vulnerability schema related to a given stimulus or situation.

Studies using human populations have found deleterious effects for lack of control versus control on responses to aversive stimuli or events (Milgrom, Vignehsa, & Weinstein, 1992; Sanderson, Rapee, & Barlow, 1989). Likewise, a small number of experiments allowing subjects to exert varying degrees of control over stimulus situations have found that perceived controllability decreases the aversive nature of a stressor (Geer & Maisel, 1972; Glass, Reim, & Singer, 1971; Sartory & Daum, 1992). It has been argued that, for both animals and humans,

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