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# Disgust and disgust sensitivity in spider phobia: Facial EMG in response to spider and oral disgust imagery

Peter J. de Jong\*, Madelon Peters, Inge Vanderhallen

Department of Medical, Clinical, & Experimental Psychology, Maastricht University, P.O. Box 616, 6200 Maastricht MD, The Netherlands

#### **Abstract**

Increasing evidence suggests that disgust and fear of contamination is involved in spider phobia. Yet, because the evidence exclusively relies on self-report data it can not be ruled out these findings are produced by mechanisms such as a negative attribution bias, or imprecise emotional labeling. Therefore, the present study sought to complement these previous studies by including physiological measures (i.e., facial EMG). Highly spider fearful (n = 24) and explicitly nonfearful women (n = 24) were exposed to general disgust-eliciting and spider relevant material using guided imagery (general disgust, spider) and video-exposure (general disgust only). Sustaining the idea that spider fearful individuals are characterized by a heightened disgust sensitivity, exposure to general (oral) disgust elicitors resulted in relatively strong disgust responses (self-report and EMG) in spider fearful women. In support of the idea that disgust is implicated in phobics' emotional responding, spider-relevant imagery elicited disgust responses (self-report and EMG) in addition to fear. Accentuating the importance of contamination ideation in spider phobia, participants' sensitivity to contagion (as indexed by the Magic Subscale of the Disgust Scale [Personality and Individual Differences 16 (1994) 701.]) was the single best predictor of elicited fear during spider imagery. Together, the available evidence converges to the conclusion that fear of contamination plays a pivotal role in the development of spider phobia.

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E-mail address: p.dejong@dep.unimaas (P.J. de Jong).

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<sup>\*</sup>Corresponding author.

#### 1. Introduction

There is increasing evidence that disgust and fear of contamination is involved in the etiology of spider phobia. The view that disgust sensitivity plays a role in the development of spider phobia is sustained by several lines of rapidly accumulating evidence (see Woody & Teachman, 2000, for a critical review). One line of research demonstrated that common as well as clinical spider fear correlates with a relatively strong disgust sensitivity as indexed by the Disgust Questionnaire (DQ; Rozin, Fallon, & Mandell, 1984), a questionnaire which is mainly concerned with food contamination by animal products (Davey, 1992; Mulkens, de Jong, & Merckelbach, 1996; Thorpe & Salkovskis, 1998). Similar results have been found when using the Disgust Scale (DS; Haidt, McCauley, & Rozin, 1994) as an index of individuals' disgust sensitivity (e.g., Tolin, Lohr, Sawchuk, & Lee, 1997). The DS is a broader index of disgust sensitivity than the DQ, covering seven domains of disgust elicitors (Food, Animals, Body Products, Sex, Envelope Violations, Death, Hygiene), and the domain of magical thinking (reflecting the sympathetic magical laws of contagion and similarity) that is closely linked to disgust in general, and cuts across the seven domains of disgust elicitors. In line with the alleged prominent role of contamination in spider fears (e.g., Davey, 1994; Matchett & Davey, 1991), subsequent research with the DS provided preliminary evidence suggesting that the relationship between disgust sensitivity and fear of spiders is restricted to the domain of oral-centered (core) disgust (i.e., Body, Food, and Body Products Subscales of the DS; de Jong & Merckelbach, 1998).

Using a different approach to investigate the idea that sensitivity to disgust predisposes people to be afraid of spiders, Sawchuk and colleagues exposed high and low spider fearful individuals to pictorial and video material displaying general disgust elicitors (e.g., rotten food, vomit), and examined their emotional responding (Sawchuk, Lohr, Westendorf, Meunier, & Tolin, in press). Their results clearly indicated that spider fearful individuals reported stronger feelings of disgust than nonfearful controls. Thus these experimental findings add to the available evidence based on questionnaire studies, that spider fearful individuals are characterized by a heightened disgust sensitivity to general disgust elicitors.

Another line of research explored the role of disgust per se in phobics' emotional responding to phobic stimuli. In other words, these studies examined whether phobics respond to fear-relevant stimuli with disgust in addition to fear. Accordingly, it has been demonstrated that the reactions of spider fearful individuals to pictures of spiders were not restricted to fear but consisted of disgust as well (Tolin et al., 1997). In addition, it has been shown that spider phobic individuals responded with stronger fear and disgust responses than nonphobic individuals or those with other phobias (Sawchuk et al., in press; Thorpe & Salkovskis, 1998). Moreover, adding to the prominent role of disgust in spider phobia, the majority of spider phobic individuals reported to consider spiders as their most disgusting item (Thorpe & Salkovskis, 1998).

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