



# Appraisal of activating thoughts in generalized anxiety disorder

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## Abstract

Worrying may be an avoidance behaviour preventing the discomfort of imagining future threats. To study the link between phasic physiological activation and thought contents, we recruited 32 generalized anxiety disorder (GAD) patients and 31 controls and asked them to report whatever was in their mind just prior to whenever they were prompted. Half of 20 prompts were triggered by non-specific skin conductance fluctuations (activating thoughts). Controls judged activating thoughts as being less pleasant. GAD participants judged activating thoughts as more anxiety provoking, less relaxing and less controllable. Not the level of activation but the appraisal of activating thoughts in a catastrophic fashion differentiates GAD patients from controls.

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## 1. Introduction

Generalized anxiety disorder (GAD) is unique in that patients do not show evidence of heightened autonomic arousal compared to controls (e.g. Hoehn-Saric, McLeod, Funderburk, & Kowalski, 2004; Hoehn-Saric, McLeod, & Zimmerli, 1989; Roth, Wilhelm, & Trabert, 1998). Specifically, they do not show higher heart rates, have equal

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skin conductance levels and the same number of non-specific skin conductance fluctuations. The finding that GAD patients do not have heightened autonomic arousal is even more puzzling considering that they report such symptoms more than healthy controls (e.g. Hoehn-Saric et al., 2004; Hoyer, Becker, & Roth, 2001). A possible explanation for these contradictory findings may be that the patients perceive their bodily reactions to the thought of a potential future threat, but then effectively dampen their response. Recently, Borkovec, Alcaine, and Behar (2004) summarized GAD and worry research of the past 25 years in their avoidance theory of worry and GAD. They argue that worrying is a form of coping behaviour initiated when a person imagines a potential future threat. More specifically, they argue that worrying is avoidance behaviour preventing the discomfort of an intruding arousal-associated threat image. Gerlach and Deckert (2006) argue that the fear of potential future negative events (described by the noun “worry”—the fear component of worry) can be considered the driving force behind the act of worrying (the avoidance component of worrying).

This idea ties in well with the notion of Brown, O’Leary, and Barlow (1993) who considered worrying a form of anxious apprehension (“a future-oriented mood state in which one becomes ready or prepared to attempt to cope with upcoming events”, p. 139). Similarly, Wells and Carter (2001) stress that worrying is often actively initiated by patients as means of coping with fear of upcoming challenges. Research employing the Meta Cognitions Questionnaire (Cartwright-Hatton & Wells, 1997) demonstrated convincingly that GAD patients not only report negative aspects about worry, but also simultaneously emphasize positive aspects (e.g. that worrying prepares them for future threats).

One important argument indirectly supporting the avoidance theory of worrying is the finding by Borkovec and Inz (1990) that worrying is a verbal rather than an image-laden cognitive activity. This finding has been replicated in GAD patients, non-clinical subjects and chronic worriers (Borkovec, Ray, & Stöber, 1998; Rapee, 1993). Furthermore, worrying is associated with less cardiovascular response than threat imagery. Speech anxious participants who worried showed less physiological activation when presented with a phobic image than relaxing counterparts (Borkovec and Hu, 1990). This effect has been replicated in at least two other similar studies (Borkovec, Lyonfields, Wisner, & Deihl, 1993; Peasley-Miklus & Vrana, 2000). Moreover, worrying for only 4 min after being confronted with an aversive film reduced negative affectivity directly after this worry period. Over the course of 3 days following the confrontation, however, subjects who had worried as compared to other activities endure more negative intrusive images (Butler, Wells, & Dewick, 1995; compare also Wells & Papageorgiou, 1995).

Skin conductance has often been measured in psychophysiological research of the anxiety disorders (e.g. Dawson, Schell, & Fillion, 2000; Venables & Christie, 1980). The signal has two properties: the skin conductance level is considered a tonic measure of physiological activation. The so-called “spontaneous” or “non-specific” skin conductance fluctuations (NCSRs) supposedly represent phasic activation without apparent triggers. However, the term “spontaneous” skin conductance fluctuations may be a misnomer in that these fluctuations may not occur completely spontaneously but rather are associated with specific internal thought processes: In a series of studies, Nikula (1991) and Nikula, Klinger, and Larson-Gutman (1993) demonstrated in healthy students that thoughts, which were followed by skin conductance fluctuations, were judged differently than thoughts that occurred when there was no phasic electrodermal activity. Specifically, the

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