



Facial emotion recognition in trait anxiety

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Abstract

The study investigated the relationship between recognition of emotional facial expressions and trait anxiety. A nonclinical sample of 19 participants with high-trait anxiety was selected, using the trait version of the State-Trait Anxiety Inventory, and compared with a sample of 20 participants with low-trait anxiety on a facial expression recognition task. Visual stimuli were 42 faces, representing seven emotional expressions: anger, sadness, happiness, fear, surprise, disgust and neutral. Participants had to identify the emotion portrayed by each face. Results showed that participants with high-trait anxiety recognized fear faces significantly better while the two groups did not differ in recognition of other facial expressions.

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The aim of the present study is to investigate the relationship between trait anxiety and recognition of emotional facial expressions. Emotion recognition ability is an important component of our nonverbal communication system and an essential skill for successful adaptation and manipulation of the environment. As a fundamental skill for adaptation and successful interpersonal relationships, the emotion recognition ability is nowadays considered to be strictly involved also in different psychopathological disorders. Abnormal recognition of emotional facial expressions is considered a critical factor for poor communication and alterations of adaptive behavior.

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Early theories, such as Beck's (1976) schema and Bower's (1981) network theory, proposed that, in both anxiety and depression, cognitive biases operate throughout information processing, including perception, attention and memory. Both models assume that the main difference between the two emotions is the content of the bias, with anxious individuals selectively processing threatening information, whereas depressed individuals selectively process information related to sadness, loss and failure. More recent theories suggest that the primary cognitive factor underlying vulnerability to and maintenance of anxiety is the bias in selective attention to threat (Eysenck, 1992; Mathews, 1990; Williams, Watts, MacLeod, & Mathews, 1997). Following Oatley and Johnson-Laird (1987), who emphasize evolutionary adaptive value of emotions, Mathews (1990) propose that in anxiety the cognitive system is switched into a hypervigilant mode that prioritized the initial automatic encoding of threat. This bias is presumed to operate at a very early stage of attentional processes, which are responsible for initial orienting to and rapid detection of threat in the environment. According to Eysenck (1992) hypervigilance theory, vigilance for threat may also maintain clinical anxiety because anxious individuals are more likely to identify minor threat cues in the environment (Mogg, Millar, & Bradley, 2000). There is widespread evidence of an attentional bias towards threat in clinical and in nonclinical anxiety (Derryberry & Reed, 1997; Mogg et al., 2000). Attentional bias for threat has been found in several studies using the probe classification task on nonclinical samples of high-trait anxiety participants (Bradley, Mogg, Falla, & Hamilton, 1998; Mogg & Bradley, 1999). Data show that high-trait anxious individuals are quicker at responding to probes in the location of threat or angry faces, than neutral or happy faces, in comparison with low-trait anxious individuals. Similar findings have also been found with photographs of fearful, relative to neutral, facial expressions (Fox, 2002). Attentional biases for threat have also been found in various clinical anxiety disorders, including generalized anxiety disorder (Bradley, Mogg, White, Groom, & de Bono, 1999; Mogg, Bradley, & Williams, 1995) and social phobia (Mogg & Bradley, 2002).

Attention is involved in emotion recognition but this ability also requires additional knowledge, it thus requires memory of some sort. One of the simplest forms of recognition is in fact called recognition memory and may simply involve the ability to store in memory some information about the early perceptual properties of the visual image, to which another image could be compared subsequently. This form of recognition may be sufficient to discriminate between two faces that are presented at separate points in time whereas recognition of emotions from facial expression requires additional knowledge regarding the contingences between the expression and many other stimuli in the world with which that expression has been directly or indirectly associated (Adolphs, 2002).

Although Beck (1976) and Bower (1981) cognitive models predict that in anxiety there will be mood-congruent biases at all stages of emotion processing, including memory, several studies, specifically designed to assess memory biases

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