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Can implicit appraisal concepts produce emotion-specific effects? A focus on unfairness and anger



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ABSTRACT

This research examined whether the non-conscious activation of an implicit appraisal concept could affect responses associated with the corresponding emotion as predicted by appraisal theories. Explicit and implicit emotional responses were examined. We focused on implicit unfairness and its effect on anger. The results show that subliminal activation of implicit unfairness affected implicit anger responses (anger facial expression and latency responses to anger words) but not explicit anger feelings (i.e., reported anger). The non-conscious effect of implicit unfairness was specific to anger, as no effect on sadness, fear, and guilt was found.

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1. Introduction

According to appraisal theories, emotions are the result of how the environment is appraised. They posit that events are judged on several appraisal dimensions, the outcome of which contributes to one's emotional reactions (Ellsworth & Scherer, 2003; Frijda, 1986; Lazarus, 1991; Ortony, Clore, & Collins, 1988; Roseman, 1984; Scherer, 1984). Research has shown that conscious evaluation of an event along these appraisal dimensions could lead to specific emotions (e.g., Ellsworth & Smith, 1988; Frijda, Kuipers, & ter Schure, 1989; Kuppens, Van Mechelen, Smits, & De Boeck, 2003; Roseman, Spindel, & Jose, 1990; Scherer, 1997a, 1997b; Smith & Ellsworth, 1985; Tong et al., 2007). For instance, if an event is appraised as unwanted, unfair, and caused by others, anger is more likely to result than other emotions. The current research examines whether activating the meaning of an appraisal non-consciously is enough to influence responses associated with a specific emotion.

Appraisal theories propose several appraisal dimensions by which emotions could be differentiated. Each appraisal reflects a domain-specific understanding of the environment, and serves adaptation purposes by contributing to the person's emotional response in that situation (Nesse & Ellsworth, 2009; Roseman & Smith, 2001). Different appraisals have been proposed by different theories, but they overlap considerably. Examples of these appraisals are presented in the Appendix A (Ellsworth & Scherer, 2003; Frijda, 1986; Roseman, 1984; Scherer, 1984; Smith & Ellsworth, 1985).

Appraisal theorists have distinguished between *explicit appraisals* and *implicit appraisal concepts* (Clore & Ortony, 2000; Leventhal & Scherer, 1987; Smith & Kirby, 2000; Smith & Neumann, 2005). Explicit appraisals, much in line with everyday understanding of the word "appraisal", refer to conscious thinking where information is weighed and deliberated using logical rules, and can be captured by self-report to a considerable extent. This does not mean that one can control or has conscious access to every cognitive process that contributes to explicit appraising. For instance, an individual could deliberately and consciously weigh out the reasons why a person is responsible for a crime, while not being aware of the origin of these

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reasons and how they were processed before they were fed into conscious working memory, in which the explicit appraising takes place. Self-report can assess to some degree the explicit appraising that occurs consciously and the outputs of these evaluations.

In contrast, implicit appraisal concepts are stored representations of the semantic meaning of particular appraisals (e.g., the meaning of unfairness). They are predicted to affect emotions through associative mechanisms, often in manners outside of awareness and strategic control. This does not mean that one never has access to these implicit associative processes and the ensuing outcomes. However, given that many associative processes are not easily available to awareness in the first place, and the fact that they are often activated unknowingly (and hence go unnoticed), there is no or limited advantage in using self-report to assess the automatic effects of implicit appraisal concepts. We use the label 'concept' in referring to implicit appraising to differentiate it from explicit appraising, and to point out that implicit appraisal concepts are really semantic meanings in memory.

Implicit appraisal concepts have been discussed in various forms by appraisal theorists. Two models appear most pertinent to our purpose. Leventhal and Scherer (1987) proposed three levels of processing in emotional responses: sensory-motor, schematic, and conceptual (Scherer, 2001). The sensory-motor level involves automatic activation of pre-programmed reflexive responses (e.g., unconditioned fear responses). The conceptual level, which corresponds to explicit appraisals, refers to deliberate analysis using propositional rules. The schematic level is similar to the associative processes posited here about implicit appraisal concepts. This level comprises schematic representations which encode not only the episodic features of past emotion-provoking situations but also the appraisal themes in them. The presence of similar situations activates the associated emotional responses by virtue of these implicit knowledge structures, and such schematic activation is thought to occur automatically.

Smith and Kirby (2000, 2001) proposed two distinct cognitive processes that correspond more closely to explicit appraisals and implicit appraisal concepts. While reasoning refers to deliberative thinking, associative processing involves automatic activation of memories by priming and spreading activation. Specifically, associative processing involves primes activating memories of related experiences and the appraisal meanings embedded in these memories. These meanings in turn shape emotional responses, and the entire process can take place outside of focal awareness. Smith and Kirby (2000, 2001) proposed an intermediate mechanism (appraisal detectors) that mediates outputs from the reasoning and associative processes and the final emotional responses, but this additional step aside, the authors agree that it is possible for associative processing to quickly and non-consciously activate emotional responses.

Both models would predict that implicit appraisal concepts could influence emotional responses quickly and non-consciously, but there is a lack of studies to test this prediction (as we will explain shortly). Another question is, what form of emotional responses do implicit appraisal concepts influence? Emotional reactions can be explicit or implicit (Winkielman & Berridge, 2004). Explicit emotional responses refer to the conscious feelings in an emotional state which can be captured by self-report, whereas implicit emotional responses refer to components (e.g., spontaneous behavioral expression and cognitive processes) that are activated outside of awareness, which are better captured by non-verbal methods (Kihlstrom, 1999; Winkielman & Berridge, 2004).

Although Leventhal and Scherer (1987) and Smith and Kirby (2000) posited that automatic associative processes could influence emotions, it is not clear whether such processes would affect explicit emotional responses, implicit emotional responses, or both. Smith and Kirby (2000, 2001), for instance, posited that it is possible for associative processes to produce conscious emotional experiences, but also stated that they could lead to emotional states that are too mild to register in awareness. Attitude research might help address this issue. Here, a similar distinction has been made between explicit attitudes (attitudes that people are aware of) and implicit attitudes (attitudes that people are less likely, at least initially, to have conscious access to). Implicit attitudes are more likely to predict spontaneous non-verbal responses (e.g., seating distance) and not explicit attitudinal judgments (Rydell & McConnell, 2006) and implicit attitudes are more likely to be influenced by subliminal primes as compared to supraliminal messages (Rydell, McConnell, Mackie, & Strain, 2006). However, there is a limit to how much one can import these findings to appraisal processes because attitudinal judgments were the focus of these studies, not emotions. There are studies that showed subliminal affective primes (e.g., facial expressions) influencing non-verbal responses (e.g., beverage consumption) but not verbal reports of feelings (Winkielman, Berridge, & Wilbarger, 2005; Zemack-Rugar, Bettman, & Fitzsimons, 2007). Again, care should be exercised in making the straightforward prediction that implicit appraisal concepts should therefore influence implicit and not explicit emotional responses, because these studies examined implicit *emotion* concepts, not implicit *appraisal* concepts, which would have provided stronger grounds to make predictions on.

Hence, there is a considerable gap in appraisal research with respect to the effects of implicit appraisal concepts: Can subliminally activated implicit appraisal concepts influence emotional responses? If so, which form of emotional responses (explicit, implicit, or both) do they affect? We aimed to address these questions. Furthermore, we were interested in emotion-specific effects; i.e., the effect of an implicit appraisal concept on an emotion that it is theoretically most associated with and not other emotions. Appraisal studies had not been able to address these issues. The large majority of studies in appraisal research employed self-report to measure appraisals and emotions, and many of these studies examined correlations between them, which meant that not only were these studies poorly positioned to examine implicit appraisal-emotion processes but they were also unable to examine the causal effects of appraisals (e.g., Roseman et al., 1990; Scherer, 1997a, 1997b; Smith & Ellsworth, 1985, 1987; Tong et al., 2007). In other studies, appraisals were manipulated using conscious methods. For instance, participants were asked to recall incidents of specific appraisals (e.g., Ellsworth & Smith, 1988), read

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