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On angry approach and fearful avoidance: The goal-dependent nature of emotional approach and avoidance tendencies☆

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HIGHLIGHTS

- Past research suggests that anger relates to approach goals and fear to avoidance goals.
- We experimentally manipulated the superordinate goals of approach and avoidance.
- Anger was related to approach only if approach was dominant/aggressive.
- Fear was related to avoidance only if avoidance was submissive/non-aggressive.

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ABSTRACT

Previous research has revealed that feelings of anger are typically accompanied by the goal to approach the emotion-evoking stimulus and feelings of fear by the goal to avoid the emotion-evoking stimulus. We set up an experiment to investigate the boundary conditions of this set of relations. We hypothesized that anger is related to approach and fear to avoidance when approach serves the goal to dominate/aggress and avoidance the goal to be submissive, but that anger is related to avoidance and fear to approach if avoidance serves the goal to dominate/aggress and approach the goal to be submissive. We manipulated the superordinate goals of approach and avoidance in an experiment in which participants moved a manikin toward or away from an opponent, depending on whether an anger or fear word appeared on their manikin (self condition) or on the opponent (opponent condition). In one condition, approach was a dominant/aggressive response (i.e., fighting) and avoidance a submissive/non-aggressive response (i.e., fleeing); in another condition, approach was a submissive/non-aggressive response (i.e., begging) and avoidance a dominant/aggressive response (i.e., stubbornly turning the back). As predicted, the reaction times of approach and avoidance depended on the goals for which approach and avoidance were instrumental as well as on the locus of the feelings (self vs. opponent). The moderation by locus excluded explanations in terms of feature overlap between stimuli (anger/fear) and responses (fight/flight and beg/stubborn).

Introduction

For decades, researchers have assumed that positive stimuli evoke the tendency to approach or reduce the physical distance between the self and the stimulus, and that negative stimuli evoke the tendency to avoid or increase the physical distance between the self and the stimulus (Chen & Bargh, 1999; Krieglmeyer, Deutsch, De Houwer, & De Raedt, 2010). Recently, however, several researchers have argued that negative stimuli do not invariably elicit avoidance. More specifically, negative stimuli that elicit fear or disgust have been shown to evoke avoidance, but negative stimuli that elicit anger have been shown to evoke approach (Carver & Harmon-Jones, 2009). The relation between anger and approach has been established across various studies and research paradigms (e.g., Carver & Harmon-Jones, 2009; Harmon-Jones, 2003; Harmon-Jones & Allen, 1998). For instance, the induction of angry feelings has been shown to speed up approach movements rather than avoidance movements (Maayan & Meiran, 2011) and to influence other correlates of approach motivation, such as relatively greater left than right frontal cortical activity (Harmon-Jones & Sigelman, 2001) and scores on the BIS/BAS scale (Yan & Dillard, 2010).

Several researchers have called on the unique relation between anger and approach to account for a wide array of research findings. For example, the finding of Lerner and Keltner (2001) that anger goes together with optimism and fear goes together with pessimism has been attributed to the fact that anger is related to approach and fear

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to avoidance (Harmon-Jones, Peterson, Gable, & Harmon-Jones, 2008). Prinz (2009) wrote that the association between anger and approach explains why people rather live close to a thief than close to a pedophile, even if they have no children. He suggested that the pedophile elicits avoidance-related feelings such as disgust, whereas the thief evokes approach-related feelings such as anger.

The aim of the present study was to investigate potential boundary conditions of the relations between anger and approach and between other negative feelings and avoidance. We focused on feelings of anger and fear because of their comparability with respect to valence and arousal (Russell & Barrett, 1999). We tested the hypothesis that the relations between anger and approach and fear and avoidance depend on the goals that these feelings reflect (e.g., Smits & Kuppens, 2005; Wilkowski & Meier, 2010). This hypothesis fits in a componential view of emotions in which emotions are presented as collections of changes in appraisal, motivation, somatic responses, motor expressions, and feelings (Moors, 2009; Roseman, 2001; Scherer, 2005). The motivational changes consist of the activation of action tendencies, that is, goals to establish a particular relation with the environment (Frijda, 1986). Feelings or emotional experiences are reflections of the changes in appraisal, motivation, somatic responses, and motor expression in consciousness. Feelings of anger reflect the goals to aggress or hurt someone (Averill, 1983; Berkowitz & Harmon-Jones, 2004; Lazarus, 1991; Plutchik, 2003; Roseman, Wiest, & Swartz, 1994) or to display one's dominance (Hess, Adams, & Kleck, 2009; Knutson, 1996; Morris & Keltner, 2000). Feelings of fear reflect the goal to protect oneself (Frijda, 1986; Lazarus, 1991; Roseman et al., 1994) or the goal to be submissive (de Waal, 2003; Fridlund, 1994; Marsh, Adams, & Kleck, 2005; Wilkowski & Meier, 2010). According to the hypothesis under study, the goals associated with anger and fear are superordinate goals, and the goals to approach and avoid are subordinate goals that are instrumental for these superordinate goals. In other words, to fulfill the superordinate goals related to anger, it is often functional to approach the stimulus, whereas to fulfill the superordinate goals related to fear, it is often functional to avoid the stimulus. Indeed, in order to aggress or hurt someone, one often needs to approach the person first (Smits & Kuppens, 2005). Moreover, social dominance is typically obtained and displayed by approach behaviors, such as by keeping rather than avoiding eye contact (Keltner, Gruenfeld, & Anderson, 2003; Mazur & Booth, 1998; Song, Herberholz, & Edwards, 2006; Terburg, Hooiveld, Aarts, Kenemans, & van Honk, 2011). Conversely, the goals to protect oneself and be submissive may be more easily reached via avoidance behavior, for instance, by stepping out of the way or by looking down (Frijda, 1986; Roseman et al., 1994). Thus, this hypothesis states that the relations between anger and approach and between fear and avoidance can be explained in terms of the functionality of approach and avoidance goals for other, superordinate, goals. Accordingly, these superordinate goals can be considered boundary conditions: Eliminating the functionality of approach and avoidance for the superordinate goals of dominance/aggression and submission/safety may eradicate the relations between anger and approach and between fear and avoidance. Moreover, switching the functionality of approach and avoidance for these superordinate goals (i.e., approach serves submission/safety goals and avoidance dominance/aggression goals) may reverse these relations.

To date, few studies have investigated whether approach and avoidance goals in the context of anger and fear are at the service of any of the superordinate goals mentioned above. Two studies have focused on the boundary conditions of the relation between anger and approach and showed that anger is accompanied by the goal to approach (measured via brain activity) only when there is an opportunity to approach (Harmon-Jones & Peterson, 2009; Harmon-Jones, Sigelman, Bohlig, & Harmon-Jones, 2003). These studies suggest that anger is not invariably related to approach, yet they do not necessarily imply that approach in the context of anger is at the service of a superordinate goal. To investigate this, one needs to manipulate the superordinate goals of approach and avoidance. A number of studies have done this in the context of perceiving angry faces. Wilkowski and Meier (2010) showed that angry faces were approached faster when they became fearful after approach (signaling dominance of the participant) than when they became happy after approach. Krieglmeyer and Deutsch (2013) found that angry faces elicited a stronger goal to approach when approach was framed as aggressive than when it was framed as peaceful and that the reverse was true for fearful faces. These studies provide support for the idea that the relation between anger and approach depends on a superordinate goal. Both studies on the role of superordinate goals, however, pertain to anger displayed by others, whereas the basic idea that anger is related to approach concerns anger as experienced by the self (e.g., Carver & Harmon-Jones, 2009). The question thus remains whether the relations between anger and fear as feelings of the self, on one hand, and approach and avoidance, on the other hand, also depend on superordinate goals.

To investigate this question, we developed a speeded reaction time (RT) task that allowed us to investigate relatively automatic approach and avoidance behaviors (Moors & De Houwer, 2006). We also took measures to exclude interpretations purely in terms of overlap between the concepts of anger and dominance/aggression and between fear and submission/safety (Eder & Rothermund, 2008). Previous studies on the perception of angry and fearful faces did not rule out such interpretations. For instance, the findings of Krieglmeyer and Deutsch (2013) may reflect the activation of a goal (e.g., to aggress another person) in response to a constellation of affairs (e.g., the other is angry), but they may also reflect an (in)compatibility between the stimulus features "angry"/"fearful" and the response features "aggressive"/"peaceful" (Kornblum, Hasbroucq, & Osman, 1990). More specifically, participants may have responded faster with an aggressive response to an angry face and with a peaceful response to a fearful face, because the stimulus features "angry" and "fearful" automatically activated the corresponding (semantically related) response features "aggressive" and "peaceful". To preclude an explanation in terms of pure feature overlap, we examined how the relations between anger/fear and approach/avoidance were qualified by the locus of the feelings: self vs. other. Any difference between two conditions that differ with regard to locus, but that are otherwise entirely equivalent, rules out an explanation in terms of feature overlap alone.

Our experimental paradigm was a variant of the manikin approach/avoidance task of De Houwer, Crombez, Baeyens, and Hermans (2001). This task consists of a series of trials in which participants use a manikin to approach and avoid stimuli. The properties of the stimuli are manipulated and RTs are measured. Our first adaptation was that we manipulated the superordinate goals of approach and avoidance. In one condition, approach was presented as a fight response (instrumental for the goal to dominate/aggress) and avoidance as a flight response (instrumental for the goal to be submissive/self-protect). In another condition, approach was presented as a beg response (instrumental for the goal to be submissive) and avoidance as stubbornly turning the back (instrumental for the goal to dominate/aggress). Our second adaptation was that two manikins appeared on screen, one representing the participant and another representing an opponent, and that the properties of both manikins were manipulated. In one version of the task, we manipulated the feelings of the participant manikin by presenting anger and fear synonyms on this manikin and by instructing participants that these words represented the feelings of their manikin. In another version, the feelings of the opponent were manipulated by presenting anger and fear synonyms on the opponent and by instructing participants that these words represented the feelings of the opponent.

The experiment was a stimulus–response compatibility (SRC) task (De Houwer, 2003; Kornblum & Lee, 1995) with two blocks. In one block (the anger-approach/fear-avoidance block) the instruction was to approach if an anger word appeared and to avoid if a fear word appeared; in another block (the anger-avoidance/fear-approach block) the stimulus–response mapping was reversed. We compared the