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Beyond the fearful ape hypothesis: Humans are also supplicating and appeasing apes

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In response to: **The human fear paradox: Affective origins of cooperative care**[Related commentaries \(28\)](#) [Author response](#)Eric J. Mercadante, Zachary Witkower, Ian Hohm and Jessica L. Tracy 

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Abstract

We review research suggesting that several of the functions attributed to fear, in the target article's fearful ape hypothesis, also apply to supplication and appeasement emotions. These emotions facilitate support provisioning from others and the formation and maintenance of cooperative relationships. We therefore propose that the fearful ape hypothesis be expanded to include several other distinctively human emotional tendencies.

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As reviewed in Grossmann's target article, research indicates that humans experience fear more often and intensely, and are more attuned to conspecifics' fear expressions, compared to other primates. To account for this between-species difference, Grossmann proposes (and marshals a compelling body of evidence in support of) *the fearful ape hypothesis*, positing that humans' heightened fearfulness emerged out of its adaptive benefits, namely: (1) Eliciting support from others in response to specific, momentary threats, and (2) promoting and maintaining long-term cooperative relationships that are crucial for survival and reproduction. We agree with Grossmann's synopsis, but contend that its scope may be too narrow. Emotions beyond fear – notably, *supplication* emotions (i.e., a group of emotions that includes fear but also sadness, disappointment, distress, and worry) and *appeasement* emotions (i.e., shame, guilt, regret, and embarrassment; van Kleef & Côté, 2022) – likely facilitate the same adaptive ends as those proposed for fear. As a result, several additional distinct emotions may also underlie and shape humans' unique capacity for cooperation (see Keltner & Shiota [2021] for a broad review of the cooperative functions of emotions).

According to van Kleef and Côté (2022), supplication emotions are those that occur when one's expectations or desires go unfulfilled. Similar to fear, the experience and expression of other supplication emotions elicit support from others. For example, like nonverbal expressions of fear (e.g., Hammer & Marsh, 2015; Marsh & Ambady, 2007), nonverbal expressions of sadness and disappointment elicit emotional and financial support from observers (Hendriks & Vingerhoets, 2006; Small & Verrochi, 2009; van Doorn, van Kleef, & van der Pligt, 2015). Furthermore, just as heightened fearfulness promotes cooperative tendencies across contexts (per the target article), individuals who are generally prone to sadness and distress are also generally prone to sympathy (Eisenberg, 2000), which increases caring behavioral tendencies toward others (Weidman & Tracy, 2020). Thus, stable tendencies to feel multiple supplication emotions may underpin the same set of cooperative behaviors as does fearfulness.

Expressing supplication emotions also has been shown to facilitate relationship formation and maintenance. One study found that individuals were more willing to help a person expressing sadness than they were a person expressing no emotion, but only when they believed the expressor was open to meeting new people (Clark, Oullette, Powell, & Milberg, 1987). Similarly, a willingness to express emotions like distress, nervousness, and anxiety is associated with the formation of intimate friendships (Graham, Huang, Clark, & Helgeson, 2008). Further supporting the role of supplication emotions in maintaining close relationships, Parkinson, Simons, and Niven (2016) found that expressions of worry lead expressors' romantic partners

to attempt to calm them, suggesting that these emotions elicit needed emotional support within existing relationships.

Unsurprisingly, given the positive relationship effects of expressing supplication emotions, suppressing these emotions can, conversely, impede relationship formation and damage existing relationships. In one study, suppressing sadness led unacquainted conversation partners to feel less rapport and a weaker desire to affiliate with the suppressor (Butler et al., 2003). Suppression of these emotions in romantic relationships is associated with greater conflict, as well as suppressors' partners feeling greater negative emotions and lower relationship satisfaction (Impett et al., 2012). Overall, research on supplication emotions complements research consistent with the fearful ape hypothesis, suggesting that the hypothesis might be fruitfully broadened to include this entire family of emotions.

Appeasement emotions occur when a person who has committed a social transgression or failed to meet others' expectations anticipates reactive physical or relational aggression. These emotions serve similar social functions to supplication emotions, but they are more specialized to facilitate exchange relationships (i.e., relationships based on the reciprocal exchange of resources instead of mutual care), rather than the communal close relationships that seem to benefit from supplication emotions (Batson, 1993; van Kleef & Côté, 2022). More specifically, appeasement emotions are particularly functional by virtue of their impact on individuals' tendency to follow social norms and meet obligations (Beall & Tracy, 2020). For example, when individuals commit a social transgression, they risk being perceived as untrustworthy, selfish, and unfit for future relationships (Gilbert, 2007). Displaying shame or embarrassment in these situations can appease onlookers by demonstrating awareness of social norms and acknowledgment that they were violated, thereby helping the transgressor maintain their relationships by conveying one's motivation to behave prosocially moving forward (Feinberg, Willer, & Keltner, 2012; Keltner & Buswell, 1997; Martens, Tracy, & Shariff, 2012).

In fact, this appeasement function extends beyond existing relationships; studies have found that individuals choose more lenient penalties for unacquainted transgressors (e.g., CEOs making public apologies) who express shame and embarrassment, compared to those who express no emotion (Giner-Sorolla, Castano, Espinosa, & Brown, 2008; Keltner & Buswell, 1997). Appeasement emotions thus help individuals form and maintain cooperative exchange relationships by reducing the consequences of social transgressions and preventing relationship dissolution, which benefit both parties' long-term fitness, and may explain the

evolution of these emotions (Barkow, 1989; Gilbert, 1997; Leary & Baumeister, 2000). In this way, appeasement emotions serve a function very similar to that of fear, proposed in the fearful ape hypothesis, but more narrowly in exchange relationships.

In closing, we commend Grossmann's review and strong support for the fearful ape hypothesis, while also recommending that it be expanded to include supplication and appeasement emotions. Both classes of emotions are associated with signals and behaviors that underlie humans' desire and ability to cooperate in specific moments, as well as to form and maintain long-standing cooperative relationships. Nonetheless, questions remain for future research. To our knowledge, the primate research that Grossmann describes has yet to be conducted for other supplication emotions like sadness, leaving it unclear whether humans are uniquely prone to experiencing sadness and recognizing it in others in the way they appear to be for fear. We look forward to research in this vein, and thank Grossmann for bringing these important questions to light with his novel and thought-provoking hypothesis.



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Competing interest

None.

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