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Self-Transcendent Emotions and Their Social Functions: Compassion, Gratitude, and Awe Bind Us to Others Through Prosociality

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Abstract

In this article we review the emerging literature on the *self-transcendent emotions*. We discuss how the self-transcendent emotions differ from other positive emotions and outline the defining features of this category. We then provide an analysis of three specific self-transcendent emotions—compassion, gratitude, and awe—detailing what has been learned about their expressive behavior, physiology, and likely evolutionary origins. We propose that these emotions emerged to help humans solve unique problems related to caretaking, cooperation, and group coordination in social interactions. In our final section we offer predictions about the self-transcendent emotions that can guide future research.

Keywords

awe, compassion, gratitude, positive emotions, prosociality

Emotions prioritize adaptive responses to threats and opportunities in the environment that are crucial for survival and reproduction (e.g., Ekman, 1992). For humans, many, if not most, of these problems and opportunities are social, and include caring for offspring, securing and sharing of food, and coordinating for defense. Guided by the argument that humans are a highly social species (e.g., Wilson, 2014), affective scientists have turned

their attention to the social functions of emotions (Fischer & Manstead, 2008; Frijda & Mesquita, 1994; Keltner & Haidt, 1999; Niedenthal & Brauer, 2012; Parkinson, 1996). At the heart of this approach is the question of how emotions help individuals coordinate interactions with allies, reproductive partners, kin, and group members to meet the challenges that arise when living in groups (Keltner & Lerner, 2010).

This social functional approach has yielded new interest in a category of positive emotions, including compassion, awe, gratitude, appreciation, inspiration, admiration, elevation, and love, which function to bind individuals together in social relationships by promoting cooperation and group stability (e.g., Haidt, 2003). We refer to this category of emotions as the *self-transcendent emotions*, in light of their capacity to encourage individuals to transcend their own momentary needs and desires and focus on those of another. Despite their important social functions, these emotions have only recently begun to receive greater empirical attention and there is still a lack of consensus among affective scientists as to whether they represent emotions at all (Ekman, 2016). In addition, these states have features that are more trait-like (e.g., grateful disposition; McCullough, Emmons, & Tsang, 2002) or motivational (e.g., to alleviate suffering; Gilbert & Choden, 2013). The systematic study of these self-transcendent emotions has important implications for understanding the functions and structure of emotion more generally.

In this article, we provide a theoretical account of the *self-transcendent emotions*, synthesizing what has been claimed and demonstrated. In doing this, we detail what is unique to these emotions and what distinguishes them from other positive emotions. Then we focus on three discrete self-transcendent emotions: compassion, gratitude, and awe. These emotions help solve three key social problems—caretaking, cooperation, and group coordination. In addition, compassion, gratitude, and awe share similarities with other prosocial emotions. Thus, when we review compassion we assume many of the generalizations should apply to sympathy, love, and pity (for a review see Goetz, Keltner, & Simon-Thomas, 2010), when we discuss gratitude it should pertain to appreciation (for a review, see McCullough, Kilpatrick, Emmons, & Larson, 2001), and when we examine what is known about awe, it should relate to elevation, inspiration, and admiration (for a review, see Keltner & Haidt, 2003). We begin with compassion and gratitude, before turning our attention to awe, which we argue deserves a place in this category. In the course of this article, we detail how these three emotions are universally experienced, reliably expressed (namely through touch; see Sauter, XXXX), and related to neurophysiological responses. We then point to untested hypotheses about these newly studied states.

Defining Self-Transcendent Emotions

The self-transcendent emotions share a number of characteristics with the broader category of positive affect. Like other positive emotions, they broaden and build one's mindset and resources (e.g., Fredrickson, 2001). Self-transcendent emotions are particularly good at building social resources given their ability to bond individuals together. They also feel pleasant (e.g., C. A. Smith & Ellsworth, 1985; see Kringsbach & Berridge, XXXX, for discussion of pleasure and positive emotions). Importantly though, some self-transcendent emotions can involve negatively valenced appraisals that give rise to more complex, mixed states. For example, while awe and compassion are categorized as positive emotions (Campos, Shiota, Keltner, Gonzaga, & Goetz, 2013; Shaver, Schwartz, Kirson, &

O'Connor, 1987), awe can be colored by appraisals of threat (Gordon, Stellar, et al., in press), and compassion can be experienced as a more negative state (e.g., Condon & Feldman Barrett, 2013). Finally, positive and self-transcendent emotions both generate approach motivations (Cacioppo, Gardner, & Berntson, 1999), though for self-transcendent emotions the object or target of this approach motivation is another person.

Critically, the self-transcendent emotions have a number of features that differentiate them from other positive emotions. The self-transcendent emotions typically arise out of other-focused appraisals, shifting attention towards the needs and concerns of others, rather than self. Compassion arises out of appraisals of others' undeserved suffering; gratitude out of others' generosity; and elevation out of others' virtue. As a result, many of the self-transcendent emotions have been deemed *other-praising* emotions (Algoe & Haidt, 2009). By contrast, other positive emotions arise out of self-relevant appraisals, for example, that the self is safe and the environment familiar (joy) or that the self has experienced a status-enhancing success (pride; Izard, 1977; Lazarus, 1991). As a result, unlike other positive emotions, which focus one's attention on the self, the self-transcendent emotions shift one's attention toward others. For instance, love may reduce self-absorption (for a review of love, see Fredrickson, 2013; Shaver, Morgan, & Wu, 1996) and awe leads to self-diminishment (Shiota, Keltner, & Mossman, 2007) and humility (Stellar et al., 2017). As a result, self-transcendent emotions are other-oriented, diminishing one's focus on the self and encouraging greater sensitivity and attunement to others.

The self-transcendent emotions are fundamentally organized by the concern to enhance the welfare of others and as a result they promote prosocial behavior. Central to these emotions is the motivation to enhance the welfare of others, through harm-reducing behavior in the case of compassion (Goetz et al., 2010), reciprocal acts of generosity in the case of gratitude (Bartlett & DeSteno, 2006), and prosocial action and collaboration in the case of awe (Piff, Dietze, Feinberg, Stancato, & Keltner, 2015). Although prosocial behavior can and does occur in the absence of these emotions, and is produced by other positive states (Isen & Levin, 1972), self-transcendent emotions are powerful proximal determinants of prosocial action (e.g., Goetz et al., 2010; McCullough et al., 2001; Piff et al., 2015).

Through prosocial tendencies, the self-transcendent emotions bind individuals to others within social collectives, whether it is one's offspring, romantic partner, or nonkin. For example, compassion is thought to be critical to care and filial attachment (Mikulincer, Shaver, Gillath, & Nitzberg, 2005), love is a determinant and protector of the long-term commitment of reproductive relations (Gonzaga, Keltner, Londahl, & Smith, 2001), gratitude is a driver of cooperative alliances among nonkin (McCullough et al., 2001), and awe is a motivator of commitment to social collectives (Keltner & Haidt, 2003). These qualities account for why self-transcendent emotions like compassion, gratitude, and awe, to which we now turn, are foundational to the complex social processes that define the human species. The ultimate function of these emotions, binding individuals together, is rooted in the assumption that humans

are designed to be social (Dunbar & Shultz, 2007; Nowak, Tarnita, & Wilson, 2010; Sober & Wilson, 1998) and that self-transcendent emotions help humans take advantage of the benefits of sociality, which could not be attained alone.

Compassion

The emotion of compassion is defined as feeling concern for another's suffering accompanied by the motivation to help and is experienced toward a variety of targets ranging from others who suffer emotionally to those in immediate danger. Compassion is part of a family of states such as pity, sympathy, and empathic concern, which vary according to secondary appraisals (Goetz et al., 2010). However, compassion is different from empathy. Empathy represents an ability to share another's feelings (affective) and understand their perspective (cognitive; Cox et al., 2012), whereas compassion represents a complimentary emotional response to another's suffering (Lazarus, 1991). In addition, empathy can refer to a multitude of shared emotional states such as joy, embarrassment, or sadness making it difficult to classify empathy as a discrete emotion (e.g., Royzman & Rozin, 2006).

Evolutionary arguments about the origins of compassion focus on how it motivates caretaking of offspring and promotes cooperation with nonkin (Goetz et al., 2010). Human infants have a long period of vulnerability, requiring immense parental investment. As a result, adaptations such as affective responses that attune parents to an offspring's distress and encourage caretaking should be selected for in order for parents to successfully pass their genes to the next generation. Empirical work has identified a strong relationship between compassion and attachment styles solidified in early childhood (Mikulincer et al., 2005), and variability in compassion responses to suffering are better explained by nurturant tendencies rooted in the desire to care for offspring than by other potential mechanisms like perceived similarity (Batson, Lishner, Cook, & Sawyer, 2005).

Although compassion likely originated to facilitate caring for infants, it extended beyond offspring and is theorized to promote cooperation between nonkin (Trivers, 1971). On this, empirical studies find that compassion towards another in need reduces perceived psychological distance (Oveis, Horberg, & Keltner, 2010) and motivates prosocial behavior central to reciprocally altruistic relationships. Inducing feelings of compassion evokes greater generosity (Saslow et al., 2013), helping (Eisenberg et al., 1989), and more costly forms of aid, such as taking painful shocks in place of another person (Batson, Duncan, Ackerman, Buckley, & Birch, 1981). Interestingly, as a motivator of costly prosocial behavior, compassion is sensitive to the tendency of the sufferer to reciprocate in the future and as such is reduced for egoistic others (Stellar, Feinberg, & Keltner, 2014). Compassion and the reciprocal relationships it engenders offer direct benefits for the individual and group (Darwin, 1871/2004).

In keeping with claims that compassion serves evolutionarily significant social functions, it follows that compassion will be universally experienced, reliably expressed, and accompanied

by specific biological changes. Consistent with this analysis, compassion has been observed in humans' closest primate relatives and ethological studies of preindustrial cultures (e.g., de Waal, 1996; Eibl-Eibesfeldt, 1989). The experience of compassion is also communicated across different cultures through patterns of touch (Hertenstein, Keltner, App, Bulleit, & Jaskolka, 2006) and vocalizations (e.g., Cordaro, Keltner, Tshering, Wangchuk, & Flynn, 2016). Finally, there is emerging evidence that compassion elicits reliable changes in the autonomic nervous system, most notably in increased activation of the vagus nerve, which may facilitate support-giving and care-taking behaviors (Stellar, Cohen, Oveis, & Keltner, 2015). Participants induced to feel compassion, compared to neutral or other positive states (e.g., pride or inspiration), exhibited reduced heart rate and greater vagal activation assessed via respiratory sinus arrhythmia. These physiological changes during compassion correlated with continuous self-reports of compassion and observers' ratings of expressed compassion. In addition, inducing compassion was associated with greater activity in the periaqueductal gray, a region of the midbrain known to promote nurturant behavior in mammals (Simon-Thomas et al., 2012).

Gratitude

Gratitude flows from the perception that one has benefited from the costly, intentional, voluntary action of another person and is part of a family of emotions that includes related states such as appreciation (McCullough et al., 2001). Gratitude is thought to solve problems related to resource sharing by coordinating responses to another's altruism and motivating patterns of reciprocity (McCullough, Kimeldorf, & Cohen, 2008). Rudimentary forms of gratitude have been observed in chimpanzees in the context of food sharing, which is targeted toward nonkin who have groomed them at an earlier time (Bonnie & de Waal, 2004; Darwin, 1871/2004). Experiences and expressions of gratitude reinforce reciprocity among nonkin, which brings benefits to the individual over time and encourages more cohesive groups (Trivers, 1971). Gratitude increases the likelihood that the benefactor will behave prosocially toward the giver in the future (McCullough et al., 2008), effects that can endure for months (Algoe, Haidt, & Gable, 2008). Compared to other positive emotions, eliciting gratitude by having a confederate help a participant led participants to behave more prosocially toward the confederate in subsequent interactions (Bartlett & DeSteno, 2006). Gratitude also increases the likelihood that the giver will behave prosocially by making them feel valued. Strong expressions of gratitude elicit greater economic giving (Rind & Bordia, 1995) and helping (Grant & Gino, 2010) in others. These effects extend to all types of relationships from strangers to romantic partners (Gordon, Impett, Kogan, Oveis, & Keltner, 2012).

Gratitude also serves the social function of *initiating* novel reciprocal relationships by motivating "upstream altruism"—future prosocial behavior toward novel others (Nowak & Roch, 2006). For instance, participants induced to feel gratitude were more likely to help a stranger than participants who felt other positive states (Bartlett & DeSteno, 2006). In addition, keeping

a gratitude journal each week increased people's feelings of connection to others and reported prosociality compared to control activities (Emmons & McCullough, 2003). These findings dovetail with earlier theoretical accounts of gratitude, suggesting that it creates more cohesive and better functioning groups (A. Smith, 1790/1976).

As with compassion, there is preliminary evidence that core processes related to gratitude demonstrate universality, although no study to date has systematically examined neurophysiological correlates of the emotion. Gratitude appears in a variety of cultures (McCullough et al., 2001) and experiences of gratitude are reliably communicated to others via specific patterns of tactile contact (Hertenstein et al., 2006) and verbal responses (e.g., "thank you"; Grant & Gino, 2010).

Awe

Awe is characterized by the perception of being in the presence of something vast that the individual does not immediately understand (Keltner & Haidt, 2003). It is often likened to feeling wonder and includes related states such as admiration, inspiration, and elevation. Although roughly one fifth of awe experiences are tinged with fear (Gordon, Stellar et al., in press), the majority of awe experiences resemble the positive states we have considered thus far. Approximately half of all awe experiences arise in response to other-focused appraisals (the actions of others related to virtuosity, magnanimity, and stature, either physical or psychological); the next largest category of elicitors is nature (Shiota et al., 2007). Recent research from other cultures such as China suggests the proportion of awe experiences elicited by others is even higher (closer to 75%) in non-Western cultures (Stellar, Bai, Anderson, McNeil, & Keltner, 2017).

Evolutionary claims about the functions of awe are predicated on the assumption that individuals attain goals (e.g., hunting large mammals) and fend off threats (e.g., warfare) more successfully in groups than alone (Dunbar & Shultz, 2007; Nowak et al., 2010; Sober & Wilson, 1998). Individuals reap the most benefits from group membership when those social groups are cohesive and stable, which requires reducing the self-interested motivations of each individual group member. Given this thinking, it has been posited that awe may have originated in response to powerful leaders, though it later generalized to objects with similarly vast or powerful properties (Keltner & Haidt, 2003). In this social context awe is believed to serve the function of prioritizing group goals and organizing individuals into hierarchies, processes that would be crucial for coordinating communal responses to threats or opportunities (Keltner & Haidt, 2003; for an overview of nonsocial functions such as generating exploration and learning, see Valdesolo, Shtulman, & Baron, XXXX).

Feeling awe towards an individual could create greater group cohesion and coordination in two ways. First, awe may increase devotion and commitment to the leader and group. Recent work supports these claims, demonstrating that awe towards an individual leads to greater loyalty, willingness to sacrifice, and positive views of the group to which the person belongs compared

to other positive states (Stellar, Bai et al., 2017). Awe promotes group coordination and cohesiveness as well by generating feelings of interconnectedness and common humanity (Shiota et al., 2007). Future work should examine how awe functions within groups and whether it is more common in prestige or dominance hierarchies (Cheng, Tracy, Foulsham, Kingstone, & Henrich, 2013).

Second, awe should also help individuals negotiate their own status vis-à-vis another by highlighting their subordinate position relative to a powerful other and evoking a reduced estimation of the importance of the self. In support of this claim, individuals feel lower status when compared to awe-inspiring others than controls (Stellar, Bai, et al., 2017) and manipulations of awe elicit self-diminishment (Shiota et al., 2007), humility (Stellar, Gordon, et al., 2017), and reduced entitlement (Piff et al., 2015). Importantly, like other self-transcendent emotions, feeling awe predicts prosocial behavior in a variety of forms, including generosity in economic games and donation of time to help others (Piff et al., 2015; Rudd, Vohs, & Aaker, 2012).

Our conceptual analysis would yield the prediction that awe is universally experienced and expressed, and that it is associated with specific patterns of neurophysiological activation. Recent work has revealed that awe is experienced in a variety of industrialized as well as preindustrialized cultures (Cordaro et al., 2016) and has universally recognized expressions in the face (Campos et al., 2013; Shiota, Campos, & Keltner, 2003) and voice (e.g., Cordaro et al., 2016; Simon-Thomas, Keltner, Sauter, Sinicropi-Yao, & Abramson, 2009). In addition, awe is associated with biological changes in the form of piloerection (goose bumps), a specific response of the sympathetic autonomic nervous system (Maruskin, Thrash, & Elliot, 2012).

As self-transcendent emotions, compassion, gratitude, and awe help individuals meet the various social problems that confront humans living in groups. Compassion compels individuals to care for those in need, strengthening social ties when they matter the most. Gratitude builds commitment in social relationships by coordinating responses to the kindness of others. Awe helps individuals fold into cohesive collectives by leading to a reduced estimation of one's individual importance. These emotions foster healthy social relationships, binding individuals together through prosociality.

Towards a Science of the Self-Transcendent Emotions

Thus far, we have differentiated the self-transcendent emotions from other positive states and have explored the crucial social functions of three self-transcendent emotions—compassion, gratitude, and awe. We have examined the considerable progress made in documenting the universality as well as expressive and physiological correlates of these emotions and the mounting evidence for the claim that these are indeed distinct emotions. With these advances as a foundation, we now turn to more speculative considerations related to the future study of the self-transcendent emotions. The claims derive from the social functionalist approach that has guided this article.

Prediction 1: *The self-transcendent emotions should be more strongly bounded by group membership than other positive states.* Self-transcendent emotions, we argue, bind individuals together through acts of prosociality, thus creating more cohesive groups. Our conceptual analysis suggests that the experience and expression of the self-transcendent emotions, more so than positive emotions (e.g., amusement), should be moderated by the in-group or out-group status of target individuals. In support of this claim, research consistently demonstrates that compassion is markedly diminished toward out-groups (Chiao & Mathur, 2010) and that compassion is a strong predictor of prosocial behavior towards in-group, but not toward out-group members (Stürmer, Snyder, & Omoto, 2005). We would likewise expect awe to be most reliably elicited by and expressed toward the actions of in-group as opposed to out-group members, suppositions awaiting empirical test.

This analysis raises an intriguing possibility warranting future investigation. If an individual were to experience one of the self-transcendent emotions toward an out-group member, it may prove more beneficial for intergroup relations than experiencing other positive emotions (e.g., Stephan & Finlay, 1999). Past work supports this claim; feeling elevation, toward an out-group increased prosocial behavior towards that out-group and reduced group-based dominance (Freeman, Aquino, & McFerran, 2009). Whether these intergroup benefits are produced by compassion, gratitude, or awe, and whether biases related to race, political ideology, or sexual orientation are reduced by these emotions, remain timely questions.

Prediction 2: *The self-transcendent emotions should produce benefits for health and well-being through improved social relationships with others.* Despite the tendency for emotions like compassion, gratitude, and awe to shift one's focus toward others and away from the self, these emotions appear to yield direct benefits to the self in the form of greater physical health and well-being. Physical benefits have been identified for a variety of self-transcendent emotions. The tendency to feel awe better predicted lower levels of proinflammatory cytokines, a negative marker of health, than six other positive emotions (Stellar, John-Henderson, et al., 2015). Experiences of compassion activate healthier autonomic functioning in the form of greater parasympathetic system activation via the vagus nerve (Stellar, Cohen, et al., 2015; Stellar & Keltner, in press). Compassion, and elevation indirectly, have been associated with the release of oxytocin, which reduces activation of the hypothalamic-pituitary-adrenal axis and is negatively associated with cortisol (Barraza & Zak, 2009; Ditzen et al., 2009; Silvers & Haidt, 2008). In addition, dispositional gratitude is a strong predictor of self-reported physical health, controlling for age and personality traits (Hill, Allemand, & Roberts, 2013).

The self-transcendent emotions have also been associated with greater subjective well-being. Inducing awe leads to boosts in life satisfaction (Rudd et al., 2012). Manipulations of gratitude through counting blessings have been associated with greater happiness and optimism in daily life (e.g., Emmons & McCullough 2003; Wood, Froh, & Geraghty, 2010) and feeling

gratitude generates motivations to self-improve (Armenta, Fritz, & Lyubomirsky, XXXX). New work suggests that compassion reduces psychological stress about one's own problems (Stellar, Jin, et al., 2017).

Although other positive emotions certainly promote better health and well-being (e.g., Fredrickson & Joiner, 2002), they likely do so, we contend, through a variety of mechanisms. For example, pride increases feelings of efficacy, whereas hope generates optimism in the face of negativity (see Cohen-Chen, Crisp, & Halperin, XXXX), both of these emotions lead to shifts in construal that likely yield health and well-being benefits. With respect to the benefits of self-transcendent emotions, we propose that these arise through a common mechanism—their capacity to strengthen one's connection with others. There is strong evidence supporting the ability of self-transcendent emotions to help individuals initiate and maintain relationships with others (e.g., Gordon et al., 2012; Oveis et al., 2010; Shiota et al., 2007). There is suggestive support for claims that gratitude leads to greater well-being through feelings of connectedness since individuals from cultures that prioritize social relationships benefit more from gratitude interventions than cultures that do not (Boehm, Lyubomirsky, & Sheldon, 2011). Future work should examine whether better social functioning consistently mediates the emerging relationship between self-transcendent emotions and mental and physical health.

Prediction 3: *The self-transcendent emotions should be more frequently strategically displayed or elicited than other positive states.* Individuals strategically express emotions to evoke specific responses from others (e.g., Sinaceur & Tiedens, 2006). Emotions like compassion, gratitude, and awe signal prosociality to others. Strategic expression of gratitude has been documented by its greater communication in public than in private (Baumeister & Ilko, 1995). Additionally, it is likely that individuals would try and strategically elicit these emotions in others to reap the benefits of the prosocial behavior they generate. As one illustration, eliciting other-oriented concern or compassion from partners by inauthentic expressions of sadness in a negotiation has been found to extract greater concessions from partners (Sinaceur, Kopelman, Vasiljevic, & Haag, 2015).

The strategic elicitation of the self-transcendent emotions raises intriguing issues about how these emotions can be used to exploit others, and whether or not individuals can reliably differentiate between authentic and inauthentic expressions of these states, issues awaiting empirical study. Preliminary evidence suggests that people can make such distinctions: for example, expressions of gratitude by a salesperson, which could be seen as strategic, elicited negative responses from buyers (Carey, Clicque, Leighton, & Milton, 1976). Since feeling self-transcendent emotions typically predicts future prosocial action, feigning their expression (e.g., faking compassion without an intention of helping) has important consequences for the potential beneficiary of that prosocial action. In addition, strategically eliciting these emotions in others (e.g., strategically stating how much one has done for another person to intentionally evoke gratitude) in order to force affiliation or extract costly prosocial behavior would also be harmful to the person from whom the

emotion is being elicited. Future work should examine whether people strategically express and elicit self-transcendent emotions more frequently than other emotional states and when this can backfire.

Conclusion

Self-transcendent emotions help individuals form enduring commitments to kin, nonkin, and social collectives. They do so by fostering connection, commitment, and attachment to others, reinforcing social bonds when they can be the most easily eroded by self-interest—when others are in need of our help, when they go out of their way to benefit us, or when they display power and status superior to our own. Thus, emotions like compassion, gratitude, and awe lie at the foundations of human sociality.

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