



All for one or one for all? Examining a parsing of emotion that is informed by lay people's values

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Abstract

A system of values define how lay people behave and view the world. Critical to this system are the contrasting values of self-enhancement and self-transcendence, which differ in the degree to which they promote the pursuit of one's own interests versus the interests of others. The present research investigated an alternative way of parsing emotion (valence x self-serving/other-serving) informed by these opposing values. In Study 1, findings from multidimensional scaling analyses supported the structural validity of self-and other-serving emotions. In Study 2, different groupings of self-and other-serving emotions were associated with interpersonally relevant traits. In Study 3, data gathered from informant report largely replicated findings regarding the importance of self-and other-serving emotions to individual difference variables. Further, self-serving and other-serving emotions were associated with self-enhancing and self-transcendent goals, respectively. In Study 4, using a daily diary design, experiencing self-serving emotions was most strongly associated with self-enhancing goals, whereas experiencing other-serving emotions was most strongly associated with self-transcendent goals.

Keywords Emotion · Emotion parsing · Interpersonal

There is broad consensus in the scientific community that emotions are functional and promote adaptation (Frijda, 1994; Levenson, 1992; Ortony et al., 1990). As dynamic processes that can change from moment to moment, emotions provide people with a constant source of information that allows them to navigate complex social interactions (Beckes & Coan, 2011; Roberts et al., 2007; Schwarz & Clore, 1983; and Tangney et al., 2007). According to a functional account of emotion, emotions are not solely consequences of actions and events, but also serve important functions that facilitate survival through a coordinated set of affective, cognitive,

and behavioral responses all working in unison (e.g., Frijda, 1994). One aspect of emotion that remains relatively understudied is lay people's beliefs about the functionality of different types of pleasurable and unpleasurable emotions, which has important implications for understanding their behavior and well-being (Chow & Berenbaum, 2016; Ford & Gross, 2019; Karnaze & Levine, 2020). The aim of the current research is to investigate the validity of a parsing of emotion that is influenced by how people perceive human nature. We examined whether emotions classified along the dimensions of valence x self-serving/other-serving, which were informed by ratings from laypeople, could be useful in understanding interpersonally relevant personality traits and goals.

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Values, human nature, and emotions

Studies suggest that there are several personal values (e.g., self-direction, power, conformity, benevolence) that are robust across cultures (Schwartz, 1994, 2012). Such values, often referred to as 'basic', can be defined as desirable, transcendent goals that guide people's lives and motivate action (Schwartz, 1994). These values are likely to be

universal because they help people navigate the requirements of human existence: ‘needs of individuals as biological organisms, requisites of coordinated social interaction, and survival and welfare needs of groups’ (Schwartz, 1992, p. 4). Basic values, therefore, act as a compass that enable humans to thrive and co-exist in society (Chase et al., 2002). One critical feature of basic values (Rokeach, 1973; Schwartz, 2012) is that some are *self*-promoting whereas others promote the welfare of *others*. A core dimension of Schwartz’s basic values system, which has been examined in more than 80 countries, captures the conflict between two opposing forces of human nature: being selfish versus being selfless. Specifically, self-enhancing values (power, achievement, hedonism) promote the pursuit of one’s own interests, whereas self-transcendent values (universalism, benevolence) promote the welfare and interests of others (Schwartz, 2012).

Values and affect are inextricably linked, such that activating one necessarily activates the other (Schwartz, 1992, 2012). One prominent functional account of emotion posits that emotions developed to allow people to shape their social environment through coordinated sets of responses (Keltner & Gross, 1999; Levenson & Gottman, 1983; Tangney & Fischer, 1995). For example, facial expressions of emotion communicate not only interpersonal information, such as desire for conflict/cooperation, but also allow for inferences of personality traits, such as levels of dominance/affiliation (Knutson, 1996). Emotions therefore play an essential role in enabling people to live in a way that is consistent with their values. Lay people’s perception of human nature as a conflict between the values of self-enhancement and self-transcendence should be reflected in their beliefs about the functionality of different types of pleasurable and unpleasurable emotions. We postulate that some emotions (e.g., pride) enable people to practice self-enhancing values by putting their own needs above the needs/welfare of others. By contrast, other emotions (e.g., guilt) enable people to practice self-transcendent values by putting the needs/welfare of others above their own.

Self-serving and other-serving emotions

It is common to describe emotions in terms of orthogonal dimensions. The two most common dimensions are (unpleasant vs. pleasant) valence and (high vs. low) arousal (Larsen & Diener, 1992; Posner et al., 2005; Russell, 2003). Emotions within two-dimensional space are often then parsed, or grouped, into categories (e.g., low arousal positive, high arousal negative). We will refer to the grouping of emotions into categories as “emotion parsing.”

In this paper, we examine an emotion parsing that differentiates emotions on the basis of the following two

dimensions: (a) positive versus negative valence¹; and (b) self-serving versus other-serving (we will refer to this particular two-dimension parsing as *self/other* parsed emotions; Chow & Berenbaum, 2012). We theorize that it is advantageous for individuals in a society to experience both self-serving and other-serving emotions. Individuals can enhance their fitness through the careful coordination of two opposing strategies. One strategy is to signal superior fitness and dominance, thereby separating themselves from the pack (i.e., self-enhancement). Another strategy is to ensure membership in a peer group, leading to resource acquisition and protection from external forces (i.e., self-transcendence). We propose that the selective pursuit of actions that enable individuals to realize the values of self-enhancement and self-transcendence is foundational to the dimension of self-serving versus other-serving emotions.

Self-serving emotions facilitate the practice of self-enhancing values. Self-serving emotions communicate superior social status (power), gratify personal desires for pleasure (hedonism), and promote personal success through demonstrating skill, effort, or courage (achievement). For example, pride for oneself is theorized to have evolved as a means of signaling status in social settings (Tracy et al., 2010). Pride is also linked to appraisals of self-worth, interpersonal dominance, and serves to garner respect from others (Tangney & Fischer, 1995; Williams & DeSteno, 2009). Studies find that pride has a distinct, nonverbal expression that includes an erect posture and a slight head tilt (Cordaro et al., 2018; Tracy & Robins, 2007). Similarly, anger directed at others protects one’s esteem by shifting blame onto others and communicating one’s strength to others (Sell et al., 2014). Anger at others is well-suited for pursuing goals associated with power and achievement.

Other-serving emotions, by contrast, facilitate the practice of self-transcendent values. Other-serving emotions promote understanding, tolerance, and the welfare of others (universalism and benevolence). These emotions place the needs of others first, signal investment in relationships, support alliances, and foster cooperation. For example, gratitude and appreciation for others are theorized to have uniquely evolved as a means of facilitating social exchanges, promoting reciprocal altruism in social contexts, and enabling prosocial appraisals and behaviors (Adler & Fagley, 2005; Algoe et al., 2008; McCullough et al., 2008).

¹ Common to almost all two-dimensional conceptualizations of emotion is the inclusion of the core dimension of positive versus negative valence, the validity of which is supported by an extensive body of research (e.g., Barrett & Russell, 1998; Larsen & Diener, 1992; Russell, 1980, 2003). Thus, alternative two-dimension emotion parsings share the dimension of valence (i.e., positive vs. negative), with differences between emotion parsings being accounted for by the dimension that is paired with the dimension of valence.

Similarly, guilt directed at oneself shifts responsibility onto one's own actions rather than blaming others. This reaction to violations of social norms leads to reparative behavior despite the personal cost (Tangney, 2002).

Relations between self/other-serving emotions, goals, and personality traits

If self/other parsed emotions reflect lay people's values, they should also be useful for understanding other aspects of human nature that are related to values. While values are guiding principles that are considered important in life, goals are the everyday objectives one strives to achieve. Goals are the *specific* events, tasks, or accomplishments people hope to achieve that are consistent with their values. In other words, people pursue goals that are consistent with their values. Studies demonstrate that emotions possess motivational properties that facilitate goal pursuit (Zeelenberg & Pieters, 2006; Zeelenberg et al., 2008), which in turn enable the practice of basic values. The types of emotions people experience are therefore likely to be influenced by the context and the type of goal they are trying to achieve. For example, when pursuing independence-promoting goals, people are likely to experience self-serving emotions related to self-enhancement. By contrast, when pursuing interdependence-promoting goals, people are likely to experience other-serving emotions related to self-transcendence.

Personality traits are strong predictors of daily behavior and affect (Leger et al., 2021; Moskowitz & Coté, 1995; Roberts & Jackson, 2008). Yet, a meta-analysis found that personality traits and values are distinct constructs (Parks-Leduc et al., 2015). We theorize that in addition to facilitating the practice of one's values, self/other parsed emotions are useful for understanding interpersonally relevant personality traits such as dominance and patience. Due to their focus on putting one's own needs above others, self-serving emotions may be particularly important to understanding self-enhancing traits such as dominance, coldheartedness, and antisociality. Due to their focus on putting the needs of others above even the needs of the self, other-serving emotions may be particularly important to understanding self-transcending traits such as patience, empathy, and sympathy.

The current studies

We conducted four studies to examine the importance of self/other parsed emotions in understanding personality traits and goals. The purpose of Study 1 was to examine: (a) the degree to which people agree with each other regarding which specific emotions are self-serving vs. other-serving; (b) whether our own hypotheses regarding the degree to which specific emotions are self-serving vs. other-serving

would be consistent with the ratings of lay people who are not emotion researchers; and (c) whether any additional emotion items could be added to preexisting lists of self/other parsed emotions based on ratings from lay people.

In Study 2, using self-report data, we examined whether self/other parsed emotions would be associated with interpersonally relevant personality traits (e.g., dominance, empathy). In terms of positive emotions, we expected that whereas self-serving emotions would be positively associated with dominance, other-serving emotions would be positively associated with warmth and prosocial traits, and negatively associated with antisociality. In terms of negative emotions, we expected self-serving emotions to be positively associated with coldheartedness, antisociality, and negatively associated with prosocial traits. In contrast, we expected other-serving negative emotions to be negatively associated with dominance and positively associated with prosocial traits.

We used informant reports in Study 3. As self-reports provide a view of personality from the inside, informant reports provide a view of personality from the outside (Vazire, 2006). In addition to examining whether we could largely replicate findings from Study 2, Study 3 also tested the hypotheses that: (a) self-serving emotions would be most strongly associated with self-enhancing goals; and (b) other-serving emotions would be most strongly associated with self-transcending goals.

The purpose of Study 4 was to examine the potential importance of self/other parsed emotions to the types of goals people pursue in everyday life. Using a daily diary study design, we tested the hypotheses that experiencing self-serving emotions would be more strongly associated with self-enhancing goals (e.g., increasing personal prestige) than experiencing other-serving emotions, whereas experiencing other-serving emotions would be more strongly associated with self-transcending goals (e.g., maintaining relationships) than experiencing self-serving emotions. The data that support the findings of these studies are available from the corresponding author (PC) upon reasonable request.

Study 1

Method

Participants

Participants were 39 undergraduate students (64% female; 26 European-American, 7 Asian-American, 4 African-American, 1 Latino-American, 1 Multiracial) between the ages of 18 and 22 years ($M = 19.4$; $SD = 1.3$) at a large, Midwestern university. Chow and Berenbaum (2012) found that the average internal consistency of self/other parsed emotions was $\alpha = 0.84$ when participants rate emotion items

on a 5-point likert scale. Because participants in the current study were simply asked to sort emotion words into 1 of 3 categories based on descriptions that were provided, we expected reliability to be quite high ($\alpha > 0.90$). Prior research has found that a sample size of 30 is sufficient for measuring reliability using Cronbach's alpha assuming the response items have strong correlations (Conroy, 2015).

Procedure and materials

Theories of emotion have identified the importance of differentiating emotions directed at oneself versus those directed at others. For example, in the emotion literature, embarrassment is widely assumed to arise from one's actions. However, the experience of vicarious embarrassment arises from observing others' public failures independent of oneself and is related to empathy for other people's pain (Krach et al., 2011). To provide a more nuanced investigation of self/other parsed emotions, we included several emotions overlooked by existing research (i.e., anger at self, contempt for self, embarrassed of others, proud of others, happy for others, ashamed of others, disgusted with self).

We compiled a list of 40 emotion words based on different emotion parsings (Table 1). We examined 12 self/other parsed emotions representing the groupings of: (a) self-serving positive (i.e., proud of self, deserving, happy for self); (b) other-serving positive (i.e., appreciative, humble, respectful); (c) self-serving negative (i.e., disgusted with others, jealous, angry at others); and (d) other-serving negative (i.e., ashamed of self, embarrassed of self, guilty). Of the emotion words we compiled, 12 were taken from studies of moral emotions (Gray & Wegner, 2011; Haidt, 2003) and 12 were taken from studies of arousal parsed emotions (Larsen & Diener, 1992) (a list of the emotion words and what literature they were taken from can be found in Table 1). We also included generic negative and positive emotions such as miserable, sad, and content.

Participants were told that they would participate in a study examining how people sort words into different categories. Each participant completed a sorting task on a computer word-processing program (Microsoft Word). For each sorting task, participants first read two descriptions of alternative ways of sorting emotions that were based on existing research (descriptions for all trials can be seen in the online supplemental materials). They were asked to sort each of the 40 emotion words listed in Table 1 into one of three categories, each with distinct headings² (e.g., for valence,

Table 1 A Priori Hypotheses Regarding the Relations between Emotion Items and Emotion Dimensions

Emotion	Dimensions			
	Valence	Arousal	Moral	Self/Other
Calm	Positive	Low	–	–
Jealous	Negative	–	–	Self
Deserving	Positive	–	–	Self
Enthusiastic	Positive	High	–	–
Miserable	Negative	–	–	–
Humble	Positive	–	–	Other
Elated	Positive	High	–	–
Fearful	Negative	High	–	–
Sad	Negative	–	–	–
Appreciative	Positive	–	Moral	Other
Bored	Negative	Low	–	–
Moved by others	Positive	–	Moral	–
Angry at others	Negative	High	Moral	Self
Angry at self	Negative	High	–	–
Content	Positive	Low	–	–
Contempt for myself	Negative	–	–	–
Contempt for others	Negative	–	Moral	–
Excited	Positive	High	–	–
Guilty	Negative	–	Moral	Other
Empathic	Positive	–	Moral	Other
Dull	Negative	Low	–	–
Respectful	Positive	–	–	Other
Sluggish	Negative	Low	–	–
In awe of others	Positive	–	Moral	–
Compassionate	Positive	–	Moral	Other
Embarrassed of myself	Negative	–	–	Other
Embarrassed of others	Negative	–	Moral	–
Nervous	Negative	High	–	–
Sympathetic	Positive	–	Moral	Other
Proud of myself	Positive	–	–	Self
Proud of others	Positive	–	–	–
Distressed	Negative	High	–	–
Relaxed	Positive	Low	–	–
Happy for myself	Positive	High	–	Self
Happy for others	Positive	High	–	–
Ashamed of myself	Negative	High	Moral	Other
Ashamed of others	Negative	High	–	–
Disgusted with myself	Negative	–	–	–
Disgusted with others	Negative	–	Moral	Self
Grateful	Positive	–	Moral	Other

the headings were “positive”, “negative”, “not clearly positive or negative”; for self/other-serving, the headings were “self-serving”, “other-serving” and “not clearly self-serving or other-serving”).

² In total, each participant completed 4 sorting tasks for the emotion dimensions of valence, arousal, moral, and self/other. Due to the scope of this paper we only present results related to the dimension of self/other. Results regarding the arousal and moral ratings, as well as additional information regarding the study instructions and analyses, can be found in the supplemental materials.

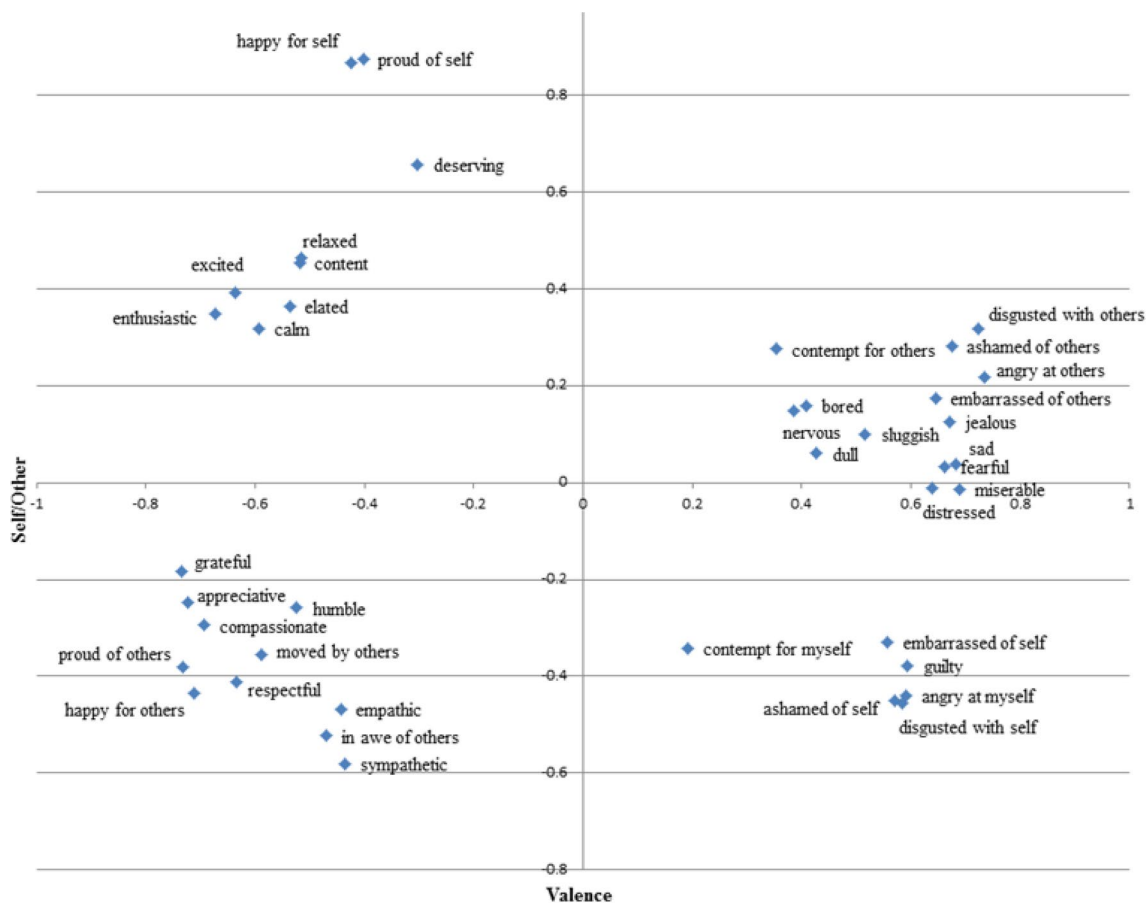


Fig. 1 Common space diagram for a two-dimension solution for valence x self/other

Results and discussion

As expected, reliability was extremely high ($\alpha = 1.0$ and $\alpha = 0.98$, for valence and self/other, respectively); there was tremendous agreement between participants regarding how to sort emotion words. We used multidimensional scaling (MDS; Davison, 1983) to examine locations of emotion items and the optimal number of dimensions that would account for the data. As predicted, for the dimension of self-serving versus other-serving, a one-dimension solution (stress < 0.01) reasonably fit the data such that scaling in two or more dimensions would likely be capturing random noise or error variance (Borg & Groenen, 1997).

For the dimension of self/other, inspection of the common space coordinates indicated that groupings of emotion items were consistent with the hypotheses in Table 1 (coordinates for all emotion items can be found in the online supplemental materials). Figure 1 depicts the two-dimension common space for self/other parsed emotions. Visual inspection of the item clusters were consistent with our hypotheses. For example, the emotions of pride in oneself, happy for oneself, and deserving (self-serving

positive) were all closely grouped together, whereas appreciative, humble, and respectful (other-serving positive) were all closely grouped together in the opposite quadrant.

We connected the data points associated with each emotion grouping (i.e., self-serving positive, other serving positive, self-serving negative, other serving negative) such that we created the smallest possible perimeter and minimized the subsequent area. We then examined whether any other data points fell within these two-dimension areas to determine whether any emotion items could be added to any of the existing emotion groupings. As can be seen in Fig. 1, “compassionate” (a25), fell within the generated two-dimension space of other-serving positive emotions, and was therefore added in Studies 2 and 3 to the list of such emotions.³

Overall, findings supported our hypotheses regarding which specific emotions are self-serving vs. other-serving. In Study 2, we sought to examine whether self/other parsed emotion groupings could be useful in examining, and

³ When using the original emotion groupings without adding any emotion items from Study 1, the pattern of findings in Studies 2 and 3 were remarkably similar.

provide incremental validity in predicting, interpersonally-relevant variables.

Study 2

Method

Participants

Participants were 183 undergraduate students (60% female; 125 European-American, 29 Asian-American, 9 African-American, 13 Latino-American, and 7 identifying as multiracial) between the ages of 18 and 22 years ($M = 19.2$; $SD = 1.0$) at a large, Midwestern university. This sample was independent from the sample in Study 1. Sample size was determined based on needing to detect a small correlation effect size ($r > 0.20$) with 80% power and $\alpha = 0.05$.

Instruments

Actual experience of emotion We developed a measure (based on the design of the PANAS; Watson et al., 1988) that assessed the actual experience of the same forty emotions from Study 1. Participants rated (1 = very slightly or not at all; 5 = extremely) the degree to which they *typically* experienced, on the average, each emotion state (e.g., fearful, proud of myself, compassionate). We computed a score for each two-dimension emotion grouping by averaging across their associated emotion items. For example, to compute the score for self-serving positive emotions, we averaged across ratings for proud of self, happy for self, and deserving. Correlations (and internal consistencies) between groupings of different emotion parsings can be seen in Table S3 in the supplementary materials. Mean scores (SD) for self-serving positive, other-serving positive, self-serving negative, and other-serving negative emotions were 3.5 (0.70), 3.8 (0.5), 1.9 (0.6), and 1.8 (0.7), respectively. Internal consistencies for self-serving positive, other-serving positive, self-serving negative, and other-serving negative emotions were $\alpha = 0.73$, $\alpha = 0.59$, $\alpha = 0.57$, and $\alpha = 0.79$, respectively.

Interpersonal trait domains We used the Interpersonal Adjective Scales (IAS; Wiggins, 1979) to assess levels of two interpersonal traits: dominance/assuredness (versus submissiveness/unassuredness) and coldheartedness/hatefulness (versus warm/agreeable). Participants rated (1 = extremely inaccurate; 8 = extremely accurate) the degree to which various adjectives (e.g., cocky, assertive) accurately described themselves. Although the IAS produces scores for a variety of subscales, we focused on the

two main dimensions of the interpersonal circumplex (Wiggins, 1979). Specifically, because dominance/assuredness ($M = 5.1$, $SD = 1.0$, $\alpha = 0.82$) and submissiveness/unassuredness ($M = 3.5$, $SD = 1.0$, $\alpha = 0.79$) are theorized to lie on opposite ends of the same dimension (in the current study, $r = -0.54$), we subtracted scores of submissiveness/unassuredness from scores for dominance/assuredness (which we will refer to as dominance). Further, because coldheartedness/hatefulness ($M = 2.6$, $SD = 1.0$, $\alpha = 0.83$) and warm/agreeable ($M = 6.0$, $SD = 1.0$, $\alpha = 0.78$) are theorized to lie on opposite ends of the same dimension (in the current study, $r = -0.68$), we subtracted scores of warm/agreeable from scores for coldheartedness/hatefulness (which we will refer to as coldheartedness).

Patience and empathy/sympathy To assess prosocial tendencies and behaviors, we administered the 10-item patience scale, 8-item empathy scale, and 10-item sympathy scale from the International Personality Item Pool (IPIP; Goldberg et al., 2006). For all three measures, participants reported the degree (1 = very uncharacteristic of me; 5 = very characteristic of me) to which they agreed with each item. Sample items for the patience scale include “rarely get angry with people” and “find that it takes a lot to make me annoyed at someone.” Sample items for the empathy scale include “make people feel welcome” and “reassure others”, whereas sample items for the sympathy scale include “value cooperation over competition” and “suffer from others’ sorrows.” Because the empathy and sympathy scales are highly overlapping and were strongly correlated ($r = 0.59$), we combined these scales into a single measure. Internal consistencies for the patience ($M = 3.5$, $SD = 0.8$) and empathy/sympathy ($M = 3.8$, $SD = 0.5$) scales were 0.88 and 0.85, respectively.

Antisocial To assess antisocial tendencies and behaviors, we administered a shortened 19-item measure of the antisocial personality disorder subscale of the Schedule for Nonadaptive and Adaptive Personality 2 (SNAP; Clark et al., 2011). The SNAP is a self-report measure used extensively in research and developed to assess personality trait dimensions that comprise personality disorders. Participants responded to items of the scale, which include antisocial beliefs and behaviors (e.g., *Lying comes easily to me; I see no objection to stepping on other people’s toes a little if it helps me out*), on a 0 (False) or 1 (True) scale ($M = 6.0$, $SD = 2.8$). Internal consistency for this scale was 0.61. We deleted items from the original scale related to incarceration (due to low base rates among undergraduate populations) and past childhood functioning.

Table 2 Zero-order correlations between positive (left side) and negative (right side) emotion groupings and individual difference variables in Study 2 (top half) and Study 3 (bottom half)

	SSPos	OSPos	SSNeg	OSNeg
Dominance	.38**	.10	.03	– .34**
Coldheartedness	– .10	– .49**	.22**	.13
Patience	.21**	.32**	– .42**	– .29**
Empathy/Sympathy	.09	.54**	– .13	0
Antisocial	– .11	– .38**	.28**	.10
Dominance	.39**	.30*	.27*	– .15
Coldheartedness	– .07	– .27*	.20	– .01
Empathy/Sympathy	.19	.36**	.01	.09

SS Pos self-serving positive emotions; OS Pos other-serving positive emotions; SS Neg self-serving negative emotions; OS Neg other-serving negative emotions

* $p < .05$, ** $p < .01$

Results and discussion

Associations between self/other parsed emotions and interpersonal traits

As seen in Table 2, for self/other parsed emotions, the pattern of associations between positive emotion groupings and individual difference variables largely supported our hypotheses. As predicted, self-serving positive emotions were significantly positively associated with dominance. This is not surprising given that dominance is linked to self-promotion and assertiveness. For example, highly dominant people may report experiencing higher levels of self-serving positive emotions (e.g., pride in self) due to the potential usefulness of those emotions in achieving dominance-related goals (e.g., controlling others). In contrast, whereas other-serving positive emotions were significantly negatively associated with coldheartedness and antisociality, those same emotions were significantly positively associated with patience and empathy/sympathy. This suggests that other-serving positive emotions are related to traits that promote interpersonal functioning rather than self-promotion. For example, highly warm and prosocial people may report experiencing higher levels of other-serving positive emotions (e.g., humility) due to the potential usefulness of these emotions in achieving prosocial goals (e.g., building and fostering relationships).

As expected, self-serving negative emotions were positively associated with coldheartedness and antisociality, and negatively associated with patience and empathy/sympathy. For example, highly coldhearted and antisocial people may report experiencing higher levels of self-serving negative emotions (e.g., anger at others, jealousy) due to the potential usefulness of those emotions in achieving self-serving goals (e.g., hurting or blaming others). As expected,

other-serving negative emotions were associated with lower levels of dominance. Contrary to our expectations, those same emotions were significantly negatively associated with patience.⁴

Researchers have emphasized the importance of informant reports as a way of complementing self-reports (e.g., Vazire, 2006). In addition to replicating findings from Study 2 using informant data, Study 3 examined the potential associations of self/other parsed emotions with various self-enhancing and self-transcending goals.

Study 3

Method

Participants

Participants were 150 undergraduate students (68% female; 53% White/Non-Hispanic, followed by 33% Asian or Asian American, 6% Black or African American, 1% American Indian or Alaska Native, and 7% describing themselves as multiracial or “other”) between the ages of 18 and 32 years ($M = 19.8$; $SD = 1.7$), and 125 informants between the ages of 18 and 66 years ($M = 33.8$; $SD = 14.6$; 57% female; 66% White/Non-Hispanic, followed by 20% Asian or Asian American, 6% Black or African American, 2% American Indian or Alaska Native, and 6% describing themselves as multiracial or “other”) recruited by the undergraduate students. These samples were independent of those in Studies 1 and 2. Sample size was determined based on needing to detect a small-to-moderate correlation effect size with 80% power and $\alpha = 0.05$. A sample size of 123 is needed to detect an effect size of $r > 0.25$ for the informant ratings. Participant sample size for the ANOVA was based on needing to detect at least a moderate effect size with 80% power. Informants who provided ratings of undergraduate participants were eligible to win a modest cash prize.

Procedure and instruments

All questionnaires were completed online. Undergraduate participants were asked to invite up to 4 family members or friends to take an online survey, in which family members/friends would answer questions regarding the undergraduate participant who invited them. Invitations were sent via undergraduate participants’ personal email accounts and contained a link to a separate online questionnaire. Of the

⁴ The associations between emotion groupings from all other emotion parsings and interpersonally relevant traits can be found in the Supplemental Material.

150 undergraduate students who participated in the study, about half (71 out of 150) received at least 1 informant rating ($M = 1.7$, $SD = 0.9$).

Actual experience of emotion Undergraduate participants completed the same measure of affect described in Study 2. Mean scores (SD) for self-serving positive, other-serving positive, self-serving negative, and other-serving negative emotions were 3.6 (0.8), 3.9 (0.7), 2.2 (0.7), and 2.0 (0.8), respectively. Internal consistencies for self-serving positive, other-serving positive, self-serving negative, and other-serving negative emotions were $\alpha = 0.80$, $\alpha = 0.77$, $\alpha = 0.53$, and $\alpha = 0.78$, respectively.

Life goals Undergraduate participants were presented with 8 different goals commonly encountered in daily life. Four of the contexts were self-enhancing (competing with others for an award or promotion; taking credit for something you accomplished; telling someone off after they insult you; seeing someone flirt with your boyfriend or girlfriend) and four were self-transcendent (maintaining a healthy relationship with a spouse or partner; making up for a mistake you made that impacted someone else; patching things up with a friend after an argument; acknowledging the contributions of others). For each context, participants were asked to “rate (1 = very slightly or not at all; 5 = extremely) the degree to which experiencing different emotions (e.g., pride, anger) may be relevant to you, rather than others, in that particular situation.” For each goal, participants responded to the same emotion items that were included in the measure of actual experience of emotion. Because we were interested in increasing external validity, an additional item added to each context (how relevant do you think this scenario is, or will be, to your life?), rated on a scale from 1 (very slightly or not at all) to 5 (extremely), revealed that participants viewed these goals as being quite applicable to their lives ($M = 3.7$; $SD = 0.6$). To examine the association of emotion groupings (e.g., self-serving positive) with self-enhancing and self-transcendent goals, respectively, for each emotion grouping we averaged scores across: (a) each of the four self-enhancing goals; and (b) each of the four self-transcendent goals, described above. For self-enhancing goals, internal consistencies for self-serving positive, other-serving positive, self-serving negative, and other-serving negative emotions were $\alpha = 0.78$, $\alpha = 0.75$, $\alpha = 0.73$, and $\alpha = 0.82$, respectively. For self-transcendent goals, internal consistencies for self-serving positive, other-serving positive, self-serving negative, and other-serving negative emotions were $\alpha = 0.80$, $\alpha = 0.78$, $\alpha = 0.87$, and $\alpha = 0.80$, respectively.

Informant ratings Family members/friends of undergraduate participants completed measures of dominance, coldheartedness, and empathy/sympathy. To encourage partici-

pation, we used brief measures of each variable consisting of a few items each. Items were chosen based on analyses from Study 2. For each measure, we chose items that contributed most to the overall reliability and which were most strongly correlated with the full measure. Individuals were asked to rate (1 = disagree strongly; 7 = agree strongly) the degree to which each item described the undergraduate participant who invited them to the study and were told that their responses would be kept confidential. The dominance scale ($M = 4.6$, $SD = 1.3$, $\alpha = 0.87$) was composed of *dominant*, *assertive*, and *firm*. The coldheartedness scale ($M = 2.3$, $SD = 1.2$, $\alpha = 0.77$) was composed of *hardhearted*, *coldhearted*, and *unsympathetic*. The empathy/sympathy scale ($M = 5.7$, $SD = 1.0$, $\alpha = 0.84$) was composed of *concerned about others*, *reassures others*, and *makes others feel good*. Ratings across different informants were averaged for each participant in order to maximize reliability (Vazire, 2006).

Results and discussion

Associations between self/other emotions and informant ratings of interpersonal traits

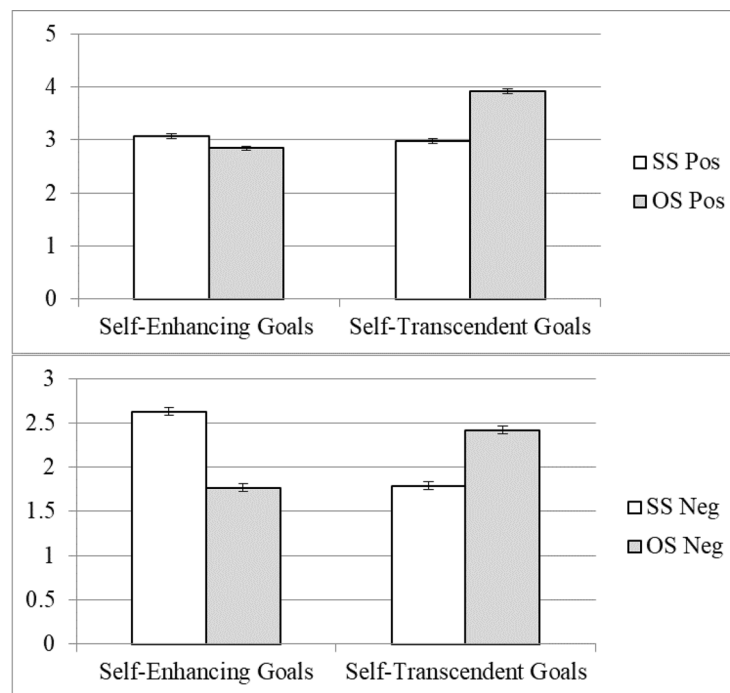
To begin, we computed zero-order correlations to examine whether we could replicate our findings from Study 2. As seen in Table 2 (bottom), the pattern of associations between positive emotion groupings and individual difference variables was quite similar to that found in Study 2. As expected, self-serving positive emotions were significantly positively associated with dominance. Further, other-serving positive emotions were significantly negatively associated with coldheartedness and significantly positively associated with empathy/sympathy.

The pattern of associations between negative emotion groupings and individual difference variables was similar to those found in Study 2 but with some differences. Though not found in Study 2, self-serving negative emotions were significantly positively associated with dominance. Further, although the negative association between other-serving negative emotions and coldheartedness was moderate in size, the association was not significant, as found in Study 2. Overall, our results using informant ratings of individual difference variables were similar to those using self-report ratings in Study 2.

Association of emotion parsings with life contexts

We then examined whether the association of different self/other parsed emotion groupings varied as a function of context. We tested our hypotheses that: (a) self-serving emotions would be among the most strongly associated with self-enhancing goals; and (b) other-serving emotions

Fig. 2 Importance of positive (top) and negative (bottom) emotion groupings to self-enhancing versus self-transcendent goals. *SS Pos* self-serving positive emotions; *OS Pos* other-serving positive emotions; *SS Neg* self-serving negative emotions; *OS Neg* other-serving negative emotions



Note. SS Pos = self-serving positive emotions; OS Pos = other-serving positive emotions; SS Neg = self-serving negative emotions; OS Neg = other-serving negative emotions.

would be among the most strongly associated with self-transcendent goals. For positive emotions, we computed a 2 (within-subject emotion: self-serving positive vs. other-serving positive) × 2 (within-subject context: self-enhancing goals vs. self-transcendent goals) ANOVA, with emotion rating as the outcome variable. For negative emotions, we computed a 2 (within-subject emotion: self-serving negative vs. other-serving negative) × 2 (within-subject context: self-enhancing goals vs. self-transcendent goals) ANOVA, with emotion rating as the outcome variable. As expected, there was a significant emotion × context interaction for both positive emotion groupings ($F(1, 149) = 370.59, p < 0.01, \eta = 0.71$) and negative emotion groupings ($F(1, 149) = 548.15, p < 0.01, \eta = 0.79$). As seen in Fig. 2, in terms of positive emotions, whereas self-serving positive emotions were more strongly associated with self-enhancing goals, other-serving positive emotions were more strongly associated with self-transcendent goals. In terms of negative emotions, whereas self-serving negative emotions were more strongly associated with self-enhancing goals, other-serving negative emotions were more strongly associated with self-transcendent goals.

To further test our hypotheses we computed four separate, one-way ANOVAs using the following groups of within participants variables: (a) self-serving positive and other-serving positive for self-enhancing goals; (b) self-serving positive and other-serving positive for self-transcendent goals; (c) self-serving negative and other-serving negative

for self-enhancing goals; and (d) self-serving negative and other-serving negative for self-transcendent goals. As expected, for positive emotions, there was a significant effect of emotion groupings for both self-enhancing ($F(1, 149) = 29.33, p < 0.01, \eta = 0.16$) and for self-transcendent goals ($F(1, 149) = 294.26, p < 0.01, \eta = 0.66$), such that endorsement of self-serving positive emotions was significantly higher than other-serving positive emotions and endorsement of other-serving positive emotions was significantly higher than self-serving positive emotions. Similarly, for negative emotions, there was a significant effect of emotion groupings for both self-enhancing ($F(1, 149) = 256.34, p < 0.01, \eta = 0.63$) and self-transcendent goals ($F(1, 149) = 203.18, p < 0.01, \eta = 0.58$), such that endorsement of self-serving negative emotions was significantly higher than other-serving negative emotions and endorsement of other-serving negative emotions was significantly higher than self-serving negative emotions.

In Studies 2 and 3, we found that self/other parsed emotions: (a) can be useful in examining interpersonally relevant individual difference variables⁵; and (b) are associated with self-enhancing- versus self-transcendent goals. In Study 4,

⁵ Additional findings of self/other parsed emotions providing incremental validity in predicting interpersonally relevant individual difference variables and goals can be found in the Supplemental Materials.

using a daily diary design, we sought to examine whether experiences of self/other parsed emotions would be associated with the self-enhancing versus self-transcendent goals people actually reported pursuing in their everyday lives.

Study 4

Method

Participants

Participants were 124 undergraduate students (64% female; 60% European-American, 24% Asian-American, 4% African-American, 9% Latino-American, and 3% Multiracial) between the ages of 18 and 22 years ($M = 19$; $SD = 1.1$). This sample⁶ was independent from the samples in Studies 1–3. Power analyses for multilevel modeling was conducted using a simulation-based power analysis app for R (Lafit et al., 2021; “Model 3: Effect of a level-1 continuous predictor (random slope)” option of app). Sample size was determined based on estimates of detecting a small to moderate effect size with at least 80% power and $\alpha = 0.05$.

Procedure

Participants were told that the study focused on the relations between emotions and daily experiences. Similar to other studies that have used a similar design, participants were asked to respond to a series of online questions, every day for six days. Participants received emails every evening at 7 pm, which contained a link to the online questionnaires. They were presented with the same questions every day and were given twelve hours to complete each online questionnaire.

To begin, participants were asked to “think about a time today when you were trying to accomplish a goal (e.g., stick to my diet, do well on my psychology exam, have a good time with my friends, make others feel welcome).” They were then asked to rate (0 = not at all; 5 = extremely) the degree to which the goal they came up with was represented by each of four domains based on research on values by Schwartz and colleagues (e.g., Bardi & Schwartz, 2001; Schwartz, 1994). The domains assessed were: (a) *gaining personal prestige, increasing personal competence, or being independent* ($M = 3.4$, $SD = 1.4$); (b) *gratifying your own physical needs, or being mentally/emotionally stimulated* ($M = 3.4$, $SD = 1.4$); (c) *understanding and assisting in*

the welfare of others/society, or maintaining harmonious relationships ($M = 2.3$, $SD = 1.7$); and (d) *following cultural, societal, or religious values, or controlling your personal desires/impulses* ($M = 2.4$, $SD = 1.7$). Although previous research has identified ten separate yet overlapping value domains, in the present research we combined related values to form the domains listed above. Between-person reliability across days for each domain listed above was good (0.68, 0.70, 0.81, and 0.83, respectively). The intraclass correlation coefficients (ICCs), which represent the percentage of variance that is at the between-person level, were 0.27, 0.30, 0.43, and 0.46, respectively. Participants also rated (0 = not at all; 5 = extremely) the degree to which they experienced eight different emotions in trying to accomplish their goals. We examined two self-serving positive emotions (pride for self, deserving), two other-serving positive emotions (appreciation, humility), two self-serving negative emotions (anger at others, disgust with others), and two other-serving negative emotions (shame, guilt). Between-person reliability across days for each emotion listed above was good (0.77, 0.85, 0.78, 0.87, 0.78, 0.79, 0.71, and 0.78, respectively).

Results and discussion

Out of a possible 744 daily diary entries, 694 (93%) were completed. The average number of logs completed by participants was 5.6 out of 6. We tested our hypotheses that: (a) for self-enhancing goals, the experience of self-serving emotions would be greater than the experience of other-serving emotions; and (b) for self-transcendent goals, the experience of other-serving emotions would be greater than the experience of self-serving emotions. We conducted multilevel modeling using the MIXED procedure of the SAS 9.3 software. We constructed two-level multilevel models—with level 1 as the within-person level and level 2 as the between-person level—for each emotion (e.g., pride in self and goal types). Each model was conducted with a random statement that included both random intercepts and random slopes. Based on the work of Enders & Tofighi (2007), each emotion variable was person-centered (i.e., each daily score was subtracted by the participant’s weekly mean) to focus on within-subject variance.⁷ A generic version of these models can be seen below:

Level 1:

$$\text{Goal Type}_{ij} = \beta_{0j} + \beta_{1j}(\text{Experience of Emotion})_{ij} + r_{ij}$$

Level 2:

⁶ Some findings from data collected from this sample are reported in Chow, Berenbaum, & Flores, 2014. However, we present novel findings that have not been reported elsewhere. In addition to actual affect, the study measured the degree to which different emotions would have been useful to them in accomplishing their goals, findings of which are reported in Chow et al., 2014.

⁷ A table of findings that reports the association between self/other emotion parsing groupings and daily goals can be seen in the supplemental material. The pattern of results is remarkably similar.

Table 3 Unstandardized coefficients of experience of self/other parsed emotions predicting goals

	Independence/ Personal Prestige	Gratifying Needs/ Being Stimulated	Assisting Others/ Maintaining Relationships	Following Cultural Values/ Inhibiting Desires
<i>Self-Serving Positive Emotions</i>				
Pride in self	.21**	.07	.15**	– .01
Deserving	.11*	.07	.04	.001
<i>Other-Serving Positive Emotions</i>				
Appreciation	– .03	.04	.25**	.08
Humility	– .02	– .08	.20**	.10
<i>Self-Serving Negative Emotions</i>				
Anger	– .02	.01	.01	– .06
Disgust	– .07	– .04	.08	.01
<i>Other-Serving Negative Emotions</i>				
Guilt	.03	.03	–.10	.12*
Shame	.02	.002	–.13*	.05

* $p < .05$. ** $p < .01$

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + u_{1j}$$

As seen in Table 3, the pattern of results largely supported our hypotheses. On days when participants experienced more self-serving positive emotions (i.e., pride in self, deserving) than their own average, they reported having significantly more self-enhancing goals of establishing independence/gaining personal prestige (pride in self: $t(119) = 4.36, p < 0.01, \beta = 0.21, 95\% \text{ CI}[0.11, 0.31]$; deserving: $t(115) = 2.16, p < 0.05, \beta = 0.11, 95\% \text{ CI}[0.01, 0.22]$). Consistent with expectations, experiencing more other-serving positive emotions and other-serving negative emotions than one’s own average was not significantly associated with this goal type. In contrast, when participants were above their own average in experiencing of other-serving positive emotions (i.e., appreciation, humility), they were significantly higher in having self-transcendent goals of assisting others/maintaining relationships (appreciation: $t(117) = 4.71, p < 0.01, \beta = 0.25, 95\% \text{ CI}[0.15, 0.36]$; humility: $t(105) = 3.34, p < 0.01, \beta = 0.20, 95\% \text{ CI}[0.08, 0.32]$). On days when participants experienced having more shame (i.e., an other-serving negative emotion) than their own average, they reported having less of this self-transcendent goal type ($t(102) = -2.29, p < 0.01, \beta = -0.13, 95\% \text{ CI}[-0.23, -0.02]$). In addition, on days when participants experienced more guilt (i.e., an other-serving negative emotion), they reported having more self-transcendent goals of following cultural values/inhibiting desires ($t(100) = 2.21, p < 0.01, \beta = 0.12, 95\% \text{ CI}[0.01, 0.23]$). Consistent with expectations, experiencing greater daily self-serving emotions than one’s own average

was not significantly associated with either of those self-transcending goals. Surprisingly, on days when participants reported experiencing more pride in self (i.e., a self-serving emotion), they reported having more self-transcendent goals of assisting others/maintaining relationships ($t(119) = 2.82, p < 0.01, \beta = 0.15, 95\% \text{ CI}[0.05, 0.26]$). Also surprising was that no emotions were significantly associated with the self-enhancing goal type of gratifying needs/being stimulated.

Using a naturalistic, “daily diary” study design, we were able to examine the association between organically derived goals and experience of individual types of self/other parsed emotions, which allows us to be more confident in the ecological validity of our findings. Overall, consistent with expectations, our findings indicated that experienced self/other parsed emotions were quite relevant to the types of goals people reported pursuing. Combined with findings from cross-sectional data in Studies 2 and 3, the findings from the present study support our theory that self/other parsed emotions play an important role in interpersonal functioning.

General discussion

Across four studies, we found support for a parsing of emotion that reflects the contrasting values of self-enhancement and self-transcendence. Numerous studies demonstrate that laypeople are motivated to experience various emotions for their utilitarian properties—specifically, laypeople’s beliefs about emotions, which includes whether an emotion is useful, will lead them to regulate their emotions to pursue goals that are important to them (Tamir, Vishkin, & Gutentag, 2020). Our findings

indicate that laypeople's beliefs about the self-and other-serving properties of emotions, which is informed by the conflict between the values of self-enhancement and self-transcendence, may be an important determinant of their daily emotional experiences. Further, a growing amount of research indicates that personality traits play a key role in individual differences in emotion regulation (Hughes et al., 2020). Much of this work has focused on the relationship between the Big Five model of personality traits and the experience of positive and negative affect. Our findings add nuance to this work and suggest that those high in self-enhancing traits may be particularly motivated to experience self-serving emotions, whereas those high in self-transcending traits may be motivated to experience other-serving emotions.

Though we are cautious to avoid overinterpreting our findings, there may be downstream implications of the current work. Our previous research found that depression is negatively associated with the perceived utility of other-serving positive emotions because these emotions provide individuals with greater resiliency when receiving critical feedback (Chow & Berenbaum, and Flores, 2015). Thus, it may be that teaching laypeople the value of experiencing other-serving emotions may inoculate them from the pitfalls in life that come from their poor handling of constructive criticism. Further, in light of studies showing that personality traits change across the lifespan (e.g., Roberts, Walton, & Viechtbauer, 2006), it may be that laypeople's beliefs about the usefulness of self- and other-serving emotions changes over time to fit their current needs and goals. As researchers become increasingly interested in exploring how to change laypeople's personality traits through intervention (Stieger et al., 2021), over time we may uncover how to change laypeople's emotion regulation preferences through personality trait change.

One avenue for future research is to examine the temporal aspect of how self/other parsed emotions facilitate survival. Whereas some emotions lead people to sacrifice short-term costs for long-term gains (e.g., gratitude; DeSteno, 2009), other emotions might lead people to seek to maximize short-term gains at the expense of long-term gains (e.g., anger at others). We theorize that, with some exceptions, self-serving emotions maximize short-term gains in that they provide immediate advantages to an agent by putting the needs of the self ahead of others. By contrast, other-serving emotions maximize long-term gains in that they delay gains by putting the needs of others first. However, some self-serving emotions, such as pride, provide long-term benefits, such as gaining respect from informants (Williams & DeSteno, 2009). Conversely, it is possible that some other-serving emotions, such as humility, provide short-term benefits such as drawing interest from strangers who may want to get to know us better.

In addition to those already mentioned, we have several suggestions for future research. Although our sample in Study 1 was relatively small, it should be noted that: (a) the ratings across raters were remarkably reliable (all $\alpha \geq 0.96$); and (b) our sample is similar in size to other studies that have utilized MDS analyses. Future research may wish to withhold descriptions of emotion dimensions, thereby leading participants to freely express their own emotion conceptualization. There is also a need to replicate our findings in non-college student samples and among more diverse geographical and cultural contexts. Our findings regarding positive self/other parsed emotions were generally more pronounced and consistent with our a priori hypotheses than for negative self/other parsed emotions. We encourage future research to continue examining the relationship between negatively valenced emotions and individual difference variables. Further, because participants in Study 3 recruited informants/observers themselves (which may have led to some bias and discrepancies in findings between Studies 2 and 3), we encourage future research to examine the impact of recruitment on informant ratings. In Study 4, contrary to expectations, experience of other-serving negative emotions was not significantly associated with goals related to self-transcendence. It is possible that experiencing other-serving negative emotions was not compatible with the goals participants recalled, and/or that individuals were somewhat resistant to endorsing the experience of those emotions, which are unpleasant and typically high in intensity (e.g., feeling ashamed of oneself). More broadly, it is also possible that in some instances, experiencing other-serving emotions helps people pursue self-enhancing goals, as putting others' needs before one's own can elevate one's status in a group. Finally, in this paper we tried to contribute to the emotion literature by specifying whether an emotion is experienced in relation to oneself (e.g., anger at self) or in relation to others (e.g., anger at others). Lay people may interpret some of these emotions (e.g., anger at others) as being caused by others, whereas other emotions (e.g., happy for others) could be interpreted as being shared with another person. Future work may wish to further differentiate those emotions that are caused by others and those that are shared with others, a factor that is likely to influence how lay people report on their emotional experiences.

The present research suggests that it may be particularly important to consider how values are understood by laypeople as a lens through which to understand emotion. Our approach focused on two broad values, self-enhancement and self-transcendence, that are considered opposites of one another. But there are other values, and other dimensions of values, such as the dimension ranging from openness-to-change to conservation. These other values

and value dimensions may well map onto other emotion dimensions. For example, it seems likely that openness-to-change will be associated with emotions such as curiosity, whereas conservation may be associated with emotions such as disgust and contempt (Rozin et al., 1999). Thus, while the present research provides compelling evidence for the utility of considering self-enhancement and self-transcendence for a parsing of emotion based on whether the emotions are self-serving vs. other-serving, we anticipate other sets of values and value dimensions provide clues to other ways of parsing emotions to advance scientific inquiry.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s11031-022-10002-1>.

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