Compassion, Pride, and Social Intuitions of Self-Other Similarity

Christopher Oveis
Harvard University

E. J. Horberg and Dacher Keltner
University of California, Berkeley

Compassion and pride serve contrasting social functions: Compassion motivates care-taking behavior, whereas pride enables the signaling and negotiation of rank within social hierarchies. Across 3 studies, compassion was associated with increased perceived self-other similarity, particularly to weak or vulnerable others. In contrast, pride was associated with an enhanced sense of similarity to strong others, and a decreased sense of similarity to weak others. These findings were obtained using trait measures (Study 1) and experimental inductions (Studies 2 and 3) of compassion and pride, examining the sense of similarity to strong or weak groups (Studies 1 and 2) and unfamiliar individuals (Study 3). The influences of compassion and pride on perceived self-other similarity could not be accounted for by positive mood, nor was this effect constrained by the ingroup status of the target group or individual. Discussion focuses on the contributions these findings make to an understanding of compassion and pride.

Keywords: appraisal tendency, social judgment, positive emotion, social cognition

Compassion and pride play contrasting roles within human societies. Compassion promotes attention to the needs of weak or suffering others, often motivating actions costly to the self for the benefit of others. Pride, in contrast, helps establish and maintain social hierarchies, allowing certain individuals to signal positions of strength. In the present research, we examined the social cognitive mechanisms of compassion and pride by assessing their influences on judgments of self-other similarity.

An Appraisal Tendency Framework for the Study of Emotion and Social Cognition

The present studies were guided by an *appraisal tendency framework* for the influences of specific emotions on social cognition (Han, Lerner, & Keltner, 2007; Keltner, Horberg, & Oveis, 2006; Lerner & Keltner, 2000, 2001; Lerner & Tiedens, 2006; Tiedens & Linton, 2001). Drawing on advances in the study of emotion-related appraisal (Ellsworth & Scherer, 2003), this approach assumes that each emotion is defined by a core appraisal tendency that emerges in emotion-related appraisal processes, and in part defines the experience of the emotion (Lazarus, 1991; C. A.

Smith & Ellsworth, 1985). Fear, for example, is characterized by appraisals of low certainty and low control.

Specific emotions, an appraisal tendency perspective further presupposes, influence judgments in a manner consistent with each emotion's underlying appraisal tendency. An emotion's core appraisal tendency makes particular events and themes salient within the environment. Sadness, for example, is defined by the appraisal tendency that situational factors are controlling current events, and leads individuals to attribute situational causes to ambiguous events and to estimate situationally produced events as more likely (Keltner, Ellsworth, & Edwards, 1993). In this same research, anger, defined by the appraisal tendency that others are responsible for an event, leads individuals to attribute events to the actions of others and to estimate actions produced by others as more likely.

Finally, specific emotions should only influence domains of judgment that are associated with the emotion-specific appraisal tendency. For example, fear influences judgments of certainty and risk but should not shift judgments of blame or fairness, which are domains more closely related to anger (see Lerner & Keltner, 2000, 2001).

Studies guided by an appraisal tendency framework compare the effects of emotions that differ maximally on an appraisal tendency of interest, and in judgment domains that relate thematically to the underlying appraisal tendency (Han et al., 2007; Lerner & Keltner, 2000). This approach has helped illuminate how different negative and positive emotions influence causal attribution (Keltner et al., 1993), risk perception (Lerner & Keltner, 2001), assessments of losses and gains (Lerner, Small, & Loewenstein, 2004), judgments of effort (Tiedens & Linton, 2001), and judgments of purity (Horberg, Oveis, Keltner, & Cohen, 2009).

Compassion and Care-Taking

Compassion involves the concern for those who suffer or are vulnerable and the motivation to enhance the welfare of others (Eisenberg, 2002; Lazarus, 1991; Nussbaum, 1996; Post, 2002; for

distinctions between compassion, sympathy, empathy, and pity, see Batson & Shaw, 1991; Eisenberg, 1991; Goetz, Keltner, & Simon-Thomas, in press; Haidt, 2003; Wispé, 1986). Compassion likely emerged evolutionarily as part of a care-taking system oriented toward those who are in need (Hrdy, 1999; Keltner & Haidt, 2001; Mikulincer & Shaver, 2005) and was further selected as an important criterion in romantic attraction (Miller, 2000) and friendships (Nesse, 2007). These evolutionary claims have been supported empirically: Decisions to offer help favor the vulnerable, for example, young children and the elderly, sick over healthy, and poor over wealthy (Burnstein, Crandall, & Kitayama, 1994).

Recent empirical studies have demonstrated that compassion is a care-taking emotion. Beginning early in development, the most potent elicitors of compassion are visual and auditory cues of suffering (Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). Compassion can be readily conveyed through soothing tactile contact, which reduces stress-related autonomic response and amygdala activity in the recipient (Coan, Schaefer, & Davidson, 2006; Hertenstein, Keltner, App, Bulleit, & Jaskolka, 2006; Wilhelm, Kochar, Roth, & Gross, 2001). Recent neuroimaging studies suggest that the ventromedial prefrontal cortex, a region involved in perspective taking, is activated during compassion but not during other prosocial states like love (de Vignemont & Singer, 2006; Lotze, Veit, Anders, & Birbaumer, 2007). And critically, Daniel Batson, Nancy Eisenberg, and their colleagues have established that feelings produced by exposure to another's harm and captured with terms such as *empathy*, *sympathy*, and *concern* increase the likelihood of behavior that reduces the suffering of others (e.g., Batson, Duncan, Ackerman, Buckley, & Birch, 1981; Batson et al., 1997; Batson & Shaw, 1991; Eisenberg et al., 1989). With the present studies, we advance this emergent literature by examining the social cognitive consequences of compassion. Little is known about how compassion influences social judgments, the one exception being studies demonstrating a link between sympathy and reduced severity of punitive judgments (Rudolph, Roesch, Greitemeyer, & Weiner, 2004; Weiner, 1993). The present studies show that the experience of compassion enhances perceived self-other similarity, in particular to those who are vulnerable and weak, a social intuition that is related to the provision of care (Batson, Lishner, Cook, & Sawyer, 2005; Dovidio, Piliavin, Schroeder, & Penner, 2006; Loewenstein & Small, 2007; Penner, Dovidio, Piliavin, & Schroeder, 2005; Piliavin & Charng, 1990).

Pride and Rank

From as early as 2 years of life, humans behave according to social hierarchies, which serve as heuristic solutions to the allocation of resources and division of labor (Keltner, Van Kleef, Chen, & Kraus, 2008). Self-conscious emotions track appraisals of the individual's social rank (Gilbert & Andrews, 1998; Tiedens, 2000; Tiedens, Ellsworth, & Mesquita, 2000). Embarrassment and shame signal submissiveness and the momentary loss of rank (Keltner & Buswell, 1997). Pride covaries with gains in status and rank relative to others (Shariff & Tracy, 2009; Tracy & Robins, 2004a, 2004b). In this sense, the experience and display of pride enable the relatively conflict-free negotiation of group-based roles and positions within hierarchies.

Several appraisal theories have outlined the specific success-related, self-focused appraisals that give rise to experiences of pride (e.g., Ellsworth & Smith, 1988; Lazarus, 1991; Lewis, 2000; Smith & Ellsworth, 1985; Tracy & Robins, 2004a, 2007c; Weiner, 1985, 1986). Pride arises as the result of favorable comparisons of the self to others, or socially valued standards, which implicate rises in social status (Lazarus, 1991; Mascolo & Fischer, 1995; Stipek, 1995, 1998; Tracy & Robins, 2004a, 2004b).

Consistent with the notion that pride is a rank-related emotion, the experience of pride covaries with increased access to resources (Shiota, Keltner, & John, 2006) and advances in the social hierarchy (Tracy & Robins, 2004b; Williams & DeSteno, 2009). People's narrative accounts reveal pride to be a "socially disengaged" emotion, linked to construals of increased distance between self and other (Kitayama, Markus, & Kurokawa, 2000; Kitayama, Markus, & Matsumoto, 1995; Kitayama, Mesquita, & Karasawa, 2006). The prototypical pride display involves postural expansion and a backwards head tilt (Tracy & Matsumoto, 2008; Tracy & Robins, 2004b, 2007a; Tracy, Robins, & Schriber, 2009), similar to mammalian displays of dominance. Pride, therefore, can be thought of as a rank-elevating emotion centering on appraisals of strength. In the present research, we document how pride influences social judgments of the self in relation to others. We expected pride to enhance the sense of similarity to strong others, yet diminish the sense of similarity to weak others.

Self-Other Similarity and Prosocial Action

Perceived self-other similarity involves the recognition of one or more features or attributes that are shared in common with another person or group. The sense of similarity between self and other guides social judgment and action. Attitudinal similarity is a robust basis of liking and attraction (Aron, Aron, & Smollan, 1992; Byrne, 1961; Byrne, Clore, & Worchel, 1966). Perceived phenotypic and trait similarity promote cognitions of oneness, or the inclusion of other in the self, which promote interdependent relations (Aron, Aron, Tudor, & Nelson, 1991; Cialdini, Brown, Lewis, Luce, & Neuberg, 1997; E. R. Smith, Coats, & Walling, 1999).

Perceived self-other similarity also facilitates altruistic behavior, perhaps through inferences regarding genetic overlap with others (Cialdini et al., 1997; Cunningham, 1986). As perceived self-other similarity increases, others' gains are more likely to be construed as one's own, thus increasing the likelihood of altruistic action (Burnstein et al., 1994; Hamilton, 1964; Korchmaros & Kenny, 2001; Sober & Wilson, 1998, 2001). Within group interactions, college students led to be aware of their similarity with other players in a commons dilemma game were more likely than students made aware of differences (in academic major) to take less from the common resource pool for the self and thereby preserve more resources for others (Kramer & Brewer, 1984). At the cultural level, homogeneity in income, social position, and ethnicity promotes trust and cooperative exchange in mixed-motive economic games in which individuals choose to cooperate or compete (Zak & Knack, 2001).

Perceived self-other similarity also appears to amplify compassion-related responses to others (Dovidio, 1984; Dovidio et al., 2006; Loewenstein & Small, 2007; Penner et al., 2005; Piliavin & Charng, 1990; but see Batson et al., 2005). Phenotypic similarity promotes increased perspective taking and feelings of attachment (Batson & Shaw, 1991; Cialdini et al., 1997). In other research, the

perception of shared values with a confederate who was set to receive painful shocks resulted in stronger physiological reactions, increased empathic distress, and a greater willingness to act at a cost to the self (Krebs, 1975). Likewise, individuals made aware of their similar personality and interests with another were more willing to forgo personal rewards to alleviate the suffering of that individual (Batson, Turk, Shaw, & Klein, 1995) and were more willing to receive shocks on behalf of another participant who was suffering (Batson et al., 1981). Finally, highly altruistic individuals who helped save those in peril during the Holocaust reported that a perception of shared humanity and experience with the victims was a powerful source of their altruistic action (Monroe, 1996, 2003).

The Present Investigation

Here, we present three studies in which we examined how pride and compassion produce contrasting judgments of self-other similarity. Guided by an appraisal tendency account of emotion and judgment, we predicted that compassion would enhance the sense of self-other similarity, particularly to weak others, whereas pride would enhance the sense of self-other similarity to strong others. The present three studies extend what is known about compassion and pride in three ways. First, whereas previous research has shown that self-other similarity increases compassion, here we document that experiences of compassion increase feelings of similarity with others. Second, we examined a critical moderator of the influence of compassion and pride on perceived self-other similarity by drawing on clear distinctions between compassion and pride on appraisals of vulnerability and strength. Third, we demonstrated that emotions activate nonspecific feelings of self-other similarity—that is, toward targets unrelated to the source of the emotion; in previous studies of similarity and compassion, the judgment of self-other similarity was vis-à-vis the individual in need, and for whom compassion was experienced. In each of the three studies, we addressed whether relations between compassion, pride, and perceived self-other similarity were moderated by the ingroup status of the target judged as well as whether general positive mood or emotionality could account for the effects of compassion and pride.

Study 1: Trait Compassion and Pride, and Perceived Self-Other Similarity to Groups

Emotional traits are enduring aspects of one's personality that involve an increased tendency to experience a particular emotion as well as a lowered threshold for emotional experience (Rosenberg, 1998). Emotional traits share many properties of state experiences of emotion, in that they guide how individuals construe classes of situations and people (Caspi & Roberts, 2001; Keltner, 2003; Malatesta, 1990). Thus, the social cognitive correlates of trait and state emotion should often mirror one another. In Study 1, we examined how trait compassion and pride covary with perceived self-other similarity. We predicted that trait compassion would be associated with an overall increase in perceived self-other similarity but that this effect would be moderated by the strength of the target of judgment, such that compassionate individuals would feel more similar to weak social groups. In contrast,

we predicted that proud individuals would feel more similar to strong groups and more different from weak groups.

In the study, we attempted to control for two potential confounds. First, we tested whether the ingroup status of the target groups could account for relations of compassion and pride with self-other similarity. This was necessary to determine whether enhanced or decreased feelings of self-other similarity were merely a by-product of an enhanced or decreased identification with one's ingroup (e.g., Simon, 1993), which would confound our appraisal tendency account. Second, we tested whether general positive mood or personality traits associated with chronic general positive emotionality could account for observed relations of compassion and pride with self-other similarity. Positive mood is associated with more inclusive and flexible categorization, similarity- rather than difference-based comparisons, and increased cooperative behavior toward strangers (Fredrickson, 1998, 2001; Isen, 1987; Murray, Harish, Hirt, & Mita, 1990). Therefore, we tested whether participants' mood could account for observed findings. We conducted parallel analyses for Extraversion and Agreeableness, two personality traits that are characterized and defined by positive emotionality (Graziano & Tobin, 2002; John & Srivastava, 1999; Watson & Clark, 1992).

Method

Participants and procedure. One hundred fifty-eight University of California, Berkeley (UC Berkeley) undergraduates (82 women, 75 men, 1 unreported) participated and received partial credit toward the fulfillment of a class requirement. After providing informed consent, participants filled out a questionnaire packet in groups of 10–15.

Measures. The measures used are outlined below.

Trait compassion and pride. Participants filled out the pride (five items; $\alpha = .82$) and compassion (five items; $\alpha = .81$) scales of the Dispositional Positive Emotion Scales (DPES; Shiota et al., 2006; see Appendix A), which measure the tendency to experience specific positive emotions on 7-point scales ranging from 1 (*strongly disagree*) to 4 (*neither agree nor disagree*) to 7 (*strongly agree*). Each emotion scale contains items assessing the behavioral, cognitive, and phenomenological components of the emotion. No item overlaps semantically with the construct of perceived self-other similarity.

Mood. Participants rated their current mood on a 100-point scale ranging from 1 (*the worst ever*) to 50 (*neither good nor bad*) to 100 (*the best ever*). Consistent with prior research (Diener, 1984), mean response ($M = 65.10$, $SD = 17.29$) on this scale was above neutral (i.e., a rating of 50), $t(157) = 10.98$, $p < .001$.

Extraversion and agreeableness. Participants filled out the Ten-Item Personality Inventory (TIPI; Gosling, Rentfrow, & Swann, 2003), a short-form assessment of the Big Five personality traits (John & Srivastava, 1999).

Perceived self-other similarity. Perceived self-other similarity was assessed through two measures. First, participants completed a 19-item similarity to social groups measure, in which labels of 19 groups (see Appendix B) were presented, and participants rated the extent to which each group was similar to the self (1 = *not similar*,

7 = *very similar*; α = .76). Second, on the same scale participants rated their global self-other similarity to "people in general."

Outside ratings of the groups' strength and ingroup relatedness. To address that the strength of the target would moderate relations of compassion and pride with self-other similarity, an independent sample of UC Berkeley undergraduate participants were recruited (*N* = 27) who rated each of the 19 groups on two dimensions: (a) "To what extent do you believe this group is strong or weak?" (1 = *very weak*, 7 = *very strong*); and (b) "To what extent do you believe this group is an ingroup or outgroup for the typical UC Berkeley student?" (1 = *definitely an outgroup*, 7 = *definitely an ingroup*).

Results

Participants reported moderately high levels of both trait compassion (*M* = 5.45, *SD* = 0.87) and trait pride (*M* = 5.06, *SD* = 0.90).[1] Participants' tendencies to experience compassion and pride were correlated, *r*(158) = .38, *p* < .01, suggesting a common positive valence to these two traits. In light of this correlation, we partialed out the influence of the nontarget affective trait in our main analyses. We computed regression equations for perceived self-other similarity outcomes using trait compassion and trait pride as simultaneous predictors.

Consistent with our hypothesis, trait compassion significantly predicted perceived self-other similarity to 19 social groups (β = .17), *t*(157) = 2.00, *p* < .05, and global perceived self-other similarity (β = .18), *t*(157) = 2.14, *p* < .05. Pride, in contrast, did not account for significant variance in perceived self-other similarity to 19 social groups (β = .02), *t*(157) = .25, *ns*, nor did global perceived self-other similarity (β = .02), *t*(157) = .27, *ns* (see Table 1).[2]

Tests of moderation by vulnerability/strength. We predicted that relations of compassion and pride with self-other similarity would be moderated by group strength, such that trait compassion would be associated with increased self-other similarity to weak groups, whereas trait pride would be associated with increased self-other similarity to strong groups and decreased self-other similarity to weak groups. Following the logic of moderator analyses of emotion- and domain-specific judgment (Lerner & Keltner, 2001), we first calculated the mean ratings of group strength for each of the 19 groups. This set of means was then centered around the overall mean rating on that characteristic for all groups. Next, we computed a Strength × Similarity contrast term by multiplying the similarity rating for each group by its centered mean strength rating and then summing these products across all groups. This sum was positive for participants who tended to feel more similar to stronger groups and negative for participants who felt more similar to weaker groups.

When the Strength × Similarity contrast term was simultaneously regressed onto trait compassion and trait pride, both emotional traits significantly predicted the contrast term, but in opposite directions. Highly compassionate individuals rated themselves as more similar to weak groups (β = −.24), *t*(153) = −2.86, *p* < .01, whereas highly proud individuals judged themselves as more similar to strong groups (β = .28), *t*(153) = 3.26, *p* = .001 (see Figure 1).

Tests of moderation by ingroup status of target. To test whether ingroup relatedness could account for the above effects,

we computed a contrast term for ingroup relatedness in the same manner as in the section above, with positive values for the Ingroup × Similarity contrast term, indicating that a participant felt more similar to groups that were closer to his or her own group. Analyses revealed that the ingroup relatedness of the target group did not account for the relationship between group strength and similarity ratings. Adding the Ingroup × Similarity contrast term as an additional simultaneous predictor in the previous regression equation, trait compassion (β = −.31), *t*(153) = −4.03, *p* < .001, and trait pride (β = .22), *t*(153) = 2.83, *p* < .01, continued to significantly predict the Strength × similarity contrast term. Moreover, when Ingroup × Similarity was simultaneously regressed onto trait compassion and trait pride, neither trait compassion (β = .16), *t*(153) = 1.86, *ns*, nor trait pride (β = .14), *t*(153) = 1.58, *ns*, significantly predicted the Ingroup × Similarity contrast term. Compassionate individuals reported greater similarity to weaker groups, and proud individuals reported greater similarity to stronger groups independent of the groups' relation to the participant's own group.

Alternative explanations: Mood, Extraversion, and Agreeableness. Adding mood, Extraversion, or Agreeableness as an additional covariate in the above analyses, all previously observed effects remained significant or marginally significant (all *p*s < .08). Thus, neither positive mood nor enduring personality traits associated with positive emotionality could account for the observed relationships between compassion, pride, and self-other similarity.

Study 2: State Compassion and Pride, and Perceived Self-Other Similarity to Groups

In Study 1, we documented relations of the emotional traits compassion and pride with perceived self-other similarity. However, studies of individual differences in emotion are subject to third-variable confounds and selection effects. In Study 1, we sought to eliminate the most obvious alternative explanations—positive mood, positive emotionality, and ingroup relatedness. Nevertheless, the documented associations between compassion, pride, and perceived self-other similarity remain open to alternative interpretations. Perhaps compassion-prone people have been exposed to greater need, harm, or suffering than pride-prone people, or raised in ways that prioritize the value of common humanity (e.g., Oliner & Oliner, 1988), and are thus more sensitive to their similarity to others in need. Perhaps, too, pride-prone individuals

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[1] Across all three studies, gender was not significantly correlated with any measure of emotion or similarity. We also tested for moderation by gender in all studies, observing one significant interaction, which is noted in Study 3.

[2] We would speculate that these analyses reflect the relationship between the distinct appraisals of compassion and pride, on the one hand, and judgments of self-other similarity, on the other, after removing the overlapping variance reflected in the common positive valence of trait compassion and pride. Zero-order correlations between compassion, pride, and the self-similarity measures produce similar results. Compassion, *r*(158) = .18, *p* < .05, but not pride *r*(158) = .09, *ns*, was significantly associated with perceived self-other similarity to 19 social groups. And compassion, *r*(158) = .19, *p* < .05, but not pride, *r*(158) = .09, *ns*, was significantly correlated with global perceived self-other similarity.

Table 1
Prediction of Self-Other Similarity Ratings From Trait Levels of Compassion and Pride

| | Trait | | | |
| | Compassion | | Pride | |
Measure	Similarity to 19 social groups	Similarity to people in general	Similarity to 19 social groups	Similarity to people in general
	.17*	.18*	.02	.02
		Additionally controlling for		
Mood	.16†	.19*	.05	.01
Extraversion	.17†	.19*	.06	−.02
Agreeableness	.17†	.19*	.05	.00

Note. Values indicate beta weights while additionally controlling for the other emotion.
† $p < .10$.   * $p < .05$.

have been socialized to notice, value, and emulate persons of great strength, and are thus disposed to recognize similarities to strong others and dissimilarities to weak others. In light of these concerns, in Study 2 we turned to an experimental induction of compassion and pride.

Method

Participants. Forty-four UC Berkeley undergraduates (28 women, 16 men) participated and received partial credit toward the fulfillment of a class requirement.

Materials. Compassion and pride were induced using sets of slides (see also Oveis, Cohen, et al., 2009). Fifteen compassion slides depicted images of helplessness, vulnerability, and physical and emotional pain. Fifteen pride slides depicted national and local landmarks (the American Flag, the Statue of Liberty) as well as images of UC Berkeley sporting events and landmarks. A majority of the compassion (14) and pride (nine) slides featured humans. Roughly the same number of compassion (six) and pride (seven) slides featured more than one human face, and five different ethnic groups were represented in both slide sets.

The slides were selected from a larger group of potential stimuli on the basis of the results of pilot testing, wherein a separate

Figure 1. Self-other similarity ratings as a function of group strength in Study 1.

sample of participants rated eight emotional feelings after viewing each candidate compassion ($n = 25$; 11 women) or pride ($n = 27$; 13 women) slide on a large projection screen for 15 s. These pilot participants were run in groups of four to 12. Mean ratings for the slides used in the present study are displayed in Table 2.[3]

Procedure. Participants were randomly assigned to the compassion or pride condition. Upon arrival at the laboratory, each participant was seated in front of a computer in a private room. The experimenter explained that after filling out personality questionnaires, the participant would view a slide show and then answer questions about the slide-viewing experience. After obtaining informed consent, participants filled out personality questionnaires. Participants were instructed to watch and pay attention to a slide-show then complete a questionnaire packet containing the similarity to social groups task, along with a questionnaire regarding affective experiences during the induction. No mention of emotion was made in the instructions.

Compassion and pride were induced through the presentation of 2-min slideshows. Each slideshow began with the 15-s display of a blank, black screen, followed by the continuous presentation of the 15 emotion-inducing slides against a black background for 8 s each. After the slideshow, a slide displayed the instruction to complete a paper-and-pencil questionnaire in the participant's possession. All slides were presented on a 17-in. (43-cm) flat-screen LCD monitor, with each slide having display dimensions of approximately 11 in. × 14 in. Participants viewed the entire slide-show and completed the self-other similarity questionnaire alone in the room. After completing the questionnaire, participants were probed for suspicion and debriefed.

Measures. The measures used are outlined below.

Personality. Extraversion and Agreeableness were assessed via the TIPI (Gosling et al., 2003).

Perceived self-other similarity. As in Study 1, participants provided a global perceived self-other similarity rating to "people in general" and then rated perceived self-other similarity to 23 groups ($\alpha = .65$; see Appendix B). Slightly modified from Study 1, participants rated perceived self-other similarity to each group
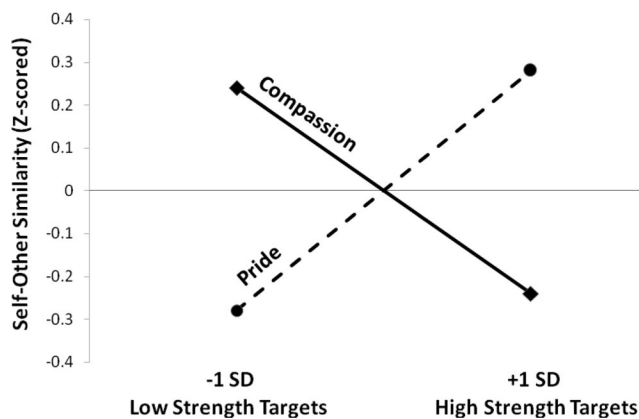
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[3] Slides and individual slide ratings are available from Christopher Oveis upon request.

Table 2
Emotional Feelings Elicited by the Compassion and Pride Slides (Pilot Study)

	Slide condition	
	Compassion ($n = 25$)	Pride ($n = 27$)
Emotional feeling	*M* (*SD*)	*M* (*SD*)
Compassion	4.42 (1.47)	2.39 (1.29)
Pride	1.45 (.76)	3.92 (1.33)
Happiness	1.82 (.67)	3.58 (1.26)
Sadness	3.67 (1.45)	1.65 (.76)
Desire	1.71 (1.02)	2.59 (1.35)
Awe	1.98 (1.10)	3.62 (1.24)
Interest	3.37 (1.87)	3.89 (1.05)
Disgust	1.58 (.54)	1.49 (.50)

Note. Ratings reflect responses to the final 15-slide stimulus sets.

on a 7-point scale ranging from 1 (*very similar*) to 7 (*very different*). For ease of interpretation, all similarity judgments were reverse scored; greater values therefore indicate greater perceived similarity between self and other.

Emotional feelings. After making self-other similarity ratings, participants reported the extent to which they experienced several emotions while viewing the slides on a 7-point scale ranging from 1 (*did not experience at all*) to 7 (*experienced very intensely*). Compassion was assessed through a composite of ratings of "compassion," "sympathy," and "moved" ($\alpha = .76$); pride was assessed through a composite of ratings of "proud," "accomplishment," and "achievement" ($\alpha = .91$).

Mood. Participants rated the positivity of their emotional response to the slides on a 7-point scale ranging from 1 (*not at all positive*) to 7 (*very positive*), and the negativity of their emotional response to the slides on a 7-point scale ranging from 1 (*not at all negative*) to 7 (*very negative*). Mood was calculated by subtracting the negativity rating from the positivity rating.

Results

Participants in the compassion condition reported significantly more compassion ($M = 5.65$, $SD = 1.15$) than pride ($M = 1.40$, $SD = 0.56$), $t(20) = 13.49$, $p < .001$, $\eta^2 = .90$, and participants in the pride condition reported significantly more pride ($M = 4.72$, $SD = 1.60$) than compassion ($M = 4.26$, $SD = 1.31$), $t(22) = 2.18$, $p < .05$, $\eta^2 = .18$. Participants in the compassion group reported significantly more compassion than did participants in the pride group, $t(42) = 3.72$, $p = .001$, $\eta^2 = .25$, who in turn reported significantly more pride than did participants in the compassion group, $t(42) = 9.02$, $p < .001$, $\eta^2 = .66$.

Viewing compassion-inducing slides produced significantly higher perceived self-other similarity to 23 social groups ($Ms = 3.46$ and 3.14), $t(42) = 2.09$, $p < .05$, $\eta^2 = .09$, as well as marginally higher global perceived self-other similarity ($Ms = 4.52$ and 3.65), $t(42) = 1.87$, $p = .07$, $\eta^2 = .08$, than did viewing pride-inducing slides (see Figure 2).

Tests of moderation by vulnerability/strength. On the basis of group ratings provided by a separate sample of participants described in Study 1, we again computed a Strength × Similarity

contrast term for each participant. As in Study 1, each contrast term was the sum of the products of the self-target similarity rating for each group multiplied by the centered mean strength rating for each group. A one-way analysis of variance (ANOVA) revealed that participants induced to feel compassion showed significantly lower scores on the Strength × Similarity contrast term than did participants induced to feel pride, $F(1, 42) = 3.92$, $p = .05$, $\eta^2 = .09$. Thus, people feeling compassion (compared with pride) rated themselves as more similar to groups generally perceived as weak, and people feeling pride (compared with compassion) rated themselves as more similar to groups generally perceived as strong.

Tests of moderation by ingroup status of target. Ingroup × Similarity contrast terms were likewise calculated for each participant. Participants in the compassion and pride conditions did not differ significantly from each other on the Ingroup × Similarity contrast term, $F(1, 42) = 0.04$, *ns*. Thus, feeling compassion versus pride did not lead participants to rate themselves as systematically more or less similar to target groups generally perceived as related to the ingroup. Furthermore, an analysis of covariance (ANCOVA) revealed that the difference between participants in the compassion versus pride conditions on Strength × Similarity remained significant when controlling for Ingroup × Similarity, $F(1, 41) = 5.20$, $p < .05$, $\eta^2 = .11$. Thus, the tendency for the compassion group to feel more similar to weak targets cannot be attributed to the perceived "ingroupness" of the target groups.

Alternative explanations: Mood, Extraversion, and Agreeableness. Not surprisingly, participants exposed to the pride slides reported a more positive mood ($M = +2.87$, $SD = 3.00$) than did participants induced to feel compassion ($M = -2.14$, $SD = 3.04$), $t(42) = 5.50$, $p < .001$. However, neither mood, Extraversion, nor Agreeableness was related to either of the two measures of self-other similarity ($rs = -.13$ to $.22$, $ps > .16$). Moreover, even when we entered the alternative accounts of mood, Extraversion, and Agreeableness as control variables in our main analyses, compassion continued to produce greater self-other similarity than pride, and pride continued to produce greater Strength × Similarity contrast term scores than compassion (all $ps < .09$).
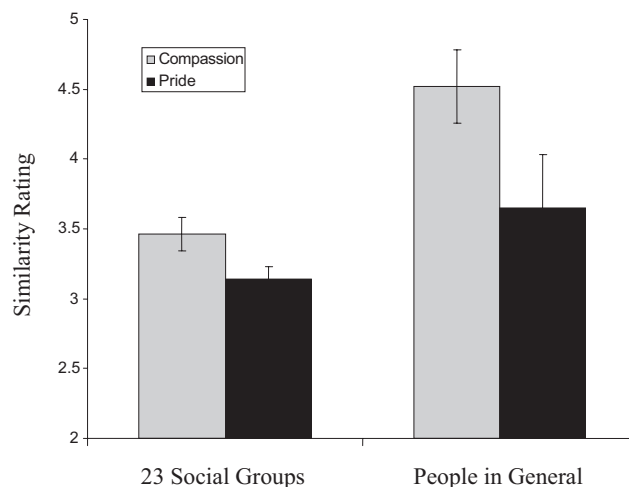

Figure 2. Mean ratings of self-other similarity in Study 2.

Study 3: Compassion, Pride, and Perceived Self-Other Similarity to Strangers' Faces

In Study 2, induced compassion produced a globally heightened tendency to view oneself as similar to others relative to induced pride. This effect was again moderated by the strength of the target of judgment: Compassion participants were more likely to perceive greater similarity to weaker groups, and pride participants were more likely to perceive greater similarity to stronger groups.

Thus far, our studies have related trait and state compassion and pride to perceived self-other similarity to social groups represented by group labels. Whereas we examined in Studies 1 and 2 how group strength moderates these relationships, in Study 3 we focused on whether compassion and pride will influence perceived self-other similarity in another modality: judgments of similarity to unfamiliar individuals represented in still photographs of their faces. Judgments of photos of individuals differ from judgments of labels of groups in terms of the entity (individual vs. group), the representation (concrete image vs. abstract label), and the mode of processing (perceptual vs. conceptual). Furthermore, faces, even with neutral expressions, elicit automatic affective responses in the amygdala that aid in the encoding of traits such as trustworthiness as well as emotionality (Engell, Haxby, & Todorov, 2007; Oosterhof & Todorov, 2009; Said, Sebe, & Todorov, 2009). These differences between evaluating groups and faces call into question whether the influence of compassion and pride on self-other similarity could be overridden by a face-to-face encounter, a question we explored in Study 3.

Method

Participants. Seventy-three UC Berkeley undergraduates participated and received partial credit toward the fulfillment of a class requirement. One participant was excluded for failing to follow experimental instructions. Six additional participants in the pride condition were excluded because they spontaneously reported being repulsed by the U.S. imagery in the pride slides. What remained was an ethnically diverse sample (30 Asian Americans, 23 Caucasians, five Mexican Americans, five Filipino Americans, and three African Americans, and three "other") of 66 participants (39 women, 27 men).

Procedure. Each participant was randomly assigned to one of two conditions, compassion or pride, and completed the experimental session individually. After providing informed consent, participants were seated individually in front of a computer terminal. Participants rated their current mood and completed personality questionnaires before viewing a 15 slide, 220-s emotion induction of compassion or pride. Each slide was presented for 10 s, followed by a 5-s presentation of a blank, black screen before the presentation of the next slide. Following the slide presentation, participants rated their similarity to each of several unfamiliar faces (the face and top of the torso were presented on a blank background), rated their posttask mood, and reported on emotions experienced during the slide presentation. Finally, participants were probed for suspicion and debriefed.

Measures. The measures used are outlined below.

Perceived self-other similarity to unfamiliar individuals. Participants rated their similarity to 17 photos of unfamiliar individuals on a 7-point scale (1 = *very similar*, 7 = *very different*; α =

.85). Self-other similarity judgments were again reverse scored; greater values indicate greater perceived similarity. The individuals presented in the photos were diverse in age (from college age to elderly), gender (eight men and nine women), and ethnicity (nine Caucasians, two each of Asian, Black African, and Indian descent, one each of Filipino and Middle Eastern descent). Photos portrayed each individual from the torso to the top of the head. None of the faces in the similarity rating task appeared in the emotion induction slide set.

Experienced emotions and mood change. Participants rated their experience of each of several feelings relevant to compassion and pride during the emotion induction task on a 1 (*did not experience at all*) to 7 (*experienced very intensely*) scale. As in Study 2, composite ratings of compassion (compassion, sympathy, moved; α = .72) and pride (proud, accomplishment, achievement; α = .94) were computed from these reports. Mood change scores were calculated by subtracting the preinduction mood rating, made on a 1 (*extremely bad*) to 5 (*neutral*) to 9 (*extremely good*) scale, from the postinduction mood rating, made on the same scale.

Results

Manipulation check. Participants in the compassion condition reported more compassion (M = 4.93, SD = 1.16) than pride (M = 1.41, SD = 0.71), t(36) = 17.22, p < .001, η² = .82, and participants in the pride condition reported more pride (M = 5.01, SD = 1.34) than compassion (M = 3.33, SD = 1.37), t(28) = 5.79, p < .001, η² = .36. Participants in the compassion group reported significantly more compassion than did participants in the pride group, t(64) = 5.12, p < .001, η² = .29, and participants in the pride group reported significantly more pride than did participants in the compassion group, t(64) = 14.03, p < .001, η² = .76.

Compassion, pride, and self-other similarity. Consistent with the main effects observed in the first two studies, compassion (M = 3.24, SD = 0.68) produced higher ratings of perceived self-other similarity to unfamiliar individuals represented in photographs than did pride (M = 2.73, SD = 0.86), t(64) = 2.72, p < .01, η² = .10 (see Figure 3). Three ANCOVAs revealed that compassion increased perceived self-other similarity even when controlling for mood change, F(1, 61) = 6.35, p = .01, η² = .09; Extraversion, F(1, 62) = 8.39, p < .01, η² = .12; and Agreeableness, F(1, 62) = 7.88, p < .01, η² = 11.

A 2 × 2 ANOVA revealed that participant gender significantly moderated the influence of the experimental manipulation on self-other similarity, F(1, 62) = 6.09, p < .05. Simple effects analyses revealed that for women, compassion (M = 3.43, SD = 0.60) and pride (M = 2.55, SD = 0.78) produced significantly different self-other similarity judgments, F(1, 37) = 15.78, p < .001, whereas for men, compassion (M = 3.02, SD = 0.71) and pride (M = 3.07, SD = 0.95) did not produce significantly different self-other similarity judgments, F(1, 25) = 0.03, *ns*.

Tests of moderation by ingroup status of target. Study 3 presented two ways of addressing whether the ingroup status of the target interacted with compassion and pride in producing self-other similarity judgments. First, we examined how self-other similarity judgments of same-gender and opposite-gender faces varied across the compassion and pride conditions. We did this using a repeated measures ANCOVA, with same-gender similarity and opposite-gender similarity as the repeated measures dependent variables and
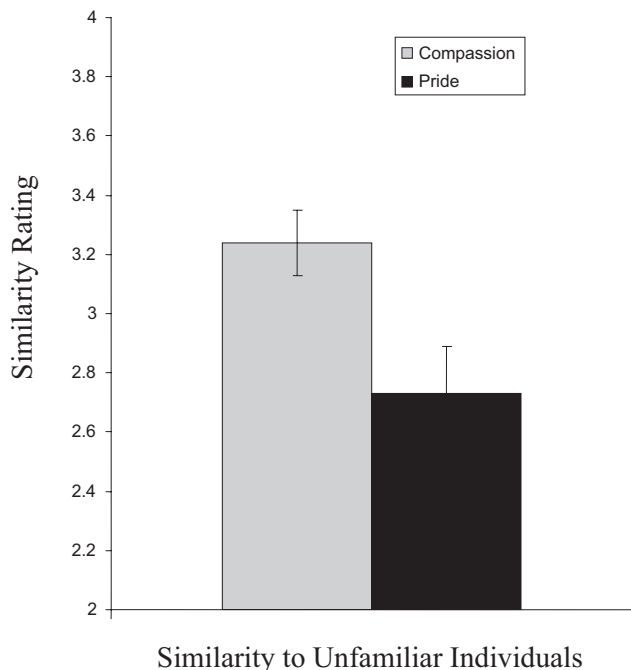
Figure 3. Mean ratings of self-other similarity in Study 3.

experimental condition (compassion vs. pride) as the between-subjects variable. This analysis revealed no significant interaction between experimental condition and ingroup/outgroup self-other similarity, $F(1, 64) = 3.03$, *ns*. Thus, the participant's gender similarity to the target did not alter the effects of compassion and pride upon perceived self-other similarity. Furthermore, participant gender did not interact with this (non) effect, $F(1, 62) = 0.05$, *ns*.

Second, we examined how self-other similarity judgments of same-ethnicity and opposite-ethnicity faces varied across the compassion and pride conditions. Three coders were provided with a list of eight ethnicity choices for each face, plus the option to write in an ethnicity. Coders were in complete agreement for 11 faces, and two out of three coders were in agreement for the remaining six faces. For each participant, we averaged the similarity judgments to targets of the participant's own ethnic background to create a same-ethnicity similarity score and averaged the similarity judgments of remaining targets (all ethnicities besides the participant's own ethnicity) to create an other-ethnicity similarity score. A repeated measures ANCOVA revealed no significant interaction between emotion condition (compassion or pride) and the repeated measures same-ethnicity/other-ethnicity similarity score, $F(1, 58) = 0.30$, *ns*. Thus, the participant's ethnic similarity to the target did not alter the effects of compassion and pride upon perceived self-other similarity.

Discussion

The perceived similarity between self and other is a central social intuition, one that facilitates beliefs in equality, altruistic action, and cooperative behavior (e.g., Sober & Wilson, 2001). Guided by an appraisal tendency approach to emotion and judgment, the present three studies reveal that compassion and pride

shift the sense of self-other similarity in opposite directions. Consistent with our central hypothesis, compassion was associated with an enhanced sense of similarity to others, in particular to those in need. In contrast, pride was associated with an enhanced sense of similarity to strong others, and a diminished sense of similarity to weak others. The effects of compassion and pride on perceived self-other similarity were observed at both the trait and state level, and across two modalities of judgment: perceptions of similarity to abstract labels of groups as well as to concrete representations of unfamiliar individuals. These effects were still observed even when controlling for mood, Extraversion, and Agreeableness.

Our results can be viewed quite readily within intuitionist accounts of moral judgment (e.g., Haidt, 2001). We examined the effects of compassion and pride on quick, single-item, intuitive judgments of groups. At this level of gut feeling, compassion may provide a general orientation to attend to those who are weak independent of their relatedness to the self, whereas pride may orient the individual toward aligning oneself with strong others. These general intuitions would then be qualified by more deliberate considerations (e.g., group relatedness, likelihood of incurring costs and benefits) as the emotion and action unfold. Thus, for compassion, although the most rudimentary effects of the emotion may be to attend to the needs of all who are vulnerable, the circle of care may narrow as the result of more deliberate reasoning processes.

The present studies revealed no ingroup moderation of relations between compassion, pride, and self-other similarity, arguing against an alternative explanation for the present findings: that the effects of compassion or pride were merely to activate a communal orientation with one's ingroup, thereby enhancing identification with one's ingroup and distinction from one's outgroup (e.g., Simon, 1993). Ruling out this explanation was particularly important given the nature of the pride stimuli, which depicted symbols of participants' ingroups. Likewise, kin selection theory might suggest that compassion would only amplify prosocial cognitions—the sense of similarity with others—toward ingroup members (e.g., Hamilton, 1964). However, people feeling pride and compassion perceived themselves to be similar to others independent of the degree of association between the target's group and their own. This pattern of findings also runs counter to the claim that compassion is preferentially directed toward members of the ingroup and is quite fitting with our analysis of compassion as a care-taking emotion directed toward weak and vulnerable others, and pride as a hierarchical emotion oriented toward elevating the strength and power of the self.

One possibility is that compassion and pride influence the level of self-construal in relation to strong or weak others at the individual, group, and/or community level (Markus & Kitayama, 1991; Mashek, Cannaday, & Tangney, 2007). Compassion may promote a communal orientation toward vulnerable others such that one takes on the identity of the individual or group as one's own, producing a shift toward an overlapping representation of self and vulnerable other, and a sense that the goals and outcomes of the other are one's own (Aron et al., 1991; Cialdini et al., 1997; Gardner, Gabriel, & Hochschild, 2002; E. R. Smith et al., 1999; E. R. Smith & Henry, 1996; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). Pride, in contrast, may produce a shift toward an overlapping representation of self and strong others, while serving

to separate the representations of self and weak others. This account fits well with work suggesting that perceived self-other similarity promotes increased feelings of oneness (or self-other overlap), perspective taking, and attachment-related behavior (Batson & Shaw, 1991; Cialdini et al., 1997).

It will be important for future studies to examine whether particular types of perceived self-other similarity are more readily influenced by compassion or pride than others. Although one can easily imagine that pride and compassion attune individuals to phenotypic cues of strength or weakness such as musculature, it seems just as reasonable to posit that these emotions attune individuals to personality- or behavior-based cues such as strong-mindedness or submissiveness.

It is interesting to note that in Study 3 the influence of emotion on self-other similarity was moderated by the gender of the participant: Only women displayed increased self-other similarity in the compassion versus pride conditions. This result is in keeping with previous research finding that females are more prone to the experience of compassion and exhibit greater levels of relational interdependence than men; however, there are few reported gender differences in the *relationship* between compassion and relevant outcomes, such as helping and perceptions of need (Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Cross & Madson, 1997; Shiota et al., 2006; Taylor et al., 2000). And few, if any, gender differences have been reported in the appraisal tendency literature as well; for example, the effects of fear and anger on risk perception emerge in both male and female participants (Lerner & Keltner, 2001). Thus, the gender moderation finding in Study 3 was somewhat unexpected, and it is unclear why similar results did not emerge in Studies 1 and 2. It is certainly possible that women are more prone to experience the cognitive consequences of compassion in relation to concrete representations of individuals rather than in relation to abstract representations of groups; however, further research would be necessary to explore this claim.

Compassion, Care-Taking, and the Intuition of Self-Other Similarity

As cooperative communities evolved, so too did the need for mechanisms that enable individuals to forgo self-interest and instead act for the benefit of others (Frank, 1988, 2002; Hrdy, 1999; Miller, 2000; Post, 2002; Sober & Wilson, 2001). One likely product of this shift in hominid evolution is compassion, an emotion that is thought to motivate care-taking behavior toward those in need (e.g., Bowlby, 1982; Keltner & Haidt, 2001; Mikulincer & Shaver, 2005).

An emergent literature on compassion suggests that it plays an important role in cooperative relations: Compassion involves patterns of tactile contact that soothe and produce trust as well as brain activation in regions central to perspective-taking (de Vignemont & Singer, 2006; Hertenstein et al., 2006; Lotze et al., 2007; Oveis, Gruber, Keltner, Stamper, & Boyce, 2009). In the present research, trait- and state-based compassion were associated with the heightened sense of similarity between self and other, and in particular to those in need. It will be important to examine whether these compassion to self-other similarity associations mediate the effects of compassion on altruistic action (Batson et al., 1981, 2005; Eisenberg et al., 1989) and the preference for mild

punishments for transgressions (Rudolph et al., 2004; Weiner, 1993).

The thesis that compassion promotes care-taking warrants several lines of inquiry. For theoretical reasons that guided the present studies, we would expect that people prone to compassion, or those feeling this prosocial state, would experience greater pleasure when the welfare of others is enhanced. This might even trigger activation in reward-processing networks in the brain, such as the nucleus accumbens or the orbitofrontal cortex (Rilling et al., 2001; Rolls, 2000). We would likewise expect individuals experiencing compassion to feel less pain when suffering for others and greater relief at the reduction of others' suffering. These predictions await empirical studies, which we hope have been enabled by the present investigation.

Pride and the Intuition of Strength

Our three studies also advance an understanding of pride, which has only recently begun to receive empirical attention (Herrald & Tomaka, 2002; Tangney & Fischer, 1995; Tracy & Robins, 2004b, 2007a, 2007b, 2008; Tracy, Robins, & Lagattuta, 2005; Williams & DeSteno, 2009). Both trait and state pride were associated with the tendency to view oneself as more different from the most vulnerable groups and more similar to the strongest groups. These findings dovetail with claims that pride, at its core, involves processes that elevate the status of the self within hierarchies (Gilbert & Andrews, 1998).

In light of the present findings, one might expect pride to increase self-enhancing biases as well, such as favorable social comparisons and self-serving attributions that elevate the self vis-à-vis others. Given the association between pride and a powerful self documented here, one might even expect pride to produce various social cognitive biases—stereotyping, inaccurate social perception, the objectification of others—that have been found to be associated with elevated social power (Keltner, Gruenfeld, & Anderson, 2003; Van Kleef et al., 2008). Finally, given dramatic culture-related differences in perceived self-other similarity (e.g., Markus & Kitayama, 1991), it will be important to examine whether pride produces similar shifts in the sense of similarity to strong groups in other cultures (see Tracy & Robins, 2008).

Conclusion

Emotions have long been considered disruptive to moral judgment and action (e.g., Nussbaum, 1996). An alternative view has emerged, one that holds that emotions evolved alongside powerful social intuitions that guide morally relevant actions such as attention to harm, punitive judgments, and the just allocation of resources (Haidt, 2001, 2007; Inbar, Pizarro, Knobe, & Bloom, 2009; Jones & Fitness, 2008; Keltner et al., 2006). Our findings are in keeping with this new view of emotion. Compassion, both as a state and as a trait, was associated with an enhanced sense of similarity between oneself and others. These findings provide insight into the links between compassion and altruism, punitive tendencies, and legal judgments, and help to explain why many consider compassion a cardinal moral emotion. Pride enhanced the sense of the strong self, promoting feelings of similarity to strong others and distinction from weak others, suggesting a potential social cognitive basis for hierarchical organization and negotiation,

a tantalizing hypothesis worthy of future testing. The results of the present studies help to shed light on the cognitive mechanisms that support altruism and group organization and foreshadow new discoveries in the emergent literature on the influence of specific emotions on social judgment.

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(Appendices follow)

Appendix A

DPES Items, Shiota et al., 2006, Study 1

Pride: "I am proud of myself and my accomplishments"; "I feel good about myself"; "Many people respect me"; "I always stand up for what I believe"; "People usually recognize my authority."

Compassion: "I am a very compassionate person"; "I often notice people who need help"; "When I see someone hurt or in need, I feel a powerful urge to take care of them"; "It's important to take care of people who are vulnerable"; "Taking care of others gives me a warm feeling inside."

Appendix B

Groups Rated for Perceived Self-Other Similarity in Studies 1 and 2

Groups rated in Study 1: Americans, UC Berkeley students, Stanford undergraduates, liberals, conservatives, Republicans, Democrats, celebrities, saints, young children, elderly people, religious fundamentalists, professional athletes, convicted felons, animals, politicians, peace activists, terrorists, and members of sororities or fraternities.

Groups rated in Study 2: young adults, Americans, males, UC Berkeley undergraduates, Republicans, small children, UC Berkeley business students, elderly people, religious fundamentalists, convicted felons, farm animals, Stanford undergraduates, peace activists, UC Berkeley psychology majors, members of sororities or fraternities, orphaned children, Democrats, females, terrorists, corporate lawyers, homeless people, procrastinators, and Stanford psychology majors.