

# A Prosociality Paradox: How Miscalibrated Social Cognition Creates a Misplaced Barrier to Prosocial Action

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## Abstract

Behaving prosocially can increase well-being among both those performing a prosocial act and those receiving it, and yet people may experience some reluctance to engage in direct prosocial actions. We review emerging evidence suggesting that miscalibrated social cognition may create a psychological barrier that keeps people from behaving as prosocially as would be optimal for both their own and others' well-being. Across a variety of interpersonal behaviors, those performing prosocial actions tend to underestimate how positively their recipients will respond. These miscalibrated expectations stem partly from a divergence in perspectives, such that prosocial actors attend relatively more to the competence of their actions, whereas recipients attend relatively more to the warmth conveyed. Failing to fully appreciate the positive impact of prosociality on others may keep people from behaving more prosocially in their daily lives, to the detriment of both their own and others' well-being.

## Keywords

happiness, interpersonal accuracy, kindness, prosociality, social cognition, social judgment, well-being

It is good to be good to others. Kindness is widely admired because of its positive impact on others. Small acts of kindness are judged very favorably by children and adults (Hepach et al., 2012; Klein & Epley, 2014), and kindness is ranked as one of the most highly desired traits in a mate by both men and women around the world (Buss, 1989). Kindness also seems valuable in more objective ways, as people who are prosocially motivated tend to increase their wealth more rapidly over time, be wealthier overall, and have more offspring than those who are more selfishly motivated (Eriksson et al., 2020).

It also feels good to be good to others. Behaving prosocially, such as by spending money on others rather than on oneself, can increase prosocial actors' happiness, reduce their stress, and improve their cardiovascular functioning (Andreoni, 1989, 1990; Dunn et al., 2014). In contrast, harming others by behaving selfishly rather than cooperatively, or by exacting revenge after harm (Carlsmith et al., 2008), can increase stress and negative emotions (Dunn et al., 2010).

Despite these positive outcomes, people can seem somewhat reluctant to be good to others even when

the cost in terms of money, time, or effort is minimal. Gratitude felt toward another person may be kept to oneself rather than expressed. Social support that could be easily offered is withheld rather than extended. A compliment that comes to mind is left unspoken rather than shared. In one series of surveys, participants reported deliberately withholding an average of 36% of compliments that came to their minds, and also reported expressing gratitude, providing social support, and giving compliments less often than they felt they "should" or "would like to" (Zhao & Epley, 2021). Indeed, intuitive responses across a wide range of interpersonal actions can be more prosocial than more deliberate and reasoned responses (Epley et al., 2006; Rand et al., 2014; Zaki & Mitchell, 2013). Although most research on barriers to prosociality focuses on the absence of motivation to behave prosocially, these results suggest that people may sometimes reason themselves out of prosociality.

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This highlights a paradox. If doing good is judged to be good, and generally feels good for both givers and receivers, then why can people seem reluctant to follow their intuitions and behave more prosocially in their everyday lives?

Emerging research suggests a partial solution to this paradox: Miscalibrated social cognition can create a misplaced psychological barrier that inhibits some prosocial behavior. Specifically, across a range of interpersonal contexts, people performing prosocial acts may systematically underestimate how positively their recipients will respond. To the extent that prosocial actions are guided by their expected impact on recipients, underestimating a potential recipient's positive experience should diminish a person's interest in behaving prosocially. Miscalibrated social cognition not only could make people appear more selfish than their actual prosocial motivation would lead them to be, but also could lead people to miss easy opportunities to enhance both their own and others' well-being.

### Undervaluing Prosociality

It may not be accidental that William James (1896/1920) named "the craving to be appreciated" as "the deepest principle in human nature" only after receiving a gift of appreciation that he described as "the first time anyone ever treated me so kindly." "I now perceive one immense omission in my [*Principles of Psychology*]," he wrote regarding the importance of appreciation. "I left it out altogether . . . because I had never had it gratified till now" (p. 33).

James does not seem to be unique in failing to recognize the positive impact that appreciation can have on recipients. In one experiment (Kumar & Epley, 2018, Experiment 1), MBA students thought of a person they felt grateful to, but to whom they had not yet expressed their appreciation. The students, whom we refer to as *expressers*, wrote a gratitude letter to this person and then reported how they expected the recipient would feel upon receiving it: how surprised the recipient would be to receive the letter, how surprised the recipient would be about the content, how negative or positive the recipient would feel, and how awkward the recipient would feel. Expressers willing to do so then provided recipients' email addresses so the recipients could be contacted to report how they actually felt receiving their letter. Although expressers recognized that the recipients would feel positive, they did not recognize just how positive the recipients would feel: Expressers underestimated how surprised the recipients would be to receive the letter, how surprised the recipients would be by its content, and how positive the

recipients would feel, whereas they overestimated how awkward the recipients would feel. Table 1 shows the robustness of these results across an additional published experiment and 17 subsequent replications (see Fig. 1 for overall results; full details are available at OSF: [osf.io/7wndj/](https://osf.io/7wndj/)). Expressing gratitude has a reliably more positive impact on recipients than expressers expect.

Although a gratitude letter may be a uniquely thoughtful form of prosociality, it is not a uniquely undervalued form. Even the positive impact of simpler expressions of kindness, such as a compliment conveyed in just a few words or sentences, shows similar patterns. In one experiment (Zhao & Epley, 2021, Experiment 1), couples visiting a tourist attraction in Chicago were separated and then randomly assigned to give compliments or receive compliments. Compliment givers wrote three genuine compliments to share with their partner and then reported how positive and how awkward they expected their partner to feel after receiving them. Compliment receivers then read their compliments and reported how they actually felt. Despite knowing their partners for an average of 10 years, and presumably knowing them well, compliment givers underestimated how positive, and overestimated how awkward, their kind words would make their partners feel. This misunderstanding is not limited to a single exchange, as compliment givers in another experiment also underestimated how positive their recipient would feel after receiving a new compliment on each of 5 days in a row (Zhao & Epley, 2020). Nor is misunderstanding limited to exchanges between familiar friends or partners, as people also underestimate how positive strangers will feel after a compliment (Boothby & Bohns, 2021).

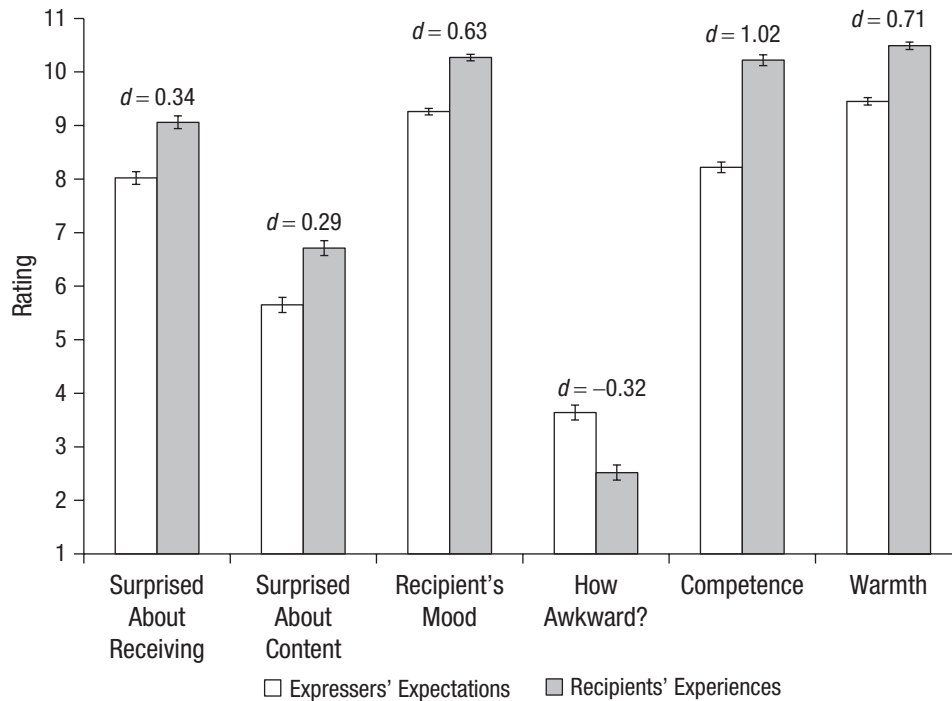
We believe that these results reflect a broader tendency to undervalue the positive impact of prosociality on another person. Indeed, similar miscalibrated expectations emerge when people are asked to express social support to someone in need (Fig. 2; Dungan et al., 2022) or to perform a random act of kindness, such as giving hot chocolate to a stranger on a cold winter day (Kumar & Epley, 2022). Undervaluing the positive impact of prosociality seems to stem at least in part from failing to appreciate how positively others react to expressions of warmth, rather than simply underestimating how positive others feel after receiving some personal benefit. For instance, people in one experiment expected recipients to feel just as positive when they received a cupcake by chance as when they received it as a random act of kindness from another person (Kumar & Epley, 2022, Experiment 3). In fact, recipients felt more positive receiving the cupcake as a random act of kindness, such that people underestimated only recipients' positive reaction to the prosocial act (see also Zhao & Epley, 2021).

**Table 1.** Effect-Size ( $d$ ) Estimates of the Gap Between the Expected and Actual Experience of Receiving Gratitude in Two Published Experiments (Kumar & Epley, 2018, Experiments 1 and 4) and 17 Subsequent Replications

Sample <sup>a</sup>	Sample size			Effect size ( $d$ )				
	Expressers	Recipients	Surprised to receive gratitude	Surprised by the content	Negative/positive mood	Awkward feelings	Competence composite	Warmth composite
Kumar & Epley (2018, Experiment 1)	107	80	0.68	0.40	0.74	-0.32		
Kumar & Epley (2018, Experiment 4)	127	78	0.37	0.40	0.96	-0.32	1.20	0.79
1: International sample (2016)	24	15	0.37	0.19	0.38	-0.36		
2: Private university (2016)	17	13	0.68	0.21	1.06	-0.69		
3: Private university (2017)	86	30	0.75	0.36	1.03	-0.37		
4: Private university (2016)	121	88	0.60	0.35	0.76	-0.34		
5: Public university (2019)	35	22	0.21	0.40	0.17	-0.75		
6: Public university (2020)	47	24	0.13	0.39	0.53	-0.43		
7: Public university (2021)	37	17	0.30	0.42	0.25	-0.35		
8: International sample (2018)	45	22	0.49	0.10	0.56	-0.65	0.94	0.88
9: Private university (2019)	137	67	0.31	0.60	0.81	-0.21	1.58	0.93
10: High school (2019)	237	95	0.28	0.05	0.46	-0.12	0.79	0.66
11: International sample (2019)	19	11	0.03	0.22	0.80	-0.34	2.87	0.96
12: Private university (2020)	76	34	0.34	0.23	0.46	-0.25	1.24	0.87
13: International sample (2020)	31	22	0.55	0.21	0.45	-0.05	0.54	0.14
14: Private university (2021)	45	45	0.24	0.17	0.67	-0.66	1.25	0.55
15: International sample (2021)	24	24	0.37	0.63	0.43	-0.29	0.57	0.79
16: Private university (2017)	127	77	0.36	0.39	0.94	-0.32	1.13	0.77
17: International sample (2017)	42	28	0.25	0.17	0.76	-0.43		

Note: Expressers in each experiment thought of someone they felt grateful to, wrote that person a gratitude letter, and reported how they expected the recipient to feel: how surprised the recipient would feel to receive the letter, how surprised the recipient would be about its content, how negative/positive the recipient would feel, and how awkward the recipient would feel. Recipients who could be contacted, and who completed the survey, reported how they actually felt on each measure. In Experiment 4 of Kumar and Epley (2018), and replications that followed the same procedure, expressers reported how they expected their recipients to rate their letter's competence (average rating of the extent to which the letter expressed "gratitude using words that were just right" and how "articulate" the letter was) and warmth (average rating of "how warm" and "how sincere" the letter was), and recipients provided their actual evaluations of the letter on these dimensions. Positive values of  $d$  indicate the degree to which expressers underestimated recipients' experience, and negative values indicate the degree to which expressers overestimated recipients' experience. An effect size of 0.8 or  $-0.8$  is generally considered to be large.

<sup>a</sup>This column shows the number assigned to each replication, the year in which it was conducted, and the nature of the sample used.



**Fig. 1.** Mean expectations versus mean actual experiences of receiving gratitude in Kumar and Epley (2018, Experiments 1 and 4) and all 17 replications reported in Table 1. Results are shown for all expresser-recipient pairs ( $N = 634$  pairs for the four measures on the left,  $N = 397$  pairs for the two measures on the right). Competence and warmth are composite measures based on two items each (competence: the extent to which the message was articulate and used words that were “just right”; warmth: how sincere and how “warm” the message was). All measures used 11-point scales ranging from 0 (*not at all*) to 10 (*extremely*). Error bars show standard errors. Effect sizes ( $d$ ) indicate the difference between expressers’ expectations of how recipients would feel and recipients’ ratings of their actual experiences. An effect size of 0.8 is generally considered to be large.

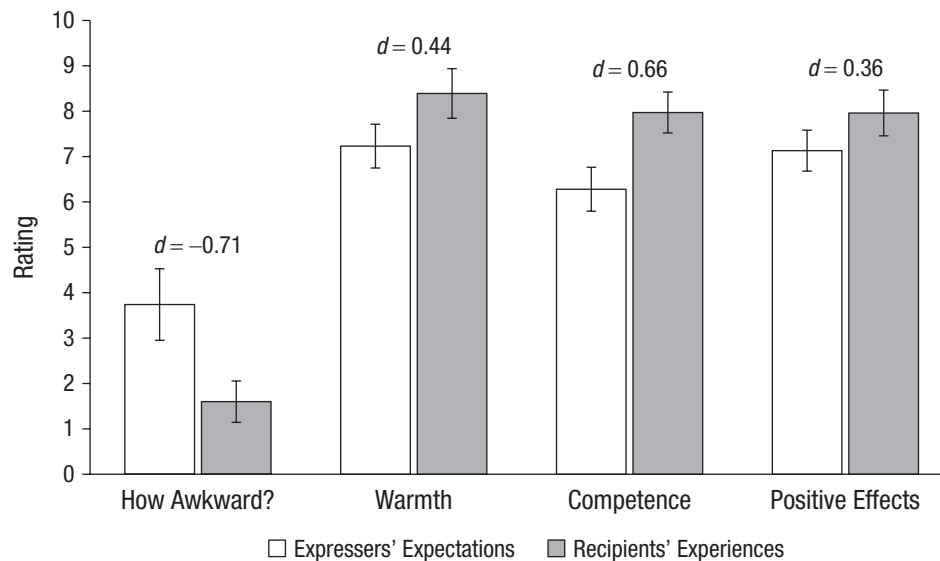
A wide variety of experiments now indicate that prosociality not just positive for recipients, but is also surprisingly positive for those behaving prosocially.

### Why? Divergent Perspectives on Prosociality

Understanding the impact of one’s own prosocial behavior on another person may be uniquely challenging because people who are behaving prosocially may interpret their own behavior differently than those who are impacted by it. In particular, social behavior tends to be evaluated along at least two independent dimensions: competence and warmth (Fiske et al., 2007; cf. Abele et al., 2021). People tend to construe their own behavior in terms of competence—how effective or capable their action seems—whereas observers tend to focus more on an action’s warmth—how kind or well intended the action seems (Abele & Wojciszke, 2007; Bruk et al., 2018). People expressing gratitude, for instance, may focus on exactly how they are expressing

their appreciation—the precise words or phrases they are using to express their feelings—while recipients focus more on the prosociality—the kindness and positive intent—conveyed by the act itself. Because prosocial acts are specifically intended to benefit a recipient, they are likely to be seen as expressing a very high degree of warmth to recipients. If expressers are primarily concerned about the competence of their prosocial act but recipients derive value from the high degree of warmth that a prosocial act typically conveys, then people who perform prosocial actions are likely to underestimate the positive impact of their prosociality on recipients (Kumar & Epley, 2018).

Several findings support this mechanism. First, as shown in Figure 3b, when participants who imagined expressing support were asked to indicate what thoughts first came to their mind, 76% indicated that their first thoughts were related to competence, whereas the remainder reported that their first thoughts were related to warmth. This pattern was reversed among those who imagined being the recipient of social



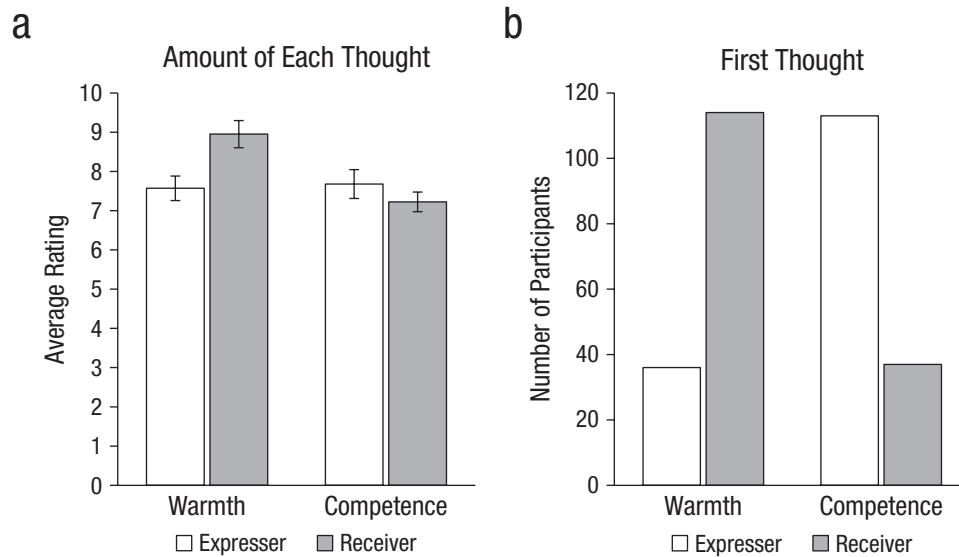
**Fig. 2.** Mean expectations versus mean actual experiences of receiving social support in Dungan et al. (2022, Experiment 2). Expressers wrote a supportive message to someone they knew and predicted how this recipient would respond. Recipients reported how they actually felt upon receiving the supportive message. The graphs show average ratings for recipients' feelings of awkwardness and three composite measures based on two items each: warmth (how sincere and how "warm/friendly" the message was), competence (the extent to which the message was articulate and used words that were "just right"), and positive effects (how positive or negative and how supported the recipient was expected to feel or actually felt after reading the message). All measures used 11-point scales ranging from 0 (*not at all*) to 10 (*extremely*). Error bars show standard errors. Effect sizes ( $d$ ) indicate the difference between expressers' expectations and recipients' actual experiences. An effect size of 0.8 is generally considered to be large.

support; only 25% reported that competence-related thoughts came to mind first. As shown in Figure 3a, participants who imagined receiving support also reported thinking more about the warmth conveyed by the expression of support than about aspects related to competence, whereas those expressing support did not show this difference (Dungan et al., 2022; see also Kumar & Epley, 2018). Second, people who are behaving prosocially tend to underestimate how positively recipients of their prosocial act will rate it for competence relative to how positively they will rate it for warmth. As shown in Figure 1, participants expressing gratitude expected that their letter would be judged less positively in terms of its competence (how articulate the letter was, how much they got the words "just right") than in terms of its warmth (how warm and how sincere the letter would seem), whereas recipients evaluated the letters very positively—and to a similar degree on these two dimensions. This meant that those expressing gratitude underestimated how competent their act would seem to recipients even more than how warm it would seem to recipients. Similar results emerge for participants expressing versus receiving compliments (Zhao & Epley, 2021; see also Boothby & Bohns, 2021). However, this asymmetry does not seem to be a universal feature of prosocial actions. In one experiment,

participants who were expressing support to someone in need underestimated recipients' positive evaluations of competence and warmth to a similar extent (Dungan et al., 2022, Experiment 4). Finally, because the warmth conveyed through a prosocial act is uniquely directed at a recipient, observers anticipating the impact of prosocial actions should underestimate how positively recipients will feel, just as prosocial actors do. Indeed, in two studies, observers who read the same gratitude letter or compliment shared with recipients, and hence could evaluate it in terms of competence, also underestimated its positive impact on recipients (Kumar & Epley, 2018; Zhao & Epley, 2021; cf. Boothby & Bohns, 2021).

### From Expectation to Action

Undervaluing the positive impact of prosociality matters, we believe, because it creates a psychological barrier to acting on prosocial inclinations. Worrying about getting one's words just right could make people avoid writing a gratitude letter they would otherwise want to write. Fearing an awkward reaction could keep people from expressing a compliment they would otherwise give. And feeling incapable of alleviating another person's grief, or being unsure of what to say, could cause people to avoid expressing support they would otherwise want



**Fig. 3.** Results from Dungan et al. (2022, Experiment 4): The graph in (a) shows how much participants who imagined expressing social support (expressers) and participants who imagined receiving social support (recipients) reported thinking about the warmth and competence conveyed. The graph in (b) shows the number of expressers and recipients who reported that their first thought was about an aspect related to warmth and the number who reported that their first thought was about an aspect related to competence. Warmth and competence were assessed using items corresponding to those described for Figure 2. Error bars in (a) show standard errors.

to provide. Consistent with this possibility are experimental results indicating that the more people expect a recipient to react positively, the more interested they are in expressing gratitude, sharing a compliment, or reaching out to express social support (Dungan et al., 2022; Kumar & Epley, 2018; Zhao & Epley, 2021). Shifting attention to the warmth conveyed by a prosocial action, a perspective that is likely to be more closely aligned to a recipient's actual experience compared with focusing on competence, should therefore increase a potential prosocial actor's interest in behaving prosocially. Results are consistent with this prediction: In one experiment, people who generated a compliment reported being more interested in sharing that compliment after being directed to focus on the warmth it conveyed, compared with participants who were directed to focus on the competence of their expression and compared with participants in a control condition whose attentional focus was not manipulated (Zhao & Epley, 2021). However, this attentional manipulation did not have a similarly large effect on the percentage of participants who actually shared their compliment; many reported that they preferred to wait for "the right time" (an aspect related to competence; see also Kumar & Epley, 2022; Dunn & Lok, 2022). More research is needed to test how much calibrating social cognition would affect prosocial behavior.

Of course, social expectations guide decision making only to the extent that they are brought to mind during the decision-making process. Not all prosocial actions are preceded by careful thinking about their impact on a recipient. Our theorizing therefore predicts that any factors that decrease people's motivation (e.g., distraction) or capacity (e.g., age) to engage in effortful social cognition would also decrease the impact of miscalibrated expectations on prosocial behavior (Epley et al., 2006; Sassenrath et al., 2022). Prosocial behavior should therefore be moderated by both the content of people's expectations and the likelihood that they will consider their expectations.

### Untested Questions

The experiments we have reviewed provide a snapshot of the relation between expectations and experiences in specific prosocial exchanges. This relation may vary across cultures, time, and different prosocial behaviors in untested ways.

Differences in prosocial behavior across cultures may stem from differences in prosocial expectations, prosocial experiences, or both. For instance, expressing gratitude in one experiment significantly increased well-being among Americans but not among South Koreans, a difference that may stem from differences



between the two cultures in the amount of indebtedness felt (Layous et al., 2013). However, this experience among gratitude expressers could also reflect cultural variation in miscalibrated expectations about how recipients would interpret these expressions. Just as the personality trait of introversion seems to influence behavior by affecting expectations about social interactions more than by affecting actual social experiences (Margolis & Lyubomirsky, 2020; Zelenski et al., 2013), so too may culture influence prosocial behavior by affecting expectations about prosocial interactions more than by affecting prosocial experiences.

How people experience others' prosocial behavior also can vary meaningfully over time. People may appreciate someone's help more while actually being helped than after achieving their goal, or may appreciate a gift more the moment they receive it than several weeks later. These changes may not be fully anticipated by helpers or gift givers (Converse & Fishbach, 2012), who may instead use their own perspective as an ego-centric guide to their recipient's experience (Zhang & Epley, 2009). Understanding the alignment between prosocial expectations and experiences in dynamic contexts, where experiences could change over time, is a critical topic for future research.

Finally, we believe that the miscalibrated expectations reviewed here reflect a broad tendency to undervalue the positive impact of warmth in social interactions. Connecting with a stranger in conversation (Epley & Schroeder, 2014), having deeper and more intimate conversations than usual (Kardas et al., 2022), and connecting through more intimate media such as voice rather than text (Kumar & Epley, 2021) tend to leave people feeling more positive than they expected, effects that may stem from the same mechanism described here. Our theorizing predicts that miscalibrated expectations could inhibit a wide array of prosocial actions characterized by positive intent and warmth, including engaging in constructive confrontations, revealing meaningful secrets, and apologizing. In addition, if people undervalue the positive impact of warmth on others, they may also fail to appreciate the pain caused by antisocial acts that reveal coldness or indifference. Failing to express appreciation for a job well done, showing indifference to another person's pain, or avoiding an opportunity to express support to a friend in need may leave deeper scars than the coldhearted expect. Although considerable research has identified imperfections in people's ability to anticipate their own reactions to negative events (e.g., Carlsmith et al., 2008; Gilbert et al., 2004), less is known about possible imperfections in people's ability to anticipate how their own harmful behavior affects others.

## Conclusion

How much people genuinely care about others has been debated for centuries. In summarizing the purely selfish viewpoint endorsed by another author, Thomas Jefferson (1854/2011) wrote, "I gather from his other works that he adopts the principle of Hobbes, that justice is founded in contract solely, and does not result from the construction of man." Jefferson felt differently: "I believe, on the contrary, that it is instinct, and innate, that the moral sense is as much a part of our constitution as that of feeling, seeing, or hearing . . . that every human mind feels pleasure in doing good to another" (p. 39).

Such debates will never be settled by simply observing human behavior because prosociality is not simply produced by automatic "instinct" or "innate" disposition, but rather can be produced by complicated social cognition (Miller, 1999). Jefferson's belief that people feel "pleasure in doing good to another" is now well supported by empirical evidence. However, the evidence we reviewed here suggests that people may avoid experiencing this pleasure not because they do not want to be good to others, but because they underestimate just how positively others will react to the good being done to them.

## Recommended Reading

- Dungan, J. A., Munguia Gomez, D. M., & Epley, N. (2022). (See References). Reports experiments in which people asked to express support to someone they knew was in need underestimated how positively the recipient would respond.
- Dunn, E. W., Aknin, L. B., & Norton, M. I. (2014). (See References). Provides a framework for understanding why behaving prosocially—specifically, by spending money on other people—can increase one's well-being.
- Kumar, A., & Epley, N. (2018). (See References). Reports experiments in which people instructed to write a gratitude letter to someone they felt grateful to underestimated how positively their recipients would respond.
- Miller, D. T. (1999). (See References). Articulates a theory of how beliefs about self-interest can be self-fulfilling, leading people to assume that self-interest is a more powerful motivator underlying human behavior than it actually is.
- Zaki, J., & Mitchell, J. (2013). (See References). Reviews research documenting that prosociality can be an intuitive, reflective, and even automatic response.

## Transparency

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*Declaration of Conflicting Interests*

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