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

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### **Abstract**

Behaving prosocially can increase wellbeing among both those performing a prosocial act as well as 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' wellbeing. 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 divergent perspectives between prosocial actors and recipients, with actors attending relatively more to the competency of their actions and recipients attending relatively more to the warmth conveyed by them. 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' wellbeing.

Word Count: 149

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

It's good to be good to others. Kindness is widely-admired due to 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, 1998). Kindness also seems valuable in more objective ways, as those 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 a person's happiness, reduce stress, and improve cardiovascular functioning (Andreoni, 1989, 1990; Dunn, Aknin, & Norton, 2014). In contrast, harming others by behaving selfishly rather than cooperatively, or by exacting revenge after harm (Carlsmith, Wilson, & Gilbert, 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 towards 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,

Caruso, & Bazerman, 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.

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: miscalibrated social cognition can create a misplaced psychological barrier that inhibits some prosocial behavior. Specifically, across a range of interpersonal contexts, those 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 recipient's positive experience should diminish a person's interest in behaving prosocially. Miscalibrated social cognition could not only make people appear more selfish than their actual prosocial motivation would lead them to be, it could also lead people to miss easy opportunities to enhance both their own and others' wellbeing.

### ***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.”

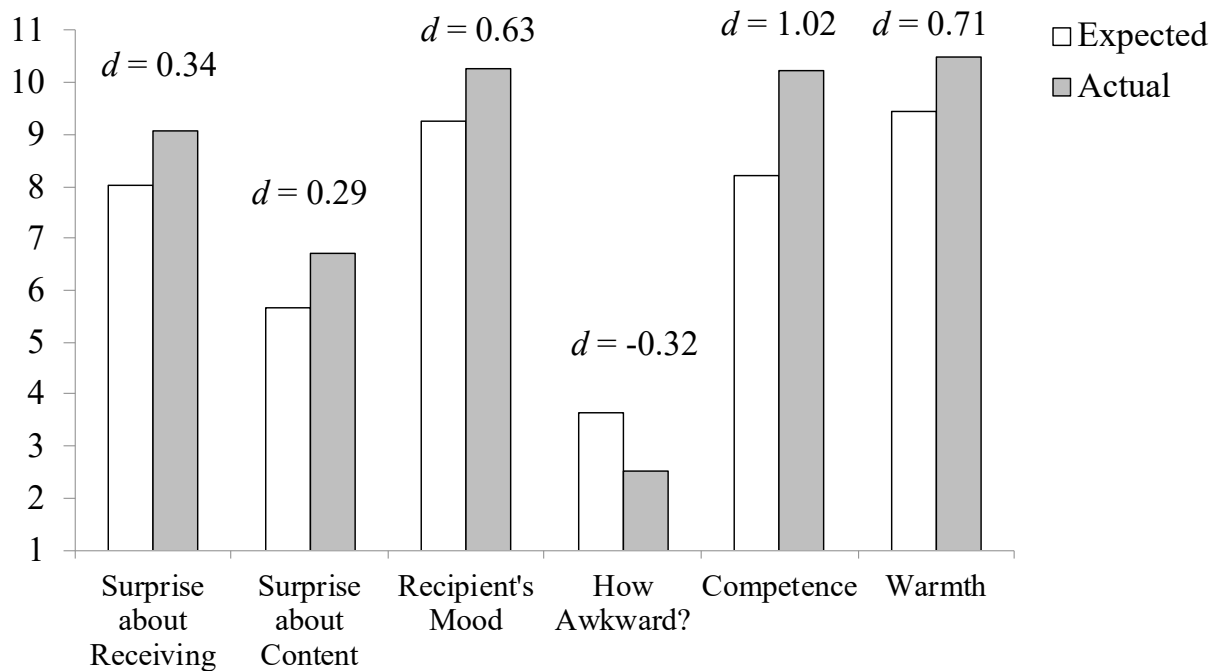
James does not seem unique in failing to recognize the power of appreciation on recipients. In one experiment (Kumar & Epley, 2018, Experiment 1), MBA students thought of a person they felt grateful to, but to whom they had not yet expressed their appreciation. Students wrote a gratitude letter to this person and then reported how they expected their 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. Those willing to do so then provided their recipient's email so they could be contacted to report how they actually felt receiving their letter. Although expressers recognized their recipients would feel positive, they did not recognize *just how* positive their recipients would feel. Those expressing gratitude underestimated how surprised their recipients would be to receive the letter and by its content, underestimated how positive their recipients would feel, and overestimated how awkward their recipients would feel. Table 1 shows the robustness of these results across 17 subsequent replications conducted since the initial experiment, with samples ranging from international MBA students at two universities to high school students (See Figure 1 for overall results; full details here: [osf.io/7wndj/](https://osf.io/7wndj/)). Expressing gratitude has a reliably more positive impact on recipients than expressers expect.

#	Sample	Expressers (N)	Recipients (N)	Surprised Receiving	Surprised Content	Recipient's Mood	How Awkward	Competence Composite	Warmth Composite
	(Exp. 1, Kumar & Epley, 2018)	107	80	$d = .68$	$d = .40$	$d = .74$	$d = -.32$		
	(Exp. 4, Kumar & Epley, 2018)	127	78	$d = .37$	$d = .40$	$d = .96$	$d = -.32$	$d = 1.20$	$d = .79$
1	International (2016)	24	15	$d = .37$	$d = .19$	$d = .38$	$d = -.36$		
2	Private Uni. (2016)	17	13	$d = .68$	$d = .21$	$d = 1.06$	$d = -.69$		
3	Private Uni. (2017)	86	30	$d = .75$	$d = .36$	$d = 1.03$	$d = -.37$		
4	Private Uni. (2016)	121	88	$d = .60$	$d = .35$	$d = .76$	$d = -.34$		
5	Public Uni. (2019)	35	22	$d = .21$	$d = .40$	$d = .17$	$d = -.75$		
6	Public Uni. (2020)	47	24	$d = .13$	$d = .39$	$d = .53$	$d = -.43$		
7	Public Uni. (2021)	37	17	$d = .30$	$d = .42$	$d = .25$	$d = -.35$		
8	International (2018)	45	22	$d = .49$	$d = .10$	$d = .56$	$d = -.65$	$d = .94$	$d = .88$
9	Private Uni. (2019)	137	67	$d = .31$	$d = .60$	$d = .81$	$d = -.21$	$d = 1.58$	$d = .93$
10	High School (2019)	237	95	$d = .28$	$d = .05$	$d = .46$	$d = -.12$	$d = .79$	$d = .66$
11	International (2019)	19	11	$d = .03$	$d = .22$	$d = .80$	$d = -.34$	$d = 2.87$	$d = .96$
12	Private Uni. (2020)	76	34	$d = .34$	$d = .23$	$d = .46$	$d = -.25$	$d = 1.24$	$d = .87$
13	International (2020)	31	22	$d = .55$	$d = .21$	$d = .45$	$d = -.05$	$d = .54$	$d = .14$
14	Private Uni. (2021)	45	45	$d = .24$	$d = .17$	$d = .67$	$d = -.66$	$d = 1.25$	$d = .55$
15	International (2021)	24	24	$d = .37$	$d = .63$	$d = .43$	$d = -.29$	$d = .57$	$d = .79$
16	Private Uni. (2017)	127	77	$d = .36$	$d = .39$	$d = .94$	$d = -.32$	$d = 1.13$	$d = .77$
17	International (2017)	42	28	$d = .25$	$d = .17$	$d = .76$	$d = -.43$		

**Table 1.** Effect size ( $d$ ) estimates of the gap between expected and actual experience of receiving gratitude in one published experiment (Experiment 1, Kumar & Epley, 2018) and 17 subsequent numbered replications, including the year the replication was conducted.

“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 they would feel to receive the letter, how surprised they 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. Several replications, following the procedure of Experiment 4 of Kumar & Epley (2018), also asked expressers to report how they expected their recipients to rate their letter in terms its

competency (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).



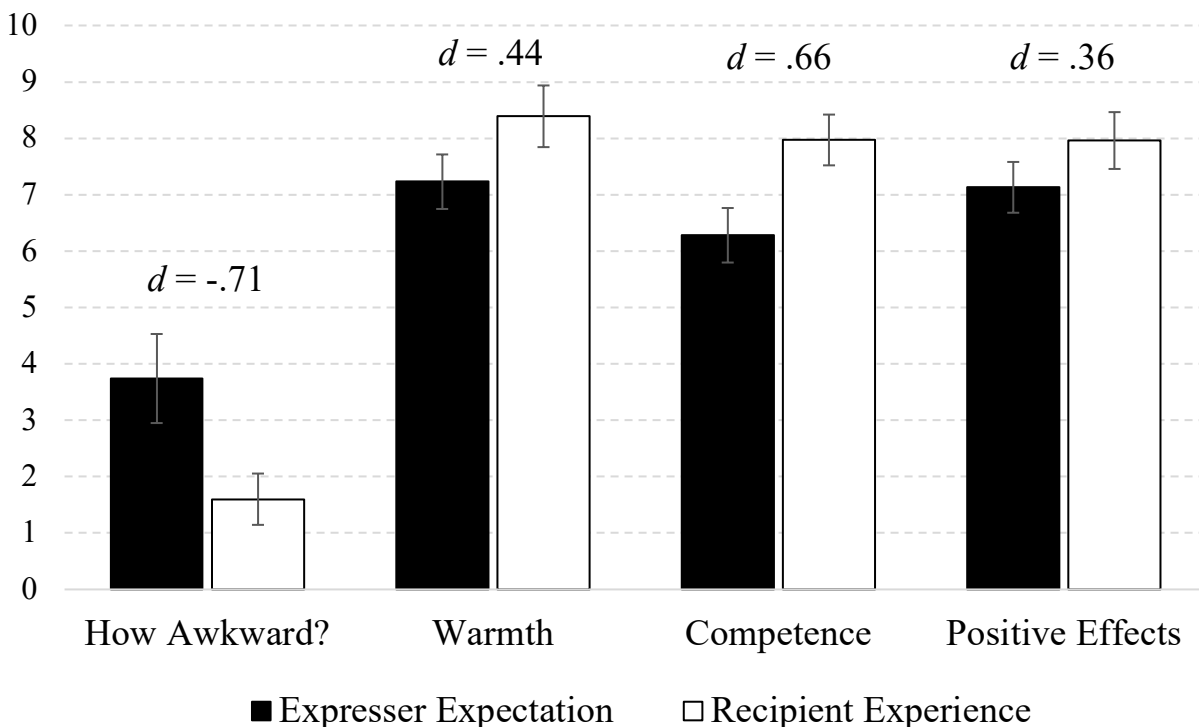
**Figure 1.** Expected versus actual experience of receiving gratitude across the 17 replications of Kumar and Epley (2018, Experiments 1 and 4) reported in Table 1, including all expresser/recipient pairs ( $N = 634$  pairs for the four measures on the left,  $N = 397$  pairs for the competence and warmth composite measures on the right). Two items measured Competence: to what extent the message was articulate and used words that were “just right.” Two items measured Warmth: how sincere and how warm/friendly the message was. Effect sizes ( $d$ ) reported for each variable indicate the difference between expressers’ expectations and recipients’ actual experiences.

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 each other for an average of 10 years, and presumably knowing their partner well, compliment-givers nevertheless underestimated how positive, and overestimated how awkward, their kind words would make their partner 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 five 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 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 (Dungan, Mungia Gomez, & Epley, in press, See Figure 2), or to perform a random act of kindness such as giving hot chocolate to a stranger on a cold winter day (Kumar & Epley, in press). These patterns seem unique to prosocial expressions of warmth, rather than undervaluing any positive outcome. In one experiment (Kumar & Epley, in press, Experiment 3), people expected recipients to feel just as



positive when they received a cupcake as a random act of kindness from another person as when they received the cupcake by chance. In fact, recipients felt more positive receiving the cupcake as a random act of kindness, meaning that people only underestimated their recipient's positive reaction to the prosocial act (see also Zhao & Epley, 2021). Prosociality is not just positive for recipients, it is surprisingly positive from the perspective of those behaving prosocially.



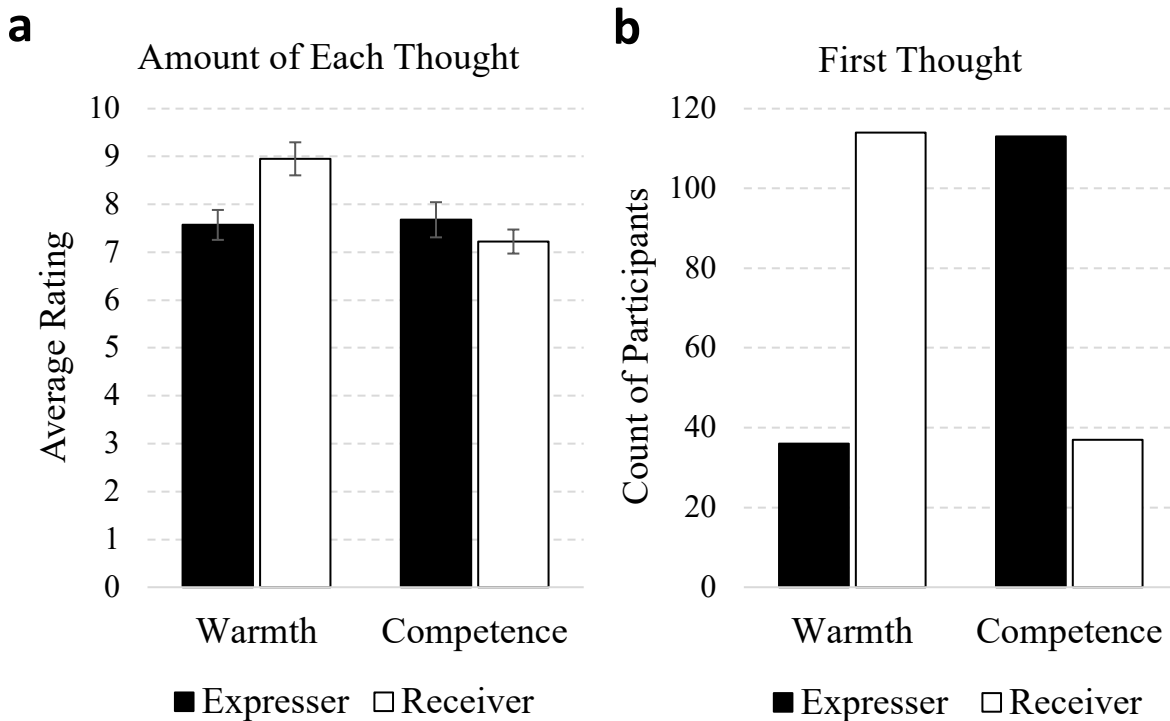
**Figure 2:** Average ratings of expectations versus experiences of social support (Experiment 2, Dungan, Munguia Gomez, & Epley, in press). "Expressers" wrote a supportive message to someone they know and predicted how this recipient would respond. "Recipients" reported how they actually felt upon receiving the supportive message. Two items measured Competence: to what extent the message was articulate and used words that were "just right." Two items measured Warmth: how sincere and how warm/friendly the message was. Finally, two items measured Positive Effects: how positive or negative and how supported the recipient felt after reading the message. All measures used 11-point scales ranging from (0) not at all to (10) extremely. Error bars show 95% confidence intervals around the mean. Effect sizes ( $d$ ) reported for each variable indicate the difference between expressers' expectations and recipients' experiences.

### ***Why?: Divergent Perspectives on Prosociality***

Understanding the impact of one's own prosocial behavior on another may be uniquely challenging because those behaving prosocially may interpret their own behavior differently than those impacted by it. In particular, social behavior tends to be evaluated along at least two independent dimensions: competence and warmth (Fiske et al., 2007; c.f., Abele et al., 2021). People tend to construe their own behavior in terms of competency—how effective or capable their action seems—while others tend to focus relatively more on its warmth—how kind or well-intended the action seems (Abele & Wojciszke, 2007; Bruk, Scholl, & Bless, 2018). A person expressing gratitude, for instance, may focus on exactly how they are expressing their appreciation—how effectively they are expressing their feelings—while recipients focus relatively more on the prosociality—the kindness and positive intent—conveyed by the act itself. If expressers are primarily concerned about the competency of their prosocial act while recipients derive value from the high degree of warmth conveyed by the act, then those performing prosocial actions are likely to underestimate the positive impact of prosociality on recipients (Kumar & Epley, 2018).

Several findings support this mechanism. First, as shown in Figure 1, those expressing gratitude may underestimate how positively recipients will rate their act in terms of its competency (how articulate the letter was, how much they got the words “just right”) more than in terms of its warmth (how warm, and how sincere, the letter will seem). Similar results emerge when giving compliments (Zhao & Epley, 2021; see also Boothby & Bohns, 2021). This asymmetry does not seem to be a universal feature of prosocial actions, however, as participants expressing support to someone in need underestimated recipients' positive evaluations of both competency and warmth to a similar extent (Dungan et al., in press). Second, as shown in Figure

3, when asked to indicate what thoughts come to mind first when imagining expressing social support, 76% indicated competence-related thoughts while the remaining indicated warmth-related thoughts. This pattern was reversed among those who imagined being the recipient of social support, where only 25% reported that competence-related thoughts came to mind first. Those receiving support also reported thinking more about the warmth conveyed by the expression of support than about aspects related to competency, while those expressing support did not show this difference (Dungan et al., in press; see also Kumar & Epley, 2018). Finally, because the warmth conveyed through a prosocial act is uniquely directed at a recipient, observers anticipating the impact of a prosocial action should underestimate how positively recipients will feel just as the prosocial actors do. Indeed, observers who read the exact gratitude letters or compliments shared with recipients, and hence could evaluate it in terms of competency, also underestimated their positive impact on recipients (Kumar & Epley, 2018; Zhao & Epley, 2021; c.f. Boothby & Bohns, 2021).



**Figure 3:** Average rating of: a) the extent to which expressers and recipients were thinking about warmth and competence, and b) the number of expressers and recipients who reported that their first thought was about an aspect related to warmth or competence (Experiment 4, Dungan, Munguia Gomez, & Epley, in press). Warmth and Competence were calculated using the same items reported in Figure 2. Error bars in (a) show 95% confidence intervals.

### *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 sharing a compliment they would otherwise give. And feeling incapable of alleviating another's grief, or being unsure of what to say, could cause people to avoid expressing support to someone they would otherwise want to provide. Consistent with this possibility, 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., in press; Kumar & Epley, 2018; Zhao & Epley, 2021). Shifting attention to the warmth conveyed by their prosocial action, a perspective that is likely to be more closely aligned to a recipient's actual experience, should therefore increase interest in behaving prosocially. Consistent with this prediction, people in one experiment who generated a compliment reported being more interested in sharing that compliment after being directed to focus on the warmth conveyed by their compliment, compared to participants directed to focus on competency or a control condition (Zhao & Epley, 2021). However, this attentional manipulation did not have a similarly large impact on the percentage of participants who actually shared their compliment during the experiment itself, with many reporting that they preferred to wait for "the right time" (an aspect related to competency; see also Kumar & Epley, in press; Lok & Dunn, in press). 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, Caruso, & Bazerman, 2006; Sassenrath, Vorauer, & Hodges, 2022). Prosocial behavior should therefore be moderated by both the content of people's expectations and by the likelihood of considering 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 culture, 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 wellbeing among Americans but not among South Koreans, a difference that may stem from differences in the amount of indebtedness felt between the two cultures (Layous et al., 2013). However, this experience among gratitude expressers could also reflect cultural variation in miscalibrated expectations about how their recipients would interpret their expression. Just as the personality trait of introversion seems to influence behavior by affecting expectations about social interactions more than their actual experiences (Margolis & Lyubomirsky, 2020; Zelenski et al., 2013), so too may culture influence prosocial behavior by affecting expectations about prosocial interactions more than it affects prosocial experience.

Experiences involving prosocial behavior also vary meaningfully over time. People may appreciate someone's help more while actually being helped than after achieving their goal, or appreciate a gift more the moment they receive it than several weeks later, changes that may not be anticipated by helpers or gift givers (Converse & Fishbach, 2010). Understanding the alignment between prosocial expectations and experiences in more dynamic contexts is a critical topic for future research.

Finally, we believe 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 (Kardas, Kumar, & Epley, 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 of divergent perspectives on social actions described here. Our theorizing predicts that miscalibrated expectations could inhibit a wide array of prosocial actions characterized by positive intent and warmth including constructive confrontations, revealing meaningful secrets, and apologizing. Undervaluing the positive impact of warmth on others means that people may also fail to appreciate the pain caused to others by more antisocial acts that reveal coldness or indifference. Failing to acknowledge appreciation for a job well done, expressing indifference to another's pain, or avoiding an opportunity to express support to a friend in need, may also leave deeper scars than the cold-hearted expect. Although considerable research had identified imperfections in people's ability to anticipate their own reactions to negative events (e.g., Carlsmith, Wilson, & Gilbert, 2008; Gilbert, Lieberman, Morewedge, & Wilson, 2004), less is known about possible imperfections anticipating others' reactions to their own harmful behavior.

### ***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 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, Washington, 1854/2011)

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 after being good to them.



### **Recommended Reading**

Dungan, J.M., Munguia Gomez, D.M., & Epley, N. (See References). People asked to express support to someone they know who is in need, or to a stranger in need, underestimate how positively recipients will respond.

Dunn, E.W., Aknin, L.B., & Norton, M.I. (See References). Provides a framework for understanding why prosocial behavior, specifically spending money on others, can increase wellbeing.

Kumar, A., & Epley, N. (See References). People instructed to write a gratitude letter to someone they feel grateful to underestimate how positively their recipients will respond.

Miller, D. T. (See References). Articulates a theory of how beliefs about self-interest can be self-fulfilling, leading people to assume self-interest is a more powerful motivator underlying human behavior than it actually is.

Zaki, J., & Mitchell, J. (See References). Reviews research documenting that prosociality can be an intuitive, reflective, and even automatic response.

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## References

- Abele, A. E., Ellemers, N., Fiske, S. T., Koch, A., & Yzerbyt, V. (2021). Navigating the social world: Toward an integrated framework for evaluating self, individuals, and groups. *Psychological Review*, 128(2), 290–314. doi.org/10.1037/rev0000262
- Abele, A. E., & Wojciszke, B. (2007). Agency and communion from the perspective of self versus others. *Journal of Personality and Social Psychology*, 93(5), 751–763. doi.org/10.1037/0022-3514.93.5.751
- Andreoni, J. (1989). Giving with impure altruism: Applications to charity and Ricardian equivalence. *Journal of Political Economy*, 97 (6), 1447-1458. doi.org/10.1086/261662
- Andreoni, J. (1990). Impure altruism and donations to public goods. *The Economic Journal*, 100, 464-477. doi.org/10.2307/2234133
- Boothby, E. J., & Bohns, V. K. (2021). Why a simple act of kindness is not as simple as it seems: Underestimating the positive impact of our compliments on others. *Personality and Social Psychology Bulletin*, 47(5), 826–840. doi.org/10.1177/0146167220949003
- Bruck, A., Scholl, S. G., & Bless, H. (2018). Beautiful mess effect: Self-other differences in evaluation of showing vulnerability. *Journal of Personality and Social Psychology*, 115(2), 192–205. doi.org/10.1037/pspa0000120
- Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, 12(1), 1-49. doi.org/10.1017/S0140525X00023992
- Carlsmith, K. M., Wilson, T. D., & Gilbert, D. T. (2008). The paradoxical consequences of revenge. *Journal of Personality and Social Psychology*, 95(6), 1316–1324. doi.org/10.1037/a0012165

Dungan, J.M., Munguia Gomez, D.M., & Epley, N. (in press). Too reluctant to reach out:

Receiving social support is more positive than expressers expect. *Psychological Science*.

Available at [psyarxiv.com/st3hf](https://psyarxiv.com/st3hf)

Dunn, E. W., Aknin, L.B., & Norton, M.I. (2014). Prosocial spending and happiness: Using money to benefit others pays off. *Current Directions in Psychological Science*, 13(2), 347-355. doi.org/10.1177/0963721413512503

Eriksson, K., Vartanova, I., Strimling, P., & Simpson, B. (2020). Generosity pays: Selfish people have fewer children and earn less money. *Journal of Personality and Social Psychology*, 118(3), 532–544. doi.org/10.1037/pspp0000213

Epley, N., Caruso, E.M., & Bazerman, M. H. (2006). When perspective taking increases taking: Reactive egoism in social interaction. *Journal of Personality and Social Psychology*, 91(5), 872-889. doi.org/10.1037/0022-3514.91.5.872

Fiske, S. T., Cuddy, A. J., & Glick, P. (2007). Universal dimensions of social cognition: Warmth and competence. *Trends in Cognitive Sciences*, 11(2), 77–83. doi.org/10.1016/j.tics.2006.11.005

Gilbert, D. T., Lieberman, M. D., Morewedge, C. K., & Wilson, T. D. (2004). The peculiar longevity of things not so bad. *Psychological Science*, 15(1), 14–19. doi.org/10.1111/j.0963-7214.2004.01501003

Hepach, R., Vaish, A., & Tomasello, M. (2012). Young children are intrinsically motivated to see others helped. *Psychological Science*, 23(9), 967–972. doi.org/10.1177/0956797612440571

- Kardas, M., Kumar, A., & Epley, N. (2022). Overly shallow?: Miscalibrated expectations create a barrier to deeper conversation. *Journal of Personality and Social Psychology*, 122(3), 367-398. doi.org/10.1037/pspa0000281
- Klein, N., & Epley, N. (2014). The topography of generosity: Asymmetric evaluations of prosocial actions. *Journal of Experimental Psychology: General*, 143(6), 2366-2379. doi.org/10.1037/xge0000025
- Kumar, A., & Epley, N. (2018). Undervaluing gratitude: Expressers misunderstand the consequences of showing appreciation. *Psychological Science*, 29(9), 1423-1435. doi.org/10.1177/0956797618772506
- Kumar, A., & Epley, N. (2021). It's surprisingly nice to hear you: Misunderstanding the impact of communication media can lead to suboptimal choices of how to connect with others. *Journal of Experimental Psychology: General*, 150(3), 595-607. doi.org/10.1037/xge0000962
- Kumar, A., & Epley, N. (in press) A little good goes an unexpectedly long way: Underestimating the positive impact of kindness on recipients. *Journal of Experimental Psychology: General*. Available at psyarxiv.com/3yast/
- James, W., & James, H. (1896/1920). *The letters of William James*. Longmans, Green, and Co.
- Layous, K., Lee, H., Choi, I., & Lyubomirsky, S. (2013). Culture matters when designing a successful happiness-increasing activity: A comparison of the United States and South Korea. *Journal of Cross-Cultural Psychology*, 44(8), 1294-1303. doi.org/10.1177/0022022113487591
- Lok, I., & Dunn, E.W. (in press). Can sociability be increased? In J.P. Forgas, W. Crano, & K. Fiedler (Eds.), *The Psychology of Sociability*. New York: Routledge / Psychology Press.

- Margolis, S., & Lyubomirsky, S. (2020). Experimental manipulation of extraverted and introverted behavior and its effects on well-being. *Journal of Experimental Psychology: General*, 149(4), 719–731. doi.org/10.1037/xge0000668
- Miller, D. T. (1999). The norm of self-interest. *American Psychologist*, 54(12), 1053–1060. doi.org/10.1037/0003-066X.54.12.1053
- Rand, D. G., Peysakhovich, A., Kraft-Todd, G. T., Newman, G. E., Wurzbacher, O., Nowak, M. A., & Greene, J. D. (2014). Social heuristics shape intuitive cooperation. *Nature Communications*, 5(1), 3677. doi.org/10.1038/ncomms4677
- Sassenrath, C., Vorauer, J. D., & Hodges, S. D. (2022). The link between perspective taking and prosociality – not as universal as you might think. *Current Opinion in Psychology*, 44, 94-99. doi.org/10.1016/j.copsyc.2021.08.036
- Washington, H.A. (Ed.). (1854/2011). *The Writings of Thomas Jefferson*. Cambridge University Press.
- Zaki, J., & Mitchell, J. (2013). Intuitive prosociality. *Current Directions in Psychological Science*, 22(6), 466-470. doi.org/10.1177/09637214134492764
- Zelenski, J. M., Whelan, D. C., Nealis, L. J., Besner, C. M., Santoro, M. S., & Wynn, J. E. (2013). Personality and affective forecasting: Trait introverts underpredict the hedonic benefits of acting extraverted. *Journal of Personality and Social Psychology*, 104(6), 1092–1108. doi.org/10.1037/a0032281
- Zhao, X., & Epley, N. (2020). Kind words do not become tired words: Undervaluing the positive impact of frequent compliments. *Self and Identity*, 22(1), 25-46. doi.org/10.1080/15298868.2020.1761438

Zhao, X., & Epley, N. (2021). Insufficiently complimentary?: Underestimating the positive impact of compliments creates a barrier to expressing them. *Journal of Personality and Social Psychology*, 121(2), 239-256. doi.org/10.1037/pspa0000277