



Case Report

Good deeds gone bad: Lay theories of altruism and selfishness

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ARTICLE INFO

Keywords:

Altruism
Selfishness
Lay theories
Attribution
Emotion

ABSTRACT

When people help others, they often benefit themselves as well. Do these benefits disqualify prosocial acts from being truly altruistic? Scientists and philosophers have long debated this question, but few have considered laypeople's beliefs about altruism. Here, we examine such *lay theories* surrounding altruism. Across two studies, observers read about agents who behaved prosocially. In some cases, agents benefitted materially, socially, or emotionally from their actions (self-oriented *consequences*); in other cases, they acted in order to accrue these benefits (self-oriented *motives*). Observers “penalized” actions that produced self-oriented consequences – rating them as less altruistic than actions involving no such benefit – unless these benefits were emotional. When agents' actions involved self-oriented motives, observers penalized them more harshly, viewing their behavior as more selfish than even clearly non-prosocial acts. These data suggest that lay theories distinguish between motives for, and “side effects” of, prosocial actions, converging with recent psychological theories of altruism.

Prosocial behaviors comprise any act that benefits others, but when people engage in such behaviors, they often benefit themselves as well. People who give to charity, for instance, enjoy positive “side effects” of their largesse, including material benefits (e.g., tax breaks), social benefits (e.g., praise), or emotional benefits (e.g., good feelings). Do such benefits disqualify prosocial actions from being considered truly altruistic?

Scholars have long disputed the distinctions between *other-oriented* (altruistic) and self-oriented (egoistic) forms of prosocial behavior (Batson and Shaw, 1991; Cialdini, 1991; MacIntyre, 1967). Some argue that if a person benefits from their prosocial action, their act was ultimately “impure” and egoistic (Andreoni, 1990; Kant, 1785). Others, however, maintain that people can benefit as an *unintended side effect* of prosocial behavior, and their true motives may nonetheless be altruistic (Batson, 2011). Despite this persistent scholarly debate, few studies have considered *lay theories* about what constitutes altruism; that is, the factors that determine whether people decide that acts are altruistic versus selfish. Clarifying how lay theories of altruism are structured could be fruitful for several reasons. First, audiences' perceptions of a prosocial act can determine whether good deeds will be met with praise, indifference, or even disapproval. Second, lay theories shape peoples' own prosocial tendencies. For instance, individuals who believe in the existence of true altruism behave more prosocially themselves (Gebauer, Sedikides, Leary, & Asendorpf, 2015). Finally, lay

theories offer a new take on a longstanding, contentious scholarly debate, by probing which formal theories accord with people's beliefs about altruism.

For centuries, a faction of philosophers (Bentham, 1789; Hobbes, 1651; Nietzsche, 1878) and psychologists (Cialdini, 1991; Freud, 1910; Skinner, 1978) have inferred that all behavior, however altruistic in appearance, is in fact driven by self-interest. Initial work proposes that laypeople tend to make similar assumptions of self-interest when assessing prosocial acts (Critcher & Dunning, 2011), particularly when prosocial agents benefit from helping others (Lin-Healy & Small, 2013). For instance, when prosocial agents reap social or material benefits from their action, people view them as less moral than agents who gain no such benefits (Berman, Levine, Barasch, & Small, 2015; Lin-Healy & Small, 2013). Moreover, people view charitable efforts that yield material gains (e.g., revenue for a company) as morally worse than neutral actions that provide no benefit to others (Newman & Cain, 2014). Echoing classic economic (Andreoni, 1990) and philosophical (Kant, 1785) accounts, these studies suggest that laypeople view true altruism to be reserved for acts in which an agent benefits others *without* benefiting herself in the process. Crucially, this supports the idea that lay theories assess a do-gooder's *consequences* when judging whether a good deed was ultimately altruistic or selfish – disqualifying those acts in which a prosocial agent personally benefits from her action.

Other work, however, challenges the assumption that people

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reflexively infer self-interest when do-gooders benefit from helping others. In particular, Barasch, Levine, Berman, and Small (2014) found that agents who experience greater emotional benefits after donating (e.g., positive feelings), are rated as *more* moral than those who feel little or no emotional benefits after donating. This work suggests people are sensitive to the *type of benefit* one gains from prosociality when judging whether a good deed is in fact self- or other-oriented. Crucially, this work also indicates that people view personal benefits differently depending on whether they are perceived as a cause or consequence of prosocial behavior – morally discrediting the former case (see Lin-Healy & Small, 2012), but not the latter (Barasch et al., 2014).

These findings suggest an alternative account not explored in prior work – that lay theories of altruism (i) place emphasis on an agent's *motives*, and (ii) distinguish between motives and consequences when judging whether an agent was altruistic or not. Importantly, this view instead suggests that people believe true altruism *can* involve benefitting both oneself and others, so long as one's motive is other-oriented.

To illustrate, imagine Jane volunteered at the soup kitchen as a *means* to boost her reputation (a self-oriented motive). Now imagine Jane volunteered at the soup kitchen simply to help others (an other-oriented motive), but boosted her reputation as a *side effect* of her action. Philosophical (Kitcher, 1998) and psychological (Batson, 1987; Staub, 1978) theories support this distinction, proposing that prosocial acts that produce self-oriented *side effects* can nonetheless be considered altruistic if they are driven by other-oriented *motives*. This theory also dovetails with evidence from attribution theory, demonstrating that laypeople indeed consider motives when drawing inferences about others' actions (Weiner, 1985). Together, this work suggests that lay theories of altruism should likewise take motives into account when judging whether a good deed is truly altruistic. In particular, they should harshly judge prosocial actions that reflect self-oriented motives, but not those that incidentally produce self-oriented side effects.

Here, we explore this possibility. Specifically, across a range of prosocial situations, we examine people's perceptions of prosocial acts, both as a function of (a) the benefits those acts produce, and (b) whether these benefits are framed as a motive for, or a consequence of, prosociality.

1. Study 1

1.1. Method

We assessed how different benefits of acting prosocially shape perceptions of altruism within-subjects. Thus, we aimed for a minimum sample size of $N = 270$ (or $N = 90$ per condition) in order to attain approximately 80% power to detect a medium-sized effect ($d \approx 0.30$; $\alpha = 0.05$) within each framing group (motive vs. consequence). We recruited 300 participants from Amazon Mechanical Turk, and received 295 completed surveys. Participants who spent less than 1.5 s reading each vignette ($N = 8$) were excluded from analysis, as it was not possible to read the vignettes in this time span. This left a total sample size of $N = 287$ (motive condition = 94, consequence condition = 88, and control condition = 105).

1.1.1. Prosocial vignettes

Participants read and rated eight vignettes in an online survey. Each vignette described a unique prosocial action performed by a unique agent (counterbalanced for gender). For instance, in one such vignette participants read about Jane, who gave blood at a local clinic. All vignettes and study materials can be found in the Supplemental Material available online.

Participants were randomly assigned to read vignettes in one of three conditions. Participants in the *control* condition read vignettes that only described prosocial actions. This provided a baseline for assessing the perceived altruism of a given action absent any other information. Participants in the other two experimental groups further

read about ways in which the agent benefitted from her prosocial action. These benefits comprised four types: (i) *material* benefits, for instance receiving a tax break after a charitable donation, (ii) *social* benefits, such as receiving praise for a donation, (iii) *emotional* benefits, such as feeling good after making a donation, and (iv) *other-oriented* benefits, such as helping others through a donation. This last condition does not represent a self-oriented benefit, and thus provided a benchmark through which to assess the extent to which people “penalize” prosocial acts that do provide self-oriented gains. Benefit type was manipulated within subjects, such that each type of benefit was described in two vignettes, for a total of eight vignettes. The type of benefit paired with each action was counterbalanced across participants.

Participants who read about benefits of prosocial actions were further randomized to read about these benefits either as *motivating* those actions or as an incidental *consequence* of those actions. For instance, participants in the motive group might read that Jane gave blood *in order* to (i) receive a gift card [material benefit], (ii) impress her friends [social benefit], (iii) feel good [emotional benefit], or (iv) help someone in need [other-oriented benefit]. Participants in the consequence group might instead read that *as a result* of giving blood, Jane (i) received a gift card, (ii) impressed her friends, (iii) felt good, or (iv) helped someone in need. Again, vignettes were counterbalanced, such that each participant read about each benefit type paired with each of two prosocial actions. Unlike benefit type, motives versus consequences versus control conditions were manipulated between subjects.

1.1.2. Ratings of perceived altruism

After reading each vignette, we probed participants' judgments using 6 items ($\alpha = 0.88$). Specifically, participants rated (i) *how altruistic* they thought the prosocial *agent* was (ii) how altruistic they thought the agent's *action* was, and (iii) how altruistic they thought the agent's *motive* for their action was. For example, after reading about Jane giving blood, all groups were asked “How altruistic was Jane's action?”, and responded on an 11-point scale ranging from 0 (“Not at all”) to 10 (“Extremely”). Participants also rated *how selfish* they perceived agents, their actions, and their motives to be. For instance, after reading about Jane, participants were also asked: “How selfish is Jane as a person?” from 0 (“Not at all”) to 10 (“Extremely”).

Ratings for questions about agents, actions, and motives were very highly correlated, $r(284) = 0.86\text{--}0.94$, $p < .001$. Thus we collapsed these three ratings together, producing one composite measure of altruism and one composite measure of selfishness. Ratings of altruism and selfishness exhibited a strong negative correlation, $r(284) = -0.44$, $p < .001$. Thus we combined these ratings into one continuous scale ranging from -5 to $+5$ to form our final measure of *perceived altruism*. On this new measure, positive ratings indicated greater perceptions of altruism than selfishness, and negative ratings indicated greater perceptions of selfishness than altruism. The pattern of results described below also holds if we analyze altruism and selfishness ratings separately (see Supplemental material). All data and code can be found at https://github.com/carlsonrw/layTheories_altruism

1.2. Results

Our main analyses focused on two questions: (i) to what extent do lay theories of altruism “penalize” agents who benefit from their prosocial acts, and (ii) to what extent does it matter whether these benefits are framed as a motive for, versus a consequence of, prosocial actions?

To address these questions, we used a 4 (benefit type: material, social, emotional, & other-oriented) \times 2 (framing: motive vs. consequence) mixed ANOVA, in which benefit type was a within-subject factor and framing was a between-subject factor. Greenhouse-Geisser corrected degrees of freedom are reported, as Mauchly's test found that assumptions of sphericity were not met in our model. We found a

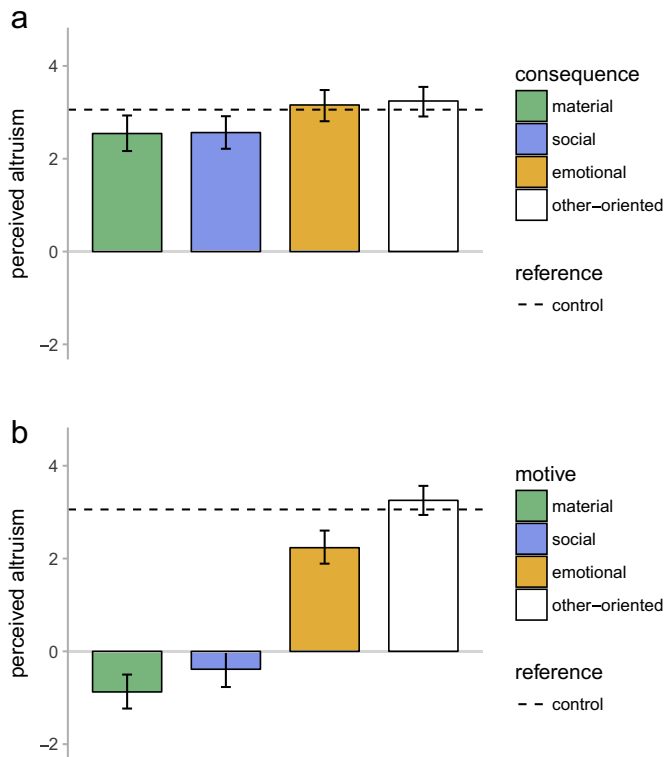


Fig. 1. a. In the **consequence condition**, prosocial actions that benefitted agents materially or socially were seen as less altruistic than actions that only benefitted others. When agents benefitted emotionally, however, they were not seen as any less altruistic. When no benefits were mentioned (control condition), observers assumed prosocial actions were highly altruistic.

b. In the **motive condition**, actions that were motivated by material or social benefits were seen as more selfish than altruistic. Actions motivated by emotional benefits, while viewed more favorably, were still seen as less altruistic than actions motivated only by benefits to others. Error bars reflect 95% confidence intervals.

significant main effect of benefit type, $F(2.03, 365.40) = 152.38$, $p < .001$, $\eta_p^2 = 0.46$, suggesting that perceptions of altruism indeed depended on whether the type of benefit involved was material, social, emotional, or other-oriented. Crucially, we also observed a significant interaction between benefit type and framing, $F(2.03, 365.40) = 71.89$, $p < .001$, $\eta_p^2 = 0.29$. This suggests that laypeople judge personal benefit types differently depending on whether they reflect a motive for, versus a consequence of, prosocial action.

Next we assessed how prosocial acts involving each benefit type were perceived by the motive group, and the consequence group, independently. Participants in the consequence group viewed prosocial acts as moderately less altruistic when agents reaped material benefits ($M = 2.54$, $SD = 1.81$), $t(87) = 4.91$, $p < .001$, $d = 0.42$, or social benefits ($M = 2.56$, $SD = 1.76$), $t(87) = 5.29$, $p < .001$, $d = 0.41$, as compared to other-oriented benefits ($M = 3.24$, $SD = 1.53$; See Fig. 1a). Interestingly, these participants did not similarly “penalize” prosocial agents who benefitted emotionally from their actions ($M = 3.16$, $SD = 1.55$), viewing them as similarly prosocial to fully other-oriented actions ($M = 3.24$, $SD = 1.53$), $t(87) = 0.87$, $p = .39$, $d = 0.06$. This suggests that lay observers retain their opinion that prosocial actors are selfless even if those actors feel good as a result of their generosity.

By contrast, participants in the motive group viewed prosocial actions as dramatically less altruistic when agents were motivated by material benefits ($M = -0.88$, $SD = 1.91$), $t(93) = 14.66$, $p < .001$, $d = 2.33$, or social benefits ($M = -0.39$, $SD = 1.92$), $t(93) = 13.06$, $p < .001$, $d = 2.05$, relative to an other-oriented benefit ($M = 3.25$, $SD = 1.62$; See Fig. 1b). Interestingly, even emotional benefits ($M = 2.23$, $SD = 1.74$), $t(93) = 6.31$, $p < .001$, $d = 0.61$, were

penalized when they reflected a prosocial agent’s motive for helping others. These findings suggest that lay theories of altruism assess much harsher views to people who act prosocially with the aim of benefitting themselves, as compared to those who benefit incidentally from their actions. In fact, our participants appeared to view prosocial acts motivated by personal gain as not altruistic at all. One-sample t -tests revealed that the perceived altruism of good deeds motivated by material benefits, $t(93) = -4.45$, 95% $CI: -1.27, -0.48$; $p < .001$, and social benefits, $t(93) = -1.95$, 95% $CI: -0.78, 0.007$; $p < .054$, fell below the mid-point of our scale, suggesting that such actions were perceived as more selfish than altruistic.

Lastly, we examined perceptions of altruism for our control group. This allowed us to explore peoples’ default assumptions about the nature of good deeds, when no information is provided about an agent’s motives or consequences. A one-sample t -test revealed that the perceived altruism of good deeds for the control group ($M = 3.06$, $SD = 1.39$) was substantially above the midpoint of our scale, $t(104) = 22.50$, 95% $CI = [2.79, 3.33]$, $p < .001$. Interestingly, as seen in Fig. 1a and b, participants in our control group ($M = 3.06$, $SD = 1.39$) credited prosocial actors as much as participants in other groups credited actions with purely other-oriented motives ($M = 3.25$, $SD = 1.62$) or consequences ($M = 3.24$, $SD = 1.53$). This suggests that absent information about benefits or motives, people assume prosocial actions are carried out selflessly.

This last inference is based on comparing ratings of selfishly motivated actions to the midpoint of our scale. However, to more strongly conclude that selfishly motivated prosocial actions are truly viewed as fundamentally non-altruistic, a better strategy would be to compare perceptions of ‘tainted’ prosocial actions on the one hand, and perceptions of neutral, clearly non-prosocial actions on the other hand (Newman & Cain, 2014). This was the goal of Study 2.

2. Study 2

2.1. Method

We recruited 420 participants from Amazon Mechanical Turk to replicate the findings of Study 1, and received 413 completed surveys. As in Study 1, participants who spent less than 1.5 s reading each vignette ($N = 7$) were excluded from analysis. This left a total sample size of $N = 406$ (motive condition = 105, consequence condition = 101, control condition = 106, and neutral condition = 94).

All procedures and measures were identical to Study 1, except for two changes. First, participants made ratings of perceived altruism on a single 11-point scale ranging from -5 (“Extremely Selfish”) to $+5$ (“Extremely Altruistic”) when judging agents, actions, and motives (3 items; $\alpha = 0.90$). This new measure is consistent with the combined measure of perceived altruism that we used for analysis in Study 1. Second, we added a neutral action condition, wherein participants read and rated the perceived altruism of neutral, clearly non-prosocial actions. For example, in one such vignette, participants read and rated the perceived altruism of Jane, who went to see a new film at her local cinema. All neutral actions can be found in the Supplemental Material.

2.2. Results

Our main analyses focused on the same questions as Study 1: how are perceptions of altruism influenced by (i) the presence of different benefits, and (ii) whether these benefits are framed as a motive for, versus a consequence of, prosocial action?

A 4 (benefit type: material, social, emotional, & other-oriented) \times 2 (framing: motive or consequence) mixed ANOVA replicated both key findings from Study 1: the main effect of benefit type, $F(2.02, 412.55) = 228.22$, $p < .001$, $\eta_p^2 = 0.53$, and interaction between benefit type and framing, $F(2.02, 412.55) = 130.40$, $p < .001$, $\eta_p^2 = 0.39$ (See Fig. 2a & 2b).

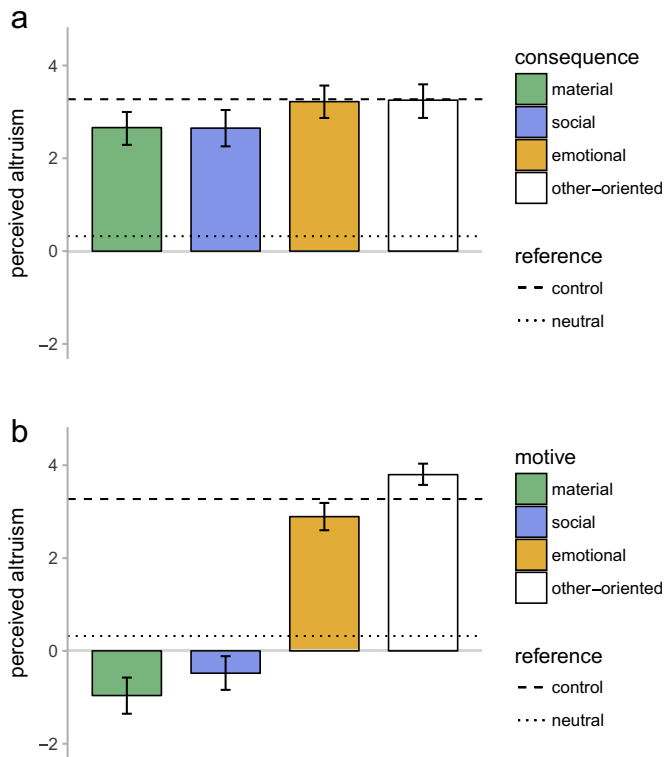


Fig. 2. a. In Study 2, we again find that benefitting materially or socially from a prosocial action reduces perceptions of altruism, but benefitting emotionally does not.

b. We again find that actions motivated by material or social benefits are seen as more selfish than altruistic. In addition, we find that actions driven by material or social motives are viewed as less altruistic than neutral actions. Error bars reflect 95% confidence intervals.

Follow-up contrasts also replicated Study 1. Prosocial acts were seen as moderately less altruistic when agents experienced material benefits ($M = 2.66$, $SD = 1.85$); $t(100) = 4.15$, $p < .001$, $d = 0.32$, or social benefits ($M = 2.65$, $SD = 1.99$), $t(100) = 4.48$, $p < .001$, $d = 0.31$, as a consequence of their action, relative to other oriented benefits ($M = 3.25$, $SD = 1.88$; see Fig. 2a). However, again, prosocial actions that produced emotional benefits ($M = 3.22$, $SD = 1.81$) were viewed no differently than actions that produced only benefits to others ($M = 3.25$, $SD = 1.88$), $t(100) = 0.30$, $p = .76$, $d = 0.02$.

Also as in Study 1, prosocial actions were viewed as dramatically less altruistic when agents were motivated by material ($M = -0.96$, $SD = 2.02$), $t(104) = 19.09$, $p < .001$, $d = 2.88$, social ($M = -0.48$, $SD = 1.92$), $t(104) = 18.08$, $p < .001$, $d = 2.68$, or emotional ($M = 2.89$, $SD = 1.59$), $t(104) = 6.45$, $p < .001$, $d = 0.65$, benefits, relative to an other-oriented benefit ($M = 3.80$, $SD = 1.19$; see Fig. 2b).

In another replication of Study 1, observers rated good deeds that were motivated by material, $t(104) = -4.88$, 95% $CI = [-1.35, -0.57]$; $p < .001$, or social benefits, $t(104) = -2.56$, 95% $CI = [-0.85, -0.11]$; $p = .012$, as more selfish than altruistic, as assessed by comparison to the scale midpoint. In Study 2, we additionally compared observers' ratings of these "tainted" prosocial actions to ratings of neutral, non-prosocial actions made by a separate group of observers. Due to heterogeneity of variances between ratings of neutral actions and ratings of prosocial actions, we used an independent samples Welch's t -test to make these comparisons. Results revealed that good deeds motivated by material, $t(187.77) = -5.18$, 95% $CI = [-1.77, -0.79]$, $p < .001$, and social, $t(191.88) = -3.33$, 95% $CI = [-1.28, -0.33]$, $p = .001$, benefits were viewed as less altruistic than neutral actions ($M = 0.32$, $SD = 1.46$). This suggests that people view good deeds that are motivated by material or social benefits as less

altruistic than actions that provide no benefit to others, such as going to the movies.

Lastly, we examined perceptions of altruism for our control group, where no information was provided about an agent's motives or consequences. A one-sample t -test replicated our Study 1 finding that the perceived altruism of good deeds for the control group ($M = 3.27$, $SD = 1.29$) was substantially above the midpoint of our scale, $t(105) = 26.12$, 95% $CI = [3.03, 3.52]$, $p < .001$. Furthermore, as seen in Fig. 2a and b, people in the control group credited agents with levels of altruism comparable to agents whose actions produced only other-oriented consequences ($M = 3.25$, $SD = 1.88$) and motives ($M = 3.80$, $SD = 1.19$).

3. Discussion

When people benefit from helping others, does this disqualify their actions from being truly altruistic? Here we show that, for laypeople, the answer to this question depends on do-gooders' motives. When actors benefit from good deeds, observers view them as less altruistic; when actors perform good deeds *in order* to accrue material or social benefits, observers view them as "counter-altruistic," more selfish even than people who engage in non-prosocial behavior. This finding reveals an interesting double bind, especially with respect to social benefits. People often act kindly in order to impress others (Harbaugh, 1998), but when observers *know* an actor is thus motivated, the actor can end up, reputationally, worse off than if she had done no good at all.

Interestingly, the above pattern was not true of prosocial acts involving emotional benefits. We find that people view feeling good in response helping others as consistent with genuine altruism (see also Barasch et al., 2014). This runs counter to the classic economic view of "warm glow" giving, in which benefitting emotionally from a good deed is interpreted as impure altruism (Andreoni, 1990). However, we also find that people somewhat morally penalize agents who engage in good deeds *in order* to feel good. That is, in observers' lay theories, feeling good *after* acting prosocially is consistent with true altruism, but helping others as a *means* for building positive emotion is viewed less nobly.

These findings build on prior work by systematically demonstrating that lay theories of altruism distinguish between motives and consequences. This dovetails with Batson's (1987) classic model, under which altruism constitutes any act with the ultimate goal of helping someone else, even if that act produces incidental personal benefits. It also connects to prior work on moral cognition in the domain of harm. When observers judge culpability, for instance, they heavily weigh not only the harm someone caused, but also their intentions in doing so (Gray & Wegner, 2008; Young & Saxe, 2009). Similarly, people give primacy to intentions when judging dishonesty, placing equal trust in a deceptive (versus honest) partner if they lie with the intent to benefit others (Levine & Schweitzer, 2015). Our findings echo these prior studies, showing that the nature of one's motives are crucial when people assess whether an act is altruistic.

Why would a good deed, even if driven by self-interest, be seen as morally inferior to a neutral act such as watching a film? Prior work suggests that people view motives as better barometers than actions when predicting someone's future behavior (Newman & Cain, 2014; Reed, Zeglen, & Schmidt, 2012; Swap, 1991). Selfish motives signal that one is only generous under certain conditions, and might not be a reliable social partner. Further, people who perform outwardly selfless acts for selfish reasons might appear not only morally inconsistent, but also morally deceptive (Barclay & Willer, 2007). This view fits with recent work suggesting that people condemn actions that falsely signal one's moral character (see Jordan, Sommers, Bloom, & Rand, 2017).

Peoples' preference for moral consistency could also explain why they do not heavily penalize prosocial actors who are motivated by emotional benefits. Emotional dispositions and goals are stable over time (Garnefski, Kraaij, & Spinhoven, 2001; Watson & Clark, 1984),

making them a much better predictor of future generosity than extrinsic motivators, such as praise or tax breaks. In addition, emotional motives appear to constitute a more honest signal of one's moral character (Everett, Pizarro, & Crockett, 2016). In accordance with scholars who emphasize the role of emotion in morality and prosocial behavior (Aknin, Van de Vondervoort, & Hamlin, 2018; Carlson, Charlin, & Miller, 1988; Darwin, 1871; Smith, 1759), initial work suggests that laypeople regard emotion as both a natural cause and consequence of altruism (Barasch et al., 2014).

Lastly, we observed a surprising discordance between lay theories and scholarly theories with respect to baseline assumptions about the nature of good deeds. Many scholars maintain that prosocial behavior, like most human behavior, is typically self-interested (Andreoni, 1990; Cialdini, Darby, & Vincent, 1973). Yet our work suggests the opposite pattern is true for laypeople – they instead assume that prosocial behavior is altruistic, unless presented with evidence of self-interested motives. This suggests that, by default, people may assume that good deeds truly are good-natured. Our results on this front are preliminary, as our study was not optimized to test this question. However, this remains an important and exciting direction for future studies to explore.

Future directions

Our research leaves open a number of opportunities for future work. First, the present research used vignettes, thus our conclusions rely on participants' responses to hypothetical prosocial situations. Future work should consider examining factors that shape perceptions of altruism when observers actively witness prosocial acts and their consequences unfold, as opposed to passively reading about them. In addition, here we focus on how prosocial acts are perceived by observers. Though another interesting question is how prosocial agents perceive their own good deeds when such acts yield personal benefits (e.g., Anik, Aknin, Norton, & Dunn, 2009), and how their perceptions compare to those of observers. Lastly, we show that incidentally benefitting from a good deed can diminish perceptions of altruism. However, recent work suggests that the inverse is also true – suffering personal costs can amplify perceptions of altruism (see Schaumberg & Mullen, 2017). One key outstanding question is how observers might integrate knowledge of both costs and benefits experienced by prosocial agents into their assessments of altruism. By exploring such avenues, future work will no doubt deepen our understanding of the factors that shape when prosocial acts are seen as merely “good deeds”, and when they are seen as acts of altruism.

Author contributions

R. W. Carlson and J. Zaki developed the study concept and contributed to the study design. Data collection was performed by R. W. Carlson. R. W. Carlson performed the data analysis under the supervision of J. Zaki. R. W. Carlson and J. Zaki drafted the manuscript, and both authors approved the final version of the manuscript for submission.

Open Practices

The research in this article earned Open Materials and Open Data badges for transparent practices. Experiment materials are included at: <https://doi.org/10.1016/j.jesp.2017.11.005>. Data and analysis code can be downloaded at: https://github.com/carlsonrw/layTheories_altruism.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jesp.2017.11.005>.

References

- Aknin, L. B., Van de Vondervoort, J. W., & Hamlin, J. K. (2018). Positive feelings reward and promote prosocial behavior. *Current Opinion in Psychology*, 20, 55–59.
- Andreoni, J. (1990). Impure altruism and donations to public goods: A theory of warm-glow giving. *The Economic Journal*, 100(401), 464–477.
- Anik, L., Aknin, L. B., Norton, M. I., & Dunn, E. W. (2009). Feeling good about giving: The benefits (and costs) of self-interested charitable behavior. In D. M. Oppenheimer, & C. Y. Olivola (Eds.). *Experimental approaches to the study of charitable giving* (pp. 3–14). New York, NY: Psychology Press.
- Barasch, A., Levine, E. E., Berman, J. Z., & Small, D. A. (2014). Selfish or selfless? On the signal value of emotion in altruistic behavior. *Journal of Personality and Social Psychology*, 107(3), 393.
- Barclay, P., & Willer, R. (2007). Partner choice creates competitive altruism in humans. *Proceedings of the Royal Society of London B: Biological Sciences*, 274(1610), 749–753.
- Batson, C. D. (1987). Prosocial motivation: Is it ever truly altruistic? *Advances in Experimental Social Psychology*, 20, 65–122.
- Batson, C. D. (2011). *Altruism in humans*. USA: Oxford University Press.
- Batson, C. D., & Shaw, L. L. (1991). Evidence for altruism: Toward a pluralism of prosocial motives. *Psychological Inquiry*, 2(2), 107–122.
- Bentham, J. (1789). *An introduction to the principles of morals and legislation*.
- Berman, J. Z., Levine, E. E., Barasch, A., & Small, D. A. (2015). *The braggart's dilemma: On the social rewards and penalties of advertising prosocial behavior*.
- Carlson, M., Charlin, V., & Miller, N. (1988). Positive mood and helping behavior: A test of six hypotheses. *Journal of Personality and Social Psychology*, 55(2), 211–229.
- Cialdini, R. B. (1991). Altruism or egoism? That is (still) the question. *Psychological Inquiry*, 2(2), 124–126.
- Cialdini, R. B., Darby, B. L., & Vincent, J. E. (1973). Transgression and altruism: A case for hedonism. *Journal of Experimental Social Psychology*, 9(6), 502–516.
- Critcher, C. R., & Dunning, D. (2011). No good deed goes unquestioned: Cynical reconstructions maintain belief in the power of self-interest. *Journal of Experimental Social Psychology*, 47(6), 1207–1213.
- Darwin, C. (1871). *The descent of man, and selection in relation to sex*.
- Everett, J. A., Pizarro, D. A., & Crockett, M. J. (2016). Inference of trustworthiness from intuitive moral judgments. *Journal of Experimental Psychology: General*, 145(6), 772.
- Freud, S. (1910). *The origin and development of psychoanalysis*.
- Gamefski, N., Kraaij, V., & Spinhoven, P. (2001). Negative life events, cognitive emotion regulation and emotional problems. *Personality and Individual Differences*, 30(8), 1311–1327.
- Gebauer, J. E., Sedikides, C., Leary, M. R., & Asendorpf, J. B. (2015). Lay beliefs in true altruism versus universal egoism. *Character: New directions from philosophy, psychology, and theology*. 75.
- Gray, K., & Wegner, D. M. (2008). The sting of intentional pain. *Psychological Science*, 19(12), 1260–1262.
- Harbaugh, W. T. (1998). The prestige motive for making charitable transfers. *The American Economic Review*, 88(2), 277–282.
- Hobbes, T. (1651). *Leviathan*.
- Jordan, J. J., Sommers, R., Bloom, P., & Rand, D. G. (2017). Why do we hate hypocrites? Evidence for a theory of false signaling. *Psychological Science*, 28(3), 356–368.
- Kant, I. (1785). *Groundwork of the metaphysics of morals*.
- Kitcher, P. (1998). Psychological altruism, evolutionary origins, and moral rules. *Philosophical Studies*, 89(2), 283–316.
- Levine, E. E., & Schweitzer, M. E. (2015). Prosocial lies: When deception breeds trust. *Organizational Behavior and Human Decision Processes*, 126, 88–106.
- Lin-Healy, F., & Small, D. A. (2012). Cheapened altruism: Discounting personally affected prosocial actors. *Organizational Behavior and Human Decision Processes*, 117(2), 269–274.
- Lin-Healy, F., & Small, D. A. (2013). Nice guys finish last and guys in last are nice the clash between doing well and doing good. *Social Psychological and Personality Science*, 4(6), 692–698.
- MacIntyre, A. (1967). Egoism and altruism. In P. Edwards (Vol. Ed.), *The encyclopedia of philosophy*. 1967. *The encyclopedia of philosophy* (pp. 2–462). New York: Macmillan.
- Newman, G. E., & Cain, D. M. (2014). Tainted altruism when doing some good is evaluated as worse than doing no good at all. *Psychological Science*, 25(3), 648–655.
- Nietzsche, F. (1878). *Human, all too human*.
- Reed, L. I., Zeglen, K. N., & Schmidt, K. L. (2012). Facial expressions as honest signals of cooperative intent in a one-shot anonymous Prisoner's dilemma game. *Evolution and Human Behavior*, 33(3), 200–209.
- Schaumberg, R. L., & Mullen, E. (2017). From incidental harms to moral elevation: The positive effect of experiencing unintentional, uncontrollable, and unavoidable harms on perceived moral character. *Journal of Experimental Social Psychology*, 73, 86–96.
- Skinner, B. F. (1978). *Reflections on behaviorism and society*.
- Smith, A. (1759). *The theory of moral sentiments*.
- Staub, E. (1978). *Positive social behavior and morality: Social and personal influences*. Vol. 1. New York: Academic Press.
- Swap, W. C. (1991). When prosocial behavior becomes altruistic: An attributional analysis. *Current Psychology*, 10(1–2), 49–64.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, 96(3), 465.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, 92(4), 548.
- Young, L., & Saxe, R. (2009). Innocent intentions: A correlation between forgiveness for accidental harm and neural activity. *Neuropsychologia*, 47(10), 2065–2072.