

**When Donation Feels Like Volunteering, People Give:**

**A “Donateer” Fundraising Method**

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## ABSTRACT

Helping others can bring people joy. The positive emotions associated with specific prosocial actions influences the propensity of those actions. In particular, people often prefer volunteering—which generates more positive emotions—to donating, even when donating would have a bigger impact. Drawing on this insight, we propose a fundraising method that restructures a donation as a “donateer” experience: asking prospective donors to dedicate income from a future session of regular work as a monetary gift to a charity. We propose that this method can heighten willingness to give because it evokes more positive emotions, those which are typically associated with a volunteering experience. Eight preregistered experiments ( $N = 4,586$ ) test these proposals and show that the donateer method can increase donation intention and action across diverse charity contexts, primarily by evoking stronger donation-associated emotions. Moreover, the experiments rule out alternative explanations, including different mindsets or charity perceptions being induced by the donateer versus direct-donation appeals, as well as explicit goal-directed interpretations of the emotion mechanism such as mood regulation or image signaling. These findings shed new light on how emotional rewards (*e.g.*, “warm glow”) motivate donations and offers a novel method that may benefit both charities and donors.

**Keywords:** charitable giving, emotional rewards, warm glow giving, donateer method

Imagine Sarah, who volunteers regularly at a local charity to do animal rescue work, despite her busy schedule as an attorney. Sarah receives a donation appeal from the animal charity and throws it away—the idea of giving money does not spark her motivation nearly as much as the idea of helping in person. The managers at the animal charity, having recruited many enthusiastic volunteers, have been quite frustrated and baffled by the seemingly inconsistent weak response to their fundraising appeal. Sarah’s reaction is especially perplexing since, given her opportunity cost, she likely would have made a bigger contribution to the charitable cause if she had worked additional hours as an attorney and donated the resulting income, instead of spending the same amount of time volunteering.

Sarah is one of a quarter of Americans who volunteer (Murphy, 2015), and is not alone in feeling and acting this way. Many charities are faced with a “volunteering puzzle” (Handy & Katz, 2008), documented both anecdotally and in archival data. On average, people are more interested in volunteering than making donations, even though donations typically generate more economic value to charities than volunteer work (Handy & Katz, 2008; Lilley & Slonim, 2014). One proposed explanation of this puzzle is that, holding constant the economic value of the contribution, people derive more happiness during the process of volunteering than during the process of donating money (Brown et al., 2019; Lilley & Slonim, 2014). Researchers and charity managers may complain that people are making inefficient decisions and try to develop methods to prompt people to make more “rational” decisions. Instead of bemoaning people’s preferences, we propose a different approach: could the psychology that underlies the volunteering puzzle be leveraged to increase donations?

We devised a “donateer” fundraising approach which asks people to donate their income from a dedicated future session of their regular work, instead of asking for a monetary donation

directly. We propose that a donateer fundraising appeal will elicit stronger willingness to give because it will evoke more positive emotions typically associated with a volunteering opportunity, compared to a standard donation appeal, despite being financially equivalent. In other words, we propose that the donateer method can help transfer at least some of the positive emotions associated with volunteering to a donation opportunity.

To illustrate this approach, suppose that Sarah now receives a fundraising appeal, asking her if she would earmark time at her job, during which she will earn money to be donated to the animal shelter. We expect that Sarah may find this donation opportunity more appealing because the prospective donateer experience will be associated with more positive emotions, similar to those that she usually derives from a volunteer experience. We thus expect that Sarah will be more likely to respond positively to the donateer appeal and make a donation than to an otherwise identical direct-donation appeal.

We test the proposed effectiveness of the donateer method as well as the underlying psychological mechanism. We first present a psychological framework for why and under what conditions the donateer method is likely to be more effective than typical fundraising appeals. Then, we present eight pre-registered experiments ( $N = 4,586$  participants), in which we tested the proposed method and the critical theoretical predictions. Last, we discuss the implications and limitations of the findings.

## ***THEORETICAL DEVELOPMENT***

### ***The “Donateer” Strategy to Reframe Donation Appeals***

We propose that a “donateer” appeal can amplify the emotional rewards associated with a donation opportunity, boosting people’s willingness to donate. Extensive research has shown that

positive emotions both motivate and reward prosocial actions, such as interpersonal helping, gift giving, volunteering, and charitable giving (Aknin, Hamlin, et al., 2012; Batson et al., 1991; Binder & Freytag, 2013; Dunn et al., 2008; Yang & Urminsky, 2018). The experience of positive emotions is especially salient when the prosocial actions have the potential for a concrete and vividly imaginable impact on the recipients (Aknin et al., 2013; Cryder et al., 2013; Lok & Dunn, 2020), such as in helping specifically identifiable individuals (Kogut & Ritov, 2007; Small et al., 2007) and in onsite volunteer work (Borgonovi, 2008).

In charitable giving, positive emotions, (*i.e.*, “warm glow,” Andreoni, 1990), have also been observed to accompany donation (Crumpler & Grossman, 2008; Mayo & Tinsley, 2009) and have been theorized to drive charitable giving (Andreoni, 1990). However, compared with other types of prosocial actions, the act of charitable giving is often dissociated from its outcomes—donors typically do not receive tangible feedback from the needy recipients. As a result, making donations tends to arouse less positive emotion than volunteering.

This discrepancy in emotion has been posited as one of the causes of the *volunteering puzzle*—a greater willingness to volunteer than to donate, even when the resulting contributions to the charitable cause are equivalent (Handy & Katz, 2008; Lilley & Slonim, 2014).

Volunteering involves experiencing a series of high-engagement tasks or events directly associated with the charitable outcomes, which facilitates positive emotion from the charitable actions. In contrast, making a donation usually requires minimal, low-engagement actions, sometimes as simple as writing a check, clicking a few boxes on a screen, or swiping a credit card, which directly generate little positive emotion from a typical donor. To reduce this problem, fundraising methods sometimes attempt to amplify the emotional rewards associated with donation actions, by highlighting the sympathetic features of the recipients (Cryder et al.,

2017; Kogut & Ritov, 2007; Small et al., 2007) or by emphasizing a donation's tangible impact on its recipients (Aknin et al., 2013, 2020; Lok & Dunn, 2020), which can increase donations.

Our proposed “donateer” method likewise represents an attempt to amplify donation-associated emotions, but using a different approach: framing. A “donateer” appeal asks prospective donors to earmark income from a future session of their regular work to be given to a charity, instead of the typical direct-donation appeal, which directly asks for a monetary donation from existing funds. The donateer method recontextualizes a donation request into an earning-to-give opportunity that ties the (otherwise not directly prosocial) actions of earning money to the charitable outcome. To the degree that doing so imbues these actions with emotional significance, donation will more closely resemble a volunteering experience. In other words, this method seeks to *leverage* the positive emotion typically associated with volunteering for the donation experience.

In sum, we propose that the donateer appeal will evoke more positive emotions than are associated with a direct-donation appeal, and will therefore elicit greater willingness to give, all else equal. We test this proposed “donateer effect” as defined by the following primary hypotheses:

H1. The donateer effect: *A “donateer” appeal (a request to earn money to be earmarked for donation) will result in more donations than an otherwise equivalent standard donation appeal (a request to donate from existing funds).*

H2. *The donateer appeal will evoke more positive emotions associated with the donation process than an otherwise equivalent standard donation appeal.*

Next, we consider three relevant situational factors, which we will test as moderators to determine when the donateer method will be most effective in practice. In addition to practical

relevance, testing between these predictions will help identify the psychological process or processes underlying the donateer effect.

### *Evoked Emotions by Charity Targets*

We have argued that the donateer effect occurs by leveraging the positive emotions that people associate with volunteering, which are typically not associated to the same extent with donating. However, in some situations, the charitable cause itself may be sufficiently associated with positive emotions for the positive emotions to even extend to direct-donation appeals. For example, the “beauty premium” effect finds that people donate more to help attractive animal species, even when these species need less help than the unattractive ones, because of the greater positive emotions associated with the former (Cryder et al., 2017). According to the emotion mechanism proposed in H2, the donateer effect should be mitigated if the charitable cause itself evokes particularly potent positive emotions, such that incremental emotional associations from the donateer framing will have limited additional effect on the overall emotional appeal of donating. Thus, we expect the donateer effect to be mitigated when applied to particularly emotionally rewarding charitable causes (*e.g.*, donating to help attractive animal species) compared to when applied to a charitable cause that is less emotionally rewarding (*e.g.*, donating to help a neutral animal species).

*H3. The donateer effect will be attenuated when the charitable cause itself evokes strong positive emotions.*

This hypothesis is uniquely predicted by the emotion-based account, and not predicted by several salient alternative explanations for the donateer effect. For one, the donateer method could lead people to focus on effort or time instead of money, which may increase inferences about one’s own prosociality (Ellingsen & Johannesson, 2011; Gershon & Cryder, 2018),

bolstering prosocial actions (Liu & Aaker, 2008; Olivola & Shafir, 2013). Related, because time and money are often tracked in different mental accounts (Soman, 2001), the donateer method could shift the decision from a mental account for money to a mental account for time, from which people might be more willing to spend. Alternatively, the donateer appeal could be more persuasive simply because of differences in how the appeal is perceived (*e.g.*, it may seem more novel or make the charity appear more competent). Finally, it is also possible that people misinterpret the donateer appeal as a request to engage in actual volunteering.

What all these accounts have in common is that they predict a consistent advantage of the donateer appeal (relative to a direct-donation appeal) that would hold irrespective of the emotional associations of the charitable cause. However, our proposed emotion mechanism instead predicts that the donateer appeal is effective specifically because of the positive volunteering-associated emotions it evokes, and therefore the effect should be attenuated when used for a highly emotionally appealing charitable cause, because bolstering the emotional appeal would have limited incremental benefit.

### ***Goal-directed versus Habitual—Two Interpretations of the Emotion Mechanism***

Next, we distinguish between two interpretations of the proposed emotion mechanism: a goal-directed account versus a habitual account (also referred to as reflective vs. reflexive, or model-based vs. model-free decision-making; see reviews in Dolan & Dayan, 2013; Gesiarz & Crockett, 2015; Sutton & Barto, 1998). These two interpretations generate different predictions for the boundary conditions of the donateer effect.

The goal-directed account assumes that people analyze the situation, estimate the costs and benefits, and take the action that maximizes their own utility. In this view, prosocial actions are taken to achieve goals based on the believed causal response-outcome relationship, such as

the emotional reward or reputation benefits from the pro-social action (Baumann et al., 1981; Bénabou & Tirole, 2006; Cialdini & Kenrick, 1976; Mullen & Monin, 2016; Palfrey & Prisbrey, 1997). According to this account, a person who wants to feel happier, and who knows that volunteering will result in feeling good about herself, will be more likely to seek out volunteering opportunities (or “donateering” opportunities that feel like volunteering) when she wants to feel better about herself. In this example, the person chooses to volunteer based on the explicit goal of own mood regulation and the expectation of a positive emotional reward that would contribute to the goal.

Alternatively, the habitual account suggests actions may be evoked by familiar situational cues, without necessarily engaging goal-directed considerations. Because repeatedly rewarded behaviors gradually acquire intrinsic affective value (Rolls & Grabenhorst, 2008; see also Slovic et al., 2007), these behaviors become more likely to be triggered by similar situations in the future (Sutton & Barto, 1998). Eventually, familiar situational cues will elicit behavioral responses without necessarily engaging higher cognitive activities (Dayan, 2009; Dolan & Dayan, 2013). This “shortcut” mechanism is key to facilitating biologically and socially adaptive behaviors (de Waal, 2008; Nowak & Sigmund, 2005). For example, in-group helping has been described as a classic case of a reinforced and internalized action, involving instinctive and habitual processes, which, at the extreme, can involve so little expectancy-based deliberation that it can even occur at the cost of sacrificing one’s life (Batson, 2011; Montgomery et al., 2017; Rand & Epstein, 2014).

More concretely, for the proposed donateer effect, the goal-directed account suggests that the donateer (vs. direct donation) appeal will increase Sarah’s willingness to give because she expects to experience emotional benefits from the donateer process and that she will donate

specifically to achieve these emotional rewards. In contrast, the habitual account suggests that Sarah's increased willingness to give is induced by the framing of the donateer appeal resembling those in volunteering opportunities that have been associated with positive emotions, which were acquired from past volunteering experiences. The key distinction here is between Sarah strategically using the donateer opportunity to achieve an emotional outcome as extrinsic incentive (the goal-directed account) or positive emotional associations causing Sarah to be intrinsically motivated to respond to the donateer opportunity favorably (the habitual account).

A critical testable distinction between these accounts is outcome contingency. The goal-directed account stipulates that actions are contingent upon outcome values, such that devaluation of an outcome will reduce the likelihood of the goal-directed action (Dayan, 2009; Dolan & Dayan, 2013). This general goal-directed account encompasses several prominent theories, particularly moral-image signaling (Khan & Dhar, 2006; Merritt et al., 2010; Monin & Miller, 2001) and mood regulation (Forgas, 2000; Larsen, 2000; see also Cialdini et al., 1987; Cialdini & Kenrick, 1976). According to these theories, people strategically carry out prosocial actions to manage their current self-appraisal (i.e., moral image and self-focused emotion), a contingent outcome. Therefore, people currently feeling good about themselves will have less reason to engage in prosocial giving, whereas people currently feeling bad about themselves will be more incentivized to engage in prosocial giving. In sum, the goal-directed accounts predict a balancing response to one's current self-appraisal: a current positive (vs. negative) appraisal reduces (vs. heightens) the need to obtain emotional rewards.

In contrast, according to the habitual account, actions are generalized responses to situational cues (Dickinson & Charnock, 1985; Dolan & Dayan, 2013). Thus, the likelihood of the action is influenced by current perceptions and emotions that are congruent with those

typically associated with the occurrence of the action. For example, extensive studies have shown that positive mood increases prosocial actions whereas negative mood decreases them (Cialdini & Kenrick, 1976; Isen, 1987; Manucia et al., 1984; Niesta et al., 2010). As such, positive self-appraisal should increase prosocial actions, and the reverse for a negative self-appraisal. In other words, the habitual account suggests a congruence pattern following one's self-appraisal: feeling good (vs. bad) about oneself increases (vs. decreases) the likelihood of habitual responses.

To summarize, if the *relative increase* in donation intention induced by the donateer appeal was primarily goal-directed, then the donateer effect should be relatively larger when people are feeling bad about themselves. In contrast, if the relative increase in donation intention induced by the donateer appeal was primarily habitual, then the donateer effect should be relatively larger when people are feeling good about themselves. Finally, if both mechanisms are similarly involved, then these moderation effects may offset each other so that the donateer effect may be observed irrespective of the current self-appraisal.

H4a. Goal-directed account: *The donateer effect will be stronger when people experience negative feelings about themselves.*

H4b. Habitual account: *The donateer effect will be stronger when people experience positive feelings about themselves.*

Notably, the predictions in H4a and H4b both hinge on changes in emotions that stem specifically from an in-the-moment self-appraisal. The effects of these self-oriented emotions are potentially distinct from the effects of integral emotions evoked by the donation appeal itself, such as emotions evoked by the charity target, as discussed in H3.

### ***Timing of the Pledged Work***

Finally, we consider an important practical boundary condition implied by our theorization, the timing (future vs. past) of the work generating the donation. We argue that the donateer method would impact preferences by influencing how people construe (and potentially experience) a future activity, and more specifically, by heightening the emotions associated with that future activity. This suggests that if the funds to be donated are from a completed past activity, for which the actual emotions have already been experienced, then the donateer framing will no longer be as effective.

*H5. The donateer effect will occur when requesting a donation from future work but will be reduced when requesting a donation from past work.*

While this is a straightforward prediction from our theorization, it is again incompatible with the aforementioned alternative accounts (*e.g.*, mindsets, charity perceptions, or extrinsic motives), which similarly expect the donateer effect to persist irrespective of the timing of the work. Thus, testing H5 will further disambiguate the applicability of the emotion mechanism from these common alternative accounts.

### ***Overview of Studies***

We conducted eight preregistered experiments ( $N = 4,586$ ; Table 1) to test the donateer effect and to study the underlying psychological process. We pre-determined the power of each study to be greater than 95% to detect a medium effect size (Cohen's  $d = 0.50$ ) and used samples of over 100 participants per cell in all studies (see web appendix for details). We list the preregistration links and summarize the detailed screening procedures for all studies in Table S1 in the web appendix. We report all methods and measures in all studies, with secondary results reported in the web appendix. We share all data on OSF ([https://osf.io/r2cbt/?view\\_only=752db9f4c81249b2aca0f161eee8e6de](https://osf.io/r2cbt/?view_only=752db9f4c81249b2aca0f161eee8e6de)).

In all experiments, we compared whether a donateer appeal generated stronger donation intentions than a direct-donation appeal, all else equal (H1). Table 1 summarizes the main results. We first tested the donateer effect in Study 1a with a hypothetical choice and in Study 1b with an incentivized choice. Then we examined the robustness of the effect in Studies 2a-2c. These studies provide consistent support for the donateer effect (H1) and the proposed emotion mechanism (H2). We then tested specific moderators of the donateer effect: the emotional appeal of the charity target (H3, tested in Study 3), sensitivity to current moral self-concept (H4a vs. H4b, Study 4) and past vs. upcoming work (H5, Study 5). We measured both the behavioral consequences (Studies 1b & 5) and emotional consequences (Study 5) of the donateer method. Overall, our results support the donateer effect, identify important boundary conditions, and reveal novel insights into the underlying psychological mechanism.

**Table 1.** Summary of the main results from all studies. We display the means by appeal type in studies where the second independent variable did not interact with appeal type (Studies 2a, 2b, and 2c), and we display the means by cell in studies where the second independent variable interacted with the appeal type (Studies 3, 4, and 5).

	N	Direct Donation Appeal	Donateer Appeal	Second Independent Variable (Manipulated)	The Donateer Effect	Interaction
Study 1a	220	3.41 [3.08, 3.74]	4.03 [3.70, 4.36]	--	$t(218) = 2.57$ , $p = .011$ ( $d = .49$ )	--
Study 1b	589	55.0%	64.4%	--	$b = .39$ , $SE = .17$ , Wald $= 5.39$ , $p = .020$	--
Study 2a	476	3.26 [3.01, 3.51]	4.30 [4.05, 4.55]	Impact level (low vs. moderate vs. high)	$t(474) = 5.90$ , $p < .001$ ( $d = .77$ )	$F(2, 470) < 1$ , $p = .508$
Study 2b	553	4.04 [3.80, 4.28]	4.61 [4.37, 4.85]	Valuation mode (feeling vs. thinking)	$t(551) = 3.41$ , $p = .001$ ( $d = .41$ )	$F(1, 549) < 1$ , $p = .988$
Study 2c	537	3.35 [3.11, 3.59]	3.97 [3.72, 4.22]	Job pleasantness (pleasant vs. unpleasant)	$t(535) = 3.54$ , $p = .001$ ( $d = .43$ )	$F(1, 533) = 1.40$ , $p = .237$
Study 3	807	2.75 [2.53, 2.97]	3.38 [3.16, 3.60]	Neutral target	$t(404) = -3.94$ , $p < .001$ ( $d = .56$ )	$F(1, 805) = 4.75$ , $p = .030$
		3.30 [3.08, 3.52]	3.43 [3.19, 3.67]	Attractive target	$t(399) = -.78$ , $p = .437$	

Study 4	656	2.62	3.35	Positive moral self-concept	$t(335) = 4.00,$ $p < .001 (d = .62)$	$F(1, 655) = 4.51,$ $p = .034$
		[2.40, 2.84]	[3.06, 3.64]	Negative moral self-concept	$t(317) = .86, p = .390$	
Study 5	748	26.5%	36.0%	Future work	$b = .45, SE = .22, Wald = 4.12, p = .042$	$b_{\text{interaction}} = -.71, SE = .33, Wald = 4.69,$ $p = .030$
		29.3%	24.2%	Past work	$b = -.26, SE = .24, Wald = 1.16, p = .282$	

## ***STUDY 1A: AN INITIAL TEST OF THE DONATEER EFFECT***

### ***Methods***

We recruited participants from Prolific and followed pre-registered recruitment and screening procedures ( $N = 220$ ,  $M_{\text{age}} = 28$ , 71 (32%) female, 5 (1%) non-binary; see details in Table S1, web appendix).

We first obtained information about participants' income on the Prolific platform. We asked participants to indicate their average hourly pay for work on Prolific, by selecting one of 13 answers from £4.00 to £10.00, in increments of £0.50. We then used this income information to customize the donation appeals so that the requested donation amount was explicitly held constant across the types of appeals.

Participants then read about a charity campaign to provide assistance to local households affected by the COVID-19 pandemic. Participants were randomly assigned to one of the two appeal types: direct-donation vs. donateer. In the direct-donation condition, participants were asked if they would pledge some earnings to the charitable cause:

*“We ask that you consider donating two hours’ worth of the income that you earn on Prolific to the charity, that is to make a donation of [value displayed through piped text].”*

In the donateer condition, participants were instead asked if they would pledge some of their time working to the charitable cause, so that their resulting earnings would be donated.

*“We ask that you consider dedicating two hours of your work on Prolific to the charity, that is to specify two hours of your upcoming work to earn [value displayed through piped text] to be donated.”*

In the donateer condition, participants were further randomly assigned to two versions of the transaction procedure. In both versions, participants deciding to donate would commit to a specific future time for the pledged work, and a donation transfer that was scheduled to occur either at the start or at the end of the pledged work.

As the dependent variable, all participants were asked, “How willing are you to donate to this campaign (1 = not at all, 4 = moderately, 7 = definitely)?” Following that, all participants were asked a series of agreement-rating questions, measuring potential mediators (on a 7 point “not at all” to “very much” scale). Participants rated the positive emotions associated with the donation on a single-item measure (“I will feel happy”) as well as on a four-item scale adapted from O’Brien and Kassirer (2019). They also rated the positive emotions that recipients may experience (“The charity recipients will feel happy”), the anticipated moral signal to oneself (“I will feel like a kind person”) and the anticipated moral signal to others (“Others will think of me as a kind person”). Additional measures and analyses are reported in the web appendix.

## **Results**

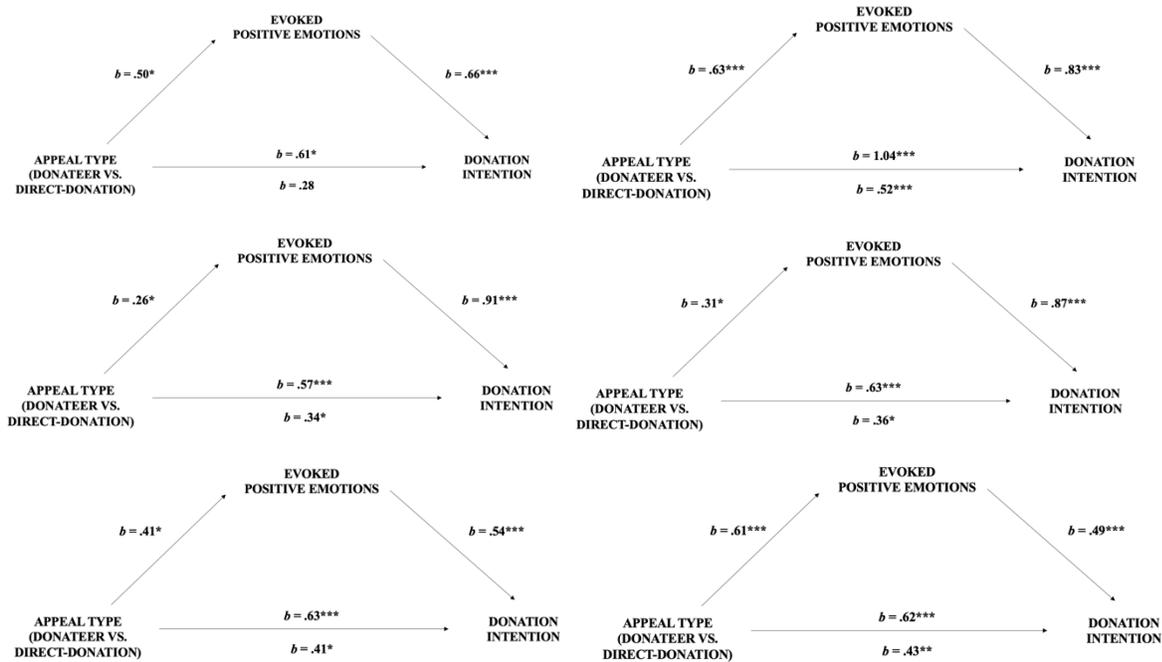
An attention check confirmed that most participants (87%) correctly understood the content of the donateer appeal. We report analyses with all participants, but the main results also held when excluding participants who failed the attention check (see web appendix).

***Prosocial giving intentions.*** Pooling the two versions of the donateer condition, participants who were shown a donateer appeal expressed a greater willingness to donate than participants shown a direct-donation appeal ( $M_{\text{donateer}} = 4.03$ ,  $CI_{95\%} = [3.70, 4.36]$  vs.  $M_{\text{donate}} =$

3.41,  $CI_{95\%} = [3.08, 3.74]$ ;  $t(218) = 2.57, p = .011, d = 0.49$ ). Participants' willingness to participate in the donateer condition did not meaningfully depend on whether the donation transfer would occur at the start or the end of the upcoming work session ( $M_{\text{donateer-start}} = 3.98, CI_{95\%} = [3.49, 4.47]$  vs.  $M_{\text{donateer-end}} = 4.08, CI_{95\%} = [3.61, 4.45]$ ;  $t(109) = .27, p = .788$ ). In fact, the donateer effect was replicated for both versions (Donateer-start vs. Donate,  $t(166) = 1.97, p = .051, d = 0.44$ ; Donateer-end vs. Donate,  $t(159) = 2.28, p = .024, d = 0.55$ ).

***Donation-associated positive emotions.*** The single-item measure revealed significantly more positive donation-associated emotions in the pooled donateer than the direct-donation conditions ( $M_{\text{donateer}} = 4.89, CI_{95\%} = [4.62, 5.16]$  vs.  $M_{\text{donate}} = 4.40, CI_{95\%} = [4.09, 4.71]$ ;  $t(218) = 2.36, p = .019, d = 0.44$ ). These positive emotions, in turn, predicted willingness to give ( $b = .68, SE = .06, t(218) = 10.93, p < .001$ ), and controlling for emotion reduced the effect of appeal type on willingness to give (from  $b = .61, SE = .24, t(218) = 2.57, p = .011$  to  $b = .28, SE = .20, t(217) = 1.44, p = .152$ ). As a result, donation-associated emotions mediated the effect of the type of appeal on willingness to give (indirect effect = .31,  $SE = .14, CI_{95\%} = [.05, .59]$ ; Figure 1).

The four item-measure for donation-associated emotions ( $\alpha = .95$ ) was highly correlated with the single-item measure ( $r = .88, p < .001$ ). Likewise, the four-item measure revealed more positive emotion in the pooled donateer vs. direct-donation conditions ( $M_{\text{donateer}} = 4.82, CI_{95\%} = [4.53, 5.11]$  vs.  $M_{\text{donate}} = 4.40, CI_{95\%} = [4.10, 4.70]$ ;  $t(218) = 2.02, p = .045, d = 0.38$ ) and significantly mediated the effect of appeal type on willingness to give (indirect effect = .31,  $SE = .15, CI_{95\%} = [.02, .61]$ ). The replication of mediation results using the four-item measure further confirms the proposed process and validates the single-item measure, which we use in subsequent studies.



**Figure 1.** Mediation results in all applicable Studies (1a, 2a, 2b, 2c, 3, and 4). The donateer effect was reliably mediated by donation-associated positive emotions, which led to greater donation intention (\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ).

**Other potential mediators.** A mediating role was not supported for any of the three alternative process items, even though the four items were moderately correlated to each other ( $r_s \in [.44, .68]$ ). Anticipated recipient emotions did not differ between appeal type ( $M_{\text{donateer}} = 5.90$ ,  $CI_{95\%} = [5.65, 6.15]$  vs.  $M_{\text{donate}} = 5.60$ ,  $CI_{95\%} = [5.31, 5.89]$ ;  $t(218) = 1.57$ ,  $p = .118$ ). Anticipated moral signal to oneself and moral signal to others were more positive in the donateer condition than in the direct-donation condition (self-signal:  $M_{\text{donateer}} = 5.34$ ,  $CI_{95\%} = [5.07, 5.61]$  vs.  $M_{\text{donate}} = 4.86$ ,  $CI_{95\%} = [4.55, 5.17]$ ;  $t(218) = 2.20$ ,  $p = .029$ ; social signal:  $M_{\text{donateer}} = 4.88$ ,  $CI_{95\%} = [4.61, 5.15]$  vs.  $M_{\text{donate}} = 4.37$ ,  $CI_{95\%} = [4.04, 4.70]$ ;  $t(218) = 2.36$ ,  $p = .019$ ). However, neither the self-signal (indirect effect = .02,  $CI_{95\%} = [-.07, .16]$ ) nor the social signal (indirect effect = -.02,  $CI_{95\%} = [-.12, .06]$ ) mediated the donateer effect.

## Discussion

Study 1a demonstrated a strong advantage of a donatee appeal over a standard donation appeal on participation intentions, supporting H1. The mediation tests are more consistent with the emotion mechanism proposed in H2, than with alternative mechanisms involving anticipated recipient emotions, moral self-image or moral reputation. We found that the donatee method can sometimes cause differences in self-image and reputation (*e.g.*, broadly consistent with Gershon and Cryder 2018), but these differences were not consistent across our studies (not supported in any subsequent studies), nor did they mediate the donatee effect in any studies.

### ***STUDY 1B: TESTING THE DONATEE EFFECT WITH AN INCENTIVIZED CHOICE***

In Study 1b, we tested the effect of a donatee appeal on actual in-person donation behavior. The incentive-compatible design used a real donation task, the “Freerice” game by World Food Program (<https://freerice.com/>). We introduced the donation task to participants using donatee vs. direct-donation wording and measured actual donations from participants. To hold the actual donation process constant, we used a subtle framing manipulation. This manipulation isolates the psychological effect of the donation appeal on actual donation from other factors, such as the logistics of the donation process, that could otherwise also impact the actual donation amount.

#### ***Method***

We recruited undergraduate students from a subject pool at a large university, applied the preregistered screeners, and obtained 589 responses ( $M_{\text{age}} = 21$ , 53% female).

Participants were invited to the laboratory and were asked to complete a series of unrelated survey tasks for course credit. After completing the required tasks, they were presented

with an optional charity task. In this task, participants could answer vocabulary questions, which generated donations to help fight world hunger. Participants were randomly assigned to see one of two versions (wording: direct-donation vs. donateer). In the direct-donation condition, the task was introduced as an opportunity to “donate task-generated payment to charity”. In the donateer condition, the task was introduced as an opportunity to “work on a task that generates donations for charity.” Participants chose whether to take part in the task by choosing between “Yes, I would like to take part in this optional task” and “No, I would like to skip this task and finish today’s experiment.” Participants were informed that they could stop the task at any time and were asked to take a screenshot when they stopped, which we used to verify their actual donations. Thus, our primary dependent variable was whether they initially decided to participate, and our secondary dependent variable was their actual donations.

Once participants entered the donation task, they answered vocabulary questions while advertisements appeared on the screen, and each correct answer generated a donation equivalent to 10 grains of rice to the World Food Program. Full materials, including additional exploratory analyses are provided in the web appendix.

## ***Results***

Participants in the donateer condition were more likely to choose to participate in the task than were participants in the direct-donation control condition (64.4% vs. 55.0%;  $b_{\text{appeal\_type}} = .39$ ,  $SE = .17$ , Wald = 5.39,  $p = .020$ ). This resulted in more rice donated, on average, in the donateer condition than in the direct-donation condition ( $M_{\text{donateer}} = 170.22$ ,  $SD = 176.55$  vs.  $M_{\text{donate}} = 140.59$ ,  $SD = 174.53$ ;  $t(587) = 2.05$ ,  $p = .041$ ,  $d = 0.24$ ). Alternative analyses using log-transformed data and non-parametric tests (to account for potential skewness) yielded similar and significant results.

## ***Discussion***

Study 1b presents additional confirmation for the hypothesized donateer effect (H1) in an experiment with real behavior and fundraising consequences. Next, we test the robustness of the donateer effect on willingness to donate to a variety of potentially relevant contextual factors and further test the proposed psychological process.

### ***STUDIES 2A, 2B, AND 2C: REPLICATION AND ROBUSTNESS TESTS***

In Studies 2a-c, we examined whether the donateer effect replicated across different operationalizations and different charity contexts. Each study compared willingness to donate from a direct-donation vs. donateer appeal, between-subjects. Additionally, we explored whether the effect was moderated by three factors that conceivably vary in practice: the expected impact of the personal contribution (Study 2a), the pleasantness of one's regular job (Study 2b), and the primary (thinking vs. feeling) valuation mode at the time of the decision (Study 2c). As in Study 1a, we tested donation-associated emotions as a mediator.

## ***Methods***

We recruited participants from online panels and followed pre-registered recruitment and screening procedures (Study 2a:  $N = 476$  MTurk participants,  $M_{\text{age}} = 40$ , 48% female, 1% non-binary; Study 2b:  $N = 537$  MTurk participants,  $M_{\text{age}} = 38$ , 38% female, 0% non-binary; Study 2c:  $N = 553$  MTurk participants,  $M_{\text{age}} = 41$ , 50% female, .4% non-binary; see details in Table S1, web appendix).

Participants read a scenario in which they imagined working a day job with a specified daily income (e.g., “You sell popsicles for \$2 each. On weekdays you usually make about \$120 a

day” in Study 2a). Then participants read about a charity campaign, which varied across studies (i.e., to improve educational resources for poor children in Study 2a; to fight hunger in Study 2b; and to grant a wish for ill children in Study 2c).

In each study, participants were randomly assigned to one of the two appeal types: donatee vs. direct-donation. In the donatee condition, participants were asked if they would pledge some of their work to the charitable cause so that their earnings from the work would be donated. In the direct-donation condition, participants were asked if they would donate some of their earnings to the charitable cause (Table 2). In both conditions, the appeal specified the (same) monetary value of the requested donation. As the dependent variable, all participants were asked to rate “How willing are you to donate to this campaign (1 = not at all, 4 = moderately, 7 = definitely)?”

**Table 2.** Key manipulation messages in Studies 2a, 2b, and 2c.

	<b>Direct-Donation Appeal</b>	<b>Donatee Appeal</b>
<b>Study 2a</b>	<i>A reputable national charity is asking people to donate their one-day earnings to charity... If interested, all you have to do is donate what you earn in a day selling popsicles to the charity, which adds about \$120 to the fund.</i>	<i>A reputable national charity is asking people to dedicate their work to charity for one day... If interested, all you have to do is sell popsicles at your work for charity for a day, which adds about \$120 to the fund.</i>
<b>Study 2b</b>	<i>You’re asked to donate the earnings of two hours of your daily work to the charity on the next working day, which generates a \$22 donation from you to the charity.</i>	<i>You’re asked to volunteer two hours of your work for the charity on the next working day, which generates a \$22 donation from you to the charity.</i>
<b>Study 2c</b>	<i>Consider donating your one-day’s earnings - donate what you will earn in a day at your day job to charity, which amounts to a \$150 donation.</i>	<i>Consider dedicating one day of your work - dedicate one of your work days to charity and give what you earn that day, which amounts to a \$150 donation.</i>

Following that, participants who chose to donate rated their agreement (on a 7 point “not at all” to “very much” scale) with the single-item measure of donation-associated positive

emotion used in Study 1a, as well as the measures of recipient emotions, self-image and social image signaling.

To test the robustness of the donatee effect, we varied different potential moderating factors in each of the studies. In Study 2a, we varied the relative levels of personal contribution (low vs. moderate vs. high). Participants read that the charity's fundraising target was about \$1,000, \$100,000, or \$10,000,000, and that the participant's individual contribution of \$120 would therefore comprise either 12%, or 0.12%, or 0.0012% of the total target. Participants presented with a lower target reported significantly higher perceived impact of their potential contribution (planned contrasts between each two levels  $p$ 's < .015).

In Study 2b, we varied the pleasantness of the job. In the pleasant-job condition, participants were asked to imagine that their day job was selling ice cream on an ice cream truck: "The job pays about \$11 an hour. Your job duty includes driving and selling ice cream and soft drinks to customers at various locations in town." In the unpleasant-job condition, participants were asked to imagine that their day job was washing dishes at a big restaurant: "The job pays about \$11 an hour. Your job duty includes cleaning and drying dishes and cutlery that are used in the kitchen and by customers." The ice cream truck job was rated as significantly more pleasant than the dishwashing job ( $p$  < .001; web appendix).

In Study 2c, we manipulated valuation modes (thinking vs. feeling), based on Hsee and Rottenstreich (2004). Before the donation scenario, participants were asked to complete an unrelated task. In the thinking conditions, participants were asked to complete five calculations while participants in the feeling conditions were asked to answer five questions by using one word to describe their feelings in response to a name or an event (see full details in the web

appendix). This manipulation successfully shifted participants' primary valuation mode during the subsequent scenario ( $p < .001$ ; see web appendix).

Full details about all additional measures are provided in the appendix.

## **Results**

The generic attention checks screened out few participants (see Table S1 in the web appendix) and did not induce differential attrition between conditions. We report results for the full sample, but the main results held when excluding participants who failed additional attention checks in each study.

**Prosocial giving.** Pooling across the conditions, participants who were shown a donatee appeal indicated greater willingness to donate than participants shown a direct-donation appeal, in all three studies (Study 2a:  $M_{\text{donatee}} = 4.30$ ,  $CI_{95\%} = [4.05, 4.55]$  vs.  $M_{\text{donate}} = 3.26$ ,  $CI_{95\%} = [3.01, 3.51]$ ;  $t(474) = 5.90$ ,  $p < .001$ ,  $d = .77$ ; Study 2b:  $M_{\text{donatee}} = 3.97$ ,  $CI_{95\%} = [3.72, 4.22]$  vs.  $M_{\text{donate}} = 3.35$ ,  $CI_{95\%} = [3.11, 3.59]$ ;  $t(535) = 3.54$ ,  $p = .001$ ,  $d = 0.43$ ; Study 2c:  $M_{\text{donatee}} = 4.61$ ,  $CI_{95\%} = [4.37, 4.85]$  vs.  $M_{\text{donate}} = 4.04$ ,  $CI_{95\%} = [3.80, 4.28]$ ;  $t(551) = 3.41$ ,  $p = .001$ ,  $d = 0.41$ ).

Across the three studies, the donatee effect was robust to all the manipulations of the second independent variable. We found no difference in the donatee effect depending on the level of relative personal impact (Study 2a, interaction  $F(2, 470) < 1$ ,  $p = .508$ ), high vs. low job pleasantness (Study 2b, interaction  $F(1, 533) = 1.40$ ,  $p = .237$ ), or the manipulation of primary valuation mode (i.e., thinking vs. feeling, Study 2c, interaction  $F(1, 549) < 1$ ,  $p = .681$ ). Most notably, the simple donatee effect was replicated when analyzed separately at each level of the manipulated factors (all  $ps < .050$  except a marginal effect  $p = .091$  in the unpleasant job conditions in Study 2b; see details in web appendix and discussion after Study 4).

***Donation-associated positive emotions.*** Participants reported significantly more donation-associated positive emotions in the donateer (vs. direct-donation) conditions (Study 2a:  $M_{\text{donateer}} = 5.34$ ,  $CI_{95\%} = [5.16, 5.52]$  vs.  $M_{\text{donate}} = 4.71$ ,  $CI_{95\%} = [4.49, 4.93]$ ;  $t(474) = 4.36$ ,  $p < .001$ ,  $d = 0.56$ ; Study 2b:  $M_{\text{donateer}} = 5.05$ ,  $CI_{95\%} = [4.85, 5.25]$  vs.  $M_{\text{donate}} = 4.74$ ,  $CI_{95\%} = [4.54, 4.94]$ ;  $t(535) = 2.15$ ,  $p = .032$ ,  $d = 0.26$ ; Study 2c:  $M_{\text{donateer}} = 5.74$ ,  $CI_{95\%} = [5.60, 5.88]$  vs.  $M_{\text{donate}} = 5.48$ ,  $CI_{95\%} = [5.30, 5.66]$ ;  $t(533.13) = 2.35$ ,  $p = .019$ ,  $d = 0.28$ ). Donation-associated emotions predicted willingness to give (Study 2a:  $b = .86$ ,  $SE = .04$ ,  $t(475) = 21.1$ ,  $p < .001$ ; Study 2b:  $b = .87$ ,  $SE = .04$ ,  $t(1100) = 23.2$ ,  $p < .001$ ; Study 2c:  $b = .88$ ,  $SE = .04$ ,  $t(535) = 23.1$ ,  $p < .001$ ) and controlling for these emotions reduced the effect of appeal type (Study 2a: from  $b = 1.05$ ,  $t = 5.94$ ,  $p < .001$  to  $b = .52$ ,  $t = 3.93$ ,  $p < .001$ ; Study 2b: from  $b = .63$ ,  $t = 3.54$ ,  $p < .001$  to  $b = .36$ ,  $t = 2.84$ ,  $p = .005$ ; Study 2c: from  $b = .54$ ,  $t = 4.57$ ,  $p < .001$  to  $b = .34$ ,  $t = 3.47$ ,  $p < .001$ ). Donation-associated emotions significantly mediated the effect of appeal type on willingness to give in all three studies (Study 2a: indirect effect =  $.52$ ,  $SE = .12$ ,  $CI_{95\%} = [.29, .76]$ ; Study 2b: indirect effect =  $.27$ ,  $SE = .12$ ,  $CI_{95\%} = [.03, .50]$ ; Study 2c: indirect effect =  $.24$ ,  $SE = .10$ ,  $CI_{95\%} = [.03, .44]$ ; Figure 1).

***Alternative motives of giving.*** The manipulation of appeal type did not consistently influence any of the alternative process measures across the studies. Anticipated recipient emotions did not significantly differ between appeal type in any study ( $ps > .20$ ). Anticipated moral signal to oneself differed in Study 2a ( $p = .005$ ) but not in Studies 2b ( $p = .55$ ) and 2c ( $p = .10$ ). Moral signal to others differed in Study 2a ( $p = .022$ ) and 2c ( $p = .005$ ) but not in Study 2b ( $p = .50$ ).

None of these variables mediated the donateer effect in any of the studies. In fact, in simple mediation models allowing parallel mediation paths, the indirect effect of appeal type on

willingness to donate was entirely explained by donation-associated positive emotions, and adding other mediators did not increase the total indirect effect in any of these studies (see web appendix).

### ***Discussion***

Using different hypothetical scenarios, Studies 2a, 2b, and 2c fully replicated the results of Studies 1a and 1b. Moreover, the donateer effect persists across different charity contexts and is not sensitive to three situational variables that commonly vary in practice, supporting the generalizability of the donateer effect. These studies also ruled out underestimation of one's wage as an alternative explanation to the donateer effect because we specified the same income information in both appeals in all the studies. Further, our attention checks confirm that the effect was not an artifact of participants mistaking the donateer opportunity for an onsite volunteering opportunity.

The mediation results provided additional process evidence consistent with our proposed mechanism. The donateer effect was reliably mediated by donation-associated emotions, but not mediated by the other three relevant anticipated outcomes: the emotional consequences for charity recipients, donor's self-image, or donor's reputation. While it is certainly conceivable that the donateer method may cause differences in these expected outcomes in some cases, our findings suggest that these potentially different expectations are unlikely to consistently explain the donateer effect.

Thus far, the basic donateer effect (H1) and the donation-associated emotions mechanism (H2) were consistently supported by the results of five studies. In the remaining three studies, we manipulated theoretically relevant moderators to test Hypotheses 3-5, identify important

boundary conditions to the application of the donateer method, and provide further insights into the emotion mechanism.

### ***STUDY 3: EFFECT ATTENUATED BY THE “BEAUTY PREMIUM”***

In Study 3, we tested a critical moderator. Building on the “beauty premium” in prosocial giving (Cryder et al., 2017), we manipulated the attractiveness of the charity target in a fundraising campaign about wildlife conservation. An attractive target is expected to evoke potent positive emotions regardless of the appeal, leaving little margin for the donateer method to further boost associated positive emotion. Therefore, we predicted that the donateer effect would be mitigated when the charity target was attractive (vs. when it was neutral), directly inducing stronger emotions associated with participating (H3).

In addition, we explored the role of intrinsic motivation. Intrinsic motivation has been theorized to arise when “the rewards are inherent in the activity, and even though there may be secondary gains, the primary motivators are the spontaneous, internal experiences that accompany the behavior” (Deci & Ryan, 2013). Pursuing an activity for its own sake heightens intrinsic motivation (Fishbach et al., 2004; Woolley & Fishbach, 2018). By contrast, extrinsic motivation is the motivation to complete an activity to achieve external benefits that are separate outcomes from pursuing the activity (Deci & Ryan, 2013).

This distinction between types of motivation corresponds to a key difference between the habitual and goal-directed interpretations of the emotion mechanism. Activities that are repeatedly reinforced with emotional rewards tend to become intrinsically motivating (Dickinson, 1985; Gesiarz & Crockett, 2015). Therefore, under the habitual account, the

increased motivation to comply with a donateer (vs. direct-donation) appeal should be primarily intrinsic. Consequently, higher evoked emotions from the donateer appeal should predict greater intrinsic motivation, which in turn increases donation intentions. By contrast, under the goal-directed account, when positive emotions are anticipated, they are seen as an external reward to be achieved by one's actions, and would not heighten intrinsic motivation.

### ***Method***

We recruited 800 participants on Prolific (US) and obtained 807 valid complete sets of data ( $M_{\text{age}} = 31$ , 321 (40%) female, 5 (1%) non-binary) after applying the preregistered screener (Table S1 web appendix). Participants were randomly assigned to 2 (direct-donation vs. donateer) x 2 (attractive vs. neutral target) between-subjects conditions.

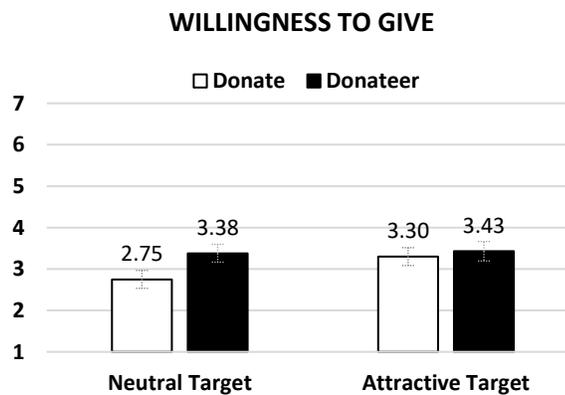
Participants read about a charity campaign focused on conservation work for endangered species. The conservation work concerned either polar bears or pink iguanas, with polar bears pretested as more visually attractive on a 5-point scale ( $M_{\text{bear}} = 3.73$ ,  $M_{\text{iguana}} = 3.22$ ,  $t(128) = 3.16$ ,  $p = .002$ ; see images and text descriptions in the web appendix). The rest of the study procedure was similar to Study 2a, including the actual earnings from Prolific indicated by participants, the wording of the two types of donation appeals, and all the measures.

In addition, we measured intrinsic motivation with items adapted from the Intrinsic Motivation Inventory (McAuley et al., 1989; Woolley & Fishbach, 2018). Participants were asked, "If you decided to donate, how will you feel about your contribution process?" The three items were: "How enjoyable would it feel?", "How interesting would it feel?", and "How engaging would it feel?" measured by a 7-point scale (0 = not at all, 6 = very much). Last, we included measures of the perceived importance, impact, and effectiveness of the charity (all on 7-

point scales; 1= not at all, 7 = very much) to control for potential differences induced by the different animal targets.

## Results

**Prosocial giving.** A 2 (direct-donation vs. donateer appeal) x 2 (attractive vs. neutral target) ANOVA revealed a significant interaction ( $F(1, 805) = 4.75, p = .030$ ), a main effect of appeal type ( $F(1, 805) = 10.87, p = .001$ ), and a main effect of target attractiveness ( $F(1, 805) = 4.75, p = .030$ ). As expected, the donateer effect was replicated in the neutral-target (iguana) conditions ( $M_{\text{donateer}} = 3.38, CI_{95\%} = [3.16, 3.60]$  vs.  $M_{\text{donate}} = 2.75, CI_{95\%} = [2.53, 2.97]$ ;  $t(404) = -3.94, p < .001, d = 0.56$ ), but was reduced and no longer significant in the attractive-target (polar bear) conditions ( $M_{\text{donateer}} = 3.43, CI_{95\%} = [3.19, 3.67]$  vs.  $M_{\text{donate}} = 3.30, CI_{95\%} = [3.08, 3.52]$ ;  $t(399) = -.78, p = .437$ ; Figure 2).



**Figure 2.** The donateer effect held for the neutral charity target but was attenuated for an attractive charity target, which induced strong emotions irrespective of appeal type. Error bars represent 95% confidence intervals.

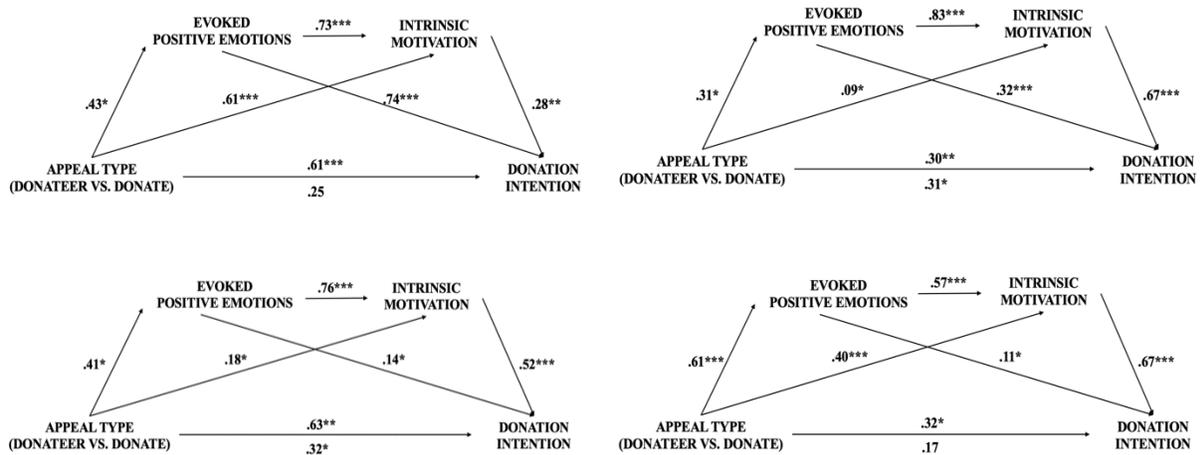
**Donation-associated positive emotions.** In the baseline (direct-donation) conditions, the attractive animals indeed induced more positive emotions than the neutral animals ( $M_{\text{bear}} = 4.66, CI_{95\%} = [4.45, 4.87]$  vs.  $M_{\text{iguana}} = 4.31, CI_{95\%} = [4.06, 4.56]$ ;  $t(403) = 2.09, p = .037$ ), verifying prior findings on the “beauty premium.” Moreover, a 2-way ANOVA revealed a significant

interaction between appeal type and target attractiveness on donation-associated emotions ( $F(1, 805) = 3.94, p = .048$ ), a directionally significant main effect of appeal type ( $F(1, 805) = 2.67, p = .103$ ), and no main effect of target attractiveness ( $F(1, 805) = 1.15, p = .285$ ). As expected, positive emotions associated with the donation did not differ by type of appeal in the attractive-target conditions ( $M_{\text{donateer}} = 4.62, \text{CI}_{95\%} = [4.38, 4.86]$  vs.  $M_{\text{donate}} = 4.66, \text{CI}_{95\%} = [4.44, 4.88]$ ;  $t(399) = .25, p = .805$ ). By contrast, more positive emotions were evoked by the donateer appeal than the direct-donation appeal in the neutral-target conditions ( $M_{\text{donateer}} = 4.72, \text{CI}_{95\%} = [4.50, 4.94]$  vs.  $M_{\text{donate}} = 4.31, \text{CI}_{95\%} = [4.06, 4.56]$ ;  $t(404) = -2.56, p = .011, d = 0.34$ ).

Moreover, donation-associated emotions mediated the donateer effect in the neutral-target conditions (indirect effect = .22,  $SE = .09, \text{CI}_{95\%} = [.05, .40]$ ; Figure 1), but not in the attractive-target conditions (indirect effect = -.02,  $SE = .09, \text{CI}_{95\%} = [-.21, .16]$ ). In a moderated mediation, target attractiveness directly moderated both the pathway from donateer (vs. donate) appeal to evoked emotion and the pathway from donateer (vs. donate) appeal to willingness to give (index of moderated mediation = -.08,  $SE = .05, \text{CI}_{95\%} = [-.19, -.01]$ , Model 8).

***Intrinsic motivation.*** A 2-way ANOVA revealed a significant interaction between appeal type and target attractiveness on intrinsic motivation ( $F(1, 805) = 5.64, p = .018$ ), a main effect of appeal type ( $F(1, 805) = 2.72, p = .044$ ), and no main effect of target attractiveness ( $F(1, 805) = 1.06, p = .303$ ). Intrinsic motivation was similar in the donateer and direct-donation conditions in the attractive-target (polar bear) conditions ( $M_{\text{donateer}} = 3.93, \text{CI}_{95\%} = [3.69, 4.17]$  vs.  $M_{\text{donate}} = 3.97, \text{CI}_{95\%} = [3.75, 4.19]$ ;  $t(399) = .25, p = .800$ ). By contrast, the donateer appeal evoked stronger intrinsic motivation than the direct-donation appeal in the neutral-target (iguana) conditions ( $M_{\text{donateer}} = 4.08, \text{CI}_{95\%} = [3.86, 4.30]$  vs.  $M_{\text{donate}} = 3.58, \text{CI}_{95\%} = [3.34, 3.82]$ ;  $t(404) = -3.12, p = .002, d = 0.42$ ). Moreover, a serial mediation via donation-associated emotions and

intrinsic motivation was supported in the neutral-target conditions (indirect effect = .32,  $SE = .10$ ,  $CI_{95\%} = [.12, .52]$ ; Figure 3). Overall, a moderated mediation found that target attractiveness moderated both the pathway from donatee (vs. donate) appeal to intrinsic motivation and the pathway from donatee (vs. donate) appeal to willingness to give (index =  $-.27$ ,  $SE = .12$ ,  $CI_{95\%} = [-.51, -.04]$ , Model 8).



**Figure 3.** Serial mediation results in all Studies (1a, 2c, 3, and 4) measuring serial mediation. The donatee effect was reliably mediated by donation-associated positive emotions, which led to greater intrinsic motivation, heightening donation intention (\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ).

**Other charity perceptions.** The same 2 (direct-donation vs. donatee) appeal x 2 (attractive vs. neutral) target ANOVA revealed no interaction ( $ps > .250$ ) on perceived importance, impact, or effectiveness of the charity, and no main effect of appeal type ( $ps > .250$ ). Target attractiveness had main effects on perception of the charity as important, impactful, and effective ( $p$ 's  $< .05$ ). These main effects, however, cannot explain why the donatee effect held in the neutral-target conditions but was mitigated in the attractive-target conditions.

## Discussion

Study 3 shows that the donateer effect was attenuated when the charity target itself evoked strong emotions and was replicated when the charity target did not evoke strong target-associated emotions. These results rule out a host of alternative explanations which predict that the donateer effect would persist regardless of the affective intensity of the charity target, particularly accounts involving differences between the appeal types in charity perceptions, mindset priming, mental accounting, or likelihood of miscomprehension.

These results also demonstrate the role of intrinsic motivation in the donateer effect, confirmed in moderated mediation analyses. In the neutral-target conditions, participants who received the donateer appeal felt more positive associated emotions than those who received the direct donation appeal and, in turn, found the donation experience more intrinsically motivating. The role of intrinsic motivation is more consistent with the habitual account, which treats the positive emotions as part of the means, than the goal-directed account, which treats the positive emotions as the ends, an incentive external to the activity itself.

#### ***STUDY 4: WHEN ARE PEOPLE MORE RECEPTIVE TO THE DONATEER APPEAL?***

In Study 4, we further tested between the goal-directed versus habitual interpretations of the emotion mechanism. Because prosocial actions are usually multiply determined (Small & Cryder, 2016), the donateer appeal could induce both mechanisms, relative to an otherwise identical donation appeal. However, it is useful to investigate whether one of the accounts is the primary explanation for the donateer effect, because the two accounts yield some opposite predictions for the effect's boundary conditions. The goal-directed account predicts that people currently feeling *bad* about themselves will be more interested in giving, as an attempt to derive

emotional benefits and repair mood. In contrast, the habitual account predicts that people currently feeling *good* about themselves will be more interested in giving, because the elicitation of habitual actions is facilitated when associative cues typically congruent with the action are heightened in the environment. In sum, these two accounts predict opposite patterns—a mood-repair pattern from the goal-directed account versus a mood-congruence pattern from the habitual account.

To test between these predictions, we adopted a manipulation of moral self-concept activation (Reed et al., 2007). This manipulation asks participants to write about themselves either using positive or negative moral descriptors, and has been shown to effectively influence people's current self-appraisal in related studies (*e.g.*, Jordan et al., 2011; Reed et al., 2007; Sachdeva et al., 2009). The goal-directed account predicts that the donateer effect should be stronger in the negative condition, when people were prompted to feel bad about themselves, due to the implied mood-repair motive (H4a). The habitual account predicts that the donateer effect should instead be attenuated in the negative condition, because actions associated with positive emotions will be inhibited, *i.e.*, mood congruence (H4b). Finally, if both mechanisms are involved to a similar extent, then the donateer effect may persist in both versions. Based on the support for the habitual account found in Study 3, we expect the results to be consistent with mood congruence (H4b).

### ***Method***

We recruited 650 participants on Prolific (US) and obtained 656 complete sets of responses ( $M_{\text{age}} = 40$ , 356 (54%) female, 12 (2%) non-binary) after applying the preregistered screening criteria (Table S1, web appendix). Participants were randomly assigned to one of four

between-subjects conditions in a 2 (direct-donation vs. donateer) x 2 (moral self-concept activation: positive vs. negative) design.

Participants were asked to complete a series of ostensibly unrelated tasks. The first task was the moral self-concept manipulation, adapted from Reed, Aquino, & Levy (2007). Participants were given four highlighted words and were asked to write a brief story about themselves using all four words. The four words were “caring, generous, fair, kind” in the positive self-concept condition and “selfish, disloyal, greedy, mean” in the negative self-concept condition. Participants were given a minimum of two minutes to write (the average participant spent nearly four minutes) and were informed that their payment would be contingent on inclusion of all four words.

After the writing task, participants completed the manipulation check from Reed et al. (2007). They assessed the extent to which what they had written reflected how they viewed themselves, on the manipulation check (“a moral person”), which was mixed in with three control aspects (“athletically gifted,” “a creative person,” and “safety conscious.”), on 7-point scales; 1 = Not at all, 7 = A great deal. This manipulation successfully influenced the perceived moral self-concept ( $M_{\text{positive}} = 5.79$ ,  $CI_{95\%} = [5.65, 5.93]$  vs.  $M_{\text{negative}} = 4.81$ ,  $CI_{95\%} = [4.59, 5.03]$ ;  $F(1, 654) = 58.40$ ,  $p < .001$ ).

Participants next completed an unrelated filler task and then read one of two donation appeals that was targeted at helping natural disaster victims. In the direct-donation conditions, participants were asked if they were interested in “donating two hours’ worth of your income on Prolific... You can sign up with the campaign with a pledged donation amount and complete the donation process with the pledged donation in just a few clicks.” In the donateer conditions, participants were asked if they were interested in “dedicating two hours of your work on Prolific

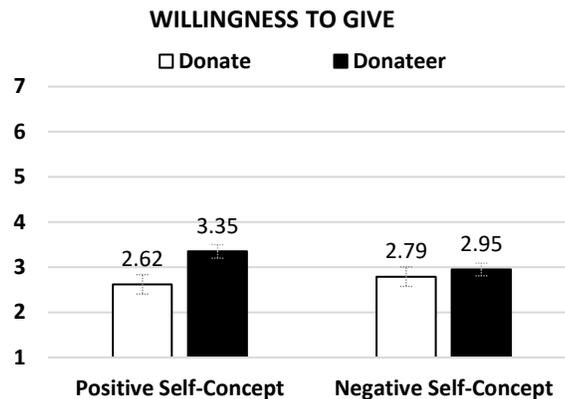
and donate your income from it... You can sign up with the campaign with a pledged time and complete the donation process after finishing the pledged work that was dedicated to the charity.” Participants were asked to indicate their willingness to give on a 7-point scale (1 = not at all, 4 = moderately, 7 = very much).

Next, participants completed three sets of measures, in randomized order. Participants completed the same 4-item measure of donation-associated emotions as in previous studies and the same 3-item measure of intrinsic motivation as in Study 3. In addition, participants completed a 3-item measure of anticipated moral image, adapted from Khan and Dhar (2007), asked to indicate the extent to which they agreed with the following statements if they decided to donate: “I will feel morally upright,” “I will feel like a good person,” and “I will feel that I am altruistic” (all on 7-point scales; 1 = not at all, 7 = very much).

## **Results**

**Prosocial giving.** A 2-way ANOVA revealed a significant interaction between appeal type (direct-donation vs. donateer) and moral self-concept activation (positive vs. negative) on willingness to give ( $F(1, 655) = 4.51, p = .034, \eta_p^2 = .01$ ), a main effect of appeal type ( $M_{\text{donateer}} = 3.16, CI_{95\%} = [2.96, 3.36]$  vs.  $M_{\text{donate}} = 2.70, CI_{95\%} = [2.53, 2.87]$ ;  $F(1, 655) = 11.45, p = .001$ ), and no main effect of moral self-concept activation ( $F(1, 655) < 1, p = .394$ ; Figure 4). Critically, in the positive self-concept conditions, participants who received the donateer appeal were more willing to donate than participants who received the direct-donation appeal ( $M_{\text{donateer}} = 3.35, CI_{95\%} = [3.06, 3.64]$  vs.  $M_{\text{donate}} = 2.62, CI_{95\%} = [2.40, 2.84]$ ;  $t(335) = 4.00, p < .001, d = 0.62$ ). No significant difference was observed in the negative self-concept conditions ( $M_{\text{donateer}} = 2.95, CI_{95\%} = [2.68, 3.22]$  vs.  $M_{\text{donate}} = 2.79, CI_{95\%} = [2.57, 3.01]$ ;  $t(317) = .86, p = .390$ ). These results support H4b. Indeed, among those receiving a donateer appeal, the positive moral self-concept

manipulation increased willingness to give, compared to the negative moral self-concept (diff = .40,  $F(1, 315) = 3.87, p = .050$ ); this difference was not observed among those who instead received the direct-donation appeal (diff = -.17,  $F(1, 337) < 1, p = .336$ ).



**Figure 4.** The donateer effect held after a positive moral self-concept was activated but was attenuated after a negative moral self-concept was activated. Error bars represent 95% confidence intervals.

**Donation-associated positive emotions.** The 2-way ANOVA revealed a main effect of appeal type on donation-associated positive emotions ( $F(1, 656) = 23.96, p < .001$ ), no main effect of moral self-concept activation ( $F(1, 656) = .33, p > .250$ ), and no interaction ( $F(1, 656) = .002, p > .250$ ). Overall, the donateer appeal evoked the anticipation of more positive emotions than did the direct-donation appeal ( $M_{\text{donateer}} = 5.14, CI_{95\%} = [4.96, 5.32]$  vs.  $M_{\text{donate}} = 4.53, CI_{95\%} = [4.37, 4.69]$ ;  $F(1, 656) = 23.96, p < .001$ ). Donation-associated emotion was supported as a mediator in a moderated mediation model (indirect effect = .29,  $SE = .07, CI_{95\%} = [.16, .43]$ ) where the moral self-concept manipulation was included as a moderator ( $b = .28, SE = .12, p = .020$ ).

**Intrinsic motivation.** Consistent with the main effects on donation-associated emotion, the 2-way ANOVA revealed a main effect of appeal type on intrinsic motivation to give ( $F(1, 656) = 37.45, p < .001$ ), a main effect of moral self-concept activation ( $F(1, 656) = 4.21, p$

= .041), and no interaction ( $F(1, 656) = .43, p > .250$ ). Overall, the donatee appeal evoked stronger intrinsic motivation than did the direct-donation appeal ( $M_{\text{donatee}} = 3.66, CI_{95\%} = [3.50, 3.82]$  vs.  $M_{\text{donate}} = 2.99, CI_{95\%} = [2.84, 3.14]$ ;  $F(1, 656) = 37.45, p < .001$ ). The activation of a positive moral self-concept induced stronger intrinsic motivation than did the activation of a negative moral self-concept ( $M_{\text{positive}} = 3.42, CI_{95\%} = [3.27, 3.57]$  vs.  $M_{\text{negative}} = 3.20, CI_{95\%} = [3.04, 3.36]$ ;  $F(1, 656) = 4.21, p = .041$ ).

**Serial mediation.** In line with our previous findings, we replicated the serial mediation via donation-associated positive emotions and intrinsic motivation in the feeling-good conditions (indirect effect = .57,  $SE = .12, CI_{95\%} = [.33, .82]$ , Model 6; Figure 3). This serial mediation was not supported in the feeling-bad conditions.

Last, anticipated moral image was not supported as an alternative mediator of the effect (indirect effect = -.001,  $SE = .02, CI_{95\%} = [-.05, .05]$ ).

## **Discussion**

The results of Study 4 indicated an emotional-congruence moderation, consistent with the habitual account. In the (baseline) direct-donation conditions, participants had similar donation intentions irrespective of their feelings about themselves (diff = -.17,  $F(1, 337) < 1, p = .336$ ). However, in the donatee conditions, participants had stronger donation intentions when feeling good (vs. bad) about themselves (diff = .40,  $F(1, 315) = 3.87, p = .050$ ).

The measures of donation-associated emotion and intrinsic motivation further corroborated the habitual mechanism. Both serial and moderated mediation analyses supported the prediction that, when people felt good about themselves, the donatee appeal would induce stronger donation intentions than the standard donation appeal primarily by eliciting stronger intrinsic motivation. However, this no longer resulted in stronger donation intentions when

people felt bad about themselves, which has been shown to reduce intrinsically motivated behaviors (Isen & Reeve, 2005).

The incidental self-oriented emotions manipulated in this study are distinct from the integral outcome-oriented emotions evoked by the charity target (*e.g.*, in Study 3). This is why the goal-directed and habitual accounts made opposite predictions (H4a vs H4b) in Study 4, despite making the same prediction (H3) in Study 3. Notably, the self-oriented emotions manipulated in this study also differ from the background emotional valence of one's job content (*e.g.*, in Study 2b), which has little implications on one's current moral self-appraisal.

### ***STUDY 5: FUTURE VERSUS PAST WORK***

In Study 5, we tested a critical boundary condition: asking for a donation from past vs. future work. When emotions during a past experience have already been encoded in memory, the donateer method will no longer evoke more positive emotions from that experience, nor heighten motivation toward it. Therefore, we expected the effect to be eliminated when the donateer appeal asked for a donation from past work.

Another goal of this study was to measure and compare the actual behavioral and emotional consequences from different donation appeals—whether the donateer method provides donors with actual emotional benefits.

#### ***Method***

We recruited approximately 800 participants from MTurk and obtained 748 valid and complete sets of responses ( $M_{\text{age}} = 37$ , 283 (38.8%) female, 1 non-binary) after applying the preregistered screeners (Table S1, web appendix).

Participants were first given a rating task, in which they evaluated 20 packaged food products and received \$.60. Participants then received a second task, to rate another 20 food products. They were presented with a consequential donation appeal, asking them to donate the \$.60 from the second rating task to a charity, Action Against Hunger.

Participants were randomly assigned to 2 (direct-donation vs. donateer) x 2 (future vs. past work) between-subjects conditions. To manipulate future vs. past work, the donation appeal was either introduced before the second rating task had begun (future-work condition) or after the second rating task had been completed (past-work condition).

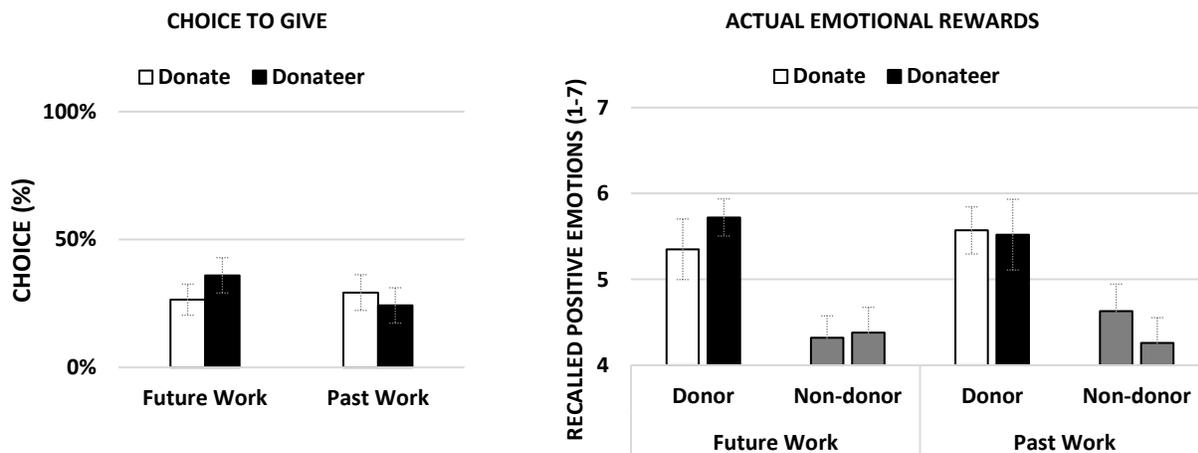
In addition, participants were either presented with a direct-donation appeal or a donateer appeal. All participants were asked to indicate their decision whether or not to donate. In the direct-donation condition, participants read that, “You can rate the second batch of 20 products as a volunteer for ActionAgainstHunger.org. If you choose to volunteer in this task, your work will generate a \$0.60 donation to ActionAgainstHunger.org.” In the donateer condition, participants read that, “You can rate the second batch of 20 products and donate your earnings to ActionAgainstHunger.org. If you choose to donate your earnings from this task, you will be making a \$0.60 donation to ActionAgainstHunger.org.” In all conditions, it was specified that, if participants chose to donate, they would be paid \$0.60 for their first rating task while the \$0.60 compensation from their second rating task would be donated to ActionAgainstHunger.org; if they decided not to donate, they would be paid \$1.20 for completing the entire study and no donations would be made on their behalf.

After participants made their donation decision and completed the second rating task (in either order), they were asked to recall their actual emotions during the second rating task, using a measure that was modified from the donation-associated emotions measure in Study 2A.

Participants also reported their current mood, the same five individual difference variable items as in previous studies, a generic attention screener, and their gender and age. Two days after their participation, participants were paid based on their choices and we made the pledged donations to the charity on the same day.

## Results

**Prosocial giving.** As predicted, the donateer effect emerged only when the donation appeal was based on future work. When the donation was framed in terms of future work (and presented before the target task), we replicated the donateer effect: participants in the donateer condition were more likely to give than were participants in the direct-donation condition (36.0% vs. 26.5%;  $b_{\text{appeal\_type}} = .45$ ,  $SE = .22$ , Wald = 4.12,  $p = .042$ ; Figure 5a). When the donation appeal was instead presented after the focal task and framed as from past work, however, the effect was eliminated, with participants directionally less likely to give in the donateer than in the direct-donation conditions (24.2% vs. 29.3%,  $b_{\text{appeal\_type}} = -.26$ ,  $SE = .24$ , Wald = 1.16,  $p = .282$ ).



**Figures 5a and 5b.** The donatee effect was replicated when a donation from future work was requested, but not when a donation from past work was requested (5a; figure on the left). These manipulations also influenced the actual emotional rewards (5b; figure on the right): In the future-work conditions, donors felt more positive emotions in the donatee condition than in the direct-donation condition, but this difference disappeared in the past-work conditions. Error bars represent 95% confidence intervals.

A 2 (direct-donation vs. donateer) x 2 (future vs. past work) ANOVA revealed a significant interaction ( $b_{\text{interaction}} = -.71$ ,  $SE = .33$ , Wald = 4.69,  $p = .030$ ), a significant main effect of appeal type with participants in the donateer condition being more likely to donate than were participants in the donate condition ( $b_{\text{appeal\_type}} = 1.15$ ,  $SE = .50$ , Wald = 5.28,  $p = .022$ ), and no main effect of future versus past work ( $b_{\text{timing}} = .14$ ,  $SE = .23$ , Wald = .36,  $p = .551$ ). Indeed, comparing the two donateer conditions, participants were more likely to give from pledged future work than from past work ( $b_{\text{timing}} = .57$ ,  $SE = .23$ , Wald = 6.23,  $p = .013$ ). The direct-donation conditions elicited similar donation likelihood regardless of timing ( $b_{\text{timing}} = -.14$ ,  $SE = .23$ , Wald = .36,  $p = .551$ ).

**Actual emotional rewards** ( $\alpha = .97$ ). In this study, we measured post-choice and post-donation emotions (i.e., as opposed to prospective donation-associated emotions in the prior studies). Because donors and non-donors made different choices, we either measured the emotional rewards derived from the *donation* process (among donors) or the emotional rewards of working for oneself (among non-donors). In the future-work conditions, donors in the donateer condition experienced more positive emotions than donors in the direct-donation condition ( $M_{\text{donateer}} = 5.72$ ,  $CI_{95\%} = [5.50, 5.94]$  vs.  $M_{\text{donate}} = 5.35$ ,  $CI_{95\%} = [5.00, 5.70]$ ;  $t(119) = 1.84$ ,  $p = .069$ ,  $d = 0.46$ ; Figure 5b). However, this difference was not observed in the past-work conditions ( $M_{\text{donateer}} = 5.52$ ,  $CI_{95\%} = [5.11, 5.93]$  vs.  $M_{\text{donate}} = 5.57$ ,  $CI_{95\%} = [5.30, 5.84]$ ;  $t(93) < 1$ ,  $p = .853$ ).

Overall, donors experienced more positive emotions than non-donors ( $M_{\text{donor}} = 5.55$ ,  $SD = 1.16$  vs.  $M_{\text{non-donor}} = 4.39$ ,  $SD = 1.70$ ;  $t(576.38) = 10.78$ ,  $p < .001$ ,  $d = 0.81$ ), and these differences emerged both in the future-work conditions ( $M_{\text{donor}} = 5.55$ ,  $SD = 1.12$  vs.  $M_{\text{non-donor}} = 4.35$ ,  $SD = 1.62$ ;  $t(323.81) = 8.49$ ,  $p < .001$ ) and in the past-work conditions ( $M_{\text{donor}} = 5.54$ ,  $SD =$

1.21 vs.  $M_{\text{donor}} = 4.42$ ,  $SD = 1.78$ ;  $t(244.04) = 6.75$ ,  $p < .001$ ). These results confirm the presumption in our theorizing that donation has positive emotional implications and, in particular, that thinking of donation in terms of volunteering strengthens the emotional associations.

### ***Discussion***

Study 5 replicated the donateer effect with consequential choices regarding actual funds and real charity donations, when the donation appeals involved *future* work generating a donation. In contrast, the donateer effect was eliminated when the donation appeals asked for pledges based on past work. As predicted in H5, the effectiveness of the donateer appeal was uniquely sensitive to the timing of the donation experience, unlike the direct-donation appeal. This boundary condition again rules out major alternative explanations (*e.g.*, charity perceptions, mindset priming, mental accounting), none of which predict the timing of the decision relative to the donation experience to moderate the donateer effect.

Furthermore, donors experienced more positive actual emotions from the same future-work donation after the donateer (vs. direct-donation) framing. This confirms that the more favorable response to the donateer appeal can result in more positive actual emotions from giving, consistent with the habitual account. A useful implication of these results is that, besides raising more funds in a target charity campaign, the donateer method may promote long-term sustainable fundraising, because making people happy with giving actions promotes more giving actions in the future (see Aknin, Dunn, et al., 2012).

### ***INTERNAL META-ANALYSIS AND INDIVIDUAL DIFFERENCES***

We conducted an internal meta-analysis, using individual participant data across all studies, while controlling for study-level fixed effects (Cooper and Patall, 2009). Because we reported all the studies in this manuscript, and because the dependent variables and main analyses were all preregistered, valid concerns about false positives in internal meta-analyses (Vosgerau et al., 2019) are mitigated. This analysis calculated a medium effect size from the donatee effect ( $b = .59$ ,  $SE = .26$ ,  $p = < .001$ ), with the donatee appeal increasing willingness to give by an average of 0.71 on a 7-point scale ( $CI_{95\%} = [.57, .85]$ , Cohen's  $d = 0.47$ ). There was considerable heterogeneity across studies ( $I^2 = 94.07$ ,  $CI_{95\%} = [91.20, 96.01]$ ), reflecting differences presumably due to variation in charity contexts, operationalizations of the donatee appeal, and sample populations.

Next, we tested whether the donatee effect varied across people, as measured by five individual difference variables (i.e., past volunteering frequency, average past donation amount, household income, gender, and age) that were measured consistently across studies. In particular, we test an individual-differences implication of the habitual account: that the donatee effect will be generally stronger among those with more volunteering experience.

The habitual account involves an important principle, that frequent previous reinforcement increases the likelihood of habitual responses by strengthening acquired associations (Dayan & Balleine, 2002). This principle generates a prediction that the donatee effect should be stronger among people who had previously volunteered more frequently. However, using an individual difference measure introduces a potential confound with general interest in contributing to charities. It is therefore noteworthy that this prediction of the habitual account does not extend to the size of prior donations, which has been shown to poorly correlate with the magnitude of emotional reward (Aknin, Dunn, et al., 2012; Dunn et al., 2008; Imas,

2014) and thus would not be expected to strengthen the association between donation and positive emotions. Therefore, the habitual account suggests that the donateer effect would be stronger specifically among people who had previously volunteered more frequently, but not among people who had given larger past donations.

Consistent with the habitual account, past volunteering frequency moderated the donateer effect (interaction  $F(1, 2520) = 9.76, p = .002, \eta_p^2 = .01$ ), whether or not controlling for household income, gender, and age. While the donateer effect was significant at all measured levels of past volunteering frequency, it was significantly stronger among participants who self-reported having “volunteered frequently” (conditional effect = .86,  $SE = .11$ ,  $CI_{95\%} = [.64, 1.07]$ ) than participants who had “volunteered infrequently” (conditional effect = .59,  $SE = .07$ ,  $CI_{95\%} = [.45, .73]$ ) or participants who “had not volunteered before” (conditional effect = .33,  $SE = .11$ ,  $CI_{95\%} = [.11, .55]$ ). By contrast, the donateer effect was not moderated by average yearly donation (interaction  $F(1, 2520) = .03, p = .863$ ), whether or not controlling for the other covariates.

## ***GENERAL DISCUSSION***

Eight preregistered experiments ( $N = 4,586$ ) demonstrate that a donateer method can increase fundraising effectiveness—more donations are recruited by asking people to pledge income from their future work to be donated than by asking people to pledge monetary donations directly. This donateer effect was observed across hypothetical scenarios as well as events with actual behavioral and charitable consequences. The success of the donateer appeals is explained by the more positive donation-associated emotions induced by donateer (vs. direct-donation)

appeals. This emotion mechanism was supported by both consistent mediation evidence across the experiments, and moderation results from manipulated and measured moderators. Alternative explanations were systematically tested and ruled out, including differences in mindsets, mental accounts, and charity perceptions that were evoked by the different appeal types.

In establishing the practical boundary conditions of the effect, we also distinguished between two interpretations of the emotion mechanism, finding stronger support for the habitual account (which predicts mood-congruence moderation) than a more commonly assumed goal-directed account (which predicts mood-repair moderation). This interpretation was also supported by our findings that the donatee-associated emotions elicit intrinsic motivation toward giving, and that the donatee effect is stronger among people who have volunteered more frequently in the past.

### ***Theoretical Implications***

Research increasingly shows that emotions can fundamentally guide and shape prosocial and moral actions (Lerner et al., 2015; Loewenstein & Small, 2007; Yang & Urminsky, 2018). However, considerable uncertainty remains about the multi-faceted roles that emotions play in shaping pro-social motives and actions. Warm glow, the positive emotions resulting from prosocial behavior, has been proposed to motivate giving. However, scant research has directly examined the psychological characteristics of the warm-glow motive. Our process evidence for the donatee effect offers new insights into this emotion mechanism: a donatee appeal elicits a heightened warm-glow motive relative to a standard direct-donation appeal, all else equal.

Moreover, these findings shed light on two common interpretations of warm-glow giving, which has been the subject of substantial prior debate. The mechanism of warm-glow giving has often been interpreted as goal-directed within the classical economic framework of utility

maximization. Under this framework, warm-glow giving has been commonly assumed to be a self-serving action motivated by the explicit goal of achieving future rewards (*e.g.*, Andreoni, 1989, 1990; Bénabou & Tirole, 2006; Crumpler & Grossman, 2008; Palfrey & Prisbrey, 1997). It is in this spirit that the warm-glow motive has been characterized as a form of “impure altruism” in the economic literature (Andreoni, 1989, 1990). In the psychology literature, prosocial behavior has also been treated in some prominent theories as if rooted in ulterior, self-interested motives: to improve one’s mood (Baumann et al., 1981; Cialdini et al., 1987; Cialdini & Kenrick, 1976; Manucia et al., 1984) or to signal a moral image to oneself or others (Jordan et al., 2011; Merritt et al., 2010; Sachdeva et al., 2009).

In contrast with this goal-direct account, the habitual account, inspired by research in biological and neurological psychology, suggests that common prosocial actions may arise from reinforced associations (Dayan, 2009; Dolan & Dayan, 2013). In this view, the warm-glow motive may represent an intrinsic motivation that accompanies helping actions that had been “trained” by repeated social interactions (Harbaugh et al., 2007; Rand et al., 2012, 2014), and therefore is not necessarily deliberately self-serving (Batson, 1987, 2011; Batson et al., 1991). Indeed, many observations of warm-glow giving that have been deemed anomalous in relation to the goal-directed account are largely compatible with the habitual account (*e.g.*, persistence of action when reward value is low, see review in Gesiarz & Crockett, 2015).

Our findings provide support for the habitual interpretation of the warm-glow motive in the context of the donateer effect. The success of the donateer method demonstrates that framing can be used to amplify the warm-glow motive and increase fundraising effectiveness. Future research may find it beneficial to investigate other methods to amplify the warm-glow motive for

promoting prosocial actions, and to consider the habitual interpretation of the emotion mechanism in other decision contexts as well.

Nonetheless, our evidence for the habitual account should not be interpreted as invalidating the goal-directed account. The goal-directed and habitual processes may occur simultaneously (Dickinson & Balleine, 1994), as complementary processes of reinforcement learning (Balleine & O’Doherty, 2010; Dolan & Dayan, 2013). In fact, as an initially goal-directed action is repeatedly rewarded, it will tend to become more habitual over time (Dayan, 2009). Thus, even in the case of the donateer effect, goal-directed processes could have been initially involved in developing a habitual taste for volunteering.

Finally, although not central to the main findings, this research may suggest a new perspective in ongoing debates about “moral balancing” effects, including both moral licensing (Khan & Dhar, 2006; Mullen & Monin, 2016) and moral cleansing effects (Gollwitzer, 1999; Jordan et al., 2011; Tetlock et al., 2000). Recent replications of these effects have been mixed and researchers have posited that there may be important unidentified moderators (Blanken et al., 2014, 2015; Mullen & Monin, 2016). Our findings (particularly in Study 4) suggest that it may be useful to consider the primary type of motivation (extrinsic vs. intrinsic) underlying the focal prosocial action. When a prosocial action is primarily motivated by extrinsic incentives such as image signaling, a positive current moral image may decrease subsequent prosocial actions (i.e., a balancing pattern). However, when a prosocial action is primarily intrinsically motivated, a positive current moral image or affective state may instead lead to more prosocial actions (i.e., a congruency pattern). Future research could test whether this helps reconcile previously inconsistent findings.

### ***Practical Implications***

From the fundraiser's point of view, the donateer method has notable merits. First, donateer framing can serve as a "nudge" tool for developing appeals. This approach involves no additional cost and can be used in either online or offline campaigns. These merits are especially valuable in comparison to volunteering, given that onsite volunteer work is often costlier and more logistically cumbersome than fundraising campaigns (Powell & Bromley, 2020), and can become simply infeasible, such as during a pandemic. Second, the donateer method is not merely a persuasion tactic to elicit donations. Rather, our results suggest that donors indeed experienced more positive emotions from the donateer experience than from an otherwise identical direct donation experience (Study 5). These findings suggest that the donateer method may promote more sustainable long-term giving behaviors as well.

More broadly, the donateer method may improve the efficiency of social contributions to the common good, in the same spirit advocated by a growing movement for effective altruism (MacAskill, 2015; Singer, 2015). Volunteer work is common in the US and other developing countries (United Nations Volunteers Program, 2018), the major benefactors of global philanthropy, yet volunteer work typically generates less efficient contributions than monetary donations, on average (Handy & Katz, 2008). The donateer method helps nudge those interested in volunteering into donating instead. In this sense, the donateer method can improve the economic equilibrium of prosocial giving by fostering a win-win between charities and donors, offering the best of both worlds—providing donors the greater warm glow they associate with volunteer work while increasing more efficient contributions to charities.

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**SUPPLEMENTARY WEB APPENDIX**

**Table S1.** Data screening summary. All screening procedures were pre-registered. Attrition rate did not significantly differ between the donate versus donate conditions in any study ( $ps > .220$ ).

<b>Study</b>	<b>Pre-registration</b>	<b>Received Sample</b>	<b>Attrition</b>	<b>Final sample</b>
Study 1a	<a href="https://aspredicted.org/blind.php?x=u8jg6g">https://aspredicted.org/blind.php?x=u8jg6g</a>	244 Prolific (UK) participants	18 incomplete responses, 6 responses from duplicate IP addresses	220
Study 1b	<a href="https://aspredicted.org/blind.php?x=859bf8">https://aspredicted.org/blind.php?x=859bf8</a>	602 undergraduate students	13 participants did not complete the study	589
Study 2a	<a href="http://aspredicted.org/blind.php?x=q95eq9">http://aspredicted.org/blind.php?x=q95eq9</a>	512 MTurk participants	19 duplicate IP addresses, 7 incomplete responses, and 10 participants who failed a generic attention check about the content of the study	476
Study 2b	<a href="https://aspredicted.org/blind.php?x=dt9sw5">https://aspredicted.org/blind.php?x=dt9sw5</a>	609 MTurk participants	25 duplicate IP addresses, 2 incomplete responses, and 45 participants who failed a generic attention check about the content of the study	537
Study 2c	<a href="http://aspredicted.org/blind.php?x=x7nq2b">http://aspredicted.org/blind.php?x=x7nq2b</a>	631 MTurk participants	28 duplicate IP addresses, 33 incomplete responses, and 17 participants who failed a generic attention check about the content of the study	553
Study 3	<a href="https://aspredicted.org/blind.php?x=p7pp75">https://aspredicted.org/blind.php?x=p7pp75</a>	833 Prolific (US) participants	19 incomplete responses and 7 responses from duplicate IP addresses	807
Study 4	<a href="https://aspredicted.org/blind.php?x=f6ua3m">https://aspredicted.org/blind.php?x=f6ua3m</a>	815 Prolific (US) participants	4 duplicate IP addresses and 155 incomplete responses (due to the first writing task)	656
Study 5	<a href="https://aspredicted.org/blind.php?x=qh8qf9">https://aspredicted.org/blind.php?x=qh8qf9</a>	908 MTurk participants	36 duplicate IP addresses, 91 incomplete responses, and 33 participants who failed a generic attention check about the content of the study	748

## Additional Materials and Results

### Study 1a

Individual prosociality. We used a prosociality measure from Crumpler and Grossman (2008). (Participants were asked to imagine the following scenario: They received a £10 incentive from the experimenter and could allocate it between themselves and their favorite charity (which they were asked to write down), and the experimenter would increase the donation so that the charity always received £10, irrespective of the participant's personal contribution). Individual prosociality had a marginally significant positive main effect on willingness to give ( $F(2, 214) = 10.02, p = .091$ ), but it did not moderate the donatee effect (interaction  $F(2, 214) = 1.61, p = .202$ ).

Spontaneous usage of imagery. We also explored whether spontaneous usage of imagery in decision making affected the proposed effect by adapting the corresponding scale (Nelis et al., 2019). Participants' individual level of prosociality and spontaneous use of imagery did not differ between conditions ( $t_s < 1, p_s > .25$ ). Spontaneous use of imagery had a positive main effect on willingness to give ( $F(1, 216) = 14.12, p < .001$ ) but did not moderate the donatee effect ( $F(1, 216) < 1, p > .250$ ).

Indirect effects. In a simple mediation model with the four mediator candidates in parallel, only the donation-associated positive emotions mediated the donatee effect, whereas the anticipation of the other three outcomes did not mediate the effect.

Mediator candidates	Indirect effect	SE	CI
Total	.33	.14	[.06, .62]
Donation-associated emotions	.31	.14	[.05, .60]
Anticipated recipient emotions	.01	.03	[-.04, .09]
Moral image to oneself	.02	.06	[-.07, .17]
Moral image to others	-.02	.04	[-.11, .06]

Intrinsic motivation. The three items were: “How enjoyable would it feel?”, “How interesting would it feel?”, and “How engaging would it feel?” with a 7-point scale with different numeral end-points (1= not at all, 7 = very much). Participants reported higher intrinsic motivation in the donatee conditions than in the direct-donation conditions ( $M_{\text{donatee}} = 4.35, CI_{95\%} = [4.08, 4.62]$  vs.  $M_{\text{donate}} = 3.85, CI_{95\%} = [3.56, 4.14]$ ;  $t(218) = 2.40, p = .017, d = 0.46$ ). A serial mediation revealed that the donatee (vs. direct-donation) appeal amplified the anticipated emotional rewards, which in turn heightened the intrinsic motivation to give (total indirect effect = .39,  $SE = .15, CI_{95\%} = [.10, .68]$ ).

Attention check. Participants were asked to identify the event in the donation appeal among “1-A donation of [2 × hourly income] to the charity,” “2-To visit the charity and offer on-site volunteer work,” and “3-Neither” (correct answer: 1). Most participants (87%) correctly understood the manipulation and indicated that the scenario was about a donation to the charity instead of on-site volunteer work at the charity. The effect held when excluding all participants who failed a comprehension check ( $M_{\text{donatee}} = 4.09, CI_{95\%} = [3.68, 4.50]$  vs.  $M_{\text{donate}} = 3.45, CI_{95\%} = [3.10, 3.80]$ ;  $t(218) = -2.32, p = .022, d = .50$ ).

### Study 1b

Recalled measures (subject to selection bias). We measured donors' recalled positive emotions (4-item) and recalled intrinsic motivation (3-item) adapted from the scales in Study 1a. In addition, we asked donors whether they were interested in participating in the same task again in the future, and how difficult, how important, and how impactful they considered the task. Importantly, because recalled warm

glow and intrinsic motivation could only be measured among donors and not among non-donors, these exploratory measures were subject to innate selection issues that impede direct comparison between conditions. (We circumvented this selection issue when measuring the actual emotional rewards from giving in Study 5.) Donors recalled similar levels of positive emotions ( $\alpha = .97$ ) from the task irrespective of appeal type ( $M_{\text{donate}} = 5.00, SD = 1.41, n = 153$ , vs.  $M_{\text{donateer}} = 4.88, SD = 1.53, n = 199$ ;  $t(351) < 1, p > .250$ ). The recalled positive emotions were highly correlated with donation amount in both conditions ( $r_s > .250, p_s < .001$ ). Donors also recalled similar intrinsic motivation ( $\alpha = .91$ ) irrespective of request type ( $M_{\text{donate}} = 3.61, SD = 1.43$  vs.  $M_{\text{donateer}} = 3.65, SD = 1.57$ ;  $t(351) < 1, p > .250$ ). While recalled intrinsic motivation was correlated with donation amount in the donateer condition ( $r = .30, p < .001$ ), this correlation was not significant in the direct-donation condition ( $r = .15, p = .058$ ). Last, similar proportions of donors in the donateer condition (40.7%) and the direct-donation condition (38.3%) indicated that they were willing to participate in the Freerice game again in the future ( $\chi^2(1, N = 352) < 1, p > .250$ ). Donors in both conditions considered the task to be similarly difficult, important, and impactful ( $t_s < 1.23, p_s > .220$ ).

Additional analysis on donors' average donations. The higher donations primarily resulted from more participants opting to give in the donateer condition than the direct-donation condition, as the average amount of donations per donor was similar between conditions ( $M_{\text{donateer}} = 264.31, SD = 153.28$  vs.  $M_{\text{donate}} = 255.62, SD = 161.10$ ;  $t(351) < 1, p = .606$ ).

Attrition rate. Similar ratios of participants failed to complete the study (5 of 285, or .18% vs. 8 of 317, or .25%;  $\chi^2(1, N = 589) = .42, p = .516$ ), so asymmetrical attrition cannot explain the main findings.

## **Study 2a**

Manipulation check on perceived personal impact ( $\alpha = .89$ ). As a manipulation check, we asked participants to indicate the extent to which they agreed with the following three statements: "If I made a contribution... I would feel accountable for the charitable outcome," "...I would feel responsible for the charitable outcome," "...I would feel that I made an impact," each on a 7-point scale (1 = not at all, 7 = very much). As intended, this manipulation influenced the perceived level of personal impact ( $M_{\text{high-impact}} = 5.02, SD = 1.27, SE = .10$  vs.  $M_{\text{moderate-impact}} = 4.61, SD = 1.52, SE = .12$  vs.  $M_{\text{low-impact}} = 4.15, SD = 1.59, SE = .13$ ;  $F(2, 473) = 13.97, p < .001$ ), with significant differences between each two levels of manipulated impact (planned contrasts  $p_s < .015$ ).

Main effect of perceived impact on donation intention. Besides the main donateer effect, perceived impact level also had a main effect on willingness to give ( $F(2, 472) = 7.21, p = .001$ ), corroborating prior research.

Simple donateer effect. The donateer method had an effect at each level of personal impact (high impact:  $M_{\text{donateer}} = 3.72, SD = 1.91, SE = .23$  vs.  $M_{\text{direct-donation}} = 3.01, SD = 1.85, SE = .19$ ;  $t(156) = 3.48, p = .001, d = .38$ ; moderate impact:  $M_{\text{donateer}} = 4.36, SD = 2.05, SE = .22$  vs.  $M_{\text{direct-donation}} = 3.16, SD = 1.90, SE = .22$ ;  $t(157) = 3.84, p < .001, d = .61$ ; low impact:  $M_{\text{donateer}} = 4.71, SD = 1.79, SE = .19$  vs.  $M_{\text{direct-donation}} = 3.68, SD = 1.90, SE = .22$ ;  $t(157) = 2.36, p = .020, d = .56$ ).

Indirect effects. In a simple mediation model with the four mediator candidates in parallel, only the donation-associated positive emotions mediated the donateer effect, whereas the anticipation of the other three outcomes did not mediate the effect.

Mediator candidates	Indirect effect	SE	CI
Total	.48	.13	[.23, .72]

Donation-associated emotions	.49	.12	[.26, .71]
Anticipated recipient emotions	.03	.03	[-.03, .07]
Moral image to oneself	.02	.02	[-.10, .00]
Moral image to others	.02	.03	[-.11, .00]

Trait altruism. we measured individual differences in trait altruism on a 20-item scale (Rushton, Chrisjohn, and Cynthia Fekken 1981). This trait did not differ between conditions ( $t < 1, p > .250$ ). When included as an individual covariate, it had a positive main effect on willingness to give ( $F(1, 472) = 58.81, p < .001$ ), but did not influence the effect; nor did it moderate the donatee effect (interaction  $F(1, 472) = .20, p < .250$ ).

Attention check. Besides the generic attention check about the content of the study (correct answer: about giving to a charity), which was used for screening (see Table S1), we used an additional attention check about the daily wage in the scenario (correct answer: “\$120 per day”), not intended or used for screening. Most participants (452 of 476, or 95.0%) recognized the correct answer for the daily wage in the scenario. The main results of the study were highly similar when excluding those who failed the additional attention check.

## Study 2b

Manipulation check on job pleasantness. We asked participants to rate how pleasant they considered the job (1= very unpleasant, 9 = very pleasant) based on the scenario descriptions. As intended, participants perceived the jobs differently between the pleasant-job and unpleasant-job conditions ( $M_{\text{pleasant-job}} = 5.06, SD = 2.07, SE = .13$  vs.  $M_{\text{unpleasant-job}} = 3.86, SD = 2.14, SE = .13; t(535) = 6.60, p < .001$ ).

Simple donatee effect. In the pleasant-job conditions, the donatee appeal increased donation intention relative to the direct-donation appeal with a similar effect size as the other studies ( $M_{\text{donatee}} = 3.99, SD = 2.06, SE = .16$  vs.  $M_{\text{direct-donation}} = 3.15, SD = 2.05, SE = .18, t(267) = 3.35, p = .001, d = .41$ ). In the unpleasant-job conditions, the donatee appeal marginally significantly increased donation intention relative to the direct-donation appeal ( $M_{\text{donatee}} = 3.96, SD = 2.10, SE = .19$  vs.  $M_{\text{direct-donation}} = 3.54, SD = 1.97, SE = .17, t(266) = 1.70, p = .091, d = .21$ ).

Indirect effects. In a simple mediation model with the four mediator candidates in parallel, only the donation-associated positive emotions mediated the donatee effect, whereas the anticipation of the other three outcomes did not mediate the effect.

Mediator candidates	Indirect effect	SE	CI
Total	.27	.13	[.03, .51]
Donation-associated emotions	.27	.13	[.02, .52]
Anticipated recipient emotions	.00	.01	[-.02, .01]
Moral image to oneself	-.01	.01	[-.04, .02]
Moral image to others	.00	.01	[-.01, .03]

Intrinsic motivation. The three items were: “How enjoyable would it feel?”, “How interesting would it feel?”, and “How much fun would it feel?” measured by a 7-point scale (0 = not at all, 6 = very much). Participants reported higher intrinsic motivation in the donatee conditions than in the direct-donation conditions ( $M_{\text{donatee}} = 4.52, CI_{95\%} = [4.32, 4.72]$  vs.  $M_{\text{donate}} = 4.17, CI_{95\%} = [3.97, 4.37]; t(535) = 2.38, p = .018, d = 0.03$ ). A serial mediation revealed that the donatee (vs. direct-donation) appeal amplified the anticipated emotional rewards, which in turn heightened the intrinsic motivation to give (indirect effect = .33,  $SE = .14, CI_{95\%} = [.06, .60]$ ).

## **Study 2c**

***Manipulation of primary valuation mode.*** This manipulation was adapted from Hsee and Rottenstreich (2004). In the valuation conditions, participants read: “You will answer five mathematical questions that require calculations. The answers to these questions may not be immediately obvious, and their levels of difficulty vary. Please give these questions the accurate answer, or your best estimate.” The five questions were, “If a car travels at two feet per minute, then by your calculations how many feet will it travel in 300 seconds? If a student bought three books for \$48, then, by your calculations, on average, how much did the student pay for each book? If there are 360 apples in three boxes evenly, then by your calculations how many apples are there in each box? If a bus can accommodate 20 people at most, then by your calculations how many buses will be needed to carry 130 people? If a shoe factory can make 400 pairs of shoes per day, then by your calculations how many pairs of shoes will it make in one week (five workdays)?” In the feeling conditions, participants read: “You will answer five questions that require you to examine and report your feelings. Please write a word that best describes your feelings after reading each question.” The questions read, “When you hear the name/word \_\_, what do you feel? Please use one word to describe your predominant feeling.” The five words used in the questions were, Abraham Lincoln, water, Beatles, giraffe, and Einstein. The manipulation-check question asked: “How much emotion was evoked during your participation in this study? (1 = a little, 10 = a lot).” As intended, participants in the feeling conditions reported greater emotion during the study than did participants in the calculation conditions ( $M_{\text{feeling}} = 5.66, SD = 2.69, SE = .16$ , vs.  $M_{\text{thinking}} = 4.23, SD = 3.20, SE = .19$ ;  $t(538.21) = 5.70, p < .001$ ). Thus, the manipulation was successful.

***Simple donateer effect.*** The simple donateer effect was replicated both in the feeling conditions ( $M_{\text{donateer}} = 4.68, SD = 1.88, SE = .16$ , vs.  $M_{\text{direct-donation}} = 4.10, SD = 1.98, SE = .17$ ;  $t(272) = 2.44, p = .015$ ) and in the calculation conditions ( $M_{\text{donateer}} = 4.54, SD = 1.98, SE = .17$ , vs.  $M_{\text{direct-donation}} = 3.96, SD = 2.03, SE = .17$ ;  $t(277) = 2.40, p = .017$ ).

***Indirect effects.*** In a simple mediation model with the four mediator candidates in parallel, only the donation-associated positive emotions mediated the donateer effect, whereas the anticipation of the other three outcomes did not mediate the effect.

<b>Mediator candidates</b>	<b>Indirect effect</b>	<b>SE</b>	<b>CI</b>
Total	.19	.07	[.06, .32]
Donation-associated emotions	.20	.07	[.08, .34]
Anticipated recipient emotions	-.0001	.01	[-.01, .01]
Moral image to oneself	.01	.01	[-.01, .03]
Moral image to others	-.02	.01	[-.05, .002]

***Exploratory variables.*** We asked participants to indicate the extent to which they thought the charitable cause was meaningful, important, and influential, all on 7-point scales (1 = not at all, 7 = very much). We averaged these perceptions ( $\alpha = .92$ ) and found that they did not differ between conditions ( $t < 1, p > .25$ ); while it had a positive main effect on willingness to give ( $F(1, 1098) = 84.70, p < .001$ ), it did not influence the donateer effect nor moderated it (interaction  $F(1, 1098) = .07, p > .250$ ).

***Attention check.*** Like Study 2a, most participants (530 of 553, or 95.8%) recognized the correct answer for the daily wage in the scenario.

## **Study 3**

Manipulation of target attractiveness. In the attractive-target conditions, participants read the following paragraph: “The polar bear is a hypercarnivorous bear whose native range lies largely within the Arctic Circle, encompassing the Arctic Ocean, its surrounding seas and surrounding land masses. It is the largest extant bear species, as well as the largest extant predatory carnivore. The polar bear is considered a vulnerable species, due to sea ice loss from climate change as the single biggest threat to their survival. The most recent study (Hamilton & Derocher, 2018) estimates there are currently about 23,000 polar bears worldwide. But without action on climate change, we could see dramatic declines in polar bear numbers by mid-century. Other threats to the bears include increased commercial activities, pollution, disease, inadequate habitat protection (of denning and seasonal resting areas), and the potential for over-harvest in smaller or declining polar bear populations.”



In the neutral-target conditions, participants read the following paragraph: “Pink iguana, *Conolophus marthae*, is a species of lizard of the family Iguanidae. This critically endangered iguana is native only to the Wolf Volcano in northern Isabela Island of Ecuador). It has a pink body with some dark stripes, prompting some to call it the pink iguana or the Galápagos rosy iguana. Fewer than 200 mature individuals remain. The area where it lives is uninhabited by humans, and also difficult to access, which limits research into the species. The Galápagos pink land iguana is threatened by introduced black rats, which can take eggs and young. The only native predator of the species is the Galápagos hawk. Other threats are possible hybridization with Galápagos land iguanas (unknown at present, but has occurred based on genetic evidence), as the ranges of the two species come into contact, and chance events such as eruptions of Wolf Volcano, which has happened as recently as 2015.”



Attention check. Like Study 1a, the majority of participants (84%) correctly understood that the scenario was about a donation to the charity instead of on-site volunteer work at a charity. The effect held when excluding all participants who failed this attention check ( $F(1,673) = 5.86, p = .016$ ).

#### **Study 4**

*Manipulation check on moral self-concept.* A 2-way ANOVA confirmed the success of the manipulation, revealing a main effect of the manipulation on the current moral self-appraisal ( $M_{\text{positive}} = 5.79$ ,  $CI_{95\%} = [5.65, 5.93]$  vs.  $M_{\text{negative}} = 4.81$ ,  $CI_{95\%} = [4.59, 5.03]$ ;  $F(1, 654) = 58.40$ ,  $p < .001$ ), no main effect of appeal type ( $F(1, 654) = .10$ ,  $p = .750$ ), and no interaction ( $F(1, 654) = .01$ ,  $p = .930$ ).

*Anticipated moral self-signal ( $\alpha = .91$ ).* The 2-way ANOVA revealed a main effect of appeal type on anticipated moral self-image ( $F(1, 656) = 8.78$ ,  $p = .003$ ), no main effect of moral self-concept activation ( $F(1, 656) = .46$ ,  $p > .250$ ), and no interaction ( $F(1, 656) = .10$ ,  $p > .250$ ). Participants expected a more desirable moral self-image following a donation in the donateer conditions than participants in the direct-donation conditions ( $M_{\text{donateer}} = 5.25$ ,  $CI_{95\%} = [4.77, 5.09]$  vs.  $M_{\text{direct-donation}} = 4.93$ ,  $CI_{95\%} = [5.09, 5.41]$ ;  $F(1, 656) = 8.78$ ,  $p = .003$ ). However, anticipated moral signal did not mediate the donateer effect in any sets of conditions.

#### **Study 5**

*Current mood ( $\alpha = .81$ ).* Current mood after completion of the tasks was highly similar across all conditions ( $M = 4.09$ ,  $SD = 1.49$ ), which did not differ between donors and non-donors ( $ps > .250$ ).

#### **Internal meta-analysis additional results**

As individual covariates, past volunteering frequency and past donation amount also had significant covariate effects, but in opposite directions: Past volunteering frequency separately predicted overall donation intention positively ( $b_{\text{volunteering\_frequency}} = .69$ ,  $SE = .05$ ,  $p < .001$ ), whereas average yearly donation amount separately predicted overall donation intention negatively ( $b_{\text{annual\_donation}} = -1.27$ ,  $SE = .02$ ,  $p < .001$ ). These additional results are in line with prior findings (e.g., Binder & Freytag, 2013; Lee & Chang, 2007, 2008) that volunteering frequency and donation size are determined by different factors that reflect distinct sources of motivation.

The other individual-difference variables did not either predict or moderate the donateer effect.

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