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The Interactive Effect of Incentive Salience and Prosocial Motivation on Prosocial Behavior

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Abstract

Charities often use incentives to increase prosocial action. However, charities sometimes downplay these incentives in their messaging (pilot study), possibly to avoid demotivating donors. We challenge this strategy, examining whether increasing the salience of incentives for prosocial action can in fact motivate charitable behavior. Three controlled experiments (N = 2,203 adults) and a field study with an alumni-donation campaign (N = 22,468 adults) found that more (vs. less) salient incentives are more effective at increasing prosocial behavior when prosocial motivation is low (vs. high). This is because more (vs. less) salient incentives increase relative consideration of self-interest (vs. other-regarding) benefits, which is a stronger driver of behavior at low (vs. high) levels of prosocial motivation. By identifying that prosocial motivation moderates the effect of incentive salience on charitable behavior, and by detailing the underlying mechanism, we advance theory and practice on incentive salience, motivation, and charitable giving.

Keywords

extrinsic incentives, prosocial behavior, charitable giving, motivation, salience, open data, open materials, preregistered

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Many charities offer incentives to motivate prosocial behavior. Blood drives offer movie tickets (American Red Cross, 2022), recycling centers offer cash (Wollbrant et al., 2022), and nonprofits offer thank-you gifts (Landry et al., 2010; Wounded Warrior Project, 2022). Despite the prevalence of these incentives, organizations at times avoid highlighting them. Is this an effective strategy to drive engagement? Might organizations be underutilizing incentives, particularly when targeting donors who are difficult to motivate or promoting causes that elicit less sympathy? We investigate how the salience of incentives influences prosocial behavior as a function of prosocial motivation.

The question of how extrinsic incentives influence prosocial behavior has garnered attention across disciplines (Barasch et al., 2016; Gneezy & Rustichini, 2000; Wang et al., 2019). Much research has compared the presence versus absence of incentives, concluding that incentives can at times undermine prosociality (see Table S1 in the Supplemental Material available online). For example, relative to no incentive, providing monetary incentives reduces advocates' efficacy in persuading others to donate (Barasch et al., 2016), and providing nonmonetary thank-you gifts reduces donation amounts (Newman & Shen, 2012). One explanation for these findings is that adding incentives introduces a new motivator—consideration of self-interest benefits (Bénabou & Tirole, 2006)—which crowds out prosocial behavior when self-interest benefits are minimal (Gneezy & Rustichini, 2000) or perceived as not worthwhile (Heyman & Ariely, 2004).

Recognizing that charities nevertheless frequently use incentives, other research has held the presence of incentives constant and examined how incentive

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framing (see Table S2 in the Supplemental Material) or salience (see Table S3) influences prosocial behavior. Most relevant to the current research, one study found that increasing the visual salience of incentives can reduce prosocial engagement, particularly when incentives are undesirable (e.g., $0.01 to Staples; Chao, 2017).

We advance this literature by investigating prosocial motivation as a moderator of the effect of incentive salience on charitable behavior, with the goal of understanding the potential advantages of increasing incentive salience and why these advantages might result. We operationalize prosocial motivation as the perceived importance of a charitable cause and the level of sympathy it evokes, which we measure, manipulate, and observe (via prior donation history). We further contribute to the literature on prosocial behavior by exploring an as-yet untested mechanism: that incentive salience increases the relative consideration of self-interest (vs. other-regarding) benefits (i.e., shifts in attribute weighting) that drives charitable behavior when prosocial motivation is low.

Statement of Relevance

Many charities use incentives to motivate individuals to engage in prosocial action (e.g., blood drives offer gift cards; charities offer thank-you gifts). Yet at the same time organizations may fear that incentives will undermine engagement, leading them to downplay these offers. Our findings suggest that charities may be underutilizing incentives, particularly when prosocial motivation is low. We investigate the interaction between incentive salience—how attention-grabbing an incentive is—and prosocial motivation on people's engagement with a charitable cause. In controlled lab studies and a field experiment involving over 22,400 alumni donors, more salient incentives increased prosocial behavior toward charities that elicited less (vs. more) sympathy and increased prosocial behavior among donors with a lower (vs. higher) history of giving. We found that, as long as a good incentive is offered, making such incentives more salient can motivate low prosocial individuals without reducing motivation in high prosocial individuals.

The Interplay Between Prosocial Motivation and Incentive Salience

Salience refers to how visually conspicuous an attribute is, which draws attention to it (Itti & Koch, 2001; Theeuwes, 2018) and increases its consideration in decision-making (Jarvenpaa, 1990). For example, increasing the salience of a product's appearance with color (vs. black-and-white) imagery influenced choice by increasing people's consideration of appearance relative to other attributes (Lee et al., 2014). Increasing the salience of incentives for prosocial behavior may cause people to automatically overweight salient attributes, placing greater consideration on self-interest benefits (i.e., people's focus on receiving monetary or nonmonetary incentives for themselves; Heath, 1999; Woolley & Fishbach, 2015) while causing them to underweight less salient attributes, such as other-regarding benefits (i.e., benefits that go to others in need; Bénabou & Tirole, 2006). Building on the saliency literature and models of attribute weighting (Chao & Fisher, 2022; Gneezy et al., 2011; Krajbich & Rangel, 2011), increasing incentive salience may increase people's consideration of self-interest benefits relative to other-regarding benefits.

We theorize that this increase in relative consideration will differentially affect behavior as a function of prosocial motivation. Our prediction builds on existing models of bottom-up and top-down processing that are related to dual-process theory (Pennycook et al., 2015; Theeuwes, 2018). These models propose that salience automatically increases consideration of prominent attributes in a bottom-up process (Itti & Koch, 2001) that people can later correct in an active and deliberate top-down process, wherein attention is selectively redirected to stimuli that aligns with one's conscious goals (Theeuwes, 2018). This reasoning is reflected in dual-process theory, which involves a quick intuitive judgment that can be overridden by more thoughtful, intuitive reasoning (Pennycook et al., 2015).

Notably, this deliberate correction process is said to occur only when individuals are sufficiently motivated (Sirota et al., 2023; Walco & Risen, 2017). Indeed, greater involvement in a topic moderates the effect of salience on judgments and decisions (Borgida & Howard-Pitney, 1983; Miniard et al., 1991). For example, less involved students evaluated a more visually salient speaker as persuasive and impactful, but this was not the case for more involved students (Borgida & Howard-Pitney, 1983). Highly involved students were motivated to base their judgment on the less salient, yet relevant, content of the speaker's message. Consistent with this idea, we propose that incentive salience increases consideration of self-interest benefits by drawing attention to the incentive. When prosocial motivation is low (i.e., when individuals are less engaged with a cause), this increase in self-interest consideration drives prosocial behavior, but when

prosocial motivation is high, people may adjust their decision-weighting after the fact so that incentive salience has less of an effect on prosocial behavior.

Support for this prediction also comes from the literature on incentivized prosocial behavior. Whereas the presence (vs. absence) of incentives often reduces prosocial behavior (Gneezy & Rustichini, 2000; Mellström & Johannesson, 2008), a positive relationship may be observed under low prosocial motivation (see Table S1 in the Supplemental Material). Incentives for donating blood motivated those who had not previously donated, without influencing frequent donors (Goette & Stutzer, 2020). Similarly, introducing incentives increased donation amounts for less liked charities, but not for liked charities (Chao & Fisher, 2022). Although this research did not manipulate incentive salience or test prosocial motivation as a moderator, we build on these findings to predict that incentive salience will increase prosocial behavior when prosocial motivation is low.

Integrating this prior research, we predict that increasing incentive salience has a greater effect on prosocial behavior when prosocial motivation is low (i.e., when individuals are less engaged with a charity's cause), relative to when prosocial motivation is high. We expect that this effect is mediated by relative consideration of self-interest (vs. other-regarding) benefits. Although salience automatically increases relative consideration of self-interest benefits regardless of prosocial motivation, this heightened consideration will exert a stronger influence on behavior when prosocial motivation is low (i.e., when people are less engaged with the cause) than when it is high.

This research is the first to examine the role of prosocial motivation in moderating the effect of incentive salience on prosocial behavior and to test the underlying mechanism in the context of attribute weighting. We build on prior research on how incentives influence prosocial behavior (see Table S1) to uncover a potential upside of increasing incentive salience. We further advance prior research offering suggestive evidence for the moderating role of prosocial motivation, which was limited to single studies in the field (Goette & Stutzer, 2020) or online within-subject settings (Chao & Fisher, 2022). We systematically test our predictions in four main studies and one supplemental study, utilizing online and field samples, manipulating and measuring prosocial motivation, and testing the underlying mechanism. This work contributes to the literature on incentives, prosocial behavior, and attribute salience. Our investigation is also practically relevant, as it addresses an important, unanswered question for charities (see the Fundraising Officer Survey in the Supplemental Material available online).

Research Overview

We first discuss how real charities display incentives online (pilot study) before testing our prediction that prosocial motivation moderates the effect of incentive salience on prosocial behavior. Study 1 manipulated the visual salience of incentives for a charity pretested as eliciting more (vs. less) sympathy and measured donation intentions.

Studies 2 and 3 utilized controlled paradigms to manipulate incentive salience and assess a behavioral measure of costly effort, similar to volunteering (Exley, 2018), as a proxy for prosocial behavior. Specifically, Study 2 assessed prosocial effort by keypresses in a donation type-a-thon (DellaVigna & Pope, 2018) and manipulated prosocial motivation as in Study 1. Study 3 held the charity constant, measuring individual variance in sympathy for a specific charity in advance of a donation click marathon (Koo et al., 2020). Additionally, Studies 2 and 3 tested the mechanism by examining whether incentive salience increases relative consideration of self-interest (vs. other-regarding) benefits.

Finally, to enhance the ecological validity of our findings, an auxiliary field experiment with a large-scale alumni-donation campaign tested the predicted interaction between prosocial motivation (inferred from frequency of prior giving) and the salience of a thank-you note incentive on donation rate.

Open Practices Statement

We preregistered Studies 1, 2, and 3 and predetermined sample size (200 participants per condition) to ensure sufficient statistical power. Data, data-analysis scripts, survey materials, and preregistrations for lab studies are accessible at https://osf.io/63zjt. The authors' institutional review board reviewed and approved the research protocols for all human-subject studies. Recruitment details for online studies are provided in the Supplemental Material.

Pilot Study: How Do Charities Use and Display Incentives?

Method

To gain insight into current practices and inform our experiments, we gathered data from websites of the 100 largest U.S. charities. We used this data to assess whether these charities use incentives to motivate giving and whether they openly advertise their use of incentives online. We expected that charities may reduce incentive salience (i.e., avoid displaying incentives prominently online) if they believe doing so

undermines giving (see Table S7 in the Supplemental Material).

Forbes publishes a list of the 100 largest charities in the United States, as determined by the quantity of private donations received. A research assistant unaware of the research hypothesis viewed the home page and primary donation page for each of the charities on this list (Forbes, 2021) and recorded whether the charity featured an incentive on each of these pages to encourage donations.

To examine whether charities may use incentives but make them less salient, we also instructed the research assistant to conduct an online search for each charity name with words associated with incentives (i.e., "thank-you gift," "donate and get," "donate and earn," "donate to win," "get a free," "get a gift," "shop to donate") to determine whether charities offered incentives at that time. Incentives could be tangible (e.g., a blanket or T-shirt) or intangible (e.g., an online app promo code, ecard, or online magazine subscription) as long as they were clearly framed as incentives for donating (i.e., "get [incentive] and support a cause"). For examples of charity websites highlighting versus downplaying incentives, see the Supplemental Material.

Results

A majority of the charities (71.0%; $n = 71$) offered incentives for donating, suggesting that charities often turn to incentives to motivate donor engagement. However, of these 71 charities, only 5.6% ($n = 4$) advertised the incentive on their home page, and 14.1% ($n = 10$) advertised the incentive on their primary donation page. The remaining 80.3% of charities using incentives did not make these incentives salient (Table S4 in the Supplemental Material).

Study 1: Charity Website Study

Method

Study 1 tested our hypothesis that increasing incentive salience increases engagement with a charity when prosocial motivation is low (vs. high). To manipulate prosocial motivation, we had participants view a simulated website for a charity pretested as eliciting relatively more or less sympathy. We manipulated incentive salience by highlighting or downplaying incentives, relying on insights from the pilot study. We predicted that the effect of incentive salience on donation intentions would be stronger for a charity evoking less (vs. more) prosocial motivation.

Participants. We preregistered this study and opened a human intelligence task (HIT) on MTurk for 800 participants (200 per cell). We obtained a final sample of 808 participants (M_{age} = 42.67 years, age range = 18–84 years; 392 males, 7 nonbinary).

Procedure. We randomly assigned participants to one of four conditions in a 2 (incentive salience: low vs. high) × 2 (prosocial motivation: low vs. high) between-subjects design. Participants viewed a simulated charity website and were entered into a lottery for $50 where they could donate some portion to their assigned charity.

To manipulate prosocial motivation, we assigned participants to view a website for one of two charities: In the high prosocial motivation condition, participants viewed a website for the UN Refugee Agency soliciting donations to provide relief to families fleeing the war in Ukraine. In the low prosocial motivation condition, participants viewed a website for the Kentucky Theater soliciting donations to keep films playing in the local community. Participants viewed a pop-up message from their assigned charity soliciting donations, informing them that if they donated $5, they would receive an incentive (a tote bag, mug, etc.). We confirmed in a posttest that participants viewed this incentive as believable (see the Supplemental Material).

We manipulated the visual salience of the incentive similarly to how charities highlighted incentives in the pilot study: In the high incentive salience condition, we visually highlighted information about the incentive in a pop-up message and on the charity's home page and donation page; in the low incentive salience condition, we displayed the same images and information but used less conspicuous fonts and colors (see the Supplemental Material for stimuli). In this way, we held information about the incentive constant while visually manipulating incentive salience.

After viewing the charity website, we asked participants how likely they would be to donate $5 or more to their assigned charity if they won the lottery (1 = *not at all likely*, 7 = *very likely*). We included manipulation checks for prosocial motivation using a three-item scale ($\alpha = .87$; adapted from Small et al., 2007): "How sympathetic do you feel toward the cause of this charity?" "How much do you feel it is your moral responsibility to help out with the cause of this charity?" and "To what extent do you feel that it is appropriate to help support this charity?" (1 = *not at all*, 7 = *extremely*), and for incentive salience: "While browsing the charity website, how aware were you of the gifts you could receive if you donated $5 or more?" (1 = *not at all*; 7 = *very much*). We randomly selected 1 participant to win the $50 lottery and to choose how much to donate to the

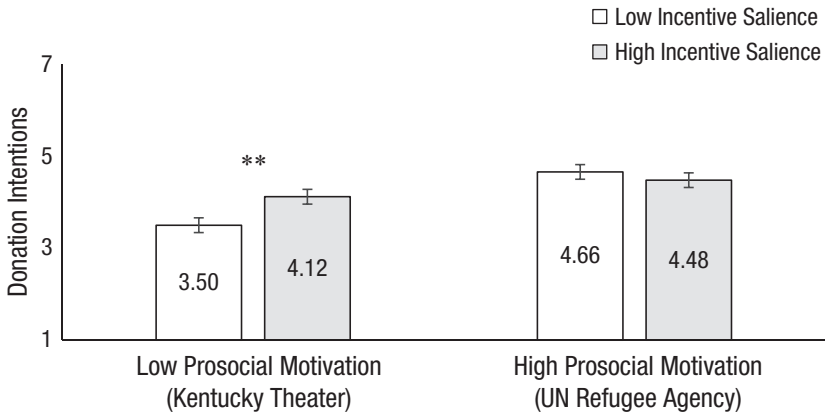

Fig. 1. Interaction between incentive salience and prosocial motivation on donation intentions (Study 1). Asterisks indicate a significant difference between conditions ($p < .01$); error bars represent standard errors.

assigned charity; and we offered to give this participant his or her choice of incentive if the donation amount was more than $5.

Results

Manipulation checks. Participants were more sympathetic to the cause in the high (vs. low) prosocial motivation condition ($M_{high} = 4.96$, $SE = 0.08$; $M_{low} = 3.76$, $SE = 0.11$), $t(806) = 10.63$, $p < .001$, $d = 0.75$, 95% confidence interval (CI) = [.61, .89], and incentives were more salient in the high (vs. low) incentive salience condition ($M_{high} = 5.74$, $SE = 0.11$; $M_{low} = 5.19$, $SE = 0.11$), $t(806) = 4.38$, $p < .001$, $d = 0.31$, 95% CI = [.17, .45]. Participants were aware of the incentive in both incentive salience conditions (i.e., the means were above the scale midpoint of 4; ps < .001; $Mdn = 6$), and incentive salience did not significantly affect prosocial motivation, $t(806) = -1.12$, $p = .264$, $d = -0.08$, 95% CI = [−.22, .06] (we report these details for subsequent studies in the Supplemental Material).

Prosocial engagement. Regressing donation intention on incentive salience, prosocial motivation, and their interaction revealed a significant effect of prosocial motivation, $B = 0.38$, $SE = 0.08$, $t(804) = 4.66$, $p < .001$, and a nonsignificant effect of incentive salience, $B = 0.11$, $SE = 0.08$, $t(804) = 1.34$, $p = .179$, qualified by the predicted interaction, $B = -0.20$, $SE = 0.08$, $t(804) = -2.47$, $p = .014$ (Fig. 1). When prosocial motivation was low, a more (vs. less) salient incentive increased donation intentions, $B = 0.31$, $SE = 0.11$, $t(804) = 2.70$, $p = .007$, with no significant effect when prosocial motivation was high, $B = -0.09$, $SE = 0.11$, $t(804) = -0.79$, $p = .428$. Study 1 thus supports our prediction that incentive salience increases engagement with a cause when prosocial motivation is low (vs. high) in a realistic donation context.

Study 2: Effort Invested as a Function of Incentive Salience and Prosocial Motivation

Method

Building on Study 1, Study 2 used a donation type-a-thon task to assess a behavioral measure of costly effort investment, similar to volunteering (Exley, 2018), as a proxy for prosocial behavior. Participants alternated pressing keys on their keyboard for 3 min to donate to a charity and earn incentives for themselves. Incentives were either more or less salient, and we manipulated prosocial motivation similar to Study 1. We predicted an interaction in which incentive salience would increase engagement with a charity that evoked less (vs. more) prosocial motivation. To test the underlying process, we measured relative consideration of self-interest (vs. other-regarding) benefits.

Participants. We preregistered this study and opened a HIT on MTurk for 800 participants (200 per cell), which returned 807 participants. After carrying out preregistered exclusions (see the Supplemental Material), we had 766 participants ($M_{age} = 40.10$ years, age range: 18–77 years; 421 males, 4 nonbinary).

Procedure. We randomly assigned participants to one of four conditions in a 2 (incentive salience: low vs. high) × 2 (prosocial motivation: low vs. high) between-subjects design.

At the start of the survey, participants read that they were invited to engage in an activity that would result in donations to a charity. We manipulated prosocial motivation much as we did in Study 1: In the high prosocial motivation condition, we invited participants

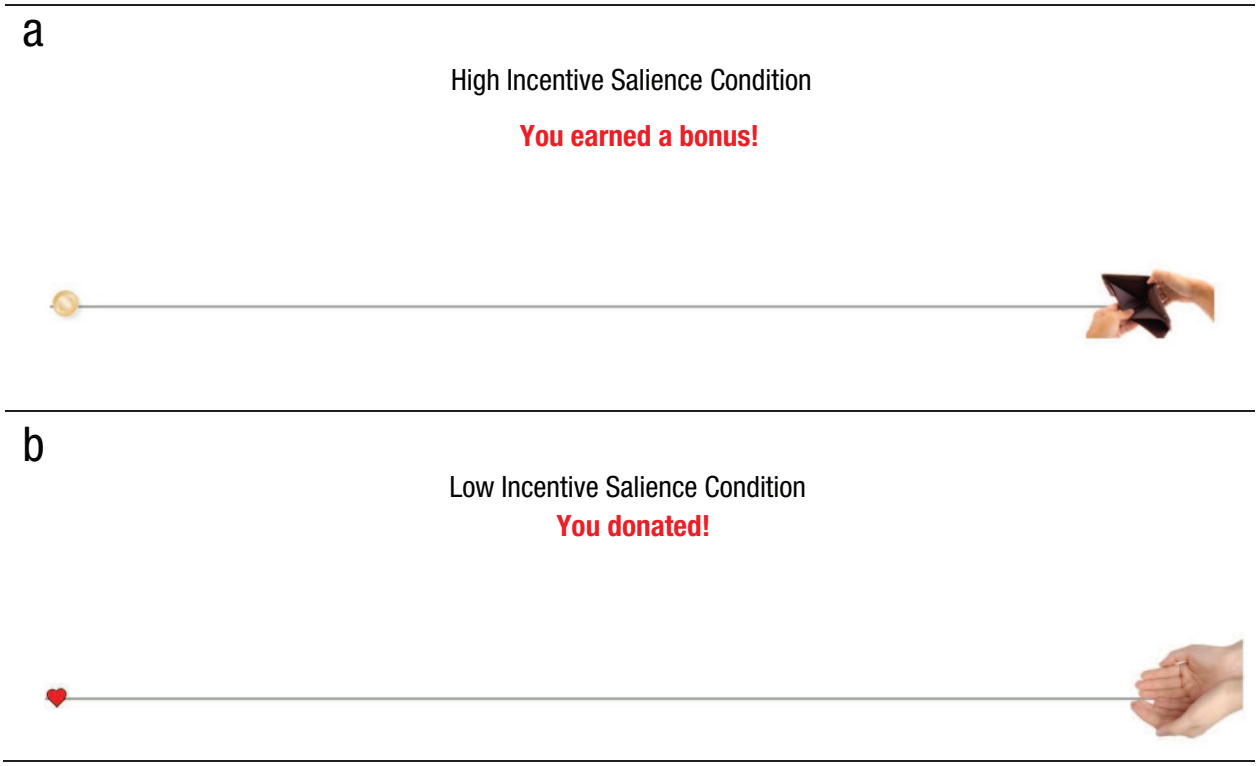

Fig. 2. Incentive salience manipulation (Study 2).

to support UNICEF's COVID relief fund for children. In the low prosocial motivation condition, we invited participants to support the JFK Library's fundraiser for preserving JFK's historic sailboat, the *Victura*. We selected these two charities because they are both considered reputable (i.e., they earned similar scores from Charity Navigator, a charity assessment organization) and because in a pretest, participants perceived it as more prosocial to support children via UNICEF than to preserve the *Victura* via the JFK Library, $t(80) = 5.24$, $p < .001$, $d = 1.16$, 95% CI = [.69, 1.62] (see the Supplemental Material for pretest details).

Participants first read about their assigned charity and indicated how important, valuable, and meaningful they found the cause to be. They then read about the type-a-thon fundraising event in which they would be participating. They were instructed to alternate pressing the "A" and "L" keys on their keyboard for 3 min to move an icon from left to right along a horizontal path on the screen. For each pair of keypresses they made, sponsors would donate \$0.01 to the participants' assigned charity, and participants would earn \$0.0001 for themselves.

Participants thus needed to invest a substantial amount of effort in support of the charity to yield any benefits for themselves, mirroring a typical donation context. This task is similar to paradigms used in prior research that measure behavior through keypresses (DellaVigna & Pope, 2018) or mouse clicks (Exley, 2018; Koo et al., 2020) as a proxy for volunteering one's effort or time. Consistent with this prior research, the amount of effort exerted by participants in our study reflected a voluntary choice to support the charity.

We manipulated incentive salience by increasing the visual prominence of the incentive. In the high incentive salience condition, each pair of keypresses moved a coin icon across the screen toward an open wallet and caused the message "You earned a bonus!" to appear (Fig. 2a). In the low incentive salience condition, each pair of keypresses moved a heart icon across the screen into cupped hands and caused the message "You donated!" to appear (Fig. 2b). The icons moved at the same rate, meaning that perceived progress was held constant.

At the end of the type-a-thon, we measured consideration of self-interest benefits using a two-item scale ($r = .73$) designed to capture participants' focus on personal gain: "To what extent did you want to maximize the amount of payment you received?" and "To what extent did you care about earning a bonus in this event?"

To measure consideration of other-regarding benefits, we asked participants, "To what extent did you find this event useful for earning a donation for the charity?"

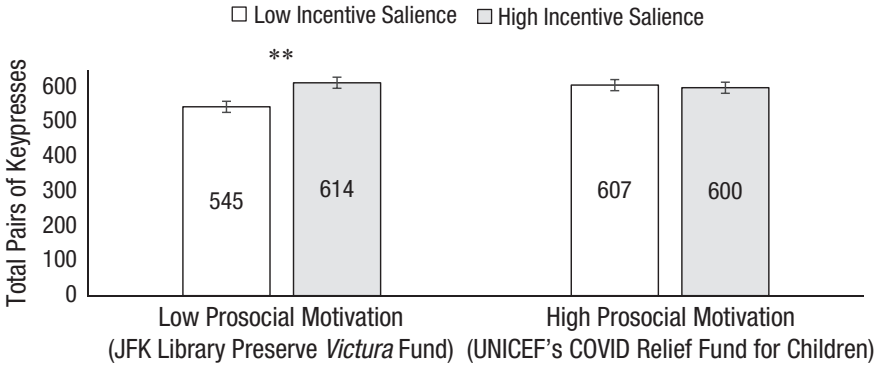

Fig. 3. Interaction between incentive salience and prosocial motivation on keypresses in a type-a-thon fundraiser (Study 2). Asterisks indicate a significant difference between conditions ($p < .01$); error bars represent standard errors.

(1 = *not at all useful*; 7 = *very useful*). This item was exploratory (i.e., not preregistered) and allowed us to examine whether increasing consideration of self-interest benefits reduces consideration of other-regarding benefits, aligning with prior models that examine how an increased emphasis on one motive affects individuals' prioritization of other motives in incentivized donation contexts (e.g., Chao & Fisher, 2022; Gneezy et al., 2011).

We included a manipulation check for incentive salience ("During the event, to what extent were you focused on earning a bonus for yourself?") and for prosocial motivation (a two-item scale adapted from Grant, 2008; $r = .96$: "To what extent did you want to increase donations to the cause?" and "To what extent did you want to help the charity?") on 7-point scales (1 = *not at all*, 7 = *very much*).

Results

Manipulation checks. Participants focused on the bonus more in the high (vs. low) incentive salience condition ($M_{high} = 4.44$, $SE = 0.11$; $M_{low} = 3.76$, $SE = 0.11$), $t(764) = 4.34$, $p < .001$, $d = 0.31$, 95% CI = [.17, .46] and were more prosocially motivated to support UNICEF ($M = 5.76$, $SE = 0.08$) than to preserve the *Victura* ($M = 4.27$, $SE = 0.11$), $t(764) = 11.37$, $p < .001$, $d = 0.82$, 95% CI = [.67, .97].

Prosocial behavior. As our measure of prosocial behavior, we analyzed the total number of pairs of keypresses participants made. This variable was normally distributed (skewness = –0.50; kurtosis = –0.23), and we thus report raw scores; the results were similar when a log transformation was used (see the Supplemental Material). Regressing keypresses on incentive salience, prosocial motivation, and their interaction revealed a nonsignificant effect of prosocial motivation, $B = 12.07$, $SE = 8.19$, $t(762) = 1.47$, $p = .141$, and a marginally significant effect of incentive salience, $B = 15.38$, $SE = 8.19$, $t(762) = 1.88$, $p = .061$, qualified by the predicted interaction, $B = –19.22$, $SE = 8.19$, $t(762) = –2.35$, $p = .019$ (Fig. 3). When prosocial motivation was low, a more (vs. less) salient incentive increased prosocial behavior, $B = 34.60$, $SE = 11.43$, $t(762) = 3.03$, $p = .003$, which attenuated when prosocial motivation was high, $B = –3.84$, $SE = 11.74$, $t(762) = –0.33$, $p = .744$.

Consideration of self-interest benefits. Regarding the underlying mechanism, we examined how incentive salience influenced consideration of self-interest benefits, following our preregistered analysis (this scale was labeled "extrinsic motivation" in the preregistration). As predicted, participants considered self-interest benefits more in the high (vs. low) incentive salience condition ($M_{high} = 5.61$, $SE = 0.08$; $M_{low} = 5.12$, $SE = 0.09$), $t(764) = 3.94$, $p < .001$, $d = 0.28$, 95% CI = [.14, .43]. Following our preregistration, a moderated mediation analysis (PROCESS model 14; 10,000 bootstrap samples) yielded a significant index, $B_{index} = –11.24$, $SE = 3.88$, 95% CI = [–19.81, –4.67]. Consideration of self-interest benefits mediated the effect of incentive salience on keypresses when prosocial motivation was low, $B = 17.71$, $SE = 4.80$, 95% CI = [8.71, 27.56], which significantly attenuated when prosocial motivation was high, $B = 6.47$, $SE = 2.40$, 95% CI = [2.31, 11.74].

Consideration of other-regarding benefits. For exploratory purposes, we examined whether this increase in consideration of self-interest benefits was offset by a reduction in consideration of other-regarding benefits. Indeed, participants in the high (vs. low) incentive salience condition found the type-a-thon less useful for donating to the charity ($M_{high} = 4.52$, $SE = 0.10$; $M_{low} = 5.08$, $SE = 0.09$), $t(764) = 4.02$, $p < .001$, $d = 0.29$, 95% CI = [.15, .43].

Relative consideration. To put these findings into context and align with prior models (e.g., Chao & Fisher,

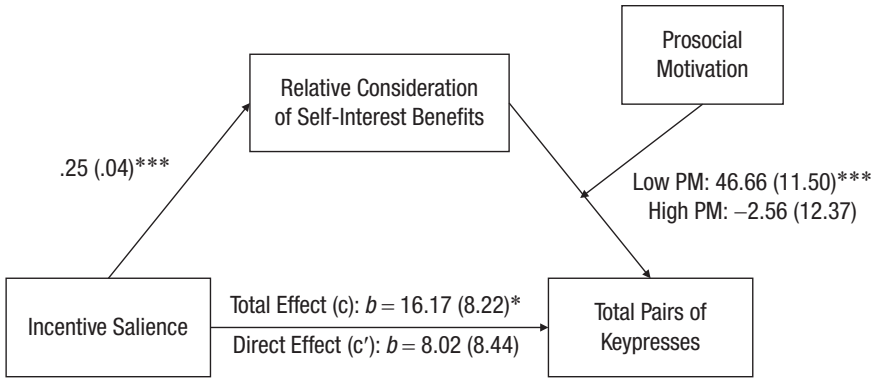

Fig. 4. Relative consideration of self-interest (vs. other-regarding) benefits mediates the effect of incentive salience on keypresses as a function of prosocial motivation (Study 2). Parentheses indicate standard errors. Path coefficients are unstandardized coefficients. High PM = high prosocial motivation condition; low PM = low prosocial motivation condition. Asterisks indicate a significant difference between conditions. *$p < .05$. ***$p < .001$.

2022; Gneezy et al., 2011), we computed relative consideration of self-interest by dividing consideration of self-interest benefits by the sum of consideration of self-interest and other-regarding benefits. A *t*-test analysis revealed that manipulating incentive salience increased relative consideration of self-interest (vs. other-regarding) benefits (M_{high} = 56.78%, SE = 0.66%; M_{low} = 50.26%, SE = 0.65%), $t(764) = 7.03$, $p < .001$, $d = 0.51$, 95% CI = [.36, .65]. Similar to our prior analysis, we found significant moderated mediation, $B_{index} = -12.12$, $SE = 4.54$, 95% CI = [−21.67, −3.75] (Fig. 4): Relative consideration of self-interest (vs. other-regarding) benefits mediated the effect of incentive salience on keypresses when prosocial motivation was low, $B = 11.49$, $SE = 3.24$, 95% CI = [5.54, 18.26], with no significant effect when prosocial motivation was high, $B = -0.63$, $SE = 2.91$, 95% CI = [–6.60, 4.89].

Study 2 supports our theory that prosocial motivation moderates the effect of incentive salience on prosocial behavior, this time when examining behavior as real effort investment. This interaction effect was mediated by relative consideration of self-interest (vs. other-regarding) benefits. Speaking to the robustness of this effect, we replicated this interaction effect in Study 2, Posttest 1, which used a circle instead of a heart icon in the low incentive salience condition, and we demonstrated that our results are not due to a physical limitation with respect to participants' ability to make keypresses in Study 2, Posttest 2 (see the Supplemental Material).

Study 3: Measuring Prosocial Motivation

Method

Advancing Studies 1 and 2, Study 3 measured, rather than manipulated, participants' prosocial motivation to support a cause. We expected incentive salience to again increase relative consideration of self-interest (vs. other-regarding) benefits, which would in turn drive greater prosocial engagement at lower (vs. higher) levels of prosocial motivation.

Participants. We first opened a HIT for 1,000 MTurk participants and received 1,009 responses for a presurvey that assessed their prosocial motivation (three-item scale from Study 1; $\alpha = .75$) toward the Intrepid Fallen Heroes Fund, a nonprofit organization that serves injured U.S. military personnel (see the Supplemental Material for full details of the presurvey). Three days later, we preregistered our main study and opened a HIT for 970 MTurk participants who had completed the presurvey. (We recruited this sample, as a small portion of presurvey respondents piloted our main study to ensure it was error-free.) This study's design ensured that our measured predictor variable of prosocial motivation was not influenced by our manipulation of incentive salience. A total of 635 people participated. After carrying out preregistered exclusions (see the Supplemental Material), our final sample was 629 participants (M_{age} = 40.49 years, age range = 19–75 years; 292 males, 7 nonbinary).

Procedure. Participants learned that they could help the Intrepid Fallen Heroes Fund by participating in a 90-s donation click marathon. Similar to the type-a-thon paradigm from Study 2, this donation click marathon assessed prosocial effort as a proxy for charitable behaviors like volunteering and was adapted from prior research (Exley, 2018; Koo et al., 2020). Participants donated their effort by clicking their computer mouse. They learned that the more they clicked the more money would be donated to the Intrepid Fallen Heroes Fund and that for each click they would also earn a $0.0001 bonus for themselves. Relying on a pilot study of a similar paradigm (n = 381;

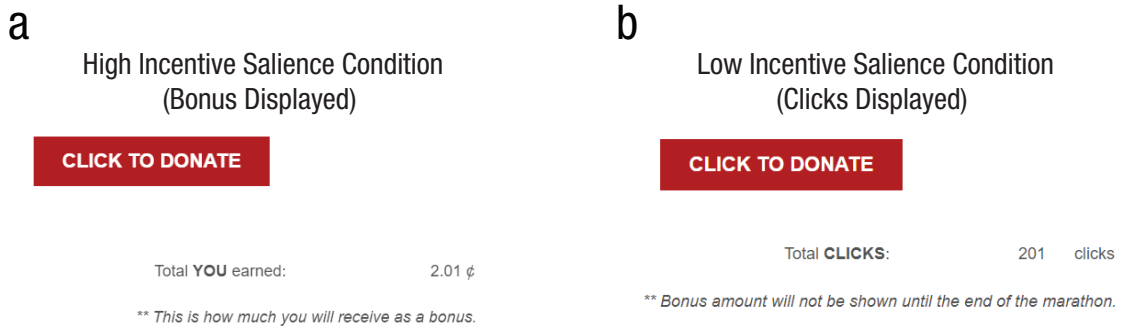

Fig. 5. Static depiction of incentive salience manipulation (Study 3).

Supplemental Study 1 in the Supplemental Material), we expected people to click around 450 times, which would earn them $0.045. To begin the click marathon, participants needed to acknowledge that they understood (a) that each click would result in a sponsor donating to the Intrepid Fallen Heroes Fund on their behalf and (b) that each click earned $0.0001 for themselves. Once the click marathon began, participants had 90 s to click as many times as they wanted on a donation button at the center of the screen. The total number of clicks served as our measure of prosocial behavior.

We randomly assigned participants to an incentive condition in a two-cell (incentive salience: low vs. high) between-subjects design. Participants in the high incentive salience condition viewed a click-tracker that displayed the bonus payment they earned for themselves in real time (Fig. 5a). Under the click-tracker, a message read, "This is how much you will receive as a bonus." Participants in the low incentive salience condition viewed a click-tracker that displayed the total number of clicks they made in real time (Fig. 5b). Under the click-tracker, a message read, "Bonus amount will not be shown until the end of the marathon." See the Supplemental Material for stimuli and links to video demonstrations of this manipulation.

This incentive salience manipulation serves as a conservative test of our prediction for several reasons. First, it is possible that participants in the low incentive salience condition felt that they made greater progress in the click marathon because they viewed clicks in units of one (i.e., clicking 201 times displayed "201 clicks"), whereas the high incentive salience condition displayed clicks in units of 0.01 cents (i.e., clicking 201 times displayed "2.01¢"). Progress may thus appear to accumulate faster in the low incentive salience condition (vs. the high incentive salience condition), which could be motivating (e.g., Sharif & Woolley, 2020) and would thus predict the opposite pattern of results (i.e., greater engagement in the low vs. high incentive salience condition). Second, because we simply changed the unit while holding the numeric information constant between conditions, participants could easily convert clicks into bonus payments and vice versa (i.e., converting a tally count of "201 clicks" to a 2.01¢ bonus payment). Third, increasing the salience of this very low-incentive rate (0.01¢ per click) could demotivate participants. Regardless, we expected that more (vs. less) salient incentives would increase engagement in the click marathon at lower (vs. higher) levels of prosocial motivation.

Following the click marathon, we tested the proposed mechanism underlying this effect first documented in Study 2: relative consideration of self-interest (vs. other-regarding) benefits. Four items assessed consideration of self-interest benefits ($\alpha = .95$): "During the click marathon, I was driven to work hard to earn a greater bonus," "In this task, I wanted to maximize my potential bonus very much," "Getting a bigger bonus was important to me," and "To what extent were you thinking about benefiting yourself during the click marathon?" Four items assessed consideration of other-regarding benefits ($\alpha = .96$): "During the click marathon, I was driven to work hard to earn a greater donation for the charity," "In this task, I wanted to maximize the charity's potential donation very much," "Getting a bigger donation for the charity was important to me," and "To what extent were you thinking about benefiting the charity during the click marathon?" (scale ranging from 1 to 7; higher scores indicate greater consideration). The decision to compute two scales was informed by a factor analysis (reported in the Supplemental Material) and deviates from the preregistration, which specified four scales. We found a similar pattern of results regardless of how we computed these scales and report the two-scale structure for simplicity (see the Supplemental Material for preregistered analyses). Last, to confirm our manipulation of incentive salience, we asked, "During the marathon, how aware were you of the bonus amount you would receive?" (1 = *not at all*, 7 = *very much*).

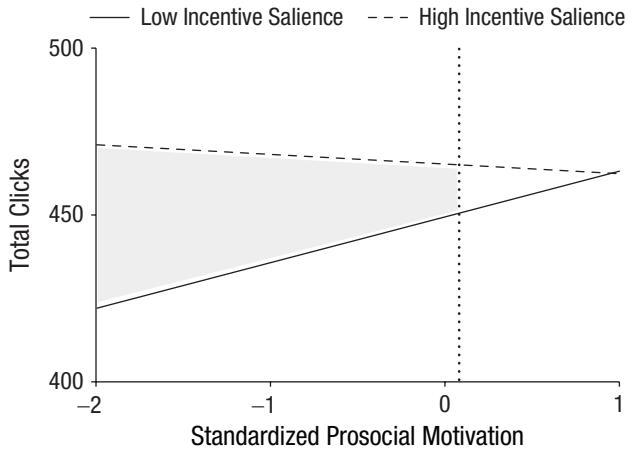

Fig. 6. Interaction between the low (vs. high) incentive salience condition and measured prosocial motivation on click count in a donation click marathon (Study 3). The vertical dotted line marks the Johnson-Neyman point at which the simple effect becomes statistically significant (JN ≤ .08), corresponding to the area shaded in gray.

Results

Manipulation check. Confirming our manipulation, participants attended to the bonus significantly more in the high (vs. low) incentive salience condition (M_{high} = 6.14, SE = 0.08; M_{low} = 4.91, SE = 0.11), $t(627) = 9.36$, $p < .001$, $d = 0.75$, 95% CI = [.58, .91].

Prosocial behavior. Click count was normally distributed (skewness = –0.47; kurtosis = 2.39). We regressed raw click count on incentive salience, standardized prosocial motivation, and their interaction. We standardized prosocial motivation to improve the interpretation of the estimates and address multicollinearity concerns (Marquardt, 1980). This analysis revealed a nonsignificant effect of prosocial motivation, $B = 5.18$, $SE = 3.72$, $t(625) = 1.39$, $p = .164$, and a significant effect of incentive salience, $B = 9.12$, $SE = 3.71$, $t(625) = 2.46$, $p = .014$, qualified by the predicted interaction, $B = -11.23$, $SE = 3.72$, $t(625) = -3.02$, $p = .003$ (Fig. 6). We decomposed this interaction using a floodlight analysis, which revealed a Johnson-Neyman (JN) point at the 95% threshold ($p < .05$), supporting our key prediction. A more (vs. less) salient incentive increased clicking behavior for individuals less motivated to support the cause (JN < .15), with no significant effect for individuals more motivated to support the cause. Put differently, a more (vs. less) salient incentive increased clicking behavior at low levels of prosocial motivation (–1 *SD*), $B = 20.35$, $SE = 5.25$, $t(625) = 3.88$, $p < .001$, but not at high levels (+1 *SD*), $B = -2.11$, $SE = 5.26$, $t(625) = -0.40$, $p = .688$.

Relative consideration of self-interest benefits. We computed relative consideration of self-interest (vs. other-regarding) benefits as in Study 2. A *t*-test analysis revealed a main effect of incentive salience: Relative consideration of self-interest benefits was greater in the high (vs. low) incentive salience condition (M_{high} = 53.34%, SE = 0.86%; M_{low} = 48.70%, SE = 0.84%), $t(627) = 3.86$, $p < .001$, $d = 0.31$, 95% CI = [.15, .47]. As in Study 2, we examined whether relative consideration mediates the effect of incentive salience on engagement with the charity as a function of prosocial motivation, this time when measuring prosocial motivation. We found that when prosocial motivation is low (–1 *SD*), relative consideration of self-interest benefits mediated the effect of incentive salience on clicks made, $B = 2.27$, $SE = 0.89$, 95% CI = [.81, 4.28], which was attenuated when prosocial motivation was high (+1 *SD*), $B = 1.17$, $SE = 0.77$, 95% CI = [–.21, 2.82] (Fig. 7). Note that our preregistration mistakenly specified Model 7 instead of Model 14. We report the results of Model 7 in the Supplemental Material.

Study 3 joined Study 2 in demonstrating that relative consideration of self-interest (vs. other-regarding) benefits mediates the interaction between incentive salience and prosocial motivation on prosocial behavior. Note again that this study utilized a conservative manipulation of incentive salience. We manipulated the unit in which clicks were displayed, holding the numeric value constant, which corresponded to presenting larger units in the low (vs. high) incentive salience condition (201 clicks vs. 2.01¢ bonus). Nevertheless, the predicted interaction still emerged, demonstrating the robustness of the effect.

Auxiliary Field Experiment

Method

Can charities use these findings to encourage donations, particularly for causes that elicit less sympathy or donors who are less motivated to engage? To test the applicability of our findings, we partnered with an alumni-donation campaign in which incentive salience was manipulated by adding a gift of negligible financial value to a standard thank-you card, akin to incentives used in prior field experiments (Falk, 2007; Yin et al., 2020) and similar to common forms of incentives that charities use as uncovered in our of Fundraising Officer Survey (see the Supplemental Material) and the pilot study (see, e.g., Fig. S1a, Example 2, in the Supplemental Material).

This manipulation, although different from that of Studies 1 through 3, was pretested to increase incentive salience without altering the perceived monetary value of the incentive (see the Supplemental Material). Similar manipulations of saliency have also been used in other field studies in charitable contexts (e.g., adding a glossy insert advertising a thank-you gift; Chao, 2017). This field experiment thus improves ecological validity by utilizing a large-scale alumni-donation campaign and

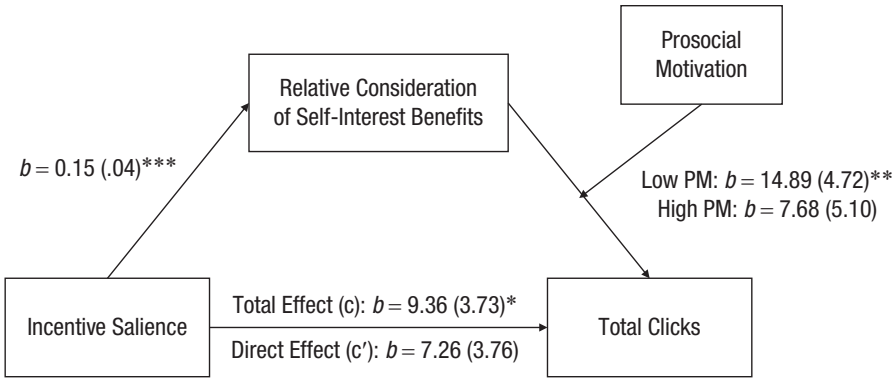

Fig. 7. Relative consideration of self-interest (vs. other-regarding benefits) mediating the effect of incentive salience on mouse clicks as a function of measured prosocial motivation (Study 3). Parentheses indicate standard errors. High and low prosocial motivation (PM) indicate values ±1 *SD* from the mean. Path coefficients are unstandardized coefficients; asterisks indicate a significant difference between conditions. *$p < .05$. **$p < .01$. ***$p < .001$.

generalizes the effect to commonly used nonmonetary, pregiving incentives (Falk, 2007; Yin et al., 2020). We predicted an interaction such that more (vs. less) salient incentives would increase donation rates when prosocial motivation was low (less frequent donors) versus high (more frequent donors). Note that the field study involved an unconditional gift, whereas the prior lab studies used conditional gifts. Thus, it is possible that a different mechanism underlies the effect in the field study. In a posttest discussed in the Results section, we address this concern and test whether our field-study manipulation activates a similar process as Studies 2 and 3.

Participants. An alumni-affairs office mailed cards to 25,358 alumni from a large U.S. university. We excluded 2,890 alumni who had never previously donated. This decision was made a priori on the basis of conversations with alumni-affairs officers, as it is unclear whether these individuals lack prosocial motivation to support the university or simply do not receive university communications (e.g., because of an address change). We conducted additional robustness analyses that included these individuals, which did not substantively change the results (see the Supplemental Material). Our final sample consisted of 22,468 alumni (graduation year range: 1936–2022; median: 1995) who had previously donated.

Procedure. Participants were randomly assigned to one of two conditions (incentive salience: low vs. high) in a between-subjects design. As part of the donation campaign, all participants received an incentive: a card thanking them for supporting the university ("Thank you for growing with [the university]") and encouraging them to donate ("One seed leads to another; your generosity plants the seed that allows our students to grow").

Participants in the low incentive salience condition received a thank-you card with no attachment (n = 11,084), whereas those in the high incentive salience condition received a thank-you card with a packet of seeds attached (n = 11,384). Figure 8 displays this manipulation, and a pretest of 295 university students and alumni confirmed that both cards were viewed as an incentive (i.e., on a scale ranging from 1–9, participants found both cards rewarding; M_{high} = 6.75, SE = 0.15; $t(145) = 12.07$, $p < .001$, d = 1.00, 95% CI = [.80, 1.20]; M_{low} = 6.15, SE = 0.14; $t(148) = 8.12$, $p < .001$, d = 0.67, 95% CI = [.49, .84]). A second pretest of 105 nonoverlapping participants from the same population confirmed that the perceived monetary value of the cards did not significantly differ by condition (M_{high} = \$3.75; M_{low} = \$3.15), $t(103) = 1.35$, $p = .180$ (see the Supplemental Material).

We used the university's categorization of alumni as more (vs. less) frequent donors (1 = *less prosocial*; the donor has previously given, but not recently; 3 = *more prosocial*; the donor has given consecutively in the past 2 years) as our measure of prosocial motivation. Our dependent measure was participants' decision to donate; we did not have donation amounts.

Results

Donation decision. A logistic regression of donation decision on incentive salience (−1 = low, 1 = high), standardized prosocial motivation, and their interaction yielded a significant effect of prosocial motivation, B = 0.94, SE = 0.06, Wald χ^2 = 256.00, $p < .001$, odds ratio (OR) = 2.55, and a significant effect of incentive salience, B = 0.20, SE = 0.08, Wald χ^2 = 5.98, $p = .015$, OR = 1.22, qualified by the predicted interaction, B = −0.13, SE = 0.06, Wald χ^2 = 4.75, $p = .029$, OR = 0.88 (Fig. 9). A more (vs. less) salient

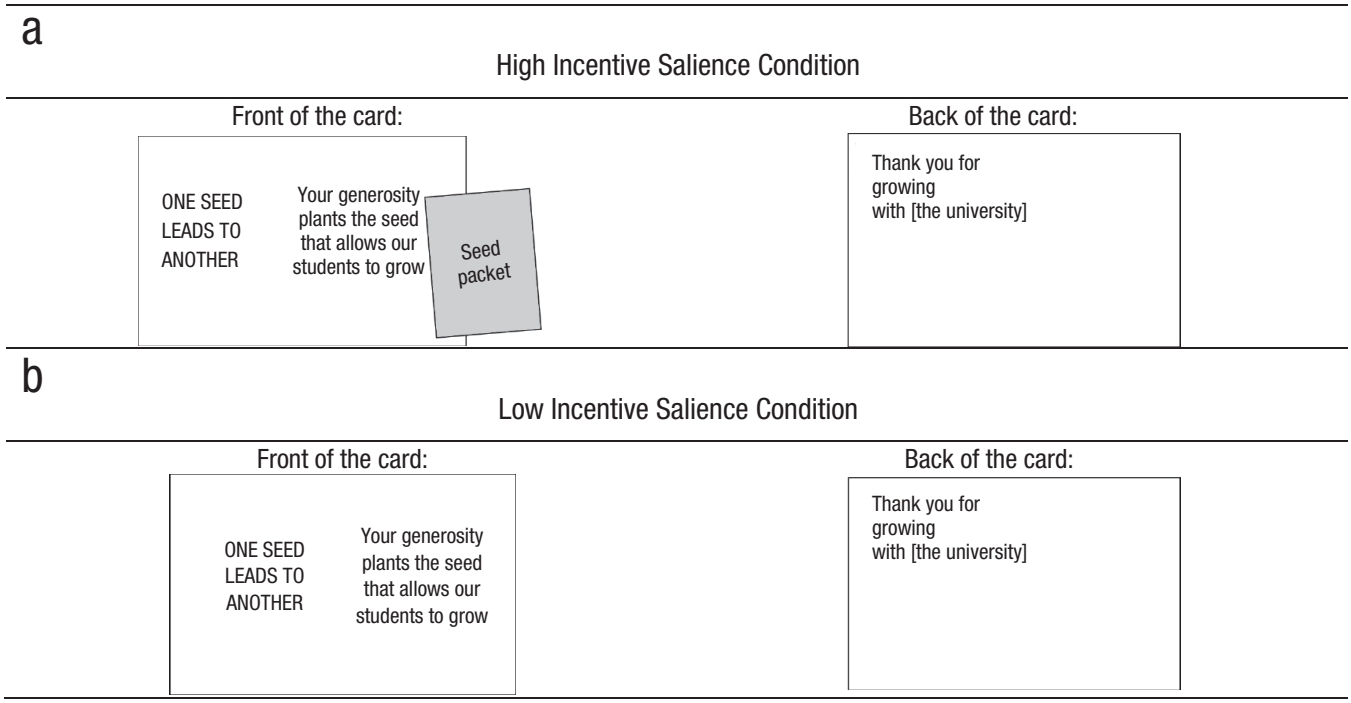

Fig. 8. Incentive salience manipulation with university name removed (field experiment).

incentive increased donation rates among less prosocial alumni (JN ≤ .68), with no significant effect among more prosocial alumni. To further illustrate this interaction, at low levels of prosocial motivation (−1 *SD*), alumni were 88% more likely to donate in the high (vs. low) incentive salience condition, $B = 0.32$, $SE = 0.13$, Wald $\chi^2 = 6.20$, $p = .013$, $OR = 1.37$. However, at high levels of prosocial motivation (+1 *SD*), there was no significant effect of incentive salience on donation likelihood, $B = 0.06$, $SE = 0.05$, Wald $\chi^2 = 1.16$, $p = .281$.

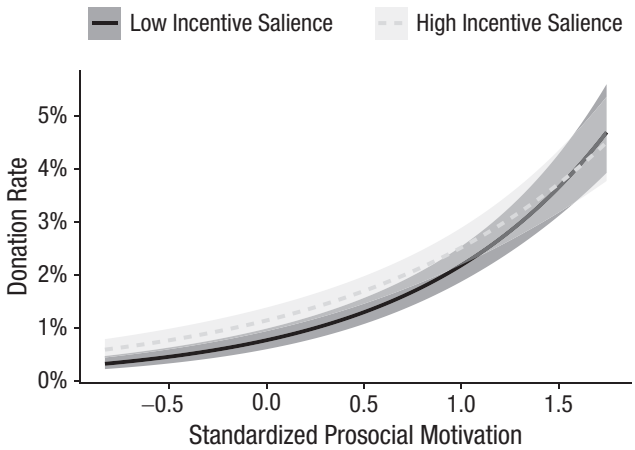

Fig. 9. Interaction between incentive salience and prosocial motivation on donation rates in response to a university fundraising campaign (field experiment). Shading represents 95% confidence intervals.

This auxiliary field experiment conceptually replicated the pattern of results from Studies 1, 2, and 3. Less frequent donors were more likely to donate when an incentive was more (vs. less) salient, whereas more frequent donors contributed regardless of an incentive's salience. This field experiment offers high ecological validity and generalizes the findings of Studies 1 through 3 to nonmonetary, pregiving incentives.

Posttest exploring the mechanism and alternative accounts. Because we were unable to examine donors' motivations directly, we designed a posttest to test the hypothesized mechanism, examine potential alternative explanations, and address limitations. In this posttest, we recruited 183 university students and alumni and randomly assigned them to the high (vs. low) incentive salience condition, as in the field study. We first asked participants to list up to 10 thoughts that occurred to them while they were viewing images of their assigned card. Participants then answered questions assessing the extent to which they (a) considered self-interest (vs. other-regarding) benefits, (b) experienced guilt, and (c) experienced reciprocity in response to receiving the card. Supporting our proposed process, and in line with Studies 2 and 3, the incentive salience manipulation increased relative consideration of self-interest (vs. other-regarding)

benefits ($M_{\text{high salience}}$ = 50.48%, SE = 1.40%; $M_{\text{low salience}}$ = 43.86%, SE = 1.23%), $t(181) = -3.58$, $p < .001$, $d = 0.53$, 95% CI = [.23, .82].

Although we found in our pretests that both incentives were perceived as highly rewarding and of similar monetary value, it is possible that perceived differences in the size of the gift in part drove the effect, as feelings of reciprocity are greater when receiving larger gifts (Falk, 2007). Additionally, the study's design necessitated using unconditional incentives, which could have driven engagement through guilt or reciprocity (Cialdini & Goldstein, 2004). Against these possibilities, we did not find a significant effect of incentive salience on reciprocity or guilt (see the Supplemental Material), suggesting that these alternative explanations did not drive our effect.

We also acknowledge that although pretest participants perceived both incentives as highly rewarding (i.e., greater than the scale midpoint), they perceived the incentive as more rewarding in the high (vs. low) incentive salience condition, $t(293) = 2.95$, $p = .003$, $d = 0.34$, 95% CI = [.11, .57]. This difference could be attributed to "warm glow," that is, the feeling of moral satisfaction from helping others, if the high incentive salience condition reinforced the message of "helping others grow." To test this possibility, we examined participants' open responses in our posttest. A research assistant unaware of condition and hypothesis coded open responses for mentions of at least one thought related to (a) self-interest benefits and (b) other-regarding benefits. First, more participants in the high (vs. low) incentive salience condition listed thoughts related to self-interest benefits. Notably, these thoughts were unrelated to feeling moral satisfaction from giving (e.g., participants wrote: "Happy to receive a gift" "it is very pretty I like it," "it's nice to be recognized," "I look forward to seeing the flowers bloom"). Second, we find no difference in the likelihood of participants mentioning thoughts about helping others between conditions, which is not predicted by a warm-glow account (see the Supplemental Material for full posttest details). Together, results from this posttest provide evidence against several alternative accounts and rule in our proposed process that incentive salience shifts relative consideration of self-interest (vs. other-regarding) benefits.

General Discussion

Despite charities' tendency to downplay incentives (pilot study), three preregistered experiments and an auxiliary field study found that increasing incentive salience increases prosocial behavior when prosocial motivation to support a charity is low (vs. high). This is because salient incentives increase relative consideration of self-interest (vs. other-regarding) benefits, which has a stronger effect on behavior at low (vs. high) levels of prosocial motivation (Studies 2 and 3). Demonstrating ecological validity, a more (vs. less) salient incentive in the field increased donation rates among infrequent alumni donors with no effect for frequent donors. Supporting our hypothesis, the results in the field are also due in part to an increase in relative consideration of self-interest benefits.

This research is the first to test the effect of incentive salience on charitable behavior across multiple experiments with different operationalizations of charitable giving (money and time), as seen in Table S3 in the Supplemental Material. We accordingly advance theory in several ways. First, we have addressed prior inconsistencies in the literature regarding the effect of incentives on prosocial behavior (Table S1) by highlighting the moderating role of prosocial motivation. Second, we are the first to examine the mechanism underlying this effect. We found that greater consideration of self-interest benefits drives prosocial behavior when prosocial motivation is low (i.e., when individuals are less engaged with a cause), but when prosocial motivation is high, individuals adjust their decision-weighting after the fact in such a way that incentive salience has less of an effect on behavior. This mechanism is in line with models of bottom-up and top-down processing related to dual-process theory (Pennycook et al., 2015; Theeuwes, 2018), in which salience increases consideration of prominent attributes in a bottom-up process (Itti & Koch, 2001) that people can later correct in an active and deliberate top-down process (Theeuwes, 2018), as long as they are sufficiently motivated (Sirota et al., 2023; Walco & Risen, 2017). To summarize, our research challenges the widespread narrative that incentives undermine charitable giving, suggesting instead that if an appropriate incentive is offered, increasing salience increases prosocial behavior, particularly when prosocial motivation is low.

Collectively, these contributions equip professionals with evidence-based guidance in navigating the strategic presentation of incentives for charitable giving. Many of these practitioners recognize the value of understanding how incentive salience influences prosocial behavior, but they do not intuit our findings (see the Fundraising Officer Survey in the Supplemental Material). Charitable organizations may increase engagement from new or lapsed donors (i.e., who may perceive the cause as less important or be less motivated to donate) by making the incentives they already offer more salient, without fear that these efforts will harm engagement among more motivated donors. Indeed, after reviewing the field-study results, the university's alumni-affairs office recommended soliciting lapsed donors and alumni who had never donated with more salient incentives as a cost-effective tool to drive

fundraising. Charities can similarly be strategic in increasing the salience of incentives if they are targeting those low in prosocial motivation, or if they have reason to believe people feel less sympathetic toward their cause (see also Chao & Fisher, 2022; Landry et al., 2010). At the same time, practitioners should carefully assess the desirability of their incentives, as undesirable incentives can reduce prosocial behavior (Chao, 2017).

We tested our effect across multiple controlled paradigms and in a field setting. However, we highlight three considerations for the generalizability of these findings. First, our samples were limited to U.S.-based adult participants and university alumni. It is worth exploring whether cultural differences moderate our effects, as prosocial traits affecting charitable giving vary across countries (Van Doesum et al., 2021). Second, in our field study, donors' familiarity with the university may have influenced their perception of the donation request. Future research should test the applicability of these findings in contexts where charities make "cold calls" targeting individuals unfamiliar with their cause. Third, Studies 2 and 3 examined the mechanism while operationalizing prosocial behavior as effort expended, with participants' efforts benefiting themselves and the charity. Although this approach is commonly used in research on prosocial behavior, there may be different processes driving people's generosity with their time versus their generosity with money (Costello & Malkoc, 2022). Alongside these considerations, fundraisers applying these findings should consider the insights derived from our research in light of the existing incentives literature (see Tables S1–S3).

Conclusion

Our research demonstrates how increasing incentive salience can positively affect prosocial behavior, particularly when prosocial motivation is lacking. Under the right circumstances, charities and nonprofits that currently downplay incentives may increase engagement from donors who are difficult to motivate by increasing incentive salience. By better understanding the advantages and limitations of leveraging incentive salience in the prosocial domain, charities can fully utilize their incentives to increase donor engagement.

Transparency

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Kaitlin Woolley: Conceptualization; Funding acquisition; Investigation; Methodology; Project administration; Resources; Supervision; Validation; Writing – original draft; Writing – review & editing.

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Open Practices

This article has received the badges for Open Data, Open Materials, and Preregistration. More information about the Open Practices badges can be found at http://www.psychologicalscience.org/publications/badges.

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Supplemental Material

Additional supporting information can be found at http://journals.sagepub.com/doi/suppl/10.1177/09567976241234560

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