

## Doing Good or Doing Well? Image Motivation and Monetary Incentives in Behaving Prosocially

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Most charitable organizations depend on private contributions, in the form of monetary gifts, volunteer efforts, or other tangible contributions, such as blood donations. The magnitude of private contributions is impressive—in the United States 89 percent of households donate, averaging \$1,620 per year, and 44 percent of US adults volunteer the equivalent of 9 million full-time jobs (Independent Sector 2001). This level of prosocial behavior is striking in light of the economic incentive to free-ride in the provision of public goods. In order to elicit contributions, charitable organizations use many creative efforts to incentivize voluntary giving: wrist bands, thank-you gifts, organized walks, concerts, and advertised donors lists. The government also helps promote charitable giving by offering tax breaks for donations.

The various types of charitable contributions and the many real-life ways of soliciting such donations suggest that there may be different motives for individuals to behave prosocially. These motives are roughly divisible into three broad categories: intrinsic, extrinsic, and image motivation. *Intrinsic motivation* is the value of giving per se, represented by private preferences for others' well-being, such as pure altruism or other forms of prosocial preferences (for surveys, see Ernst Fehr and Klaus Schmidt 2003; Meier 2007). *Extrinsic motivation* is any material reward or benefit associated with giving, such as thank-you gestures and tax breaks. *Image motivation*, or signaling motivation, refers to an individual's tendency to be motivated partly by others' perceptions. Image motivation therefore captures the rule of opinion in utility, i.e., the desire to be liked and respected by others and by one's self. If individuals are looking to gain social approval of their behavior, they should try to signal traits defined as "good" based on the community's norms and values (for economic models incorporating social approval, see, e.g., George A. Akerlof 1980; Heinz Hollander 1990; Roland Bénabou and Jean Tirole 2006; James Andreoni and B. Douglas Bernheim 2007; Tore Ellingsen and Magnus Johannesson 2007, 2008). Being altruistic is often seen as "good," and being greedy or selfish is not. Prosocial behavior is therefore a way to signal to others that one is good.<sup>1</sup>

The desire for social approval implies that, conditional on prosocial activity yielding a positive image, people will act more prosocially in the public sphere than in private settings. A number of field and laboratory studies have found such a pattern (e.g., Andreoni and Ragan Petrie 2004;

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<sup>1</sup> Behaving prosocially can also be undertaken instrumentally in order to signal one's wealth or status or in order to get future extrinsic rewards, like a political career or admission to a college (e.g., Amihai Glazer and Kai A. Konrad 1996; William T. Harbaugh 1998a, b; Tomer Blumkin and Efraim Sadka 2007).

Jason Dana, Daylian M. Cain, and Robyn M. Dawes 2006; Mari Rege and Kjetil Telle 2004; Adriaan R. Soetevent 2005). This may explain why people seldom give anonymously to charities (see Glazer and Konrad 1996), and why many organizations make an individual's contributions explicitly visible to others.

While these three motivations (intrinsic, extrinsic, and image) have separate effects on prosocial behavior, they may also interact with each other. Following Richard M. Titmuss (1970), who claimed that private monetary incentives for blood donations would decrease blood supply, a number of empirical studies have shown that such incentives indeed have negative effects on prosocial behavior (e.g., Bruno S. Frey and Felix Oberholzer-Gee 1997; Uri Gneezy and Aldo Rustichini 2000a, b; Carl Mellstroem and Johannesson 2008). Less is known, however, about the mechanisms by which this unintended consequence occurs. A number of explanations have been offered: extrinsic motivations might interact with intrinsic motivations (e.g., Edward L. Deci 1975; Frey 1997); extrinsic incentives might destroy trust in a principal-agent relationship (e.g., Armin Falk and Michael Kosfeld 2006; Fehr and John A. List 2004; Fehr and Falk 2002); or the introduction of extrinsic motives might shift an individual's decision frame from a social frame to a monetary frame (e.g., James Heyman and Ariely 2004).

This paper experimentally tests another mechanism by which extrinsic incentives can have detrimental effects on prosocial behavior: they might interact with image motivation by diluting the signaling value of prosocial behavior (see Bénabou and Tirole 2006). Simply put, when observing a prosocial activity, the addition of extrinsic incentives makes it more difficult to answer the question: "Is the individual behaving prosocially to do good or to do well?" To illustrate the point, consider the following scenario. An individual is considering buying a new environmentally friendly hybrid car which is more expensive than an equivalent car with a standard gasoline engine. Driving an automobile that is clearly a hybrid car would probably add to one's positive image, especially in a community that values environmentally friendly technologies. Suppose the government introduces a well-publicized and large tax benefit for those who purchase a hybrid car. On the one hand, the tax incentive reduces the price of the hybrid car, making its purchase more attractive. On the other hand, the tax incentive decreases the image value derived from driving the hybrid. Without the tax incentive, buying a hybrid car definitely shows the individual cares for the environment (positive image); with the tax incentives, it does not.

To test for image motivation and its interaction with monetary incentives, we develop behavioral hypotheses, based on the different properties of the different incentives driving prosocial behavior. Namely, we consider intrinsic and extrinsic motivations to be personal motivations, but consider image motivation to be a social motivation that depends on the visibility of one's actions. We then conduct an experimental study to test the behavioral hypotheses using, again, the unique property of image concerns—its dependence on visibility. More specifically, in the main experiment, named "Click for Charity," subjects could donate to a charitable organization by clicking two keys on a computer keyboard. Participants were randomly assigned to treatments that made their donation choices public or kept these decisions private. Participants were also randomly assigned to receive, or not receive, in addition to the donation made on their behalf, monetary incentives that accrued solely to them. As a third factor, participants were randomly assigned to one of two charities, the American Red Cross or the National Rifle Association (NRA), which were associated with positive ("good") or negative ("bad") image consequences, respectively.

In the main analysis we focus on the "good" charity, as it is a clear prosocial activity. The results strongly support the hypotheses that image motivation is important for prosocial behavior, and that private monetary incentives partially crowd out image motivation. That is, in the absence of monetary incentives, we find significantly greater effort in public than in private

settings. Yet when monetary incentives are introduced, these incentives have no effect on efforts made in public, while they do increase efforts made in private, and this differential effect is statistically significant. The results for a “bad” cause with a negative image value support the partial crowding out hypothesis as well. Introducing monetary incentives has no effect on public contribution efforts, while monetary incentives do increase the contribution effort when the decision is private. We were able to further examine some of these hypotheses in a field study (which is more limited due to our setup), and in general the results support what we find in the lab: private monetary incentives seem to interact negatively with image concerns, leading to the result that monetary incentives are more effective in motivating private prosocial decisions than ones made in a public setting.

The paper proceeds as follows: Section I presents the behavioral hypotheses, Section II the experimental design, and Section III the results. Section IV presents the illustrative field study. Section V discusses the implications of our findings and concludes.

### I. Behavioral Hypotheses

As argued above, image motivation is influenced by what other people think of the individual. Actions that imply personal traits such as being prosocial, fair-minded, or caring yield a positive image, while actions that imply personal traits such as being unfair or greedy reduce a positive image or even result in a negative image (e.g., Bénabou and Tirole 2006; Andreoni and Bernheim 2007; Ellingsen and Johannesson 2008). We focus on the case where an individual’s image is a function of how prosocial or greedy other people think she is, as in Bénabou and Tirole (2006). The more people think that one is prosocial, the greater is the image value of her prosocial act. However, the more people think she is greedy, that is, behaving prosocially to receive the extrinsic rewards, the lower is the image value of her prosocial activity.

A crucial property of image is its dependency on visibility; after all, image is a consequence of what others think. So if the image value obtained from a prosocial activity is positive, increasing the number of observers increases the image value of prosocial behavior and, as a consequence, leads to higher effort.<sup>2</sup> This leads to the first hypothesis on image-motivation:

*Image-Motivation Hypothesis.*—*Ceteris paribus*, changing visibility changes the level of prosocial activity. For a positive image, increasing visibility increases the level of prosocial activity.

Introducing or increasing extrinsic incentives affects prosocial behavior in two ways: by increasing the extrinsic rewards, and through image motivation. On the one hand, the relative price effect will increase prosocial activity. On the other hand, higher personal benefits associated with a prosocial activity tends to decrease its image value. The intuition is that if an individual receives greater extrinsic rewards for the activity, s/he is suspected to be acting prosocially for the extrinsic rewards rather than out of intrinsic motivation. Hence, offering a greater material reward may backfire, depending on which effect is stronger—higher extrinsic reward or lower image motivation.

Importantly, while the relative price effect is independent of visibility, the potential crowding-out of image motivation crucially depends on visibility. As a consequence, the effect of extrinsic rewards on image motivation implies that visibility may influence the effectiveness of

<sup>2</sup> Note that the case of self-image does not affect the Image-Motivation Hypothesis if self-image is independent of visibility. In the experimental setup, self-image can be thought of as a constant in all conditions and does not affect the conclusions.

material rewards. Thus, if receiving an extrinsic reward reduces image motivation, then greater publicity amplifies this reduction and reduces the effectiveness of material reward. This leads to our second hypothesis on the effectiveness of monetary incentives in promoting prosocial behavior:

*Effectiveness Hypothesis.*—Extrinsic rewards are less effective the greater is the visibility of the prosocial act.

The Effectiveness Hypothesis implies crowding-out of image motivation, even if extrinsic incentives do not have a negative net effect on prosocial activities. This is because only as long as material rewards reduce image motivation will extrinsic rewards be less effective with more visibility. As a result, a detrimental effect of extrinsic incentives (a negative net effect) is more likely to occur for a visible prosocial effort than for a private one.

In the following sections, we test these hypotheses experimentally.

## II. Experimental Design—Click for Charity

The experimental design has to fulfill three criteria: the prosocial task needs to have clear image implications by allowing one to signal personal traits; one's decision has to be made either public or private; and extrinsic monetary incentives have to be either offered or not.

In this study, participants could behave prosocially in a real-effort task: sequentially pressing two keys—X and Z—on the keyboard for up to five minutes. For every completed pair of clicks, we donated on the participant's behalf to an assigned charity, hence, the name "Click for Charity." The donations were made according to a decreasing payment schedule: 1 cent was donated for each of the first 200 pairs of X–Z presses, 0.5 cents for each of the next 200 pairs, 0.25 cents for each of the next 200 pairs, . . . , and 0.01 cents for each pair above 1,200. Although marginally decreasing, the more pairs pressed, that is, the higher the effort, the greater the donation made to the assigned charity. Before the actual task started, each participant practiced the task for 30 seconds. A total of 161 Princeton undergraduate students participated in this study; none knew the nature of the experiment before entering the lab.

This study used a between-subjects  $2 \times 2 \times 2$  design. The conditions differed in the task's visibility, the compensation scheme, and the nature of the charity, as explained below.

*The visibility of the task* was controlled by randomly assigning subjects to make their effort choice in "public" or in "private." In the private condition, the effort decision remained anonymous, while in the public condition, the choice was disclosed to others. At the end of the task, subjects in "public" had to tell the other lab participants to which charity they were assigned, whether they also earned money for themselves (based on the payment scheme below), and how much money they donated to the charity, and received themselves.

*The payment scheme* was such that a random selection of participants could, in addition to the donation, earn money for themselves. The private payment was exactly the same as the donation schedule described above.

*The nature of the cause* was manipulated by randomly assigning subjects to one of two charities: the American Red Cross or the NRA. Making an effort to benefit one of these charities is expected to have signaling value. Whether the value of the signal is positive or negative depends, at least partially, on the norms and values of the community and therefore on other observers' opinions (for instance, the two charities might be perceived differently at Princeton and at a university in a pro-gun state). In order to capture the image value associated with giving to one of the charities, we classify the two charities as either "good" or "bad," according to the participants' perception of the majority's view. That is, based on the perceived majority view (rated on an

11-point scale from  $-5$  “not at all identify” to  $+5$  “very much identify”),<sup>3</sup> a charity is considered “good” if the reported perception is positive, and “bad” if the reported perception is negative. When creating a dummy for “good” or “bad” charities based on participants’ perception of other students’ identification, we ignore the seven subjects who state a neutral perceived identification (exactly zero). When, however, we control for perceived others’ perceptions, using the full scale, or when we use the classification based on the consensus, all participants are included.

It is important to control for an individual’s perception of the norms, or consensus view, since the individual never knows what other people really think; rather, s/he holds only a perception of others’ views. As one referee noted, however, a “false-consensus” effect—the tendency of people to think others’ view are similar to their own—may be present. For this reason, we chose extreme charities where norms and personal views are well aligned. Nevertheless, we also report the results by disregarding self-reported perceptions. By analyzing the Red Cross and NRA separately, we impose the campus’s consensus view.<sup>4</sup> According to our survey of Princeton students, the majority of undergraduates positively identifies with the Red Cross (92 percent of students), and negatively identifies with the NRA (72 percent of students). Hence, the Red Cross is classified as “good” and the NRA as “bad.”

The treatment with negative signaling value allows us both to examine how the results for a “good” cause translate into a negative domain, and to refute an alternative explanation of the Image-Motivation Hypothesis. This alternative holds that individuals expend more effort in public than in private, not because of the signaling value of their actions, but for other reasons, such as showing they are very good at clicking.

The following section presents the results of the study.

### III. Results

We present the results in three steps: first, we present the analysis for the “good” and “bad” causes separately, then we present the analysis for all causes together, and finally we test whether a physical limit on the ability to continuously press keys can explain the results.

Figure 1 shows the effort expended in public and in private condition, with and without private monetary incentives offered for a “good” cause. Panel A shows effort for a “good” cause, defined as what participants think others identify with. Panel B shows the effort made for the Red Cross, a good cause as defined according to the consensus view at Princeton. This classification imposes the consensus as the image value of the signal, while the classification of panel A takes the image value as the individual perceives it. The figure shows two main results—which are qualitatively the same in both panels.

First, without any private monetary incentives, subjects put forth significantly more effort in the public than in the private condition. In the public condition, they pressed, on average, 822 pairs for a “good” charity (900 pairs for the Red Cross), while in the private condition, subjects pressed only 548 pairs for a “good” cause (517 for the Red Cross). The difference is statistically significant at the 5 percent and 1 percent level, respectively.<sup>5</sup> In line with the Image-Motivation Hypothesis, subjects exerted more effort for a good cause in public,<sup>6</sup> where they are able to signal their effort to many others.

<sup>3</sup> Participants were asked before the study started about how they would predict that Princeton students would identify with a number of charities.

<sup>4</sup> Restricting the analysis to those who correctly perceive the consensus on campus, and therefore would not be surprised had we told them about the consensus at Princeton, does not change the results.

<sup>5</sup> We use *t*-tests to compare all means, unless otherwise noted.

<sup>6</sup> This is a conservative measure, as there might be individuals who take pride in taking positions that deviate from the perceived norm.

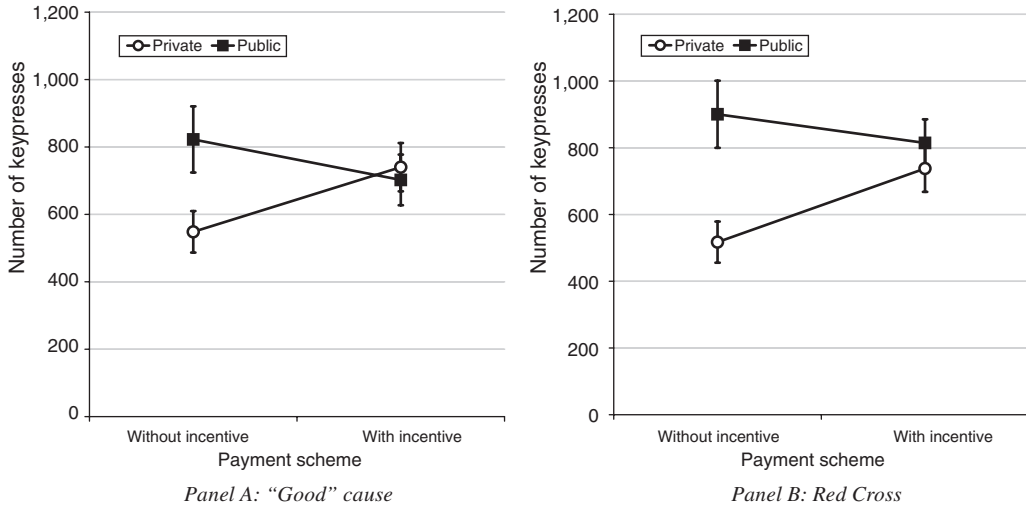


FIGURE 1. EFFECT OF INCENTIVES ON PROSOCIAL BEHAVIOR

Notes: Error bars are standard errors of the mean. Panel A shows effort for a “good” cause according to individual participant’s perception of other students’ identification at Princeton. Panel B shows effort for the Red Cross (the majority of Princeton undergraduates positively identifies with this charity).

Second, while monetary incentives do not increase the effort expended in public, they do increase effort significantly in the private condition. In the public condition, there is an insignificant decline in effort, from 822 to 702 key pairs on average, for a “good” charity (from 900 to 814 key pairs for the Red Cross). In the private condition, there is a significant increase in effort, from 548 to 740 key pairs on average, for a “good” cause ( $p < 0.05$ ) (from 517 to 737 key pairs for the Red Cross,  $p < 0.05$ ). Under both classifications, the different impact of incentives in public and in private is statistically significant at the 5 percent level.<sup>7</sup> As we show at the end of this section, this result is not driven by subjects in the public condition reaching a physical limit. Therefore, this result supports the Effectiveness Hypothesis, which posits that private monetary incentives are less effective in public than in private. This result implies that monetary incentives crowd out the image motivation to behave prosocially.

Panel A and panel B of Figure 2 show the results for a “bad” charity, defined according to participants’ perceptions, or according to the consensus at Princeton (the NRA), respectively. For a “bad” cause, without incentives, contributions are not significantly different in public and private, and are on a very low level (200–300 clicks on average). This result refutes an alternative explanation arguing that participants press more in public, independent of the image value of their actions. For example, if individuals were to expend more effort in public to show that they are good at key-pressing, there should also be significantly higher effort in the public sphere for the “bad” charity.

Figure 2 also shows, as for a “good” cause, that monetary incentives increase effort only in private. In public, monetary incentives are not effective—the effort level is not statistically different with or without monetary incentives. In private, however, monetary incentives increase effort substantially. For the “bad” cause, effort increased from 204 to 559 key pairs ( $p < 0.05$ ), and

<sup>7</sup> The results are robust to focusing on participants who correctly perceived the consensus on campus. See Figure A1 in the online Appendix (<http://www.aeaweb.org/articles.php?doi=10.1257/aer.99.1.544>).



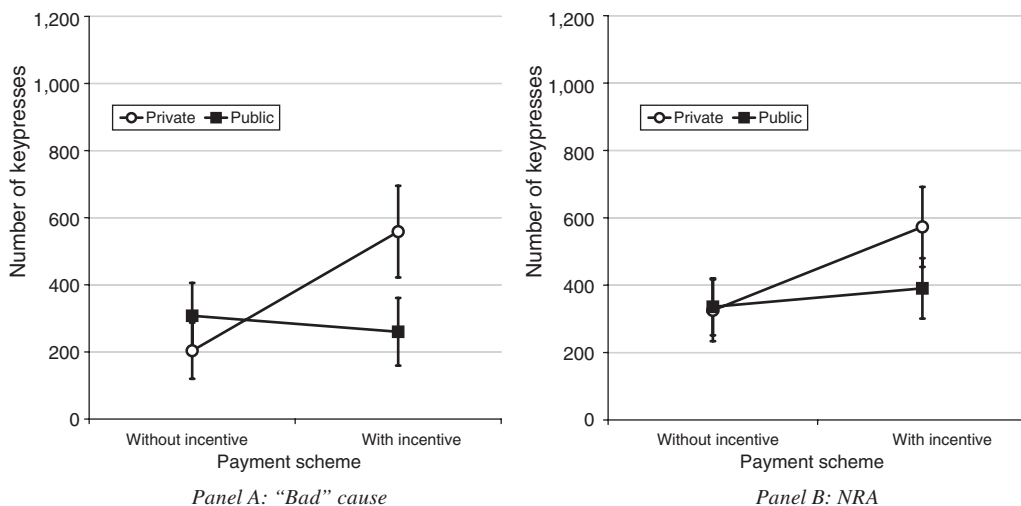


FIGURE 2. EFFECT OF INCENTIVES ON EFFORT FOR A "BAD" CAUSE

*Notes:* Error bars are standard errors of the mean. Panel A shows effort for a "bad" cause according to individual participant's perception of other students' identification at Princeton. Panel B shows effort for the NRA (the majority of Princeton undergraduates does not identify with this charity).

for the NRA, from 325 to 573 ( $p = 0.10$ ). The difference in effectiveness of incentives in private and public is statistically significant when classifying a cause as "bad" according to participants' perceptions ( $p = 0.06$ ), but not for the NRA ( $p = 0.32$ ).

In sum, the evidence for the "bad" cause refutes alternative explanations, arguing that participants click more in public independent of the image value. Interestingly enough, contributions are not lower in public than in private, as one would have expected, taking the same logic of the Image-Motivation Hypothesis to a negative image value. This might be due to a censoring effect: a minimum level of key pairs which participants feel obliged to press to fulfill their implicit agreement to participate. This is supported by some participants' explicit remarks in a similarly designed experiment, "Bike for Charity," presented below. The results for a "bad" cause also show that offering monetary incentives is less effective at increasing effort in public than in private, even for a task with negative image value. Empirically, the Effectiveness Hypothesis is therefore also supported for a "bad" cause. As the effort expended for a "bad" cause is already at a very low level, physical limit cannot explain the differential effect of monetary incentives in the private and public conditions.

Analyzing good and bad causes together, Table 1 shows the difference between private and public conditions in an OLS regression where the number of key pairs is the dependent variable. We control for the type of the assigned charity in two ways: panel A presents the analysis controlling for individual perceptions of the majority view (on a full scale:  $-5$  to  $+5$ ),<sup>8</sup> and panel B shows the same analysis but controls for the Red Cross or the NRA (a "good" or a "bad" cause

<sup>8</sup> The results are robust to controlling for a dummy for "good" and "bad" charity based on perceived identification of others. See Table A1 in the online Appendix. Using a scale raises an interesting open question: is the extent of crowding-out greater the stronger is the perceived majority view? As this question is beyond the scope of this paper, we leave it for future research.

TABLE 1—EFFECT OF MONETARY INCENTIVES IN “CLICK FOR CHARITY”

	Private (1)	Public (2)	All (3)
<i>Panel A: Controlling for perceived identification of others</i>			
Private monetary incentive (= 1)	240.80 (3.01)***	-88.88 (-0.95)	240.80 (3.01)***
Public sphere (= 1)			152.45 (1.80)*
Private incentive × public			-329.67 (-2.68)***
Perceived identification of others	43.55 (3.00)***	89.35 (5.52)***	43.55 (3.00)**
Perceived identification × public			45.80 (2.11)**
Constant	384.43 (7.11)***	536.88 (8.25)***	384.43 (7.11)***
<i>N</i>	82	79	161
<i>R</i> <sup>2</sup>	0.20	0.29	0.25
<i>Panel B: Controlling for Red Cross and NRA</i>			
Private monetary incentive (= 1)	231.95 (2.82)***	0.64 (0.01)	231.95 (2.81)***
Public sphere (= 1)			26.94 (0.25)
Private incentive × public			-231.31 (-1.91)*
Nature of cause (RC = 1)	179.34 (2.08)**	498.02 (5.69)***	179.34 (2.08)**
Nature of cause × public			318.68 (2.59)***
Constant	332.05 (4.27)***	358.99 (4.78)***	332.05 (4.27)***
<i>N</i>	82	79	161
<i>R</i> <sup>2</sup>	0.15	0.28	0.22

*Notes:* Dependent variable: number of key pairs. OLS regressions. *t*-values in parentheses. Robust standard errors.

\*\*\* Significant at the 1 percent level.

\*\* Significant at the 5 percent level.

\* Significant at the 10 percent level.

according to the consensus view at Princeton). The results are qualitatively the same in both panels.

Column 1 of Table 1 shows that, in the private condition, monetary incentives increase effort significantly ( $p < 0.01$ ). In contrast, column 2 shows that for subjects in the public sphere, monetary incentives do not increase individual effort. Both panels show that the nature of the cause is important for people's effort, but the cause seems to be more important in the public than in the private condition. This finding is consistent with the view that the signal matters more in public than in private. As seen in column 3, the difference in the effectiveness of monetary incentives in the public versus the private conditions (i.e., the interaction term of private monetary incentives and the public condition) is substantial and statistically significant in panel A ( $p < 0.01$ ) and in panel B ( $p = 0.06$ ). Also, column 3 shows that the nature of the cause is



significantly more important in the public than in the private setting. The results support both the Image-Motivation Hypothesis, which argues that the signal matters more in public, and the Effectiveness Hypothesis, which holds monetary incentives to be less effective when an activity with image reward is conducted in public.

While interpreting the differential effect of monetary incentives in the public compared to the private condition, one concern is that the effect may be due to a physical limit. Subjects exerting effort for a good cause in “public” may reach a physical limit even without extrinsic incentives. In this case, it might be impossible to increase effort with monetary incentives, even if subjects wanted to continue. While the analysis for the “bad” cause suggests otherwise, since effort is at a low level in this condition, we nevertheless tested explicitly whether participants reached a physical limit in the good-cause condition. To find what people’s average physical limit is, we ran an additional control treatment, the “Limit” treatment, in which 26 students from the same subject pool at Princeton participated. The subjects performed the same key-pressing task for five minutes, and their effort decision remained anonymous. However, in this condition the task was not a donation task, as the subjects could earn money for themselves only by pressing the keys, and they were given high financial incentives to do so. Subjects got a flat rate of 0.11 cents per pair, plus a bonus, which increased from \$2 if they pressed more than 1,000 pairs to \$20 if they pressed more than 1,500 pairs.

The average number of keys pressed in the Limit treatment was 1,290 (s.e. 44) pairs, while subjects pressed only 857 (s.e. 61) pairs for the Red Cross in the public sphere. The difference between the amount of key presses in the two conditions is statistically significant ( $p < 0.01$ ). Analyzing the distribution of key pairs for the Red Cross in public and in the Limit treatment, we find that while in the Limit treatment nobody pressed fewer than 900 pairs, 50 percent of the participants did so for the Red Cross (see Figure A2 in the online Appendix). Therefore, the ineffectiveness of monetary incentives in the public condition cannot be attributed to a physical limit, as most subjects could have increased their effort substantially.

#### IV. Field Study—Bike for Charity

To illustrate whether the effect found in the “Click for Charity” experiment also translates to a field setting, we launched a similarly designed campaign at the MIT gym, titled “Bike for Charity.” In this campaign, participants could donate to a “good” or “bad” charity by cycling on stationary bikes for up to ten minutes, at a donation rate of \$1 per mile. As in “Click for Charity,” we implemented a between-subject  $2 \times 2 \times 2$  design. The visibility was manipulated by randomly assigning subjects to bike in the public view (on the second floor of the gym, where everyone works out) or in a private location (in a private room on the third floor of the gym). The participants received either private monetary rewards for themselves (in the last weeks of the campaign) or not (in the first weeks of the campaign). The cause of the charity<sup>9</sup> was randomly manipulated, as in the “Click for Charity” experiment. All information was posted on big signs.

Due to the lack of a randomized compensation scheme, and to the fact that participants knew in advance that they would be randomly assigned to bike for either a “good” or a “bad” charity, selection bias is a concern. More specifically, we expect that individuals whose image is most affected by monetary incentives will avoid conditions involving private monetary incentives. This, in turn, could dampen the interaction between extrinsic incentives and image concerns. Similarly, if the nature of the cause is unclear (the most extreme case is random assignment, as

<sup>9</sup> We used four controversial charities: two of the four focus on gun control and are either against or in favor of stronger gun control (NRA and Educational Fund to Stop Gun Violence); the other two focus on abortion and lobby either against or for it (Pro-Life Association and Pro-Choice Action League).

TABLE 2—EFFECT OF MONETARY INCENTIVES IN “BIKE FOR CHARITY”

	Private (1)	Public (2)	All (3)
Private monetary incentive (= 1)	0.56 (2.78)***	−0.02 (−0.07)	0.56 (2.81)***
Public sphere (= 1)			0.28 (1.34)
Private incentive × public			−0.58 (−1.93)*
“Good” cause (= 1)	0.84 (3.75)***	0.84 (3.21)***	0.85 (4.84)***
Female (= 1)	−0.54 (−2.71)***	−0.46 (−2.08)**	−0.50 (−3.30)***
Constant	1.50 (6.27)***	1.75 (6.04)***	1.48 (7.30)***
<i>N</i>	69	82	151
<i>R</i> <sup>2</sup>	0.33	0.18	0.24

*Notes:* Dependent variable: distance in miles. OLS regressions. *t*-values in parentheses. Robust standard errors. Charity classified according to participants’ perception of whether MIT students identify with charity (“good” if others’ identification is greater than zero and “bad” if others’ identification is lower than zero on a scale from −5 “not at all identify” to +5 “very much identify”).

\*\*\*Significant at the 1 percent level.

\*\*Significant at the 5 percent level.

\*Significant at the 10 percent level.

in our study), the more image-concerned a person is, the less likely she would be to participate in such a campaign—to avoid the chance of being associated with a “bad” cause. Both selection biases act against the Image-Motivation Hypothesis and the Effectiveness Hypotheses.

Despite the limits of the “Bike for Charity” design, the results present suggestive field evidence supporting the Effectiveness Hypothesis. A total of 151 participants were assigned to cycle either for a “good” or a “bad” charity, where “good” and “bad” charities are defined according to whether participants perceive other MIT students’ identification as positive or negative, respectively. For these participants, adding private incentives is, on average, more effective in the private than in the public condition. Table 2 shows this effect in an OLS regression, with distance biked in miles as the dependent variable. It also shows that extrinsic incentives increases effort in the private condition (column 1;  $p < 0.01$ ) but not in the public condition (column 2;  $p = 0.96$ ), and as can be seen in column 3, this difference is statistically significant ( $p = 0.057$ ).<sup>10</sup>

The effect obtained in the field is not as strong as in the lab. However, as discussed, the lab results are obtained in a fully randomized setting where participants could not self-select into a condition based on its characteristics (a good/bad cause, and with/without private monetary incentives), while in the field self-selection can dampen the effect. Therefore, the suggestive evidence is encouraging—in spite of the selection bias, we observe differential effects of monetary incentives between the public and the private conditions. Future research should further investigate the interaction between extrinsic incentives and image motivation in the field.

<sup>10</sup> Adding individuals to the analysis who believe that the charities are seen by other students as neither positive nor negative, and therefore who stated a 0 on the scale (−5 to +5), as in Click for Charity, does not change the results qualitatively, but increases the standard errors of the estimations.

## V. Conclusions

The results of the laboratory experiment, illustrated also in a field study, support our hypothesis that monetary incentives depend crucially on visibility: monetary incentives are more effective in facilitating private, rather than public, prosocial activity. People want to be seen by others as doing good. But with extrinsic incentives, the signal of a prosocial act gets diluted, as one might behave prosocially mainly to *do well* for oneself. The image value decreases, and the incentive becomes less effective. If no one is watching (i.e., private contribution), the incentive to also do well for oneself cannot dilute any signal to others, and consequently extrinsic incentives are very likely to increase prosocial behavior.

Our results have important policy implications. For example, if a government considers a tax benefit policy to facilitate the adoption of a new environmentally friendly technology, it should expect the policy to be more successful for promoting a nonvisible technology, such as environmentally friendly water heaters, relative to a visible technology, such as hybrid cars. This is because hybrid cars might be purchased in part as a signaling medium, while water heaters, located in a home's utility room, usually are not. By giving tax benefits, the government might unintentionally damage the signaling value vested in hybrid cars. The net effect of the incentive depends on the strength of the price effect compared with the crowding-out effect.

It is important to note that image crowding-out by monetary incentives is shown here when both the prosocial decision and the extrinsic incentives are public. If extrinsic incentives exist but are not publicly known, others' opinion should be the same as if no extrinsic rewards existed. Consequently, major donors to charities might not want to make their extrinsic incentives public, as it would dilute the image signal of their contribution. If decision makers, such as fundraisers or policymakers, anticipate the Effectiveness Hypotheses, they should use fewer public extrinsic incentives for visible prosocial activities. This brings us back to Titmuss and his intuition that monetary incentives might reduce prosocial behavior. The research in this paper contributes to the discussion by showing that Titmuss's claim crucially depends on the visibility of the prosocial decision. Therefore, if blood donations are sufficiently public, there is good reason to doubt the effect of extrinsic incentives and even to expect detrimental effect of monetary incentives.

There are several open questions which this study did not answer and which are left for future research. One is how the results of this research translate to other circumstances, e.g., to societies where volunteering is not perceived as honorably as in the United States. In these cases image might not be a significant driver of prosocial behavior. This leads to the second question: how is image-motivation constructed? Norms, perceptions, and personal views are clearly the ingredients, but the mechanism by which image is formed is unknown. In this study we overcame this issue by selecting extreme charities where norms and personal views are well aligned. It would be interesting to understand what would happen in cases where private views may not be aligned with others' views. Last, but not least: does crowding-out of image motivation depend on the type of extrinsic incentive used? In this study we explored the effect of monetary incentives, which may be different from the effect of nonmonetary incentives. To continue with the hybrid car example, the incentive of using the carpool lane may not dilute the signal as much as monetary incentives would.

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