No Substitute for the Real Thing:
The Importance of In-Context Field Experiments In Fundraising

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Abstract:

We test the importance of doing in-context field experiments before launching an actual fundraising campaign by contrasting normative predictions, expert opinion and an incentive-compatible experiment with an actual field test. We present results from a natural field experiment with prior donors of a non-profit that used different matching framings and mechanisms. The novel intervention that was most strongly predicted to yield higher contributions by “warm-glow” models of impure altruism and by professional fundraisers performed significantly poorer than a standard matching intervention. Several other expert predictions and implications of the model were also inconsistent with the empirical findings. An incentive-compatible online survey experiment test of the interventions failed to predict the results, indicating a limitation of non-field experiments in measuring social preferences (e.g., Levitt & List, 2007), particularly in the domain of fundraising. Theoretically, our results question the implications of the standard impure altruism model. More practically, our results suggest the indispensability of field testing for interventions in fundraising.

Keywords: Fundraising, Matching Solicitations, Altruism, Motivation, Field Experiment
1. Introduction

One of the most common solicitation techniques used in fundraising is matching – communicating to prospective donors than an external donor has committed to matching the amounts given by prospective donors. A matching solicitation can be thought of as a conditional leadership gift that uses a commitment to match others’ contributions at a given rate, sometimes limited to the maximum amount the leader is willing to give (Karlan & List, 2007). The most standard matching solicitation promises to match every dollar donated (e.g., a 1:1 match), but solicitations are also known to use higher match ratios, e.g., 2:1, 3:1, etc. (Dove, 2000). Popular press reports describe matching as the “staple of fund-raising” (Leonhardt, 2008) and a large body of academic work has studied matching solicitations.

Research on matching solicitations has focused on varying the price of donations, by altering the match rates and studying the effect on fundraising performance. The empirical results from this research have been extremely mixed. There is some evidence that matching improves fundraising outcomes (Bekkers, 2015; D. Karlan & List, 2007, 2012; Martin & Randal, 2009; Meier, 2007). At the same time, several papers have failed to find a positive effect, or have even reported a negative effect of matching (Baker, Walker, & Williams, 2009; Davis, Millner, & Reilly, 2005; Eckel & Grossman, 2008; Huck & Rasul, 2011; Karlan, List, & Shafir, 2011; Rondeau & List, 2008).

One particular concern about matching is the potential for crowding out behavior. Donors may scale back their contributions in response to a match offer (Adena & Huck, 2017; Huck, Rasul, & Shephard, 2013). Similarly, a higher match ratio (compared to a standard 1:1 match) does not always increase fundraising performance (Karlan and List, 2007). Speculations
in the literature attribute such behavior to scope-insensitivity for quality signals (Karlan & List, 2007) and lack of attention to price information (Eckel & Grossman, 2017).

How can a fundraiser navigate the possibilities and decide on the best fundraising solicitation to use? What sources of guidance should the fundraiser rely on to make an informed decision about the offer design? In this paper, we focus on three possible sources of information: implications of theoretical models, opinions of experts, and low-cost internal research. We explore two types of interventions that these sources suggest, to varying degrees, may improve fundraising: reframing who gets credit for matched donation funds and setting a cutoff below which donated funds are not matched.

We explore the degree to which theoretical models, expert opinion and survey experiment suggest adoption of these matching variants. To establish a ground truth in a given setting, we present the results of a natural field experiment in which the different solicitations were randomized across prior donors of a non-profit during an annual fundraising drive. We contrast the results with the conclusions a fundraiser would likely draw without a field experiment.

Next, in Section 2, we develop the implications for our interventions from established theoretical models of altruistic giving. Then we report the predictions of professional fundraising managers (Section 3) and the results of a realistically low-cost incentive-compatible survey experiment (Section 4). We contrast the predictions from these sources of guidance with the actual results of the natural field experiment (Section 5). We demonstrate that the sources of guidance fundraisers are likely to rely upon poorly anticipate the real outcomes of the field study. Lastly, in Section 6, we discuss the implications of our findings for both theories of donation and for fundraising practices.
Our findings highlight the limitations of existing theories and suggest the need to revise or clarify models of charitable giving to enable more precise and accurate predictions of field outcomes. More generally, the results highlight the limited role of expert opinions and survey experiments in anticipating the actual effects of fundraising interventions, and therefore the limited use of these approaches for assessing the viability of solicitation appeals. While anecdotal evidence abound about the limited ability of fundraising experts in making predictions, using an “empirical case-study” we demonstrate the indispensability of in-context field experiments for identifying optimal fundraising interventions.

2. Predictions from Theoretical Model as Initial Guidance to the Fundraiser

The standard model of altruistic behavior in fundraising, based on Andreoni (1990; also see Karlan & List, 2007), can be written as:

\[ U_i = F(y_i, G, g_i) \]

Here an individual agent \( i \) gets utility from private consumption \( y_i \), the total quantity of funds \( G \) raised by a charity, and the agent’s own private contribution to charity \( g_i \). Assuming \( y_i, G, g_i \) are all normalized to the same units, e.g., dollars; the consumption bundle \( (y_i, g_i) \) is related by the budget constraint \( y_i + g_i \leq w_i \). Assuming that utilities are additively separable, the total utility can be written as:

\[ U_i = u(y_i) + \delta_i h(G) + \gamma_i f(g_i) \]

It is typically assumed that \( u(\cdot), h(\cdot), \text{ and } f(\cdot) \) are identical across people and each is concave and increasing in \( y_i, G \) and \( g_i \) respectively. The component \( \delta_i h(G) \) indicates pure altruism, the utility a person receives from the charity having the funds, which is heterogenous in the population based on the individual-specific parameter \( \delta_i \). The parameter \( \delta_i \) captures several
important characteristics of the fundraising appeal and giving behavior. For example, it captures
individual perceptions of uncertainty about the appeal’s potential to raise $G$ and signals that
alleviate such concerns are likely to improve pure altruism (List & Lucking-Reiley, 2002).

The component $\gamma_i f(g_i)$ represents the individual-specific utility, or “warm-glow,” that a
donor receives from personally contributing funds. Donating a larger amount will generate more
warm-glow for the donor. Similarly, other factors that make a contributor feel good about their
own donation (e.g., boosting the ego, Andreoni, 1990) are likely to increase the warm-glow
feeling from a given donation, via $\gamma_i$.

When a person donates $g_i$, the benefits from pure altruism and from warm glow are
countered to some degree by the cost, due to donor’s loss of utility from private consumption
$u(y_i)$. The balance of these factors is what determines how much the person chooses to donate.

2.1 Matching Solicitations

Next, we present a refinement of the standard impure altruism model that explicitly
incorporates matching donations, adapted from Karlan and List (2006). In a standard 1:1
matching, every dollar donated to charity is matched by an external donor. So, the fundraising
organization gets two dollars for every dollar the individual decides to donate. Consider
potential donor $i$. If person $i$ believes that $n$ other individual donors (i.e., assuming $n + 1$ donors
in the population) will each give an average of $g$, the total amount of money raised by the $n$ other
donors is $G = 2ng$. More generally, $G = \Phi ng$, where the matching multiplier $\Phi = 2$ for 1:1
matching, 3 for 2:1 matching, etc. Incorporating these into the standard model and making a few
substitutions, the utility of potential donor $i$ when making private contribution $g_i$ can be
expressed as:
\[ U_i = u(w_i - g_i) + \delta_i h(G + \Phi g_i) + \gamma_i f(g_i) \]

Optimal individual giving under this model is given by differentiating the above utility function w.r.t. \( g_i \). This gives the first order condition (FOC) as:

\[ u'(w_i - g_i) = \delta_i \Phi h'(G + \Phi g_i) + \gamma_i f'(g_i) \]

Here, based on our assumptions, \( u'(\cdot) \), \( h'(\cdot) \), and \( f'(\cdot) \) are weakly positive. Also, since \( u(\cdot) \) is concave and increasing in private consumption and \( y_i = w_i - g_i \), \( u'(\cdot) \) is decreasing in \( y \), but increasing in \( g_i \). Therefore, the above equation expresses the marginal utility of giving as a function of the marginal utility from pure altruism and the marginal utility from warm-glow.

### 2.2 Predictions from the Standard Matching Solicitations Model

The FOC makes several useful predictions, verified to various degrees by extant literature. At the simplest level, when the matching multiplier (\( \Phi \)) is higher or people derive higher utility from pure altruism (\( \delta_i \)) or derive more utility from warm-glow (\( \gamma_i \)) based on their own donations, they will donate more, all else equal, up to the budget constrain \( w \).

Of particular importance is how the matching multiplier \( \Phi \) interacts with the other parameters. If the presence of matching (\( \Phi \geq 2 \)) serves as a credible quality signal to decision-makers (Karlan & List, 2007), a match may also have the effect of bolstering the pure-altruism benefit, increasing \( \delta_i \). Matching can also signal higher co-operation in the provisioning of public goods (Bekkers, 2015; Eckel & Grossman, 2003; also see Frey & Meier, 2004; Shang & Croson, 2009), thereby increasing the equilibrium contribution through the implications of higher participation for perceived quality, as captured in \( \delta_i \). Furthermore, prior donors, who have revealed some preference towards the cause, might have a higher valuation for the public goods.
generated by the charity based on the funds received, and this would also be expressed as a higher individual $\delta_i$.

However, as the total amount of public good increases, on account of a higher match rate $\Phi$ or a higher $n$ (more donors), the marginal utility that an individual derives from increasing the total amount raised by the charity will decrease, and the individual’s donation decision will be relatively more driven by warm-glow preferences (Ribar & Wilhelm, 2002). As a result, matching might induce donors to give less, as the benefits of matching funds crowd out the benefit of their own contribution, particularly if warm-glow benefits are relatively low.

Factors in the donation context can also change the marginal utility derived from warm-glow preferences via $\gamma_i$. For example, the nature of solicitor-solicitee interaction (DellaVigna, List, & Malmendier, 2012), attractiveness of the solicitor (Landry, Lange, List, Price, & Rupp, 2006), unconditional gifts (Landry, Lange, List, Price, & Rupp, 2011), generous acknowledgment and recognition one’s contribution (Harbaugh, 1998) or psychological benefits of associating with the charity (e.g., Escalas & Bettman, 2003) could boost to $\gamma_i$, increasing the benefits of personally giving. Thus, differences in the matching multiplier $\Phi$ could impact the value of warm-glow $\gamma_i$, if the match impacts potential donors’ inferences about the charity itself, about their relationship to the charity, or about how they think the charity will view their donation.

Furthermore, the extent of individual warm-glow preferences may also vary across donors. In particular, prior donors who have given more often or larger amounts in the past, might have done so because of their stronger warm-glow preferences (e.g., Landry, Lange, List, Price, & Rupp, 2010). Thus, while introducing a match or increasing the rate of an existing match should increase donations according to the model, that is only the case holding all else
equal. In practice, all else is not necessarily equal, as differences in match rate may impact other parameters or may impact the marginal effect of the sources of utility, and may have differential effects across donors with different parameter values.

Recent empirical findings that higher matching multipliers (Φ > 2) often do not boost fundraising performance more than a basic 1:1 matching (Φ = 2) are particularly relevant to this point (Karlan & List, 2007; but see Meier & Frey, 2004). This could occur for multiple reasons, including a reduction in incremental benefits from pure altruism when the match is higher, particularly if warm-glow benefits are not high. This is not good news for fundraisers who often resort to higher matching multipliers with the aim of raising more money (Dove, 2000). The idea that matching appeals have multiple conflicting effects on motives to donate raises the possibility, however, that new designs of matching incentives might better isolate the effects of the match that motivate donors.

2.3 Model-based Alternative Matching Mechanisms

2.3.1 Giving Credit to the Donor Framing

Previous research has shown that how a match is framed can have important consequences for the performance of a charitable solicitation. For example, a rebate framing (e.g., give $10 to the charity and get back $5 from a third party) has been shown to underperform compared to an equivalent match framing (e.g., give $5 to the charity and a third party will give the charity a $5 match; Blumenthal, Kalambokidis, & Turk, 2012; Davis, Millner, & Reilly, 2005; Eckel & Grossman, 2003). This has been attributed to a differential misunderstanding of the consequences of matching subsidies (Davis et al., 2005) and by differential beliefs about others’ donations (Bekkers 2015).
We propose a “giving credit” framing intervention where we suggest to the donor that the match is being added to the donor’s contribution instead of being made as a separate donation. This framing implies that the fundraising organization gives the donor credit for the full sum of both the donor’s contribution and the ensuing matched amount. In effect, this could operate as a mental accounting intervention, adding the donor’s match amount not only to the pure altruism utility but also to the private warm-glow utility. Under the regular framing, the first-order conditions for an individual donor considering their personal donation amount $g_i$ are as given above. In contrast, under the “giving credit” frame, the first-order conditions for an individual donor considering their personal donation amount $g_i$ would instead be:

$$u'(w_i - g_i) = \delta_i \Phi h'(\Phi(ng_i + g_i)) + \Phi \gamma_i f'(\Phi g_i)$$

Under these assumptions, the model predicts more incremental utility from donating and therefore a higher likelihood of donation under the “giving credit” frame. The “giving credit” frame should also increase donations, although the impact on donation amounts depends on the slope $f'(\cdot)$. It is important to note that the model is sufficiently flexible that a deterministic prediction cannot be made – if the slope of $f(\cdot)$ is much flatter at $\Phi g_i$ than at $g_i$, or if the intervention shifts the $\delta_i$ or $\gamma_i$ parameters, then the “giving credit” framing may not yield higher donations.

From a practical point of view, we note that the framing is costless, unlike a higher match ratio which might exhaust the limited ability of a donor to match more quickly. Therefore, the model suggests that the framing intervention, absent unanticipated effects on the other parameters, should make a match more effective.

2.3.2 Incremental Matching Mechanism
Some researchers have discussed the intriguing possibility that instituting some kind of threshold for matching could increase donations by reducing the crowding-out effects of the match (e.g., Sanders, Smith, & Norton, 2013). Anik, Norton, & Ariely (2014) find a beneficial effect of a match that kicks in only if sufficiently many people agree to participate. Different matching mechanisms than a simple ($\Phi - 1$) match for every dollar donated are also possible, and may affect how much donors choose to give. For example, instead of a 1:1 match until a certain threshold amount ($D$) is raised, a lumpsum match offer that only triggers when the threshold is reached ($D: D$) has been shown to raise more funds (Baker et al., 2009).

We consider specifically an offer made to prior donors to match every dollar they contribute over their previous contribution (i.e., a 1: $\Delta$ offer). Defining $pg_i$ as donor $i$’s most recent prior donation, the match rate $\Phi$ now depends on the prior and current donation:

$$\Phi = 1 + \Delta g = 1 + min(0, g_i - pg_i)$$

We define $G'$ as donor $i$’s beliefs about how much will be raised from other donors, including the incremental matches based on those other donors. Under the incremental match offer, the first order conditions will be the same as no match (with $G'$ in the pure altruism utility term) when $g_i \leq pg_i$. However, there will be a discontinuity at $g_i = pg_i$, such that the first order conditions will differ somewhat from the standard match for $g_i > pg_i$:

$$u'(w_i - g_i) = \delta_i(2g_i - pg_i)h'(G' + g_i^2 - g_i * pg_i) + \gamma_i f'(g_i)$$

This matching intervention could result in multiple differences in utility, relative to the standard match. First, it may be that donors’ beliefs about funds raised by others $G'$ will be smaller than the corresponding believed funds $G$ raised under the standard (1:1) match, since the donor will only match incremental amounts. If so, the incremental match would lead to less crowding out relative to control than the standard match does, because $h(\cdot)$ will be evaluated at
an earlier, less flat part of the curve, and therefore incremental pure altruism from the same
donation will be higher under the incremental match than the standard match. However, this is
not necessarily the case – if potential donors believe that the incremental match will yield a
sufficient increase in donors and/or donation amounts, this may not occur.

Second, the incremental match introduces a discontinuity, such that there is no match
benefit to the individual, holding beliefs about others’ donations constant, for donations at or
below the prior year’s donation. As a result, the incremental pure altruism benefit of donating an
additional dollar will be higher directly above the prior donation amount compared to below.
This is likely to shift some donors who would have given the same amount as before or slightly
less without a match, to instead give more than the prior donation, increasing donation amounts.
However, the model does not make a clear prediction for how this would compare to behavior
under a standard match.

Relatedly, although not part of the impure altruism model, incremental matching can
anchor donors to their past contribution amount, reducing the likelihood of significantly scaling
down and giving less, but also reducing the chances of deciding to substantially increase their
donation (Ariely, Loewenstein, & Prelec, 2003; Tversky & Kahneman, 1974).

2.3.3 Incremental Matching with Credit to the Donor

Lastly, we consider the joint effects of combining both changes to the matching offer,
incremental matching and ”giving credit” framing. When considering making a donation less
than or equal to the prior year, the first order conditions will the same as no match. However,
there will be a discontinuity at $g_i = pg_i$, such that the first order conditions will differ from the
standard match and the unframed incremental match for $g_i > pg_i$: 
\[ u'(w_i - g_i) = \delta_i(2g_i - pg_i)h'(G' + g_i^2 - g_i \ast pg_i) + (2g_i - pg_i)r_i f'(g_i^2 - g_i \ast pg_i) \]

This makes analogous (but stronger) predictions to those described above when comparing the joint intervention to a standard match with “giving credit” framing, since both the incremental effects and the discontinuity are now magnified by the warm-glow term. The model also suggests that instituting the “giving credit” framing may be less beneficial when added to the incremental match than the standard match, due to a smaller additional “warm-glow” benefit from the smaller match amount for a given donation under incremental matching.

3. **Expert Opinion as Guidance to the Fundraiser**

The impure altruism model of charitable giving predicted positive results for the “giving credit” framing intervention and suggested that the incremental matching mechanism might be beneficial, although the exact prediction depends on other parameters. These theoretical model implications are one potential source of guidance that charities could rely on to make decisions about how to formulate their donation appeals.

Another source of guidance, that charities may in fact be more likely to rely on, is people with experience and expertise in fundraising, whether their own staff or peers with corresponding roles at other organizations. The beliefs of fundraising experts could reflect the model implications, particularly if the model represents a good description of reality. However, their beliefs could also diverge from the model implications. The discrepancy could occur either because they have imperfectly learned the implications of a relatively accurate model, or because they have learned about donor’s actual behaviors that diverge from the model implications. To test this, we surveyed experts with practical experience in raising money for non-profits to measure their beliefs about the causal effects of the proposed interventions.
3.1 Design

We used the services of an online panel provider company to recruit fundraising managers (N=105) of non-profit organizations for a brief survey. Participants had an average experience of 10.2 years in fundraising related work, and 66% reported having experience working in fundraising campaigns that specifically used matching contributions.

Participants read about a direct mail fundraising campaign for a non-profit and about the intended target audience (see Table 1 for a summary; the actual stimuli used in all studies are provided in the Online Appendix). All participants then read about each of the five different solicitation strategies discussed earlier: control (no matching), standard matching (i.e., 1:1), standard matching with “giving credit” framing, incremental matching (i.e., 1: Δ), and incremental matching with “giving credit” framing.

Participants then compared pairs of two out of the five conditions they saw earlier and answered two questions about each pair, using five-point Likert scales. First, they evaluated how likely they thought participation rates (i.e., the number of people responding to the appeal) were to be higher in one condition versus the other. Then they evaluated how likely the average donation amount (i.e., among those who responded to the appeal with a non-zero donation) was to be higher in one condition versus the other. Participants answered these two questions for four pairs: standard matching vs. control, standard matching with “giving credit” framing vs. standard matching with regular framing, incremental matching vs. standard matching (both with regular framing), and incremental matching with “giving credit” framing vs. incremental matching with regular framing. Participants then answered a few follow-up questions about their work experience.
<table>
<thead>
<tr>
<th>Conditions</th>
<th>Solicitation text shown to experts</th>
</tr>
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<tbody>
<tr>
<td>Control</td>
<td>&quot;During our 75th Anniversary, we hope you will continue to join us in demonstrating your commitment to Chicago’s art and artists by making a contribution today.&quot;</td>
</tr>
</tbody>
</table>
| Standard Matching                 | "In recognition of the Organization’s success over its 75-year history, a supporter has offered a matching grant to encourage you to increase your donation and invest in our future.  
This supporter will give $1 for EVERY $1 you contribute. So, for every dollar you give, we will receive two dollars in support of our programs — your dollar and a dollar from this supporter.  
Let’s not lose this match — please give today!"                                                                                         |
| Standard Matching with “giving credit” framing | "In recognition of the Organization’s success over its 75-year history, a supporter has offered a matching grant to encourage you to increase your donation and invest in our future.  
This supporter will add $1 to your contribution for EVERY $1 you give. So, for each dollar you give, we will receive two on your behalf in support of our programs.  
Let’s not lose this match—please give today!"                                                                                           |
| Incremental Matching              | "In recognition of the Organization’s success over its 75-year history, a supporter has offered a matching grant to encourage you to increase your donation and invest in our future.  
This supporter will give $1 for every additional $1 you donate OVER your last gift. So, for each dollar you add to the amount of your last contribution of $«PREVIOUS», we will receive two dollars in support of our programs — your dollar and a dollar from this supporter.  
Let’s not lose this match — please give today!"                                                                                           |
| Incremental Matching with “giving credit” framing | "In recognition of the Organization’s success over its 75-year history, a supporter has offered a matching grant to encourage you to increase your donation and invest in our future.  
This supporter will add $1 to your contribution for every $1 you donate OVER your last gift. So, for every dollar you add to the amount of your last contribution of $«PREVIOUS», we will receive two dollars on your behalf in support of our programs.  
Let’s not lose this match—please give today!"                                                                                           |

Table 1: Conditions with actual descriptions that were shown to experts in the survey.
3.2 Results

Our statistical test was aimed at determining whether experts were significantly more likely to evaluate one of the solicitation variations as performing better than the other. Accordingly, we recoded responses favoring one version (“definitely yes” or “probably yes” on the Likert scale) as -1, neutral responses (the middle option, “cannot predict”) as 0, and responses favoring the other version (“probably no” or “definitely no” as +1. We then compared the mean response of the recoded values to zero.

3.2.1 Participation

Comparing standard matching to control, 90% of the experts thought participation would be higher (M= -0.847 vs. 0, t(104)=17.50, p<.001) with standard matching, and 6% thought participation would be lower.¹ The experts also expected that the “giving credit” framing would boost participation for matching solicitations. Comparing standard matching with or without “giving credit” framing, 70% of the experts thought the “giving credit” framing would yield higher participation while 14% thought participation would be lower (M= -0.552 vs. 0, t(104)=7.72, p<.001).

However, the experts were pessimistic about incremental matching. Experts were split on whether incremental matching would yield higher participation than standard matching using regular framing, with 35% saying it would be higher and 40% saying it would be lower (M= 0.047 vs. 0, t(104)=0.56, p=.576). The experts were more likely to think that adding the credit framing to the incremental match would generate higher participation than an incremental mechanism alone (53%), rather than lower participation (19%; M = -0.343 vs. 0, t(104)=4.49, p<.001).

¹ Proportions do not add up to 100% because some people said “cannot predict.”
3.2.2 Average Contribution upon Participation

Comparing standard matching to control, 63% of the experts thought average contributions would be higher with standard matching, while 17% thought it would be lower (M= -0.457 vs.0, t(104)=6.06, p<.001). Experts were also very positive about the effect of framing on average contribution amounts, with 65% responding that matching with the “giving credit” framing would yield higher contributions than regular framing under standard matching, while only 15% thought it would be lower ( M= -0.495 vs.0, t(104)=6.78, p<.001).

Experts were less optimistic about the effects of incremental matching on the amounts donors gave. Only 49% of the experts thought incremental matching would yield a higher conditional contribution than standard matching with regular framing, and 32% thought it would be lower (M= -0.171 vs.0, t(104)=1.97, p=.052). Experts were also more likely to believe that the “giving credit” framing would improve the performance of incremental matching compared to regular framing (57%) than the reverse (17%; M= -0.40 vs.0, t(104)=5.34, p<.001).

Expert practitioners examined all our potential interventions as they typically would in team meetings before a fundraising campaign. Overall, experts agreed with the implications of the impure altruism model as to the effects of the “giving credit” framing. Likewise, experts were more uncertain about the effect of incremental matching mechanism alone, but thought adding the “giving credit” framing would make it a stronger intervention.

4. Incentive-compatible Survey Experiments as Guidance to the Fundraiser

Based on the sources of information discussed to this point, the fundraiser might feel confident about using the “give credit” framing, and somewhat less certain about the benefits of instituting the incremental match. Next, we consider an internal research study as the final source
of guidance that a charity might rely on in making decisions about how to formulate their matching offer. Many charities conduct internal research, particularly using low-cost methods, to learn about donors and better anticipate their reactions to the charity’s activities. Common research methods range from simply monitoring donor feedback to structured qualitative interviews with small numbers of donors to simple surveys of potential donors. We test one such research method, conducting an incentive-compatible survey experiment to measure the effect of each type of matching offer on intentions to donate.

4.1 Design

Online survey respondents (N=524) were recruited from Amazon’s Mturk employment marketplace to participate in a decision-making study. This approach was chosen to enable best practices (e.g., incentive compatibility) under the constraint of using low-cost methods feasible for typical charities. The sample chosen was motivated by the widespread reluctance among charities to contact their donors more than necessary, particularly when doing so would reveal tactical considerations in fundraising that might leave their donors feeling manipulated.

Respondents were informed that they at the end of the survey, five people would be selected at random and be given a real $20 lottery reward. The Mturk platform allows this claim to be made with reasonable credibility, as the funds would be paid as an Mturk bonus within two days of study completion, from a highly-rated requester account with a track record of paying bonus incentives.

A key challenge in this kind of survey experiment with a publicly-recruited sample is how to replicate the “warm donor” mindset of the prior donors who would be targeted in an actual fundraising appeal. We asked respondents to select their favorite from a list of 20 well-
known charities, to ensure that they had a baseline level of interest in the charity analogous to the motives of a charity’s prior donors. We then randomly assigned respondents to one of five between-subject conditions, in which they were shown offers to pre-commit an amount (up to $20) to be deducted from their bonus and donate to their selected charity, in case they later won the lottery.

The control condition involved no matching amounts. The four other conditions proposed a match from the experimenter’s funds (e.g., “we will donate an extra $1 for every $1 you give), with differing contingencies and framing matching the interventions under discussion (1:1; 1:1 + ”give credit” framing; 1:Δ; 1:Δ + ”give credit” framing). In the incremental matching conditions, respondents were told that the match would apply to amounts over $3.00.

Respondents were then asked to choose how much of their $20 bonus they would donate to their favorite charity, between $0 and $20, should they win. As described to the respondents, five winners were selected at random, the amount they chose as their donation was deducted from their bonus payment, the remainder was paid via Mturk bonus and we sent their donation amount to the selected charity, along with any applicable matching amount.

4.2 Results

The overall participation rate (i.e. survey respondents choosing to commit more than $0) was 80% (see Fig. 1; left-panel) and there were no significant difference in participation rates between any of the pairs of conditions (all p’s >.25).
The survey experiment also revealed similar levels of average contribution amount among participating donors (i.e., among those who committed some non-zero amount) across conditions. None of the comparisons between pairs of conditions were significant (all \( p \)'s > .18) except for one: standard matching with “give credit” framing received significantly higher conditional contributions compared to the no-match control (\( p=.037 \)).

Overall, the survey experiment was largely inconclusive as to whether one version would perform significantly better. There was no significant difference in net contribution between pairs of conditions. A fundraiser might either treat these non-significant results as irrelevant to their decision, or perhaps as evidence that the decision of which version to use would be of little consequence. Alternatively, a fundraiser might interpret these results as suggestive evidence that the “give credit” framing with a standard match has the highest likelihood of success, particularly in terms of average contribution, largely consistent with the model implications and expert opinions.
5. Field Experiment as a Test of Ground Truth

5.1 Design

To measure the actual impact of the proposed matching interventions in at least one real-world context, we conducted a fundraising field experiment in collaboration with a local non-profit in Chicago. The non-profit was a small but well-established arts organization with less than 15 employees. It promoted young artists by organizing exhibitions and workshops, and also offered various art classes, including summer art classes for children. The non-profit was planning to conduct its annual fundraising campaign, and as part of celebrating its 75th anniversary, had secured a leadership gift from one of its patrons for that year’s campaign. The organization leveraged the leadership grant to run a matching campaign during this fundraising drive, with five different randomized mail-based solicitations. This experiment, unlike the survey experiment, represents a natural field study (Harrison & List, 2004) in which decision makers did not know that they were part of an experiment.

The organization sent out mailers with a letter signed by the Deputy Director, a pledge card, and a prepaid self-addressed envelope. Mailers were sent to the organization’s list of 3588 potential donors. The experimentally-manipulated matching offers, however, were only sent to the people who had previously donated, which constituted 1480 mailings. Targeting prior donors is common in fundraising field studies that use mailers (Goswami & Urminsky, 2016; Huck & Rasul, 2011; Karlan & List, 2007, 2012; Karlan, List, & Shafir, 2011; List & Lucking-Reiley, 2002), because of substantially higher participation rates, potentially due in part to a greater willingness to open and read the solicitation. The targeted prior donors were relatively small-amount contributors (median last contribution: $45) who had previously either bought a
membership, enrolled in classes, attended an event, or contributed in some other way to the organization.

The matching offer for each experimental condition, when applicable, was contained in the body of the letter and a summary of the matching offer was also printed on the back flap of the self-addressed envelope (see the Online Appendix for full details of all the stimuli used). The prior donors were each sent one of the five experimental mailers, using a 2(Match Type: 1:1, 1:Δ) x 2(Credit to Donor: Yes, No) + 1 (no-match control) between-subjects randomized design. Mailers were sent out in the first week of September, 2014. Data on the contributions received was recorded until the February of 2015 (i.e., for about five months), when contributions to the campaign had largely ended (only two contributions in February).

5.2 Results

We analyze the results in terms of participation, average contribution among donors (i.e., conditional upon sending in a donation), and net money raised. This approach can sometimes be more informative than merely looking at the overall money raised from a solicitation appeal, as different factors tend to impact the decisions of whether to give and how much to give (Goswami & Urminsky, 2016).

5.2.1 Participation

Averaging across experimental conditions, the overall contribution rate was 5.6%. The participation level in the standard 1:1 matching condition (8.1%) was directionally higher than in the control condition (5.1%), but the difference was not significant ($\chi^2(1)=2.25, p=.133$). This result is consistent with the mixed results in the prior literature on the effects of using matching solicitations with prior donors.
More importantly, we find no evidence that either the “giving credit” framing or the incremental match improved donation rates, and the observed differences instead point in the opposite direction. Contrary to both the predictions of the impure altruism model and the expert practitioners, when the solicitation was framed to give donors credit for the matching funds, the participation rate was significantly lower than the regular framing, under the standard match (4.1% vs. 8.1%; $\chi^2(1)=4.06, p=.043$). Likewise, incremental matching with the “give credit” framing directionally reduced, rather than increased, participation compared to the incremental matching offer with the regular framing (3.9% vs. 6.6%, %; $\chi^2(1)=2.08, p=.148$).

Overall, comparing both the matching conditions with credit framing to the combined matching conditions with regular framing, the “giving credit” framing significantly reduced participation (4.0% vs. 7.4%; $\chi^2(1)= 6.21, p=.013$). The detrimental effect of the “give credit”
framing did not vary depending on the matching method (standard 1:1 vs. incremental 1:Δ; \( \beta=0.149, z=0.281, p=.778 \)).

5.2.2 Average Contribution

We used log-transformed donation amounts to account for skew in the data (see Fig. 3).

![Log of average contribution among donors. The vertical bars are 95% CI.](image)

Donation amounts among those who gave were directionally lower in the standard 1:1 match than in the control condition \((t(40)=1.34, p=0.187;\) see Figure 3). More importantly, we find no evidence that the “giving credit” framing or incremental match increased contribution amounts. In fact, the “giving credit” framing significantly reduced contributions relative to regular framing, for the standard 1:1 match offer \((t(36)=2.43, p=.020)\). The credit framing did not yield significantly higher donations than regular framing under incremental matching, and the effect of framing did not significantly differ by match type \((\beta=0.642, t=1.52, p=.134)\).
The results also indicate that the incremental match failed to improve contributions. In fact, averaging across framing conditions, the incremental match resulted in a significant reduction in average contribution compared to the standard match ($t(42)=2.59, p=.013$).

5.2.3 **Net Money Raised**

To assess the net effects, incorporating both the number of donors and how much each donor gave, we analyzed the log-transformed average money raised per mailing across conditions. The standard 1:1 match raised directionally less money than the control condition ($t(633)=1.40, p=.161$).

![Figure 4: Log of net donations per mailing. The vertical bars are 95% CI.](image)

Moreover, we find no evidence that more money is raised when using the “give credit” framing or incremental matching. In fact, the credit framing raised significantly less money than regular framing under standard matching ($t(610)=2.13, p=.033$) and directionally less under...
incremental matching ($t(553)=1.41, p=.160$). Overall, combining both the matching conditions, credit framing significantly reduced the money raised per mailing compared to the regular framing ($t(1165)=2.56, p=.010$). Money raised did not significantly differ between standard and incremental matching ($t(1165)=.831, p=.41$).

5.3 Discussion

Overall, the results of the field study establish a ground truth, at least in this specific real-world setting, quite at odds with the expectations a fundraiser would be likely to have. Most dramatically, the “giving credit” framing does not improve fundraising as might be expected, but instead consistently reduces the outcomes. While less dramatic, we find no benefit from the incremental match, and instead find a reduction in donation amounts attributable to the incremental match. Notably, these failures of the alternative solicitation methods are observed in exactly the kind of setting in which the fundraiser might be looking for alternative ways to implement matching, as the standard matching offer did not perform significantly better than control in this campaign.

6. General Discussion

In this paper, we explore the potential decision process of a fundraiser choosing which form of matching solicitation to implement, among four versions varying the framing of the match and the donation level at which the match first applies. We compare the guidance the fundraiser would receive from three sources: (1) the theoretical impure altruism model of donation behavior, (2) the opinions of expert fundraisers, and (3) the findings of a low-cost survey-based experiment. While these sources of guidance convey some uncertainty and mixed results, the general conclusions are likely to be that a “giving credit” framing will improve the
performance of matching solicitations, and that incremental matching may have little effect or provide some improvement.

Given the common reluctance of fundraisers to conduct field experiments, our hypothetical fundraiser might well decide to implement the “giving credit” framing with an incremental match based on one or more of these sources of guidance. The results of our field experiment suggest that this decision, reasonably based on the likely sources of information available to the fundraiser, might be a serious mistake, at least in some fundraising contexts. We find strong evidence that the “giving credit” framing would result in significantly worse outcomes, and the results suggest that the incremental match would have little net effect, but would be likely to reduce donation amounts.

6.1 Implications for research on fundraising

Why did the seemingly promising “giving credit” fail in the field? One possibility is that potential donors construe the inherent conditionality of matching solicitations as a coercive nudge (e.g., Goswami & Urminsky, 2016) and this was amplified by the “giving credit” framing. Another possibility is a generalization of intuitions that underlie social loafing (Latané, Williams, & Harkins, 1979). By telling potential donors that the leader would add to their donation, the potential donors might have felt less accountability for the outcome and less ownership of the resulting donation. Lastly, donors might view a conditional leadership gift as patronizing or be suspicious of the claim, and this might have been exacerbated by the framing. Indeed, research has found that disclosing more details about the match, including the source of leadership gift (Karlan & List, 2012), can improve results of charitable solicitations.
Our analysis of the modified impure altruism model seemed to make a clear prediction that the “giving credit” manipulation would either have no effect (if people failed to incorporate the match into their warm-glow utility) or a positive effect. That said, the modeling framework is flexible enough to accommodate our findings, with additional assumptions. The “giving credit” framing might have reduced enjoyment from the donation, decreasing the degree of warm-glow benefit $\gamma_i$. Alternatively, the framing might have reduced beliefs about the needs of the charity or the credibility of the charity, as capture by the pure altruism coefficient $\delta_i$. It’s also possible that the framing shifted beliefs about how much others would donate in a way that affected individual’s own motivation to donate.

Thus, the surprising failure of the “giving credit” manipulation (and to a lesser degree, the failure of the incremental match) do not necessarily call into question existing psychological or economic theories of donation behavior. However, these findings do highlight the difficulty of making accurate predictions about the effectiveness of field interventions from incomplete theories, and point to important questions to be addressed in future research to enable existing theories to make more precise predictions.

6.2 Implications for fundraising practices.

What will our hypothetical fundraiser who relied on reasonable sources of information and chose to implement the “giving credit” framing with incremental matching learned from the experience? Unfortunately, the fundraiser is unlikely to learn much due to the lack of a comparison and the resulting inability to conclude reliably whether this new approach worked. As a result, fundraisers are unlikely to update their beliefs effectively, resulting in the
perpetuation of unreliable expert opinion. Absent a controlled trial, as in our field experiment, the fundraiser would not have learned that the “giving credit” intervention was a costly mistake.

Many practitioners might not be surprised to hear that theoretical economic models developed by academics sometimes generate implications that do not hold up in the field. In fact, prior field experiments have documented other findings that may be rationalizable ex post under the impure altruism model with specific assumptions, but which contradict plausible a priori interpretations of the model (Andreoni, 1988; Eckel & Grossman, 2003; Karlan & List, 2007).

These practitioners, sceptical of academic predictions, may believe that they or their experienced colleagues will predict better. However, in our data, professional fundraising managers overwhelmingly and incorrectly predicted that the “giving credit” framing would perform better than the regular framing. Other fundraising managers might put less trust in expert opinions but be confident that with a bit of data about donors, they could choose the best option. Consistent with prior concerns about the difficulty of measuring social preferences in lab studies (Levitt & List, 2007), our results suggest that using such “pre-tests” before launching a campaign, even with incentive-compatible mechanisms, may be of limited benefit.

Taken together, the results strongly support a pessimistic view of the fundraiser’s ability to accurately predict field outcomes without field data in the relevant context. In this pessimistic view, we echo recent work which concludes that the combination of reasoning processes in a decision may result in different outcomes in different contexts (Goswami & Urminsky, 2016a) and that even field results from one setting may not generalize to another (Alcott & Mullainathan, 2012). However, the positive recommendation for fundraisers is to simply test planned interventions before full implementation, and to continue testing new ideas in the field.
after implementation. While such experiments are not costless, doing so is well within reach of most fundraising organizations and the learning can far outweigh the minimal costs (Goswami & Urminsky, 2016b). In fact, many marketing organizations (particularly those operating online) have not only adopted experimentation, but restructured their marketing activities around experimentation to the point where field testing is an ongoing and seamless aspect of their practice (Brynjolfsson & McAfee 2011). There is simply no substitute for in-context field experiments to test the consequences of fundraising interventions.
References


Online Appendix

Experimental stimuli used in the natural field experiment

Letter sent to prior donors in the control condition

September 5, 2014

«Name»
«Company»
«Address»
«City», «State» «Postal_Code»

Dear «Short_Salutation»,

Art enters our lives at different moments, both intentionally and unexpectedly. For some, it is a brief yet memorable encounter; for others, a long-term relationship that has been cultivated over years. And for many more, art is an essential part of life—something that has always been there, engrained in everything you do. Whatever your relationship, the fact that art begins and ends with people is universal. Art exists solely because of the people who communicate through it, interpret it, share in it—you.

At the Hyde Park Art Center, we work to make sure that anyone in our city can participate and progress in the visual arts. With your help, we provide long-term arts education both within our award-winning facility and inside of our neighboring south side Chicago Public Schools. Alongside this work, we nurture artistic advancement and launch diverse Chicago artists into the international contemporary art dialogue.

Successfully carrying out and intertwining these differing activities has grown our audience to over 45,000 participants each year and gained us national recognition as a model for how an organization can develop its city’s artists while remaining accessible and relevant to its immediate community.

During our 75th Anniversary, we hope you will continue to join us in demonstrating your commitment to Chicago’s art and artists by making a contribution to the Hyde Park Art Center today.
By investing in the Art Center you will: provide artists at all levels the opportunity to challenge their practice and take the next step in their career; empower students to learn new skills through art and become positive leaders amongst their peers; and, continue to build a vibrant community of art participants and supporters in Chicago.

We truly appreciate your involvement and support, and hope to see you soon!

Thank you,

Christina Jensen
Deputy Director

P.S. Please join us on Saturday, September 13 from 12 - 9 PM for our free 75th Anniversary BBQ Block Party Bash. You can find out more about the Block Party, all of our programs, and make a gift online at hydeparkart.org.

Letter sent to prior donors in the 1:1 matching condition

September 5, 2014

Dear «Name»,

Art enters our lives at different moments, both intentionally and unexpectedly. For some, it is a brief yet memorable encounter; for others, a long-term relationship that has been cultivated over years. And for many more, art is an essential part of life—something that has always been there, engrained in everything you do. Whatever your relationship, the fact that art begins and ends with people is universal. Art exists solely because of the people who communicate through it, interpret it, share in it—you.

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During our 75th Anniversary, we hope you will join us in demonstrating your commitment to Chicago’s art and artists by making a contribution to the Hyde Park Art Center. In recognition of the Art Center’s success over its 75 year history, a supporter has offered a matching grant to encourage you to increase your donation and invest in our future.

This supporter will give $1 for EVERY $1 you contribute. So, for each dollar you give, we will receive two dollars in support of our programs—your dollar and a dollar from this supporter.

By investing in the Art Center you will: provide artists at all levels the opportunity to challenge their practice and take the next step in their career; empower students to learn new skills through art and become positive leaders amongst their peers; and, continue to build a vibrant community of art participants and supporters in Chicago.

We truly appreciate your involvement and past support, and hope that you will help us take advantage of this matching grant and give today!

Thank you,

Christina Jensen
Deputy Director

P.S. Please join us on Saturday, September 13 from 12 - 9 PM for our free 75th Anniversary BBQ Block Party Bash. You can find out more about the Block Party, all of our programs, and make a gift online at hydeparkart.org.

Letter sent to prior donors in the 1:1 matching with credit framing condition

September 5, 2014

«Name»
«Company»
«Address»
Dear «Short_Salutation»,

Art enters our lives at different moments, both intentionally and unexpectedly. For some, it is a brief yet memorable encounter; for others, a long-term relationship that has been cultivated over years. And for many more, art is an essential part of life—something that has always been there, engrained in everything you do. Whatever your relationship, the fact that art begins and ends with people is universal. Art exists solely because of the people who communicate through it, interpret it, share in it—you.

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Christine
Christina Jensen
Deputy Director

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This supporter will give $1 for every additional $1 you donate OVER your last gift. So, for each dollar you add to the amount of your last contribution of $«Gift», we will receive two in support of our programs—your dollar and a dollar from this supporter.
By investing in the Art Center you will: provide artists at all levels the opportunity to challenge their practice and take the next step in their career; empower students to learn new skills through art and become positive leaders amongst their peers; and, continue to build a vibrant community of art participants and supporters in Chicago.

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Thank you,

Christina Jensen
Deputy Director

P.S. Please join us on Saturday, September 13 from 12 - 9 PM for our free 75th Anniversary BBQ Block Party Bash. You can find out more about the Block Party, all of our programs, and make a gift online at hydeparkart.org.
Letter sent to prior donors in the 1: Δ matching with credit framing condition

September 5, 2014

«Name»
«Company»
«Address»
«City», «State» «Postal_Code»

Dear «Short_Salutation»,

Art enters our lives at different moments, both intentionally and unexpectedly. For some, it is a brief yet memorable encounter; for others, a long-term relationship that has been cultivated over years. And for many more, art is an essential part of life—something that has always been there, engrained in everything you do. Whatever your relationship, the fact that art begins and ends with people is universal. Art exists solely because of the people who communicate through it, interpret it, share in it—you.

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Christina Jensen
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Pledge Card included in all conditions
Return envelope in control condition
Return envelope in 1:1 matching condition

Join!
Celebrate the Hyde Park Art Center community, and help make 75 our best year yet!

In recognition of the Art Center’s success over its 75 year history, a supporter has offered a matching grant to encourage you to donate and invest in our future.

This supporter will give $1 for EVERY $1 you contribute. So, for every dollar you give, we will receive two dollars in support of our programs — your dollar and a dollar from this supporter. Let’s not lose this match—please give today!

Hyde Park ART CENTER
5020 S. Cornell Avenue
Chicago, IL 60615

Return envelope in 1:1 matching with credit framing condition
Join!
Celebrate the Hyde Park Art Center community, and help make 75 our best year yet!

In recognition of the Art Center's success over its 75 year history, a supporter has offered a matching grant to encourage you to donate and invest in our future.

This supporter will add $1 to your contribution for EVERY $1 you give. So, for each dollar you give, we will receive two on your behalf in support of our programs. Let's not lose this match—please give today!

Hyde Park Art Center
5020 S. Cornell Avenue
Chicago, IL 60615

Return envelope in 1: Δ matching condition
Join!
Celebrate the Hyde Park Art Center community, and help make 75 our best year yet!

In recognition of the Art Center’s success over its 75 year history, a supporter has offered a matching grant to encourage you to increase your donation and invest in our future.

This supporter will add $1 to your contribution for every $1 you donate. OVER your last gift. So, for every dollar you add to the amount of your last contribution, we will receive two dollars on your behalf in support of our programs. Let’s not lose this match—please give today!

Hyde Park ART CENTER
5020 S. Cornell Avenue
Chicago, IL 60615
Experimental stimuli used in the survey of experts

Introduction

We are planning to test a few matching fundraising solicitations on prior donors of a local non-profit. The non-profit promotes young artists by organizing exhibitions and workshops. It also offers summer art classes for children.

The solicitations will be sent using postal mail. The mail will include an appeal letter, a pledge card, and a return envelope.

Random groups of donors will be sent different matching solicitations, and we are interested to compare the groups on participation (average donate rate) and the amount donated by participating donors (average donation amount).

We are interested in your opinion about these matching fundraising solicitations. There are no right or wrong answers.

We are planning to test five (5) different appeal letters. A random group of prior donors will see only one letter.

Below you will see the actual texts (shown within quotation signs) in these letters. Please review them carefully before answering a few questions about them.
Details about the five test conditions (left panel) and an illustrative example of a paired comparison (1:1 vs. Control, right panel)

1. Control

"During our 75th Anniversary, we hope you will continue to join us in demonstrating your commitment to Chicago's art and artists by making a contribution today."

2. Standard Matching

"In recognition of the Organization's success over its 75-year history, a supporter has offered a matching grant to encourage you to increase your donation and invest in our future.

This supporter will give $1 for EVERY $1 you contribute. So, for every dollar you give, we will receive two dollars in support of our programs — your dollar and a dollar from this supporter.

Let’s not lose this match — please give today!"

3. Standard Matching with Credit to the Donor

"In recognition of the Organization’s success over its 75-year history, a supporter has offered a matching grant to encourage you to increase your donation and invest in our future.

This supporter will add $1 to your contribution for EVERY $1 you give. So, for each dollar you give, we will receive two in support of our programs — your dollar and a dollar from this supporter.

Let’s not lose this match — please give today!"

4. Incremental Matching

"In recognition of the Organization’s success over its 75-year history, a supporter has offered a matching grant to encourage you to increase your donation and invest in our future.

This supporter will give $1 for every additional $1 you donate OVER your last gift. So, for each dollar you add to the amount of your last contribution of $PREVIOUSLY, we will receive two in support of our programs — your dollar and a dollar from this supporter.

Let’s not lose this match — please give today!"

5. Incremental Matching with Credit to the Donor

"In recognition of the Organization’s success over its 75-year history, a supporter has offered a matching grant to encourage you to increase your donation and invest in our future.

This supporter will add $1 to your contribution for every $1 you donate OVER your last gift. So, for every dollar you add to the amount of your last contribution of $PREVIOUSLY, we will receive two dollars on your behalf in support of our programs.

Let’s not lose this match — please give today!"

Considering the control and the standard matching conditions, shown below once again, please answer the two questions that follow.

1. Control

"During our 75th Anniversary, we hope you will continue to join us in demonstrating your commitment to Chicago's art and artists by making a contribution today."

7. Standard Matching

"In recognition of the Organization's success over its 75-year history, a supporter has offered a matching grant to encourage you to increase your donation and invest in our future.

This supporter will give $1 for EVERY $1 you contribute. So, for every dollar you give, we will receive two dollars in support of our programs — your dollar and a dollar from this supporter.

Let’s not lose this match — please give today!"

Compared to the Control condition, do you think participation (i.e., number of people responding to the appeal) would be HIGHER in the Standard Matching condition?  
Definitely Yes   Probably Yes   Can’t Predict   Probably No   Definitely No

Compared to the Control condition, do you think average donation amount (i.e., non-zero dollar amount donated by those who decided to respond to the appeal) would be HIGHER in the Standard Matching condition?  
Definitely Yes   Probably Yes   Can’t Predict   Probably No   Definitely No

[The placeholder $PREVIOUSLY>> reminded the donor about his/her last contribution amount]
Experimental stimuli used in the lab experiment

Choice of favorite charity

In this survey, you will be making some decisions about a charity. Please choose which of the following charities you would be most interested in donating to.

- Direct Relief International
- United Way
- Feeding America
- Catholic Charities USA
- Goodwill
- Food for the Poor
- American Cancer Society
- YMCA
- World Vision
- St. Jude Children's Research Hospital
- Boy's and Girl's Clubs of America
- American Red Cross
- Habitat for Humanity
- Feed the Children

Illustrative example of a question with piped choice (of favorite charity) soliciting donation in the 1:1 matching with credit framing condition
If you are randomly selected to receive the $20 surprise reward as part of this survey, you could choose to donate to $q://QID80/ChoiceGroup/SelectedChoices, if you wish.

A matching grant is available. We will add an extra $1 to your donation for EVERY $1 you give. So, for every dollar you give, $q://QID80/ChoiceGroup/SelectedChoices will receive two dollars on your behalf in support of their programs.

If you do choose to donate, we will deduct the amount you specify from your $20 winnings if you win and donate it to $q://QID80/ChoiceGroup/SelectedChoices. You would then receive the remainder via Mturk as a bonus.

You need to make your decision about donating now. Please select below how much money, in dollars, if any, you would donate to $q://QID80/ChoiceGroup/SelectedChoices, in case you win.
Additional Analysis of the Field Experiment Data

Online Table 1: The table shows that randomization for the field experiment worked for all the variables except the lifetime transaction count. However, the values of lifetime transaction account are not very different across conditions and range between 4 and 5 in absolute terms. Due to certain technical problems (migration to a new MIS, etc.) we could not retrieve the Last Donation Amount figures for 127 prior donors. The non-profit did not share demographic information about the donors like age, gender, education, or income, and we use publically available data (www.psc.isr.umich.edu/dis) to retrieve median household income from zip codes.

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>1:1</th>
<th>1:1 Credit</th>
<th>1: Δ</th>
<th>1: Δ Credit</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last Donation Amount ($)</td>
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<td>68.66</td>
<td>78.25</td>
<td>74.21</td>
<td>79.20</td>
<td>1.66</td>
<td>.155</td>
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<td>54713.19</td>
<td>55019.63</td>
<td>52983.56</td>
<td>54771.48</td>
<td>0.22</td>
<td>.926</td>
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<tr>
<td>Lifetime Transaction Amount ($)</td>
<td>1736.20</td>
<td>2142.11</td>
<td>702.97</td>
<td>561.60</td>
<td>682.78</td>
<td>1.53</td>
<td>.188</td>
</tr>
<tr>
<td>Lifetime Transaction Count</td>
<td>5.5</td>
<td>5.1</td>
<td>3.6</td>
<td>3.9</td>
<td>3.8</td>
<td>5.32</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

*based on zip-code

Online Table 2: The table reports results of participation (using logistic regression) for each pair of experimental conditions, controlling for lifetime transaction count. The result in each cell compares the column value in the corresponding cell against the row value in the corresponding cell.

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>1:1</th>
<th>1:1 Credit</th>
<th>1: Δ</th>
<th>1: Δ Credit</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>z = +1.68, p = .093</td>
<td>z &lt; 1</td>
<td>z = +1.29, p = .198</td>
<td>z &lt; 1</td>
<td>z = -1.69, p = .089</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:1</td>
<td>z = -1.51, p = .132</td>
<td>z &lt; 1</td>
<td>z = +1.18, p = .238</td>
<td>z &lt; 1</td>
<td>z = -1.35, p = .176</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: Δ</td>
<td>z = -1.51, p = .132</td>
<td>z &lt; 1</td>
<td>z = +1.18, p = .238</td>
<td>z &lt; 1</td>
<td>z = -1.35, p = .176</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: Δ Credit</td>
<td>z = -1.51, p = .132</td>
<td>z &lt; 1</td>
<td>z = +1.18, p = .238</td>
<td>z &lt; 1</td>
<td>z = -1.35, p = .176</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Online Table 3: The table reports results of log of average contribution (upon participating; using OLS) for each pair of experimental conditions, controlling for lifetime transaction count. The result in each cell compares the column value in the corresponding cell against the row value in the corresponding cell.

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>1:1</th>
<th>1:1 Credit</th>
<th>1: Δ</th>
<th>1: Δ Credit</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>t = -1.31, p = .199</td>
<td>t = -2.34, p = .027</td>
<td>t = -2.62, p = .014</td>
<td>t = -1.49, p = .149</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:1</td>
<td>t = -2.33, p = .025</td>
<td>t = -2.50, p = .016</td>
<td>t = -1.19, p = .242</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: Δ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: Δ Credit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Online Table 4: The table reports results of log of net average contribution (using OLS) for each pair of experimental conditions, controlling for lifetime transaction count. The result in each cell compares the column value in the corresponding cell against the row value in the corresponding cell.

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>1:1</th>
<th>1:1 Credit</th>
<th>1: Δ</th>
<th>1: Δ Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>t = +1.67, p=.095</td>
<td>t&lt;1</td>
<td>t = +1.21, p=.226</td>
<td>t&lt;1</td>
<td></td>
</tr>
<tr>
<td>1:1</td>
<td></td>
<td>t = -1.57, p=.117</td>
<td>t&lt;1</td>
<td>t = -1.77, p=.076</td>
<td></td>
</tr>
<tr>
<td>1:1 Credit</td>
<td></td>
<td>t = +1.21, p=.227</td>
<td>t&lt;1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: Δ</td>
<td></td>
<td></td>
<td>t = -1.38, p=.167</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: Δ Credit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We examined potential moderation by Last Donation Amount, Median Household Income, Lifetime Transaction Amount, and Lifetime Transaction Count of the relationship between each of the condition pairs and participation, contribution upon participation, net contribution. We also examined moderation by these covariates of the relationship between overall (incremental mechanism, 1:1 mechanism), overall (credit framing: YES, NO) and participation, contribution upon participation, net contribution. For brevity, we report both significant and marginally interactions, along with interpretations of the results.

Moderation by Last Donation Amount

Online Table 5: For high last donation amount (mean + 1SD), credit framing decreased average contribution upon participation, whereas for low last donation amount (mean - 1SD) there was a small increase with credit framing.

<table>
<thead>
<tr>
<th>DV: Log of Donation Amount (upon Participation)</th>
<th>( \beta )</th>
<th>( SE )</th>
<th>( t )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>3.998</td>
<td>0.251</td>
<td>15.87</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Credit framing vs. No Credit framing (combined)</td>
<td>0.309</td>
<td>0.408</td>
<td>0.75</td>
<td>.453</td>
</tr>
<tr>
<td>Last Donation Amount</td>
<td>0.005</td>
<td>0.002</td>
<td>2.53</td>
<td>.015</td>
</tr>
<tr>
<td>Credit framing x Last Donation Amt.</td>
<td>-0.006</td>
<td>0.002</td>
<td>-2.17</td>
<td>.036</td>
</tr>
</tbody>
</table>

Online Table 6: For high last donation amount (mean + 1SD), credit framing decreased average net contribution, whereas for low last donation amount (mean - 1SD) there was a small increase with credit framing.

<table>
<thead>
<tr>
<th>DV: Log of Donation Amount (net)</th>
<th>( \beta )</th>
<th>( SE )</th>
<th>( t )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>-6.823</td>
<td>0.153</td>
<td>-44.57</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Condition = 1:1 + Credit framing vs. 1:1</td>
<td>0.199</td>
<td>0.207</td>
<td>0.96</td>
<td>.336</td>
</tr>
<tr>
<td>Last Donation Amount</td>
<td>0.004</td>
<td>0.002</td>
<td>2.43</td>
<td>.016</td>
</tr>
<tr>
<td>Condition x Last Donation Amt.</td>
<td>-0.004</td>
<td>0.002</td>
<td>-2.27</td>
<td>.024</td>
</tr>
</tbody>
</table>
Online Table 7: For high last donation amount (mean + 1SD), when credit framing was added to an incremental match mechanism, it increased average contribution upon participation, whereas for low last donation amount (mean - 1SD) there was a decrease an incremental match mechanism and credit framing.

<table>
<thead>
<tr>
<th>DV: Log of Donation Amount (upon Participation)</th>
<th>β</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>4.606</td>
<td>0.513</td>
<td>8.97</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Condition = 1: Δ + Credit framing vs. 1: Δ</td>
<td>-0.850</td>
<td>0.611</td>
<td>-1.39</td>
<td>.179</td>
</tr>
<tr>
<td>Last Donation Amount</td>
<td>-0.002</td>
<td>0.002</td>
<td>-0.82</td>
<td>.422</td>
</tr>
<tr>
<td>Condition x Last Donation Amt.</td>
<td>0.008</td>
<td>0.004</td>
<td>1.93</td>
<td>.067</td>
</tr>
</tbody>
</table>

*Moderation by Median Household Income*

No significant or marginally significant interactions.

*Moderation by Lifetime Transaction Amount*

Online Table 8: For high lifetime transaction amount (mean + 1SD), matching decreased participation, whereas for low lifetime transaction amount (mean - 1SD) matching increased participation.

<table>
<thead>
<tr>
<th>DV: Participation</th>
<th>β</th>
<th>SE</th>
<th>z</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>-3.191</td>
<td>0.2933</td>
<td>-10.88</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Condition = 1:1 vs. Control</td>
<td>0.758</td>
<td>0.3582</td>
<td>2.12</td>
<td>.034</td>
</tr>
<tr>
<td>Lifetime Transaction Amount</td>
<td>0.0001</td>
<td>0.00003</td>
<td>2.77</td>
<td>.006</td>
</tr>
<tr>
<td>Condition x Lifetime Transaction Amt.</td>
<td>-0.0001</td>
<td>0.00003</td>
<td>-2.65</td>
<td>.008</td>
</tr>
</tbody>
</table>

Online Table 9: For high lifetime transaction amount (mean + 1SD), incremental mechanism increased average contribution upon participation, whereas for low lifetime transaction amount (mean - 1SD) incremental mechanism decreased average contribution upon participation.

<table>
<thead>
<tr>
<th>DV: Log of Donation Amount (upon Participation)</th>
<th>β</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>4.614</td>
<td>0.147</td>
<td>31.23</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Incremental mechanism vs. 1:1 (combined)</td>
<td>-0.627</td>
<td>0.229</td>
<td>-2.74</td>
<td>.008</td>
</tr>
<tr>
<td>Lifetime Transaction Amount</td>
<td>0.0001</td>
<td>0.00004</td>
<td>1.27</td>
<td>.210</td>
</tr>
<tr>
<td>Incremental mechanism x Lifetime Transaction Amt.</td>
<td>0.0004</td>
<td>0.0001</td>
<td>3.00</td>
<td>.004</td>
</tr>
</tbody>
</table>

Online Table 10: For high lifetime transaction amount (mean + 1SD), matching decreased average contribution upon participation, whereas for low lifetime transaction amount (mean - 1SD) matching increased average contribution upon participation. The results are similar to that found for participation (Online Table 8).

<table>
<thead>
<tr>
<th>DV: Log of Donation Amount (upon Participation)</th>
<th>β</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>4.252</td>
<td>0.283</td>
<td>15.00</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Condition = 1:1 vs. Control</td>
<td>0.549</td>
<td>0.330</td>
<td>1.66</td>
<td>.105</td>
</tr>
<tr>
<td>Lifetime Transaction Amount</td>
<td>0.0001</td>
<td>0.00003</td>
<td>4.38</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>
Online Table 11: For high lifetime transaction amount (mean + 1SD), incremental mechanism increased average contribution upon participation, whereas for low lifetime transaction amount (mean - 1SD) incremental mechanism decreased average contribution upon participation. The results are similar to that found when incremental (combined) was compared to 1:1 (combined) (Online Table 9).

<table>
<thead>
<tr>
<th>DV: Log of Donation Amount (upon Participation)</th>
<th>β</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>4.801</td>
<td>0.159</td>
<td>30.23</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Condition = 1: Δ vs. 1:1</td>
<td>-0.744</td>
<td>0.245</td>
<td>-3.04</td>
<td>.004</td>
</tr>
<tr>
<td>Lifetime Transaction Amount</td>
<td>0.00003</td>
<td>0.00004</td>
<td>0.82</td>
<td>.420</td>
</tr>
<tr>
<td>Condition x Lifetime Transaction Amt.</td>
<td>0.0003</td>
<td>0.0001</td>
<td>2.13</td>
<td>.039</td>
</tr>
</tbody>
</table>

Online Table 12: For high last donation amount (mean + 1SD), matching decreased net contribution, whereas for low last donation amount (mean - 1SD) matching increased average net contribution. The result is a direct fallout of the results for participation (Online Table 8) and conditional contribution (Online Table 10).

<table>
<thead>
<tr>
<th>DV: Log of Donation Amount (net)</th>
<th>β</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>-6.529</td>
<td>0.176</td>
<td>-37.07</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Condition = 1:1 vs. Control</td>
<td>0.572</td>
<td>0.241</td>
<td>2.38</td>
<td>.018</td>
</tr>
<tr>
<td>Lifetime Transaction Amount</td>
<td>0.0001</td>
<td>0.00003</td>
<td>4.10</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Condition x Lifetime Transaction Amt.</td>
<td>-0.0001</td>
<td>0.00003</td>
<td>-3.99</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Moderation by Lifetime Transaction Count
No significant or marginally significant interactions.