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Do beliefs about peers matter for donation matching? Experiments in the field and laboratory ☆

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ABSTRACT

A popular fundraising tool is donation matching, where every dollar is matched by a third party. But field experiments find that matching doesn't always increase donations. Individuals may believe that peers will exhaust the matching funds, so their donation isn't pivotal. We develop a theory of how beliefs about peers' donations affect one's likelihood of donation. We test our theory using novel "threshold match" treatments in field and laboratory experiments. One "threshold match" treatment more than doubles the donation rate relative to no match. To understand the mechanism behind this increase, we use a lab study to show that beliefs about peers' donations matter. Our theoretical, lab, and field results combined suggest people are more likely to donate when they believe they are more pivotal to securing matching money. Beliefs about others matter, and they should be taken into account when trying to increase donations.

1. Introduction

In 2016 US charitable contributions totaled $390 billion, and giving by individuals grew at a higher rate than giving from foundations and corporations (GivingUSA, 2016). Charitable giving has been about 2% of US GDP since the turn of the century (Karlan et al., 2011). Fundraisers have begun to embrace the use of randomized field experiments to identify the best practices for attracting donors. A popular fundraising institution is to offer matching funds (e.g., an anonymous third party will match each dollar given with an additional dollar up to $10,000). Recent field experiments find that donation matching yields varied success in terms of response rate and donation amounts. Some find that the match improves one or both of these outcomes, while others find no effect or even negative impacts.[1] This paper uses theory coupled with field and lab experiments to explain these inconsistent results. We explore how individuals' beliefs about the actions of others

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[1] See, for example, Chen et al. (2006), Karlan and List (2007), Meier (2007), Rondeau and List (2008), Eckel and Grossman (2008), Huck and Rasul (2011), Karlan et al. (2011), Gneezy et al. (2014), Huck et al. (2015).

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(henceforth, "beliefs about peers") relate to donations. Specifically, we find that people are more likely to donate when they believe they are more pivotal to securing matching money.

It is highly plausible that beliefs about peers would impact the effectiveness of match money. In non-matching contexts, previous evidence suggests that beliefs about others' contributions are correlated with own contributions in the provision of public goods in the lab and field (Croson, 2007; Fischbacher and Gächter, 2010; McBride, 2010; Fehr and Leibbrandt, 2011) and that information about others' donations can affect own donations (Shang and Croson, 2009; Croson and Shang, 2013; Smith et al., 2015). While these papers do not study donation matching explicitly, we believe that their findings lend plausibility to the idea that beliefs about peers may also matter in the donation matching context. Indeed one survey based study finds that receiving matching money increases both the likelihood of donation and non-incentivized self-reported beliefs that peers will donate (Bekkers, 2015).[2] To our knowledge, our study is the first to exogenously attempt to alter beliefs that peers will donate to explore the causal relationship between changes in beliefs and one's own likelihood of donation.

Donation matching introduces a new channel through which beliefs about peers may matter. An individual may care about securing matching money for the charity but may believe that others' donations will exhaust the matching money. In this case, the individual's low probability belief that her donation will secure matching money could make her unlikely to donate. The belief that one's donation may not actually be matched could explain why traditional donation matching has inconsistent effects. This line of thinking suggests that if the match could be structured so as to *increase* the individual's belief she is pivotal to securing matching money, then she would be more likely to give.

Using experiments in the field and laboratory, we empirically investigate the hypothesis that individuals will be more likely to donate as their belief of being pivotal to securing matching money rises. We use a novel donation matching procedure, where individuals are placed in groups of 10 and offered a (flat) matching amount of $50 if a threshold number of donations is received (e.g., if at least 3 people donate, then the charity receives $50 extra). We call this matching procedure the "threshold match."

This threshold match bears similarities to laboratory threshold public goods games. In a threshold public goods game the public good in the form of a monetary payoff to the individual is provided if and only if total contributions (or the number of contributors) reach a certain level. See, for example, Isaac et al. (1989), McBride (2010), Anik et al. (2014). Note that when a threshold public goods game calls for a binary decision (or minimum contributing set; see Van de Kragt et al., 1983; Rapoport and Eshed-Levy, 1989), then obtaining the threshold depends only on the number of subjects who contribute. A special case is the volunteer's dilemma, where a public good is provided if exactly one person volunteers (Diekmann, 1985). The main difference between our threshold match and either a threshold public goods game or a volunteer's dilemma is that when the threshold number of individuals is obtained a bonus is paid directly to the charity rather than directly to the subjects in the experiment. This difference in the receiving parties may cause contribution motivations, reactions to the imposed threshold, and outcomes to differ.[3] Interestingly, laboratory threshold public goods games that call for a discrete number of contributors find that as subjects report a higher likelihood of being pivotal to reaching the threshold, they are also more likely to make a contribution (Offerman et al., 1996; Chen et al., 1996; McBride, 2010). Here we ask whether this insight can be leveraged to increase donations to a charity.

In both the field and laboratory we induce variation in individuals' beliefs of being pivotal by varying the threshold required to secure the matching money.[4] In our field experiment, we conduct a direct mail campaign targeted toward alumni of a non-profit educational program. We use a between-subjects design. We compare the performance of the threshold match treatments, with thresholds of 1, 2, and 3 donors, to a control and a traditional dollar-for-dollar match resembling Rondeau and List (2008). Relative to control, we find an economically substantial and statistically significant effect of the "3 out of 10" threshold match treatment along the extensive margin. Specifically, the donation rate (3.7%) is more than twice that of the control (1.6%). A model that incorporates beliefs about peers has explanatory power.

To better trace out the beliefs mechanism, we conduct a within-subjects laboratory experiment. Our laboratory experiment replicates the incentives of the field experiment while also eliciting individuals' beliefs about peers. We view our field experiment as identifying a treatment effect of practical interest, and our laboratory experiment as testing the mechanism

[2] In Bekkers (2015), Dutch individuals are paid for completing a survey, then asked if they would like to donate from that payment, and asked a non-incentivized question about how much they think others will donate. Bekkers (2015) randomly assigns survey respondents to non-matching or matching conditions, among other treatments. Embedding his study within a nationally representative survey is a clever way to measure beliefs in the field, where it would usually be very odd to ask subjects their beliefs about peers. However, in his setting it is still difficult to disentangle the effect of beliefs about peers from other factors that may be driving contribution behavior. For example, it is plausible that a matching commitment serves as a signal that enhances the credibility of the charity to individuals (Vesterlund, 2003), which could increase both donation rates and beliefs about peer donations. In this case, the matching treatment would potentially confound the role of individuals' beliefs about peers with the role of signaling.

[3] As just one example, in our lab experiment, a charity that serves low income adolescents is the beneficiary of contributions, rather than fellow college students serving as experimental subjects. One way this may affect our results is through an increase in contributions across all our treatments, as Charness and Holder (forthcoming) find that subjects contribute more to the United Way, where recipients are likely to be more needy, than to a UC Santa Barbara charity that benefits college students, although the differences are not statistically significant.

[4] Previous work in the laboratory and field has found that as the threshold rises there is first an increase and then a decrease in the likelihood and amount of contributions (Isaac et al., 1989; Anik et al., 2014). This observed behavior is consistent with the beliefs mechanism we implicitly test in the field and explicitly test in the lab. For example, a person may believe she is not pivotal at extremely low or high thresholds because at low thresholds others will surely donate enough, and at high thresholds the goal is extremely unlikely to be met. Indeed, we find in the lab that individuals' elicited beliefs of being pivotal vary by the level of the threshold.