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Warm glow, information, and inefficient charitable giving☆

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ABSTRACT

More than 200 donors participated in a framed field experiment which consisted of a series of decisions about how to divide a gift between a set of similar charities. Most subjects simultaneously gave to multiple charities with similar missions even when the social benefit of gifts to different charities were not equal, as proxied by the matching rates applied to subjects' gifts. Taking each subject's preferences over the set of charities as given, these choices resulted in substantial inefficiencies: subjects forfeited social surplus (matching funds) equal to 25% of the value of their gifts. Suggestive evidence indicates that warm glow utility derived from the act of making a gift, which can lead to a love of variety even among similar charities, and risk aversion over the social value of charitable gifts are both important factors motivating donors who make socially inefficient gifts. Additionally, few subjects were willing to pay for information that could have enabled them to increase the social benefit of their gifts, although many of these subjects also forfeited potential personal gains in an investment decision, casting some doubt on this interpretation. The possibility that the personal value of information might not be equal to the social value might help explain why there are so few rigorous evaluations of aid programs: such evaluations are costly to charities and might not be valued by donors.

1. Introduction

Charitable giving in the U.S. is big business. In 2008, Americans are estimated to have made donations totaling $307 billion, or 2% of GDP (Giving USA Foundation, 2009). However, while the total sum of money being donated is quite large, it is divided across myriad charities in a very disaggregated way by many individual donors. Over 65% of households are estimated to have given to charity in 2008 (Giving USA Foundation, 2009) and a recent random sample of Americans shows that most gifts are relatively small, with two-thirds of the reported gifts less than $100 and a median gift of $50 (The Center on Philanthropy at Indiana University, 2007). There are over 500,000 public charities in the U.S. registered with the IRS, and over 60% of these are small operations with less than $100,000 in annual revenue (National Center for Charitable Statisics at The Urban Institute, 2009). With so many donors and charities and no social planner or market mechanism to solve coordination problems, the potential for inefficient allocations is a serious concern.

Nonetheless, we know relatively little about *how* donors choose which charities to support. We can infer that any donor who simultaneously gives to more than one charity does so because her expected marginal utility from each charity is equal. In the next section I argue that there are two aspects of the donation allocation decision that could lead to equal marginal utilities, even between charities that produce the same public good and thus might otherwise be substitutes. First, a donor might be motivated by something other than the output her gift to a charity produces, deriving private "warm glow" utility directly from the act of making the gift (Andreoni, 1990). Second, charitable contributions can be thought of as credence goods since the donor never knows the true value of her gift in terms of what the charity produced (Darby and Karni, 1973). As in the standard investment decision framework, donors who are risk averse over the social value of contributions might choose a portfolio of charitable giving that has a lower expected productivity in exchange for a reduction in the variance of charitable output.

In observational data it would be impossible to determine if a donor gives to multiple charities because doing so maximizes her warm glow utility or because she is diversifying her charitable portfolio as a result of risk aversion, or because of some combination of the two factors. Similarly, it would be difficult to precisely quantify charities' productivities. To overcome both of these identification challenges, I designed and conducted a framed field experiment which allows me to take each donor's preferences over a set of charities as given, based on her initial allocations.[1] Then, by changing

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[1] According to the taxonomy of experiments proposed by Harrison and List (2004) a framed field experiment imposes a set of rules but makes use of field context and a nonstandard subject pool.

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the matching rates received by the charities, a proxy for the social benefit of donations, and inducing risk over whether or not the matching funds would be received by the charity, I can identify whether donors are solely motivated by the social benefit of their gifts or whether other considerations such as warm glow and risk aversion lead to inefficient allocations. I focus on forgone matching funds as a quantifiable measure of inefficiency in the experiment: if a donor initially gives to two charities when they have the same matching rate, and then continues to give to both of them in a later scenario even if one of them now receives a much higher matching rate than the other, the magnitude of the inefficiency is defined as the difference in the matching rates times the size of the gift to the charity with the lower rate (the forgone matching funds).

In this modified dictator game, subjects were first asked to divide a gift between a charity they currently supported and a set of three charities which have similar mission statements (CARE, Mercy Corp, and/or Oxfam America). In the second stage of the budgeting process, when they were asked to allocate their gift between the three charities which are arguably substitutes, 70% of the subjects gave money to more than one charity. When one of the charities that a subject supported became exogenously more productive (in the sense that it had a higher matching rate), very few subjects perfectly substituted into that charity, giving it their entire gift. Rather, the majority of subjects weakly substituted, moving a larger share of their total giving into a higher-valued charity but continuing to allocate at least some of their total giving to the now lesser-valued charities. In the process, subjects who did not perfectly substitute contributed to major inefficiencies in the allocation of gifts across charities (taking initial preferences as given), forfeiting matching funds equal to 25% of total un-matched giving. Weak substitution could be consistent with either risk aversion or warm glow, and although the experimental design did not conclusively separate these two motivations, decisions that involve risk over matching rates suggest that both likely play a role in donors' decisions.

An alternate test of how much subjects cared about the social benefit of their gifts indicates that relatively few subjects were willing to pay for information about matching rates that could have enabled them to increase the value of their gifts. When they were told the distribution of matching rates but not how the rates would be assigned to charities, only 40% of subjects were willing to give up a small portion of their endowments in order to find out which charity would receive the highest rate; the rest preferred to allocate their gifts without knowing what they would be worth to the charities. While many of these subjects also chose not to purchase personally profitable information in an investment scenario, casting some doubt on the results about the value of information to donors, this should nonetheless be concerning for those who argue that rigorous evaluations of aid projects are too rare (Duflo, 2004; Savedoff and Levine, 2006). The possibility that donors might place so little value on information about the relative social benefits of different programs could help explain why so few charities are willing to undertake costly evaluations of their projects.

This paper bridges the broad research fields of charitable giving and generosity in experimental dictator games, extending the existing literature by exploring the importance of risk aversion and a more general form of warm glow as factors that influence donors' decisions of which charities to support.[2] In that regard, this research complements two recent publications that also used dictator games in framed field experiments with unconventional recipients (welfare beneficiaries and diabetic smokers) in order to study dictators' sensitivity to how their gifts would be spent, though neither of these papers tested as rigorously for motivations as I do (Fong, 2007; Jacobsson et al., 2007). Several authors have investigated substitution in charitable giving, but this work has been more frequently concerned with crowding out of private donations by public contributions (Andreoni, 1989; Ribar and Wilhelm, 2002; Andreoni and Payne, 2008) rather than with a single donor's choice between gifts to multiple charities. Reinstein (2006) and (2007) are the only other studies, aside from this one, to consider one individual's substitution patterns between charities, but neither of these papers is able to assess the magnitude of inefficiencies or the likely cause of imperfect substitution as my experiment allows me to do. The experimental nature of my data allows me to probe reasons *why* donors do or do not substitute between charities, and the fact that all of the experimental subjects are donors outside the laboratory strengthens the relevance of their experimental choices.

In the next section, I explain a simple theoretical framework for understanding how donors with different types of preferences will allocate their gifts in the experiment, which is described in Section 3. In Section 4, I present the empirical results. Section 5 discusses limitations of the experimental design and alternative interpretations of the results and Section 6 concludes.

2. Theoretical framework

The basic goal of this study is to characterize donors' preferences over charities which could be considered substitutes in that they produce the same thing. These charities use the donations they receive in order to produce the same public good Y which is an argument of the donor's utility function.[3] Ultimately, a donor chooses the bundle of consumption goods and charitable donations that maximizes her utility, but here I abstract away from the question of private consumption versus charity and focus on only the allocation of donations across charities, as in the second step of a two-stage budgeting process, in keeping with the experimental setup.

Specifically, let $Y=f(g_i+G_{-i})$ where g_i denotes donor i's gift, and gifts from all others are summed as the quantity, G_{-i}. These gifts are then converted into the public good according to the production function $f(\cdot)$. Following Andreoni (1990) we can define a pure altruist as a donor i whose utility function over private consumption c_i and the public good Y is $u(c_i, Y)$, whereas a purely warm glow donor's utility function is $u(c_i, g_i)$ such that the donor cares only about her gift to the charity g_i and not at all about the public good.[4] Warm glow implies that someone else's donation is not a perfect substitute for one's own donation and helps explain the fact that private contributions to public goods are not perfectly crowded out by public contributions, as would be the case if all donors were purely altruistic.[5]

[2] Camerer (2003) provides an overview of dictator games such as those used in laboratory tests of altruism and social preferences by Andreoni and Miller (2002), Charness and Rabin (2002), and Fisman et al. (2007). Eckel and Grossman (2003) find that subjects in dictator games are more generous to charities when contributions are matched rather than subsidized, with important implications for income tax policy. Karlan and List (2007) and Meier (2007) provide evidence from field experiments that donors are responsive to the "price" of their gifts in terms of matching rates. Other field experiments have compared various fundraising mechanisms such as lotteries, challenge grants, and matching grants (Landry et al., 2006; List and Lucking-Reiley, 2002; Rondeau and List, 2008).

[3] For example, CARE, Mercy Corps, and Oxfam America (the charities used in the experiment) all have very similar mission statements and could be considered to "produce" poverty alleviation, which is a public good for everyone who cares about the welfare of the world's poor (i.e. whenever *anyone* makes a gift to one of these charities, *everyone* who cares about the welfare of the poor is better off).

[4] Duncan (2004) proposes an alternative model of "impact philanthropy" in which donors derive utility from personally increasing the level of public good production, drawing on both the altruistic and warm glow theories. As such, impact philanthropy is based on beliefs about others' gifts and the initial endowment of the public good, neither of which are meaningfully different across the various experimental scenarios used to classify preference types in this paper. For this reason, impact philanthropy does not offer useful predictions for choices in the experiment.

[5] In perhaps the most direct possible test, Crumpler and Grossman (2008) designed an experiment in which subjects' contributions to charities perfectly crowded out contributions made by the experimenters. Nonetheless, over half of the experimental subjects chose to contribute from their own experimental payouts, even though they could not increase the net amount the charities received from the experiment. Previously, in another laboratory study, Andreoni (1993) found that private contributions to a public good were not perfectly crowded out by taxes.