Testing for Altruism and Social Pressure in Charitable Giving*

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Abstract

Every year, 90 percent of Americans give money or time to charities. Is such generosity necessarily welfare enhancing? We present a theoretical framework that pinpoints two types of motivation: individuals like to give, e.g., due to altruism or warm glow, or individuals would rather not give but dislike saying no, e.g., due to social pressure. To distinguish the two types of motivation, we design a door-to-door fund-raising drive in which we vary the ability of households to seek or avoid a solicitor. Some households are informed about the exact time of solicitation with a flyer on the door-knob; thus, they can seek the fund-raiser if giving is welfare-enhancing, and avoid it if giving is welfare-decreasing. We find that the flyer reduces the share of households opening the door by 10 to 25 percent, suggesting that the average household seeks to avoid fund-raisers. Moreover, if the flyer allows checking a box for 'Do Not Disturb' giving is 30 percent lower. The latter decrease is concentrated among donations smaller than $10. These findings suggest that both types of motivation affect charitable giving, with more evidence supporting the social pressure explanation. Combining reduced form insights from these treatments with data gathered from a complementary field experiment, we are able to structurally estimate altruism and social pressure parameters.

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1 Introduction

Jane the solicitor is making her yearly neighborhood rounds to raise money for the local Chapter of the Red Cross. She approaches Mr. Dowd's house and is met at the door with a smile and nod. After the usual precursors, Jane inquires into whether Mr. Dowd would like to make a donation to the Red Cross. Jane notes that all proceeds will be earmarked for disaster relief in South Africa, where atrocities affect the lives of millions of children daily. Mr Dowd, being a kind and caring gentleman, donates $20 to the cause. Jane thanks Mr. Dowd, provides a receipt, and is on her way.

Such transactions occur daily in the fund-raising world. In the US alone, roughly 90% of adults give money to at least one cause annually, many of which involve situations similar to the interaction between Jane and Mr. Dowd. Yet, we still know little about the motivations for such giving. Mr. Dowd may enjoy giving, either because he cares about this specific worthy cause or because he likes the warm glow of giving. A competing view is that Mr. Dowd does not like to give and that his gift is mostly due to the actions of Jane who effectively placed him under social pressure to give.

The two views have very different welfare implications. The altruism (or warm glow) model (Fehr and Gaechter, 2000; Andreoni, 1989 and 1990) posits that giving is mostly supply-driven, ant that it is utility-maximizing for Mr. Dowd to give. Under this model, the above transaction increases Mr. Dowd's utility and represents an overall enhancement of societal welfare. The social pressure model (Akerlof and Kranton, 2000) posits that giving is mostly demand-driven, and that giving may be utility-reducing for Mr. Dowd. He would have rather remained on the couch watching the Red Sox had he known who would greet him at the door.

While prior research on charitable giving has provided evidence that individual giving is prevalent in the marketplace (Andreoni, 2006; List and Lucking-Reiley, 2002), it has been less helpful in distinguishing the nature of giving. This study provides a theoretical framework and an empirical test for parsing these two forms of giving. The test combines household level survey data with a series of field treatments in an actual marketplace for charitable giving. The experimental treatments are used to derive structural estimates of the underlying parameters based on the theoretical model. In this way, the empirics and theory are intertwined in a manner that is rare in this literature.

Our field experiment revolves around a door-to-door fund-raising drive for two charities, a local children's hospital, which has a reputation as being a premier hospital for children, and an out-of-state charity, that most solicitees know little about. We approached 7,669 households in the towns surrounding Chicago in the period between April and October 2008. We designed the fundraising drive to permit estimation of the key parameters of our theory, while maintaining the naturalness of the solicitations.

The crucial aspect of our experimental design is to allow individuals to sort, i.e., to either

seek or avoid the solicitor. In our first treatment, 'Fund-Raising with Flyer,' a flyer on the doorknob notifies households one day in advance about the one-hour time interval in which a fund-raiser will arrive at their home.[1] In the second treatment, 'Fund-Raising with Opt-Out,' the flyer also includes a box that can be checked if the household does 'not want to be disturbed'. We compare these two condition to a baseline treatment, 'Fund-Raising with No Flyer,' wherein our solicitors approached households in the usual manner. We estimate the impact of the treatments on both the share of households that answer the door and on the share of households that give.

This design allows for a simple test of the importance of (pure or impure) altruism and of social pressure. If altruism is the main driver of giving, the flyer should increase both the presence at home and the share of households giving. Since giving is utility-enhancing, households should sort into staying at home (as long as alternative ways of giving to these charities require more effort). In addition, households who intend to give in response to the flyer but who find it too costly to be at home should give to the charity via other means. Conversely, if social pressure is the main driver of giving, the flyer should lower both the presence at home and the share of givers. Since being asked to give is welfare-diminishing, households should sort out of the home to avoid the encounter with the solicitor. In addition, the households that are not at home during the visit of the solicitor will not give via other means, since these forms of donation are not subject to social pressure.

We report several results. First, the flyer treatments lower the presence at home substantially: relative to a baseline rate of 40 percentage points in the baseline treatment, the share of households opening the door is 10 percent lower in the Flyer condition and 25 percent lower in the Opt-Out condition. The effect is similar for both charities.

Second, in terms of actual giving, the mere presence of a flyer on the door-knob has no effect: 6.3 percent of all households give in both the baseline and the Flyer treatment. Giving is 30 percent lower in the Opt-Out treatment, however, a significant decrease relative to the baseline group. While the level of giving is higher for the local charity in all conditions, the mean treatment impact is similar for the two causes.

Third, this decrease in giving in the Opt-Out treatment reflects a decrease in donations of up to $10 (the median amount given). Donations above $10, instead, increase slightly (not significantly) in the treatments with sorting relative to the baseline treatment.

Fourth, we observe the donations via mail or Internet from the households contacted in the flyer treatments for the out-of-state charity. While 50 out of 1,761 households contacted give money in person, no household in the sample gives through these other means.

Fifth, the timing of the fund-raising drive provides additional insights into the motivation for giving. While most of the fund-raising took place between April and August 2008, some

[1] For a small number of observations, the flyer does not indicate the exact time, but only that there will be a visit in the next two weeks. Excluding these observations does not affect the results.

took place during the financial crisis in September and October 2008. We compare the level of giving and the effect of the treatments in the period before and after the crisis. While this comparison does not rely on experimental variation and is subject to alternative interpretations, it provides suggestive evidence on the impact of the crisis. We find that the crisis substantially lowers the level of giving in the Baseline group from 6.8 to 2.7 percent of the households. In addition, while the estimates are noisy, we find some evidence that in the crisis period the Flyer treatment increases giving (though not significantly so), rather than decreasing it.

Overall, our reduced form estimates indicate that both altruism and social pressure are important determinants of giving in this setting, with stronger evidence supporting the role of social pressure. The findings on opening the door indicate that households are on average trying to avoid the solicitors, consistent with social pressure. The lack of an effect on giving in the Flyer treatment is consistent with opposing effects due to altruism and social pressure approximately cancelling each other out. The decrease in giving associated with the Opt-Out condition further supports the role of social pressure: when the costs to avoid the solicitor is lowered (a simple check on a box suffices), the giving due to social pressure decreases. This latter finding is reinforced by the fact that the impact occurs almost exclusively for smaller donations, which are more likely due to social pressure than large donations. The social pressure interpretation is also consistent with the lack of donations via mail or Internet. Finally, the financial crisis appears to have lowered the social pressure cost of not giving.

To go beyond estimating reduced form substitution effects, we use a structural approach to estimate quantitatively the magnitudes of the social pressure cost and of the extent of altruism. To do so, we must combine the observed impact of the primary experimental treatments discussed above with data gathered from a complementary field experiment on the value of time. In these complementary treatments, in the spirit of the main treatments we use warning and non-warning treatments that vary the compensation ($10 or $0) and the duration (5 minutes or 10 minutes) of the survey. This approach allows us to identify the elasticity of presence at home and survey completion with respect to a monetary incentive. We find that the increased payment and shorter duration increase (not significantly) the presence at home by 10 to 15 percent. These same treatments increase (significantly) the share willing to undertake the survey by 80 to 90 percent. Preliminary estimates point to a significant amount of social pressure, with social pressure costs associated with turning down a donation of around $4. The model also provides evidence of substantial heterogeneity in altruism: the mean individual is not altruistic, but there is a tail of individuals that show substantial altruism.

Beyond its methodological contribution, we view our paper as contributing to several literatures. First, our results have implications for the optimal taxation regime of charitable giving. The tax advantaged status of charitable giving has its roots in the assumption that giving increases societal welfare including, presumably, the welfare of the giver. This assumption is largely untested. Our results provide evidence that, in addition to welfare-increasing

motives for giving, welfare-decreasing motives pay an important role in door-to-door giving. This suggests that tax subsidies may be designed to provide a separate consideration for high social-pressure forms of giving, such as door-to-door and phone giving.

Second, it provides field evidence of behaviors that have been found to be important in laboratory experiments (Charness and Rabin 2002, Fehr and Gachter, 2000, Dana, Weber, and Kuang, 2007; Lazear, Malmendier, and Weber, 2006). Third, it complements the literature that explores optimal fund-raising approaches using field experiments (e.g., List and Lucking-Reiley, 2002; Croson and Shang, 2006; Landry et al., 2006; Ariely, Bracha, and Meier, forthcoming). Relative to this literature, our paper is characterized by a tighter link between the model and the experimental design that allows for structural estimation of the behavioral parameters. In this sense, a tighter test of models in field experiments will help bridge the gap between the theoretical and the empirical literature. Finally, it relates to a theoretical literature on the reasons for giving (see, e.g., Andreoni, 2004). Likewise, it builds on a literature in psychology (going back to Asch , 1951 and Milgram, 1963) and in economics (Garicano, Palacios-Huerta, and Prendergast, 2005; Falk and Ichino, 2006; Mas and Moretti, forthcoming) on the effect of social pressure.

The rest of the paper proceeds as follows. In Section 2 we present a simple model of giving with altruism and social pressure. We introduce the experimental design in Section 3 and discuss the reduced-form results of the treatments in Section 4. In Section 5, we structurally estimate the underlying parameters of the model, and in Section 6 we conclude.

2 Model

We model the decision to give to a charity when a solicitor visits a home and asks for a donation. We distinguish the case in which the visit is anticipated (a flyer provides information about the visit) and the case in which the visit is unanticipated (no flyer). In the first, but not in the latter case, the giver can affect the probability of being at home at a cost. This captures costly sorting to avoid, or seek, the fund-raiser. We also consider the case where the flyer provides a do-not-disturb option, which allows the agent to avoid the fund-raiser at no cost. In addition to in-person giving, we allow for giving via mail. We present first a general set-up, and then make parametric assumptions, which we use to estimate the model.

Setup. We consider a two-stage game with two players, a giver and a fund-raiser. In the first stage, the giver receives (or does not receive) a notice of an upcoming visit of the fund-raiser. The giver observes the notice with probability r, with $0 < r \leq 1$. If the giver does not observe the notice (or does not receive one), she is at home with probability h_0. If she observes the notice, she chooses the probability h of being at home in the second stage, with $0 \leq h \leq 1$. If the gives adjusts the probability of being at home from the baseline h_0, she incurs a cost $c(h)$, which satisfies $c(h_0) = 0$, $c'(h_0) = 0$, and $c''(\cdot) > 0$: there is no cost of

being at home with the baseline probability h_0, and the marginal cost of small adjustments is small. Larger changes in probability have an increasingly larger cost. Notice that we do not assume symmetry around h_0 and that we allow for corner solutions at $h = 0$ or $h = 1$.

In the second stage, the fund-raiser visits the home. With probability h, the giver is present and donates an amount $g \geq 0$. With probability $1 - h$, she is absent, in which case there is no in-person donation ($g = 0$). We allow the giver to contribute an amount g_m to the charity via other channels, such as mail or Internet. The giver decides on this 'mail' donation if she hears about the charity, that is, if she is at home when the fund-raiser visits, or if she sees the flyer.

We assume that the giver has utility

$$U(g) = u(W - g - g_m) + av(g, G_{-i}) + a\theta v(g_m, G_{-i}) - s(g). \tag{1}$$

The agent cares about private consumption, which is W (the pre-giving wealth) minus the giving g, as well as about giving to the charity. The private utility satisfies standard monotonicity and concavity properties: $u'(\cdot) > 0$ and $u''(\cdot) \leq 0$. The utility of giving in person to the charity v can depend on the giving of others to the charity G_{-i} and satisfies similar assumptions: $v'_g(\cdot,\cdot) > 0$, $v''_{g,g}(\cdot,\cdot) < 0$, and $\lim_{g\to\infty} v'(g,\cdot) = 0$. We assume $v(\cdot) \geq 0$, that is, the utility of giving is non-negative, and normalize the utility of no giving to zero: $v(0, G_{-i}) = 0$. The utility of giving via mail is a scaled-down version of the utility of giving in person, $\theta v(g_m, G_{-i})$, with $0 \leq \theta < 1$. The assumption $\theta < 1$ captures the costs to giving via mail, such as finding an envelope and stamp,.as well as the possibility that giving through an impersonal mean (such as mail) yields lower utility.[2]

Expression (1) allows for both the case of pure altruism (Charness and Rabin 2002, Fehr and Gächter, 2000) and impure altruism (warm glow, Andreoni, 2004). In the case of pure altruism, the agent cares about the total contributions to the charity $G_{-i} + g$, which are used to provide a public good through a production function $v(G_{-i} + g)$. This yields utility $av(G_{-i} + g)$, where the parameter a captures the level of altruism and can be negative if the giver values the charity negatively. In the case of impure altruism, the agent cares about giving g because of a warm glow associated with the act of giving, implying that the utility $v(\cdot)$ does not necessarily depend on the giving of others G_{-i}. In this case, the parameter a captures the intensity of the warm glow. Since our design does not separate pure from impure altruism but rather altruism from social pressure, we use a specification that encompasses both forms of altruism.[3]

The final element in the utility function is social pressure. We assume that the giver pays a utility cost $s(g) = S(g^s - g) \cdot \mathbf{1}_{g<g^s} \geq 0$ if she gives g while the fund-raiser is present. The cost is highest for the case of no donation ($s(g) = Sg^s$), then decreases linearly with the donation g, and is zero for donations of g^s of higher. This captures the idea that the agent pays a

[2]The key results generalize if we allow for a fixed cost of giving by mail, compared to giving in person.

[3]The parameter a can also capture the belief of the donor about the quality of the charity.

social pressure cost not only for not giving, but also for giving very small amounts. If the giver is away from home during the fund-raising visit, she does not incur a social pressure cost, whether or not she donates via mail. This assumption captures a class of models that we broadly label 'social pressure': individuals dislike to be seen as not giving, whether because of identity (Akerlof and Kranton, 2000), social norms, or self-signalling (Bodner and Prelec, 2002; Grossman, 2007). Notice that the standard model is a special case of this model for $S = 0$ (no social pressure) and $a = 0$ (no altruism or warm glow). We further assume that the giver is aware of her own preferences and rationally anticipates her response to social pressure.

Giving In Person. We solve the model working backward from the second stage. In the second stage, conditional on being at home, the giver chooses the in-person giving g to maximize (1). Notice that, conditional on being at home, the giver always prefers an in-person donation g to a mail donation g_m, given that mail donations give lower utility than an equivalent in-person donation ($\theta < 1$), and given the social pressure to give in person.

We characterize the solution g^* as a function of the parameters a and S (Figure 1). It is useful to define the altruism thresholds $\underline{\underline{a}} \equiv (u'(W) - S)/v'(0, G_{-i})$, $\underline{a} \equiv (u'(W - g^s) - S)/v'(g^s, G_{-i})$ and $\bar{a} \equiv u'(W - g^s)/v'(g^s, G_{-i})$. Notice that $\underline{\underline{a}} < \underline{a} \leq \bar{a}$ and $\underline{a} = \bar{a}$ for $S = 0$.

Lemma 1a (Conditional Giving In Person). *For any type a, there is a unique optimal donation $g^*(a, S)$ (conditional on being at home), which is weakly increasing in a and takes the form: (i) $g^*(a, S) = 0$ for $a \leq \underline{\underline{a}}$; (ii) $0 < g^*(a, S) < g^s$ for $\underline{\underline{a}} < a < \underline{a}$; (iii) $g^*(a, S) = g^s$ for $\underline{a} \leq a \leq \bar{a}$; (iv) $g^*(a, S) > g^s$ for $a > \bar{a}$.*

Proof. See Appendix A.

Lemma 1a, illustrated by Figure 1, characterizes the patterns of giving. Giving is an increasing function of the altruism (or warm glow) parameter a, as expected. When the altruism parameter is sufficiently low (case (i)), the individual does not give at all to the charity. For a higher level of altruism (case (ii)), the individual gives a positive amount, albeit less than g^s. The level of altruism that will induce the individual to give a positive amount is a function of the social pressure S, as Figure 1 illustrates. In the absence of social pressure, the individual starts giving a positive amount only for a positive level of altruism, that is, $\underline{\underline{a}} > 0$. If social pressure S is high enough, however, the individual gives to the charity even for a negative altruism a: in this case, giving is entirely due to the desire to avoid the social pressure cost. In the presence of social pressure, there is also bunching of giving at $g^* = g^s$ (case (iii)), since this is the lowest level of giving associated with no social pressure cost. Finally, for large enough a (case (iv)), the donor gives more than g^s. Lemma 1a implies that any giving above g^s is surely due to (pure or impure) altruism, while donations smaller than g^s may be due to altruism or social pressure.

Giving Via Mail. In the second stage, conditional on not being at home, the giver decides to give via mail g_m. This decision takes place only if the gives was informed about the fund-

raising campaign via a flyer. The decision to give via mail is simpler than the decision to give in person because no social pressure is involved: the only reason to give via mail is altruism or warm glow. Define $a_m = u'(W)/\theta v_g'(0; G_{-i})$.

Lemma 1b (Conditional Giving Via Mail). *For any type a, there is a unique optimal donation via mail $g_m^*(a)$ (conditional on not being at home), which is weakly increasing in a and takes the form: (i) $g_m^*(a) = 0$ for $a < a_m$; (ii) $g_m^*(a) > 0$ for $a \geq a_m$; (iii) for all levels of a, $g_m^*(a) \leq g^*(a; S)$.*

Proof. See Appendix A.

The giving via mail is increasing in the level of altruism a: for low levels of altruism, there is no giving, and giving is increasing in altruism for high enough levels of altruism a. Notice that the threshold that determines whether the individual gives by mail, a_m, does not depend on the social pressure cost S.

Being at Home. Turning to the first stage, we distinguish between the cases in which the visit is anticipated and in which it is not. It is not anticipated in the No-Flyer treatment and in the Flyer treatment with probability $1-r$. In this case, the giver cannot affect h and opens the door with probability h_0. If the visit is anticipated, instead, the agent optimally chooses h given her utility from being at home, $u(W - g^*) + av(g^*, G_{-i}) - s(g^*)$, and her utility from not being at home, $u(W - g_m^*) + a\theta v(g_m^*, G_{-i})$:

$$\max_{h \in [0,1]} h\left[u(W - g^*) + av(g^*, G_{-i}) - s(g^*)\right] + (1-h)\left[u(W - g_m^*) + a\theta v(g_m, G_{-i})\right] - c(h).$$

Lemma 2 characterizes features of the solution for h^* as a function of the parameters a and S.

Lemma 2 (Presence at Home). *For any type a, there is a unique optimal probability of being at home $h^*(a, S)$ that is non-decreasing in a. For $S = 0$ (no social pressure), $h^*(a, 0) = h_0$ for $a \leq \underline{\underline{a}}$ and $h^*(a, 0) > h_0$ for $a > \underline{\underline{a}}$. For $S > 0$ (social pressure), there is a unique $a_0(S) \in (\underline{\underline{a}}, \bar{a})$ such that $h^*(a, S) \leq h_0$ for $a \leq a_0$ and $h^*(a, S) > h_0$ for $a > a_0$. Moreover, the threshold $a_0(S)$ is (weakly) increasing in S.*

Proof. See Appendix A.

Lemma 2 establishes that the optimal probability of being at home $h^*(a, S)$ is (weakly) increasing in altruism: the more the giver cares about the charity (or about the warm glow), the more likely she is to be at home. The exact pattern of the probability of being at home, however, differs depending on the degree of social pressure (Figure 1). In the case of no social pressure ($S = 0$), there are only two possibilities. One, the agent is sufficiently altruistic, $a > \underline{\underline{a}}$, that she plans to give if at home, $g > 0$. In this case, she actively seeks to be at home given that the utility of giving while at home is higher than the utility of giving via mail (recall the assumption $\theta < 1$). The probability of begin at home is increasing in the altruism parameter a up to the corner solution $h = 1$. Two, the agent is less altruistic, $a \leq \underline{\underline{a}}$ and does not plan

to give either at home or via mail. In this other case, she is indifferent as to being at home or not given that she does not plan to donate in either case. Hence, she does not alter her probability of being at home from the baseline h_0. In neither case the agent seeks to avoid the fund-raiser.

In the case of social pressure ($S > 0$), this is no longer true. An agent with sufficiently low altruism ($a \leq \underline{\underline{a}}$), who does not plan to give, avoids the fund-raiser because she would pay a social pressure cost if she did not give when asked. For somewhat larger altruism, an agent gives a small amount but still prefers to avoid the fund-raiser because the giving is motivated by social pressure rather than by a genuine desire to give (notice $a_0 > \underline{\underline{a}}$). Only an agent with a sufficiently large level of altruism ($a > a_0$) seeks the encounter with the fund-raiser since she gives out of genuine concern.

Opt-Out. So far we have assumed that it is costly for the agent to reduce the probability of being at home. We now consider the possibility that the agent can costlessly reduce the probability of being at home to zero. This is motivated by the Opt-Out treatment in which the subjects receive a flyer with a do-not-disturb check box.[4]

The presence of an Opt-Out option does not affect the giving decisions $g^*(a)$ (conditional on being at home) and $g_m^*(a)$ (conditional on not being at home) characterized in Lemmas 1a and 1b. It affects, however, the probability of being at home $h^*(a)$, as characterized in Lemma 3. The next Lemma refers to $a_0(S)$ defined in Lemma 2. (We break ties by assuming that if the agent is indifferent between $h = h_0$ and $h = 0$, the agent will choose not to opt out, that is, $h = h_0$.)

Lemma 3 (Opt-Out Decision). *For $S = 0$ (no social pressure), the agent never opts out for any a. For $S > 0$ (social pressure), the agent opts out for sufficiently low altruism, $a < a_0(S)$.*

Proof. See Appendix A.

In the absence of social pressure, the agent has no reason to opt out and the solution for $h^*(a)$ is the same as without opt-out option. In the presence of social pressure, however, opting out allows the agent to avoid all cases in which the encounter with the fund-raiser lowers utility. Hence, the agent opts out for any level of altruism lower than $a_0(S)$. For higher altruism levels, giving is determined by altruism and not by social pressure—hence, the agent does not opt out, and the solution is as in Lemma 2.

Testable Predictions. To complete the solution of the model, we assume that the population of agents is heterogeneous with respect to the altruism (or warm-glow) parameter a, which we assume distributed with c.d.f. F. In deriving predictions of the model, we consider two

[4] While this option does not allow any reduction of h below h_0, but only to $h = 0$, in our setting, this is not a restriction because any agent that prefers to lower h below h_0 (at a positive cost) will strictly prefer to lower h to 0 at no cost.

special cases: (i) *Altruism and No Social Pressure* ($F(\underline{\underline{a}}) < 1$ and $S = 0$); (ii) *Social Pressure and Limited Altruism* ($S > 0$ and $F(\underline{\underline{a}}) = 1$). The first case corresponds to the standard model with no social pressure, but with a positive share of altruistic individuals (that is, individuals with $a > \underline{\underline{a}}$). The second case allows for social pressure, but assumes a zero-probability mass of altruistic individuals (that is, individuals with $a > \underline{\underline{a}}$). We compare the predictions for the three treatments of No Flyer (NF), Flyer (F), and Opt-Out (OO).

We consider first the probability of being at home $P(H)$.

Proposition 1. *The probability $P(H)$ that the giver is at home in the No-Flyer (NF), Flyer (F), and Opt-Out (OO) treatments is*

$$\begin{aligned} P(H)_{NF} =& h_0, \\ P(H)_F =& (1-r)h_0 + r\int_{-\infty}^{\infty} h^*(a,S)dF, \\ P(H)_{OO} =& (1-r)h_0 + r\int_{a_{OO}}^{\infty} h^*(a,S)dF, \end{aligned}$$

where $a_{OO} = -\infty$ for $S = 0$ and $a_{OO} = a_0$ for $S > 0$. With Altruism and No Social Pressure ($F\left(\underline{\underline{a}}\right) < 1$ and $S = 0$), the probability $P(H)$ is higher with flyer than without: $P(H)_F = P(H)_{OO} > P(H)_{NF}$. With Social Pressure and Limited Altruism ($S > 0$ and $F\left(\underline{\underline{a}}\right) = 1$), the probability $P(H)$ is lower with flyer and lowest with opt-out: $P(H)_{NF} > P(H)_F > P(H)_{OO}$.

Proof. Because $h^*(a,S) \geq 0$ for all $a < a_0$, $P(H)_F \geq P(H)_{OO}$ follows. The inequality is strict when $F(a_0) > 0$ and $S > 0$ (Lemma 3), and is an equality otherwise. In the case of *Altruism and No Social Pressure,* since $S = 0$, $h^*(\underline{\underline{a}}; S) = h_0$ and $h^*(a,S) > h_0$ for $a > \underline{\underline{a}}$. Given the assumption $F(\underline{\underline{a}}) < 1$, this implies $P(H)_F > P(H)_{NF}$. In the case of *Social Pressure and Limited Altruism*, notice that $h^*(a,S) < h_0$ for all $a \leq \underline{\underline{a}}$ by Lemma 2 since $S > 0$. Given the additional assumption $F\left(\underline{\underline{a}}\right) = 1$, this implies $P(H)_{NF} > P(H)_F$.

Proposition 1 illustrates that, in the polar case of Altruism and No Social Pressure, the flyer increases the presence at home relative to the control group since the agent seeks to meet the solicitor. The opt-out option has no differential effect since no one avoids the solicitor. Under Social Pressure and Limited Altruism, the opposite is true: the flyer lowers the presence at home, as the agent seeks to avoid the fund-raiser. In this case, the opt-out possibility lowers the presence at home further, as it makes the avoidance costless. In the case in which both altruism and social pressure are present, the probability of being at home is higher for the flyer group if the altruism force dominates the social pressure force.

The next Proposition illustrates the impact of the different treatments on the unconditional probability of giving $P(G)$.

Proposition 2. *The unconditional probability $P(G)$ that the giver will give in the No-Flyer*

(NF), Flyer (F), and Opt-Out (OO) treatments is

$$
\begin{aligned}
P(G)_{NF} =& [1 - F(\underline{\underline{a}})]h_0 \\
P(G)_F =& (1-r)[1 - F(\underline{\underline{a}})]h_0 + r\int_{\underline{\underline{a}}}^{\infty} h^*(a,S)dF \\
P(G)_{OO} =& (1-r)[1 - F(\underline{\underline{a}})]h_0 + r\int_{a_0}^{\infty} h^*(a,S)dF
\end{aligned}
$$

With Altruism and No Social Pressure ($S = 0$ and $F\left(\underline{\underline{a}}\right) < 1$), the probability $P(G)$ is weakly higher with flyer and opt-out: $P(G)_F = P(G)_{OO} > P(G)_{NF}$. With Social Pressure and Limited Altruism ($S > 0$ and $F\left(\underline{\underline{a}}\right) = 1$), the probability $P(G)$ is weakly lower with flyer and lowest with opt-out: $P(G)_{NF} > P(G)_F > P(G)_{OO}$.

Proof. Because $h^*(a,S) \geq 0$ for all a and $a_0 \geq \underline{\underline{a}}$, $P(G)_F \geq P(G)_{OO}$ follows, with strict inequality for $F(a_0) > 0$ and $S > 0$. In the case of *Altruism and No Social Pressure*, since $S = 0$, then $h^*(a,0) = h_0$ for $a \leq a_0 = \underline{\underline{a}}$ and $h^*(a,0) > h_0$ for $a > a_0 = \underline{\underline{a}}$ (Lemma 2). $P(G)_F > P(G)_{NF}$ follows given $F\left(\underline{\underline{a}}\right) < 1$. In the case of *Social Pressure and Limited Altruism*, $\int_{\underline{\underline{a}}}^{\infty} h^*(a,S)dF = 0$ given the assumption $F\left(\underline{\underline{a}}\right) = 1$ and thus $P(G)_{NF} > P(G)_F$.

Proposition 2 illustrates that, under Altruism and No Social Pressure, the flyer and opt-out groups are equivalent, since there is no reason to use the opt-out option in the absence of social pressure. In addition, in this case the probability of giving is higher in the flyer treatment than in the no-flyer treatment, since the agent seeks opportunities to stay at home. Under Social Pressure and Limited Altruism, instead, the probability of giving is higher in the no-flyer treatment than in the flyer treatment, and even lower in the opt-out treatment. In the presence of both altruism and social pressure, the comparison between the control and advance notice group depends on whether the giving is more due to real altruism (which works to increase giving) or to social pressure (which has the opposite effect).

The third result on charitable giving, summarized by Proposition 3, regards the probability of giving conditional on opening the door.

Proposition 3. *The probability of giving conditional on being at home, $P(G|H)$, is higher in the Flyer and Opt-Out treatment than in the No-Flyer treatment:* $\min\left(P(G|H)_F, P(G|H)_{OO}\right) \geq P(G|H)_{NF}$.

Proof. The conditional probability of giving in the NF treatment is $P(G|H)_{NF} = (1 - F(\underline{\underline{a}}))$. The conditional probability of giving in the F treatment is

$$
P(G|H)_F = \frac{(1-r)h_0\left(1 - F(\underline{\underline{a}})\right) + r\int_{\underline{\underline{a}}}^{\infty} h^*(a,S)dF}{(1-r)h_0 + r\int_{-\infty}^{\infty} h^*(a,S)dF}.
$$

After some simple algebra, the inequality $P(G|H)_F \geq P(G|H)_{NF}$ reduces to $\int_{\underline{\underline{a}}}^{\infty} h^*(a,S)dF / \int_{\underline{\underline{a}}}^{\infty} dF \geq \int_{-\infty}^{\infty} h^*(a,S)dF$. That is, if the probability of being at home conditional on seeing a flyer

and having $a > \underline{\underline{a}}$ is greater than the probability of being at home conditional on just seeing a flyer. The inequality $P(G|H)_F \geq P(G|H)_{NF}$ follows because $h^*(\cdot; S)$ is increasing in a for $a > \underline{\underline{a}}$ and weakly lower for all $a \leq \underline{\underline{a}}$ than for any $a > \underline{\underline{a}}$. To prove $P(G|H)_{OO} \geq P(G|H)_{NF}$, consider two cases: (i) for $S = 0$, the agent never opts out and hence $P(G|H)_{OO} = P(G|H)_F \geq P(G|H)_{NF}$; (ii) for $S > 0$, the inequality $P(G|H)_{OO} \geq P(G|H)_F$ can be rewritten as $(1-r)h_0\left(1 - F(\underline{\underline{a}})\right) + r\int_{a_0}^{\infty} h^*(a,S)dF \geq \left((1-r)h_0 + r\int_{a_0}^{\infty} h^*(a,S)dF\right)(1 - F(\underline{\underline{a}}))$, which simplifies to $rF(\underline{\underline{a}})\int_{a_0}^{\infty} h^*(a,S)dF \geq 0$, which always holds..

The prediction on conditional giving is simple. Conditionally on reaching an agent at home, giving is higher with the flyer (simple or with out-out option) than without. This prediction holds for all levels of the parameters. Altruism and social pressure both lead to increases in the conditional probability of giving with flyer: altruistic people that are more likely to select into staying at home, and non-givers that dislike the social pressure cost of not giving select away from the home.

Our last proposition focuses on the size of the amount given. We distinguish between small donation, defined as $g \leq g^s$, and large donations, $g > g^s$.

Proposition 4. *(i) The unconditional probability of a donation larger than g^s, $P(G^{HI})$, is*

$$P(G^{HI})_{NF} = (1 - F(\bar{a}))h_0$$
$$P(G^{HI})_F = (1-r)(1 - F(\bar{a}))h_0 + r\int_{\bar{a}}^{\infty} h^*(a,S)dF = P(G^{HI})_{OO},$$

implying $P(G^{HI})_F = P(G^{HI})_{OO} \geq P(G^{HI})_{NF}$ (with strict inequality if $F(\bar{a}) < 1$).

(ii) The unconditional probability of a donation smaller than (or equal to) g^s, $P(G^{LO})$, is

$$P(G^{LO})_{NF} = (F(\bar{a}) - F(\underline{\underline{a}}))h_0$$
$$P(G^{LO})_F = (1-r)(F(\bar{a}) - F(\underline{\underline{a}}))h_0 + r\int_{\underline{\underline{a}}}^{\bar{a}} h^*(a,S)dF$$
$$P(G^{LO})_{OO} = (1-r)(F(\bar{a}) - F(\underline{\underline{a}}))h_0 + r\int_{a_0}^{\bar{a}} h^*(a,S)dF,$$

implying $P(G^{LO})_F = P(G^{LO})_{OO}$ if $S = 0$ and $P(G^{LO})_F > P(G^{LO})_{OO}$ if $S > 0$ and $F(a_0(S)) - F(\underline{\underline{a}}) > 0$.

Proof. (i) Because $h^*(a,S) > h_0$ for $a > \bar{a}$ (Lemma 2), $P(G^{HI})_F$ and $P(G^{HI})_{OO}$ are strictly greater than $P(G^{HI})_{NF}$ when $F(\bar{a}) < 1$ and equal (to zero) otherwise. (ii) For $S = 0$, $a_0 = \underline{\underline{a}}$ and hence $P(G^{LO})_F = P(G^{LO})_{OO}$. For $S > 0$, $P(G^{LO})_F > P(G^{LO})_{OO}$ as long as $F(a_0(S)) - F(\underline{\underline{a}}) > 0$.

Proposition 4 shows that a flyer (with or without opt-out option) increases large donations, as long as there is a positive probability of highly altruistic individuals. In this case, the

comparative statics holds also with social pressure ($S > 0$). Even in the latter case, the only donors that contribute more than g^s are the ones motivated by (pure or impure) altruism. The probability of small donations, instead, decreases in the presence of a flyer with opt-out relative to the simple flyer treatment, regardless of the amount of social pressure (given a regularity condition). Small donations are more likely to be driven by social pressure, and the opt-out option lowers such donations. The comparison of small donations between the flyer and the no-flyer treatment, instead, depends on the prevalence of altruism or social pressure.

Next, we consider the impact of the different treatments on the probability of giving via mail.

Proposition 5. *The unconditional probability of a donation while not at home* $P(G^m)$ *satisfies* $0 = P(G^m)_{NF} < P(G^m)_F \leq P(G^m)_{OO}$, *with*

$$P(G^m)_F = r \int_{a_m}^{\infty} (1 - h^*(a, S)) dF$$

$$P(G^m)_{OO} = \begin{cases} P(G^m)_F & \text{if} \quad a_0(S) < a_m \\ r \left[F(a_0(S)) - F(a_m) + \int\limits_{a_0(S)}^{\infty} (1 - h^*(a)) dF \right] & \text{if} \quad a_0(S) > a_m \end{cases}$$

Proof. All types that are notified by the flyer (probability r) and are not at home (probability $1-h$), will give if the altruism level a is above a_m (Lemma 1b). In the NF condition, this never occurs since $r = 0$. In the F condition, the probability of being at home is determined by $h^*(a, S)$. In the OO condition, the condition is the same except if $a_0(S) > a_m$. Over this interval, the individual opts out (Lemma 2), and hence $1 - h^* = 1$.

The giver never uses the option to give by mail when she can give in person. As a consequence, in the No-Flyer condition, giving via mail is zero, since the giver is only informed about the fund-raiser if she is at home. In the Flyer and Opt-Out treatments, however, the individuals receive a notice of the fund-raiser and hence may give even if they are not at home, so long as their altruism parameter a is above a_m. Notice that giving via mail is at least as high under the Opt-Out condition than in the Flyer condition because some of the individuals that opt out because they would have given too much in person are happy to give a smaller amount via mail.

Set-Up for Estimation. In addition to the general set-up, we consider a special case that allows for a closed-form solution, which we estimate structurally in Section 5. We impose two additional assumptions: First, there are only two possible levels of giving, 0 or $\bar{g}$ (which is assumed to be at least as large as g^s). Second, the cost of leaving home $c(h)$ is quadratic: $c(h) = (h - h_0)^2 / \eta$. Third, there is no giving by mail ($\theta = 0$). The first assumption simplifies the giving problem to a binary give-or-not decision. The second assumption imposes symmetry on the cost function: increasing and decreasing the probability from the baseline probability h_0 have the same marginal cost. The last assumption slightly simplifies the estimation.

Solving the simple set-up backwards, the agent gives, conditional on being at home, if and only if the (net) utility from giving is higher than the social pressure costs, that is, $u(W-\bar{g})+av(\bar{g},G_{-i}) \geq u(W)-s(0)$. We can re-write this condition as $av(\bar{g},G_{-i})/\bar{g} \geq [u(W)-u(W-\bar{g})]/\bar{g}-s(0)/\bar{g}$. We define the left-hand-side term—the value per dollar of the money given to the charity—as $\alpha \equiv av(\bar{g},G_{-i})/\bar{g}$. Without loss of generality, we renormalize $[u(W)-u(W-\bar{g})]/\bar{g}$ to 1. We can then interpret α as the average value of giving, compared to the average value of private consumption which equals 1. Hence a value of α larger than 1 indicates that the agent derives higher utility from giving than from keeping the money, and a value of 0 indicates that the agent is not altruistic. In the presence of social pressure, an agent will give if α is higher than $\bar{\alpha}_S \equiv 1-s(0)/\bar{g}$. The higher the social pressure S and the the lower $\bar{g}$ are, the lower is the threshold for giving, and therefore the more likely giving is. The threshold $\bar{\alpha}_S$ can be negative for a high enough S and small enough $\bar{g}$.

Going to the fist stage, the maximization problem of the giver can be rewritten as

$$\max_{h\in[0,1]} A + h\max\left(\bar{g}\left[\alpha-1\right],-S\right)-\left(h-h_0\right)^2/2\eta,$$

where A is a constant that equals $u(W)+av(0,G_{-i})$. Neglecting corner solutions (h equal to 0 or 1), this convex maximization problem has a unique solution h^* which we can write as $h^*=\max\left[\min\left[h_0+\eta\max\left(\bar{g}\left[\alpha-1\right],-S\right),1\right],0\right]$. In the case $\alpha \geq \bar{\alpha}_S$, the agent prefers to give, and the probability of being at home is $h^*=\min\left(h_0+\eta\bar{g}\left[\alpha-1\right],1\right)$. In the presence of social pressure ($S>0$), the giver may decide to give even if the marginal utility of giving α is smaller than the private marginal utility ($\alpha<1$), in which case the agents avoids being at home ($h^*<h_0$). In the absence of social pressure ($S=0$) or if altruism is high enough ($\alpha>1$), the individuals get positive net utility from giving and hence they seek the opportunity to be at home ($h^*>h_0$). The solution of this simpler set-up, therefore, has qualitatively very similar features to the general set-up. *In Appendix A we characterize the equivalent of Propositions 1 to 3.* (There is no equivalent of Proposition 4 given that there is only one size of donation).

Survey. While the focus of the paper is on charitable giving, we do a similar analysis of the request by a surveyor to fill a survey of varying duration and for varying pay. The purpose of these treatments is to estimate the underlying social pressure and altruism parameters. Therefore, we analyze this case under the same parametric assumption for $c(h)$ used above.

We assume that consumers have a baseline utility s of filling a 10-minute survey for no monetary payment. The parameter s can be positive or negative to reflect that individuals may be happy to contribute to public goods or may dislike surveys. In addition, individuals get utility from receiving a pay m for doing the survey and get disutility from the time cost c of the survey. Hence, the overall utility from filling a survey is $s+m-c$. Like in the case of charitable giving, we also assume that there is a distribution of s in the population, with $s \sim F_S$.

Similarly to the case of giving, the agent undertakes the survey if $s+m-c$ is larger

than S. Hence, we can write the decision problem of staying at home (conditional on receiving a notice) as $\max_{h\in[0,1]} h \max(s+(m-c), -S) - (h-h_0)^2/\eta 2$, leading to solution $h^* = \max[\min[h_0 + \eta \max(s+(m-c), -S), 1], 0]$. We define the threshold $\bar{s}_S^{m,c} = -S-(m-c)$ as the lowest level of s such that individuals will accept to fill in the survey if asked. This threshold depends on the pay m and on the time cost c. An increase in the pay m or a decrease in the cost of time c will increase the probability of being at home and the probability of filling a survey because they make surveys more attractive and hence select a larger pool of population.

In Section 5 on estimation, we take advantage of the survey treatments to obtain estimates of the underlying parameters for the charity treatments.

3 Experimental Design

Charities. The two charities in the fund-raising treatments are La Rabida Children's Hospital and the East Carolina Hazard Center (ECU), both well-respected charities. To provide evidence on which charity consumers like better, we included two related questions in the survey administered in the survey treatments. The first question asks survey respondents to rank five charities: La Rabida, ECU, the Chicago Historical Society, the Donate Life charity, and the Seattle Children's Hospital. The rank is coded as a number from 1 (least liked) to 5 (most liked). The charity with the highest average rank is the La Rabida Children's Hospital (average rank 3.95) followed by Donate Life (rank 3.79), the Seattle Children's Hospital (rank 3.47). At the bottom of the rank, below the Chicago Historical Society (rank 2.96), is the East Carolina Hazard Center (rank 2.54).

Since the elicitation of consumer preferences in absence of incentives can be problematic, we also ask them to allocate \$1 that '*an anonymous sponsor has pledged to give*' to one of the five charities.[5] Out of 255 respondents, 147 choose to pledge the donation to the La Rabida charity, and only 7 choose the ECU charity. In a twin question asking about which charity should be least likely to receive the donation '*in the event of another \$1 pledge*', the ECU was the top choice for 74 out of 174 respondents, with only 3 respondents indicating La Rabida.

Hence, the two charities correspond to a highly-liked and less-liked charity. La Rabida appears to be highly liked both because it is an in-state charity well-known to residents in the area around Chicago, and also because it provides health benefits to children (it is ranked higher than the Chicago Historical Society). ECU appears to be least liked both because of its out-of-state status and because of its mission (it is lower ranked than the Seattle Children's Hospital which is similarly out of state).

Door-To-Door Fund-Raising. The experimental design focuses on a door-to-door cam-

[5] We followed up on the preferences and delivered the donations.

paign, rather than on a phone, mail, or in-person campaign, because it offers the easiest implementation of the notice of upcoming visits. While door-to-door campaigns are both common and previously studied in economics (Landry et al., 2006), it is hard to quantify how much money is raised through this channel.

To provide some evidence, we included questions in the survey asking respondents to recall in the past 12 months, how many times have people '*come to your door to raise money for a charity*'. We asked similarly phrased questions about giving via phone, via mail, and '*through other channels, such as employer or friends*'. Of 177 respondents that answered these questions, 73 percent of respondents stated that they had had at least one such visit, and 46 percent of respondents reported at least three such visits. This frequency is smaller but comparable to other solicitation forms: phone (84 percent received at least one call), mail (95 percent received at least one piece of mail) and other forms (85 percent had at least one such contact).

We also asked approximately how much the respondents gave to these solicitors in total over the last 12 months. As a percent of all the respondents, 40 percent reported giving a positive amount to a door-to-door campaign, compared to 27 percent giving in response to phone, 53 percent in response to mail, and 76 percent in response to other means. We can use this data also to estimate the average amount given with each type of campaign. However, this estimate is very sensitive to a small number of individuals reporting giving of large sums (in two cases \$50,000 and \$60,000) which could be accurate but could also be due to measurement error or self-aggrandizing claims. If we cap the donations at \$1,000, the average total door-to-door donation in the past 12 months (including non-donors) is \$26, compared to \$59 by phone, \$114 by mail, and \$283 by other means. The numbers for the uncapped donations are \$26 by door-to-door, \$89 by phone, \$897 by mail, and \$1,867 by other means. Hence, it appears that door-to-door solicitations are quite common, at least in the area where the survey took place, and that they tend to raise a smaller, but not negligible, amount of money.

Solicitor Recruitment. For the door-to-door field experiment, we employed 48 solicitors and surveyors who were all assigned to multiple treatments. All solicitors elicited contributions within at least two treatments, and most over multiple weekends. Each solicitor and surveyor's participation in the study typically followed four steps: (1) an invitation to work as a paid volunteer for the research center, (2) an in-person interview, (3) a training session, and (4) participation as a solicitor and/or surveyor in the door-to-door campaign.

Undergraduate solicitors and surveyors were recruited from the student body at the University of Chicago, UIC, and Chicago State University via flyers posted around campus, announcements on a university electronic bulletin board, and email advertisements to student list hosts. All potential solicitors were told that they would be paid \$9.50 per hour during training and employment. Interested solicitors were instructed to contact the research assistants to schedule an interview.

Initial fifteen-minute interviews were conducted in private offices in the Chicago Booth

School of Business. Upon arrival to the interview, students completed an application form and a short survey questionnaire. In addition to questions about undergraduate major, GPA, and previous work experience, the job application included categorical-response questions—scaled from (1) strongly disagree to (5) strongly agree—providing information about personality traits of the applicant: assertiveness, sociability, self-efficacy, performance motivation, and self-confidence. Before the interview began, the interviewer explained the purpose of the fund-raising campaign or survey and the nature of their work. The interview consisted of a brief review of the applicants' work experience, followed by questions relating to his or her confidence in soliciting donations. Upon concluding the interview, all applicants were offered employment, except for a few applicants that were rejected due to age, with the idea that their data would not match those of the students.

Once hired, all solicitors and surveyors attended a 45-minute training session. Each training session was conducted by the same researcher and covered either surveying or soliciting. The soliciting training sessions provided background of the charities and reviewed the organization's mission statement. Solicitors were provided a copy of the informational brochure for each charity in the study. Once solicitors were familiarized with the charities, the trainer reviewed the data collection procedures. Solicitors were provided with a copy of the data record sheet which included lines to record the race, gender, and approximate age of potential donors, along with their contribution level. The trainer stressed the importance of recording contribution (and non-contribution) data immediately upon conclusion of each household visit. Next, the trainer reviewed the solicitation script. At the conclusion of the training session, the solicitors practiced their script with a partner and finally in front of the trainer and the other solicitors.

The training sessions for surveyors followed a similar procedure. Surveyors were provided with copies of the data record sheets. The trainer reviewed the data collection procedure and also stressed the importance of recording all responses immediately upon conclusion of each household visit. The trainer then reviewed both the script and the long survey that the surveyors would be conducting. The surveyors would then practice the script and survey with the trainer.

Location and Randomization. The field experiment took place in towns around Chicago on Saturdays and Sundays between April 27, 2008 and October 18, 2008. The towns reached are Burr Ridge, Flossmoor, Kenilworth, Lemont, Libertyville, Oak Brook, Orland Park, Rolling Meadows, and Roselle, for a total of 8,915 households reached for the charity treatments and 2,020 households reached for the survey treatments. *GET CENSUS INCOME VALUES.* From this initial sample, we exclude 841 observations in which the households displayed a no-solicitor sign (in which case the solicitor did not contact the household) or the solicitor was not able to contact the household for other reasons (including for example a lack of access to the front door or a dog blocking the entrance). We also exclude 559 solicitor-day observations for 5

solicitors with substantial inconsistencies in the recorded data.[6] The final sample analyzed in this paper includes 7,669 households reached for the charity treatments and 1,866 households reached for the survey treatments.

The randomization of the different treatments takes place within a solicitor-day observations and is at the street level within a town. Each solicitor is assigned a list of typically 25 households per hour, for a total daily workload of either 4 hours (10-12 and 1-3) or 6 hours (10-11 and 1-5). Every hour, the solicitor moves to a different street in the neighborhood and runs (typically) a different treatment. The solicitor does not know whether the treatment involves a flyer or not (although s/he can presumably learn it from observing the flyers on the door). The randomization occurs conditional on the type of treatment: survey, La Rabida charity, or ECU charity. That is, a solicitor that is assigned to La Rabida on a given day will only do different treatments for La Rabida and similarly for a solicitor assigned to the ECU charity or to the survey. Solicitors are trained to either do charity treatments or survey treatments, so the randomization of the treatment takes place within the charity or survey treatment.

Treatments. In the treatments without flyer, the solicitors visit the households listed in the one-hour time block, knock at the door or ring at the bell and, if they reach a person, go through the script (Appendix B). In the fund-raising treatment, the solicitors inform the household about the charity (La Rabida Children's Hospital or the East Carolina Hazard Center), ask if they are willing to make a donation and, if they receive one, leave a receipt. In the survey treatment, the solicitor asks the household member if he or she is willing to respond to survey questions about charitable giving. The solicitor informs the household member about the duration of the survey (5 or 10 minutes, depending on the condition) and about the payment for the survey, if any ($10 or none).

For the treatments with flyer, the script for the solicitor's visit is the same, but in addition, on the day before the door visit, a solicitor drives by the houses and leaves a flyer on the door knob of the houses in the list. The flyer, which is professionally prepared, indicates the upcoming visit for a fund-raising (or survey) with a one-hour time interval of visit. Figure 3 presents examples of two flyers used for the fund-raising treatment and two flyers used for the survey treatment.[7] In the fund-raising treatments with opt-out the flyer has a box 'Check this box if you do not want to be disturbed'. If the solicitors find the box checked, they do not knock at the door.

We can summarize the charity treatments as follows (Figure 2):

[6] These five solicitors indicate the presence of flyers on the door or on the floor also for households in the no-flyer treatment.

[7] For a small number of observations, the flyer does not indicate the exact time of the visit, but only that there will be a visit in the next two weeks. The results for this sub-group are qualitatively similar to the results for the flyer with the one-hour interval of visit. We present the results combining these treatments. Excluding the observations with the two-week window would not change any of the results.

1. **No-Flyer (NF).** This is a standard door-to-door fund-raising treatment.

2. **Flyer (F).** This is a door-to-door fund-raising with a flyer that the announces the one-hour block of a visit the day before (Figure 3).

3. **Opt-Out (OO).** This is a door-to-door fund-raising with a flyer as in Treatment F, expect that the flyer also offers an option to opt-out ('Check this box if you do not want to be disturbed').

The survey treatments are mostly aimed at estimating the elasticity of the presence at home and of the response rate to the monetary payment and the duration of the survey. In Section 5, we use these elasticities to estimate the social pressure and altruism parameters. The survey questions are mostly about patterns of charitable giving, such as the ones cited above. The survey treatments are as follows (Figure 2):

1. **No-Flyer (NF).** This is a door-to-door treatment with a request to fill a 10-minute survey with no payment. This is the only survey treatment with no flyer.

2. **10-Min.-$0 (F10-$0).** In this survey treatment, a flyer announces the visit in one-hour blocks the day before. The survey, as in treatment NF, is a 10-minute survey with no payment.

3. **10-Min.-$10 (F10-$10).** This flyer treatment includes a payment of $10 to complete to 10-minute survey. The payment is announced on the flyer (Figure 3).

4. **5-Min.-$0 (F5-$0).** This treatment, also characterized by a flyer, involves a shorter survey form and no payment. The flyer specifies that the survey will take 5 minutes to complete.

4 Reduced-Form Results

We report the differences across the treatments in the share of households answering the door, the empirical counterpart of the $P(H)$, and the share of households giving to the charity and responding to the survey, corresponding to $P(G)$ and $P(SV)$. We also present results on giving conditional on being at home, corresponding to $P(G|H)$, and the frequencies of small and large donations, $P\left(G^{LO}\right)$ and $P\left(G^{HI}\right)$.

Table 1 presents the summary statistics on the frequencies of answering the door and giving across the different treatments. While this Table presents suggestive evidence on the impact of the treatments, the raw statistic are potentially confounded with randomization fixed effects. As discussed in Section 3, treatments were randomized within a date-solicitor time block, but not all treatments were run in all time periods. Hence, estimates that do not control for the

randomization fixed effects are confounded, for example, by time effects—we ran more La Rabida treatments earlier in the sample when donation rates also happened to be higher.

The average rate at which the respondents open the door hovers around 40-42 percent in the Baseline treatment for La Rabida, ECU, and the survey treatment. Since households did not know the task at hand, these averages ought, indeed, to be close. The share that opens the door is smaller for the Flyer treatment and smaller yet for the Opt-Out treatment. In the survey, the probability of opening the door is larger for the treatments with higher pay and shorter duration. These results are confirmed in the regression analysis below.

The share of givers (out of all households contacted) varies between 2.89 percent (ECU Opt-Out treatment) and 7.88 percent (La Rabida Opt-Out treatment). The share of givers is substantially smaller for the ECU charity than for the La Rabida charity, consistent with the survey evidence that ranks the La Rabida charity as more liked than the ECU charity. For the ECU charity, the share of givers is substantially lower in the Opt-Out treatment than in the other treatments. For the La Rabida charity, instead, the giving is somewhat higher in the Opt-Out treatment. These results, except for the last one, are confirmed once we add the randomization fixed effects.[8]

We now present the results which control for the randomization fixed effect. The empirical specification includes fixed effects for solicitor i, town j, and day t. As such, all the identification comes from within-solicitor, within-location and within-day variation in treatment.[9] We also include two additional control variables $X_{i,j,t,h}$: (i) six dummies for the hourly time blocks h starting at 10am, 11am, 1pm, 2pm, 3pm, and 4pm; (ii) a subjective rating by the solicitor of the quality of the houses visited in that hour block on a 0-10 scale. The latter control provides a rough measure of the wealth level of a street not captured by the town fixed effects. We run the OLS regression

$$y_{i,j,t,h} = \alpha + \Gamma T_{i,j,t,h} + \eta_i + \varphi_j + \lambda_t + BX_{i,j,t,h} + \varepsilon_{i,j,t,h} \tag{2}$$

where the dependent variable $y_{i,j,t,h}$ is an indicator variable for whether individual i opened the door (y^H), gave to the charity (y^G), or gave conditional on opening the door ($y^{G|H}$). The treatment variables $T_{i,j,t,h}$ are indicators for the various fund-raising treatments, with the No-Flyer treatment as the omitted group. As such, the point estimates for Γ are to be interpreted as the effect of a treatment compared to the Baseline. We cluster the standard errors at the solicitor$\times$date level.

[8]The summary statistics for the La Rabida charity giving rates are confounded with the timing of the roll-out of the treatments, since we ran more Opt-Out treatments for the La Rabida charity early on when donations happened to be higher.

[9]This specification assumes that the impact of the fixed effects on the relevant outcomes is additive. We obtain essentially identical results using solicitor-date fixed effects. These fixed effects, however, do not allow us to identify the difference in outcomes between La Rabida and ECU, since on any given date each solicitor raised money for only one charity. Hence, we report results for the specification (2).

We also estimate the impact of the fund-raising treatment separately for the two types of charities (ECU and La Rabida). For this specification, we estimate the OLS regression

$$y_{i,j,t,h} = \alpha + \Gamma_{LaR} T_{i,j,t,h} d_{LaR} + \Gamma_{ECU} T_{i,j,t,h} d_{ECU} + \eta_i + \varphi_j + \lambda_t + BX_{i,j,t,h} + \varepsilon_{i,j,t,h} \tag{3}$$

where d_c is an indicator variable that indicates that the fund-raising campaign involved charity $c \in \{LaR, ECU\}$. The omitted treatment in this specification is the No-Flyer Treatment for the La Rabida charity. In Figures 4a-4c, we plot the estimated coefficients from this specification. The estimated impact for the Baseline No-Flyer treatment for La Rabida is $\hat{\alpha}$, estimated from specification (3) with no fixed effects and controls. The estimated impact for the other treatments k in charity c is $\hat{\alpha} + \hat{\gamma}_c^k$.

Answering the Door. Figure 4a presents the results on the probability that the households open the door to the solicitors for the La Rabida and the ECU charity. The results are remarkably similar for the two charities: a flyer on the door knob announcing the visit reduces the share of households opening the door by about 4 percentage points relative to the Baseline treatment with no flyer. As Table 2 shows, the difference is statistically significant. The share of households opening the door is further lowered, by an additional 6 percentage points, by the presence of an opt-out condition ('Please do not disturb') on the flyer. Hence, the Flyer and the Opt-Out conditions lower the probability of opening the door by, respectively, 10 percent and 25 percent, an economically large effect that is similar for both charities. Following Proposition 1, we interpret this evidence as suggestive of social pressure: when informed of a visit by a solicitor, the households attempt to avoid it, especially when doing so has little cost (in the Opt-Out treatment). Notice that the reduction in the probability of opening the door in the presence of a flyer can be due to two factors: a lower probability of being at home, or a lower probability of opening the door conditional on being at home. The variable we measure captures the sum of these two effects.

Unconditional Giving. Figure 4b present the second set of results, on the share of households that give to the charity out of all the households in the treatment group. The overall share of giving is higher for the La Rabida charity than for the ECU charity in each treatment. For example, in the No-Flyer treatment, the share of giving is about 7 percent for La Rabida but only 4 percent for ECU. This difference is to be expected since La Rabida is a highly liked charity that a large share of survey respondents prefer to the ECU charity. Despite the different levels of giving, the pattern of effects across treatments is similar for the two charities. Compared to the Baseline treatment, the Flyer treatment has essentially the same share of giving. The lack of a difference between these treatments is estimated quite precisely given that the bulk of the observations is for the Baseline and Flyer treatments. The Opt-Out treatment, instead, lowers giving by 2 percentage points for both charities. This difference is statistically and economically significant (see Table 2): the effect amounts to a reduction of about a third relative to the other treatments.

The first main result on giving—that the flyer per se does not affect giving—is consistent with the presence of both social pressure and altruism as determinants of charitable giving. The advance notice provided by the flyer increases the presence at home among the altruistic givers and lowers the presence at home by the households that give due to social pressure. To the extent that these two forces have about the same size, we expect no overall impact.

The result is also consistent with our previous finding that the flyer significantly reduced the share of households opening the door. This may at first seem puzzling: Why would the flyer significantly lower presence at home but not giving? The model suggests an answer. The flyer affects not only the presence at home among givers, but also among non-givers with social pressure. This last group avoids being at home to avoid paying the disutility cost. The avoidance among non-givers does not impact the probability of giving, but it lowers the probability of home presence.

The second main result on giving—that the opt-out option significantly lowers giving—points to the importance of social pressure: in the Opt-Out treatment the cost of avoiding the fund-raiser is substantially lowered, and giving decreases proportionally. If giving were only due to altruism, the opt-out option should not affect giving. The importance of social pressure appears particularly substantial for the ECU charity where the Opt-Out treatment lowers giving by 40 percent, compared to a 20 percent reduction for La Rabida. As expected, social pressure is a more important determinant of giving for a charity that is less liked by the respondents.

Conditional Giving. Figure 4c presents the results for giving, conditional on answering the door. The conditional giving for each treatment is the share of the estimated unconditional giving (Figure 4b) divided by the estimated share of households answering the door (Figure 4a). For both charities, the conditional giving is higher in the treatments with flyer than in the Baseline treatment. The increase in conditional giving for the La Rabida charity from Baseline to the Flyer treatment is consistent with the prediction of Proposition 3, since the flyer allows sorting in by the donors that want to give and allows sorting out by the individuals that do not want to give. The conditional giving in the Opt-Out treatment is comparable to the one in the Baseline treatment for the La Rabida charity and is lower than in all the other treatments for the ECU charity.

Amount of Giving. We now provide evidence on the impact of the treatments on the amount of giving. As Proposition 4 clarifies, social pressure and altruism make different predictions on the amount given: individuals that give due to social pressure give the least that they can without paying the social pressure cost, while individuals that given due to altruism may give higher amounts. This leads us to the prediction that the flyer treatment, which increases sorting, may both increase larger donations (sorting in of altruists) and decrease smaller donations (sorting out of social-pressure givers). The opt-out treatment, which facilitates sorting out easier but not sorting in, should lower the share of small donations but not the share of

larger donations.

We split donations based on the median amount given, \$10, and label donations smaller than (or equal to) \$10 as small and donations larger than \$10 large.[10] Figure 4 presents the results on giving of large and small donations across the four treatments. In the Baseline treatment, 4 percent of households give small donations, and 2 percent give large donations. The percentage giving a small donation decreases slightly in the Flyer treatment and decreases substantially (by 2.1 percentage points) in the Opt-Out treatment. Hence, the availability of the opt-out option more than halves the likelihood of a small donation, a significant difference (Table 2). The patterns are very different for the larger donations. The flyer somewhat increases (though not significantly) the incidence of larger donations, and the opt-out has a similar effect. This pattern is exactly consistent with the predictions of Proposition 4 in presence of both altruism and social pressure. The smaller donations are more likely to be due to social pressure and hence are lower in the presence of sorting (out), especially when opting out is costless. The larger donations are more likely to be due to altruism and hence are somewhat higher in the presence of sorting (in).

A final pattern regarding the amount of giving that Figure 5 does not detail is the difference between the two charities. For ECU, the small donations are the bulk of the giving: 77 percent of donations are small donations (that is, smaller than or equal to \$10). The corresponding figure for La Rabida is 59 percent, leaving a more substantial share of larger donations. This is consistent with the fact that giving for the more liked charity (La Rabida) is more likely to be due to altruism than giving for the less-like charity (ECU). This difference, when combined with the impact by amount of giving captured in Figure 5, can explain why the Opt-Out treatment leads to a larger percent reduction for the 'bad charity' (ECU) than for the 'good charity' (La Rabida).

Giving Via Mail or Internet. While the analysis so far has focused on in-person donations, for one of the charities (ECU) we also obtained data on the donations in other forms (mail and Internet) coming from households in our sample over the time period of the fund-raising campaign. The results are reported in Column (7) of Table 1: there was not a single donation from the households in the sample in any of the three treatments. This is quite striking when compared to 3 to 5 percent of households that donate in person for that same charity. While we expected no donation in the No-Flyer group under any model, the absence of donations in the Flyer and Opt-Out treatments provide evidence on the motivations of giving. If giving was due to pure altruism, we expect that individuals that cannot be at home during the fund-raiser would donate via mail or Internet. The fixed costs of this form of giving (which in the model lowers θ) would attenuate the share of givers, but not likely to zero. A model of warm glow can better fit the data under the assumption that the warm glow is interaction-specific: it arises only from an in-person donation (that is, θ is low). The lack of donations via mail or

[10] The results are very similar if we adopt \$15 as a split.

Internet is also perfectly consistent with the importance of social pressure: giving arises only in situations where social pressure is higher.

Financial Crisis. While a majority of the observations for the field experiment are from the month of May to August 2008, 22 percent of the observations date from September and October 2008. Hence, the field experiment covers both the pre-financial crisis period and the peak of the financial crisis and allows us to compare the results in the two periods. While this comparison is obviously not experimental (since other factors can differ in the pre- and post-crisis period), it is still interesting to consider the heterogeneity of treatment effects in the two periods.

Two main hypothesis on the impact of the crisis are that (i) it reduces the giving due to altruism since it increases the marginal utility from private consumption; (ii) it reduces the giving due to social pressure since it lowers the social pressure cost of turning away a solicitor ('sorry, the times are too tough'). Under the first hypothesis, giving should decrease proportionally in all conditions and, in the presence of social pressure, giving should still be lower in the Opt-Out condition. Under the second hypothesis, giving should decrease, but not so much in the Opt-Out group, where most giving due to social pressure has already disappeared.

Figures 6a and 6b present evidence on these patterns for the pooled charities. The financial crisis does not have much impact on the share of households that open the door in the different treatment (Figure 6a). However, it lowered giving substantially, in the Baseline treatment from 7 percent to 3 percent. Interestingly, though, giving in the Opt-Out treatment does not decrease as much, consistent with an effect of the financial crisis on the social pressure cost. It is, of course, difficult to test that no decrease occurred for the latter group given that giving decreased for all charities. An alternative interpretation of these results is that the solicitors raising funds in the last two months in the sample are less able than the solicitors in the earlier month. While this is possible, this pattern does not explain why the propensity to open the door does not vary in the pre- and post-period: if the givers appear worse on observables such as attractiveness, one would expect lower rates of opening the door.

Survey. To estimate the effect of the survey treatments, we estimate a specification parallel to (2) for the survey treatments. The dependent variables are indicator variables for answering the door and for filling up a survey. Figure 7 and Table 3 present the results of the estimates across the four treatment groups. The first comparison involves a 10-minute survey for no pay under the No-Flyer and under the Flyer condition. The next two conditions, both run with flyers, involve more attractive condition to complete the survey: a shorter duration (5 minutes, \$0) or a \$10 payment (10 minutes, \$10).

Figure 7 and Table 3 show the impact of the shorter duration and of the payment on the share of households that open the door. Comparing the two \$0-10-minute conditions, the presence of a flyer reduces by 15 percent (though not significantly) the share opening the door.

Compared to the \$0-10-minute condition with Flyer, the more attractive surveys have a 10 to 15 percent increase in the share of households opening the door (though the difference is not significant). This latter result provides some evidence that the households are responding to the inducements offered.

The most significant impacts of the treatments are on the share of households completing the survey. The share completing the survey is around 10 percent for the two \$0-10-minute conditions (that is, with and without flyer). Compared to the 10 percent completion in the \$0-10-minute condition with Flyer, the more attractive conditions increase the completion rate to over 18-19 percent, an 80-90 percent increase. Interestingly, the increase is very similar for the two groups, indicating a very high value of time for survey completion.

5 Structural Estimation

While the fund-raising experiments provide evidence on the importance of both altruism and social pressure, they do not provide a quantitative estimate of the underlying preferences for giving. In this Section we estimate the parameters of the model by combining the results of the fund-raising experiments and of the survey experiments. For the estimation, we adopt the simple set-up described in the last part of Section 2

We use a Minimum-Distance Estimator. Denote by $m(\vartheta)$ the vector of moments predicted by the theory as a function of the parameters ϑ and by $\hat{m}$ the vector of observed moments. The minimum-distance estimator chooses the parameters $\hat{\vartheta}$ that minimize the distance $(m(\vartheta) - \hat{m})' W^{-1} (m(\vartheta) - \hat{m})$, where W is a weighting matrix. Since the moments are all on the same scale, that is, probabilities, we use as a weighting matrix the identity matrix: $W = I$. In this case, the minimum-distance estimation reduces to the minimization of the sum of squares.

The moments $m(\vartheta)$ that we use to identify the model (Table 4) are: (i) the probability of opening the door in the various charity treatments $(P(H)_j^c,\ j = F, NF, OO,\ c = LaR, Ecu)$; (ii) the unconditional probability of giving in the various charity treatments $(P(G)_j^c,\ j = F, NF, OO,\ c = LaR, Ecu)$; (iii) the probability of checking the opt-out box in the Opt-Out treatment $(P(OO)_{OO}^c,\ c = LaR, Ecu)$; (iv) the probability of opening the door in the various survey treatments $(P(H)_j^S,\ j = NF, F\$0m10, F\$0m5, F\$10m10)$; (v) the unconditional probability of filling in the survey in the various survey treatments $(P(S)_j^S,\ j = NF, F\$0m10, F\$0m5, F\$10m10)$. The correspondent empirical moments $\hat{m}$ are estimated using the same controls as in the main regressions.

To calculate the method of simulated moments estimate, we employ a common sequential quadratic programming algorithm (Powell, 1983) . The algorithm comes pre-implemented in Matlab as the *fmincon* routine. We enforce the following constraints: $S \geq 0$ (social pressure non-negative), $\alpha \in [-9999, 9999]$ (altruism finite), $\sigma \geq 0$ (non-negative standard deviation of

altruism), $h_0, r \in [0,1]$ (probabilities between zero and one), and $\eta \in [0, 9999]$ (finite elasticity of home presence). We begin each run of the optimization routine by randomly choosing a starting point, drawn from a uniform distribution over the permitted parameter space. The algorithm determines successive search directions by solving a quadratic programming sub-problem based on an approximation of the Lagrangian of the optimization problem. To avoid selecting a local minima, we choose the best (i.e. the lowest squared distance) of 1000 runs of the *fmincon* routine, for different initial points.[11]

The parameters ϑ that we estimate (Table 5) are: (i) h_0—the probability of being at home and answering the door in the no-flyer conditions; (ii) r—the probability of observing and remembering the flyer; (iii) η—the responsiveness of the probability of being at home to the utility of being at home; (iv) μ_a^c $(c = LaR, Ecu)$—the mean of the distribution F from which the altruism parameter α is drawn; (v) σ_α^c $(c = LaR, Ecu)$—the standard deviation of the distribution $F(\alpha)$ of altruism; (vi) μ^S—the mean of the distribution F^S of the utility of doing the survey; (vii) σ^S—the standard deviation of the distribution F^S of the utility of the survey; (viii) S^c $(c = LaR, Ecu, S)$—the social pressure associated with not giving to the specific charity or saying no to the request of a survey; (ix) v^S —the value of one hour of time spent completing a survey.

While the parameters are estimated jointly, it is possible to provide intuition of the identification behind the estimates of the different parameters. The observed probability of being at home in the No-Flyer group identifies h_0, the baseline probability of being at home. This parameter is over-identified since we observe this moment for three groups: $P(H)_{NF}^{LaR}$, $P(H)_{NF}^{Ecu}$, and $P(H)_{NF}^{S}$. As one can observe for Table 4, the three empirical moments are almost identical to one another, as predicted, and are very close to the estimated. The probability of observing and remembering the flyer, r, is essentially identified off the fraction of households that check the out-out box in the Flyer treatment (since this moment equals $rh_0(1 - F(1))$), which is is 10 to 12 percent of all households. The elasticity of home presence η with respect to incentives is identified off the difference in home presence in the survey as the payment and the survey durations vary. Given the elasticity η, the mean and standard deviation of altruism towards the charity as well as the social pressure parameters are identified from the share at home and the share giving in the different charitable giving treatments. The survey parameters (μ^S, σ^S, S^S, and v^S) are, not surprisingly, identified using the survey moments. The difference in the survey completion rate when the amount of money and the time duration are varied identify the standard deviation of the utility of doing the charity σ^S and the value of time v^S. The share completing the survey under the various conditions identifies the mean altruism μ_S and the social pressure S^S.

Columns 1 and 2 of Table 5 reports the estimates of the parameters along with the standard errors. The probability of being at home h_0 is very precisely estimated to 41.8 percent, with

[11] For the results presented here, the best estimate is achieved by about half of all runs.

an almost perfect fit. The share of households that have seen the flyer r is estimated at 26.3 percent, with a s.e. of .76 percent. While this may appear low, one should take into account that this includes cases in which the owners of the home are away in the weekend and cases in which the person that sees the flyer forgets to talk to the partner in the household. The estimated elasticity of home presence with respect to incentives is estimate at 0.0486, implying a cost of increasing the probability of being at home by 10 percentage points of $.1^2/\eta = \$.21$ and a cost of a 20 percentage point change of \$.84. However, this parameter is noisily estimated, due to the fact that the survey sample if quite small relative to the rest of the experiment. We are currently collecting more data to obtain more precise estimates of the elasticity.

Given the noisy estimate of the elasticity η, the altruism and social pressure parameters for the charity are also estimated imprecisely and generally not significantly different from zero. The parameters for the survey are quite precisely estimated even given the uncertainty in eta, since their estimation relies more on the probability of survey completion. The average disutility for survey completion is estimated to equal approximately $-\$25$, implying that on average households do not intend to complete surveys for no pay. There is, however, a large variation in this willingness to do a survey underscored by the standard deviation σ^S of \$25, implying that there is a significant share of respondents that like doing surveys. Finally, the value of time for one hour of survey is estimated to be \$138, which is quite high, although not so out of line with the average income of the households in the areas of solicitation.

Since the key altruism and social pressure parameters are confounded by the imprecision of eta, we present illustrative estimates holding eta constant for two polar cases, $\eta = .02$ (households are very inelastic) and $\eta = .5$ (households are very elastic). In both cases, we obtain statistically significant estimates of social pressure cost, but of different magnitudes. For low elasticity eta, on average the altruism level is estimated to be quite low, with a high variance across people. The level of social pressure required to estimate the data is then around quite high: the disutility cost of saying no to a charity is estimated to be about \$8. For a high elasticity eta, instead, the the average altruism level is estimated to be quite high, although smaller than 1, with a small standard deviation. In this scenario, almost all households like the charity: the ones that like the charity a little more (α above 1) select into staying at home, the households with lower altruism α select out of their homes. In this scenario with very high altruism a small (but significant) social pressure cost of \$.35 is enough to explain the data.

Table 4 illustrates how the estimated moments for the case of varying η come close to the empirical moments. The fit of the model is overall very good.

6 Conclusion

Are gifts of time and money to charities welfare-enhancing for the giver? We begin the discussion of this issue by developing empirical strategies derived from theory to measure two

major underlying reasons for giving: altruism and social pressure. As an illustration of our approach, we present a test based on a field experiment that has our solicitors approaching thousands of households in a door-to-door fund-raising drive. By varying the extent to which the households are informed of the fund-raising drive and a complementary survey that varies cash payments, we are able to structurally estimate the parameters of interest.

We find evidence that both altruism and social pressure affect door-to-door charitable giving, yet there is greater evidence in favor of the social pressure explanation. Our estimate of the social pressure cost is consistently greater than half of the individual gift.

Our results have implications for the optimal taxation regime of charitable giving, as our data suggest that in addition to welfare-increasing motives for giving, welfare-decreasing motives play an important role in some types of giving. Our evidence is also consonant with several strands of the literature, as it adds to the literature on field evidence for behavioral phenomena (DellaVigna, forthcoming; Harrison and List, 2004), and in particular fund-raising field experiments. This paper also relates to the experimental literature on giving. In dictator games, a significant share of experimental subjects opt to share a sum they are allocated with an anonymous other player (Forsythe et al., 1994). An extensive literature estimates social preferences from laboratory play in related games (Charness and Rabin 2002, Fehr and Gachter, 2000). Most closely related to this paper, a recent literature examines the impact of allowing subjects to sort out of the giving situation and finds that this leads to a substantial decrease in giving (Dana, Weber, and Kuang, 2007; Lazear, Malmendier, and Weber, 2006). We also find a decrease in giving in response to sorting, but only when costs are lowered sufficiently through an opt-out option. Our findings also relate to a theoretical literature on the reasons for giving.

Our design allows us to separate explanations based on pure or impure altruism (Andreoni, 2004), from social pressure. Our model of social pressure is a reduced-form representation of utility-diminishing models of giving, whether social pressure, social norms, or self- and other-signaling (Bodner and Prelec, 2002; Grossman, 2007). In this respect, the evidence from the Opt-Out treatment suggests that self- and other-signaling is unlikely to explain door-to-door giving, since checking a box not to disturb is presumably a strong signal of unwillingness to give.

In this paper we focus on only one form of giving—door-to-door fund-raising—to showcase our approach. We conjecture that our results are likely to extend well to other high-pressure approaches to raise money, such as phone-athons, charity banquets, auctions, lotteries, etc., but likely have less explanatory power with lower-pressure approaches, such as mail solicitations. We hope that future research builds on our strategy to provide more evidence on these forms of donation.

A Appendix A - Mathematical Appendix

Proof of Lemma 1a. The function $U(g)$ defined by (1) is globally (strictly) concave in g. Hence, there will be a unique solution to the maximization problem (if the solution exists, which we prove below). If $a \leq \underline{\underline{a}}$, then $U'(0) \leq 0$. $U(\cdot)$ is always decreasing on the interval $[0, \infty)$ because of concavity, and hence $g^* = 0$. If $\underline{\underline{a}} < a < \underline{a}$, then $U'(0) > 0$ and hence $g^* > 0$ using the first inequality; using the second inequality, $U'_-(g^s) < 0$ and hence $g^* < g^s$. If $\underline{a} \leq a \leq \bar{a}$, then $U'_-(g^s) \geq 0$ and $U'_+(g^s) \leq 0$ which by strict concavity of U implies $g^* = g^s$. Finally, if $a > \bar{a}$, then $U'_+(g^s) > 0$ which implies $g^* > g^s$; in addition, g^* is finite given the assumption $\lim_{g\to\infty} v'(g, G_{-i})$. Finally, to show that g^* is weakly increasing in a, notice that in cases (ii) and (iv) where the solution is interior, the implicit function theorem implies $dg^*/da = -v'(g^*, G_{-i}) / \left(u''(W - g^*) + av''_g(g^*, G_{-i})\right) > 0$.

Proof of Lemma 2. The optimal probability of being at home is an interior solution by the assumptions on $c(\cdot)$ and satisfies:

$$c'(h) = [u(W - g^*(a)) - u(W) + av(G_{-i} + g^*(a)) - av(G_{-i})] - s(g^*(a))$$

Because $c'(h)$ is strictly increasing, this last expression can be inverted to yield a unique solution, which we denote by $h^*(a, S)$.

If $a < \underline{\underline{a}}$, then $g^*(a) = 0$ by Lemma 1a and the term in brackets is zero. If $S = 0$, then $h^*(a, 0) = h_0$ for $a \leq \underline{\underline{a}}$. If $S > 0$, then the second term is strictly negative and thus $h^*(a, S) < h_0$ for $a \leq \underline{\underline{a}}$.

Next, note that the term in brackets can be re-written as $\int_0^{g^*(a)} u'(W - g) + av'_g(g, G_{-i})dg$. Because of the concavity of $u(\cdot)$ and $v(\cdot)$, this integral is strictly positive when evaluated at $\bar{a}$. Because $g^*(\bar{a}, S) = g^s, s(g^*(\bar{a}; S)) = 0$. Thus $h^*(\bar{a}; S) > h_0$.

The right-hand side is continuous and, by the Envelope Theorem, strictly increasing for all a – denote the right-hand side by $R(a)$. Suppose $a \in (\underline{\underline{a}}, \bar{a})$. Using the Inverse Function Theorem, $(h^*)'(a) = (1/c''(h^*))(\partial R/\partial a) > 0$. The identical result follows if $a > \bar{a}$. $h^*(a)$ is continuous by the continuity of $c'(h)$ and $R(a)$.

Suppose $S > 0$. Because $h(a; S)$ is continuous, is strictly monotonic, $h(\underline{\underline{a}}; S) < h_0$, and $h(\bar{a}; S) > h_0$, the Intermediate Value Theorem implies that there is a unique value $a^* \in \{\underline{\underline{a}}, \bar{a}\}$ such that $h(a^*) = h_0$.

Finally note that a_0 is defined by $u(W - g^*(a_0(S); S) + a_0(S)v(G_{-i}; g^*(a_0(S), S) - S(g^s = g^*(a_0(S), S)) \cdot \mathbf{1}_{g^*<g^s} \equiv u(W) + a_0 v(G; 0)$. Suppose $g^*(a_0(S), S) < g^s$. Differentiating both sides and using the fact that $g^*(a_0(S), S)$ is chosen optimally, one derives the condition that $(\partial a_0/\partial S)v(G_{-i}, g^*(a_0(S); S)) = g^s - g^*(a_0(S); S)$. Because the right-hand side is positive and $v(G_{-i}, g^*(a_0(S); S)) \geq 0$, $\partial a_0)/\partial S > 0$. Now suppose $g^*(a_0(S), S) = g^s$. Then the equivalent derivation yields $(\partial a_0/\partial S)v(G_{-i}, g^s) = 0$. Because $v(G_{-i}, g^s) > 0$, $(\partial a_0/\partial S) = 0$ in this region.

Proof of Lemma 3. We denote by $O(a, S)$ an indicator variable that equals 1 if the agent opts out for parameters a and S, and 0 if otherwise. $O(a; S) = 1$ if and only if the expected utility from choosing an interior h^* is less than the utility of not being home: $(h^*(a, S))[u(W - g^*(a; S)) + av(g, G_{-i}) - s(g^*(a; S))] + (1 - h^*(a, S))[u(W) + av(0, G_{-i})] < u(W) + av(0, G)$. That is, if $u(W - g^*(a; S)) - u(W) + av(g^*(a; S), G_{-i}) - av(0, G_{-i}) - s(g^*(a; S)) < 0$. If $S = 0$, this condition is never met because $g^* = \arg\max_{g\in[0,\infty)} u(W - g) + av(g, G_{-i})$. If $S > 0$, this condition holds with equality at a_0 (by definition). Because the left-hand side is strictly increasing, the condition is meet for all $a < a_0$.

Model for Structural Estimation. Here we derive the expressions for the simplified

set-up that we estimate. The probability $P(H)$ that the giver G will be at home is

$$\begin{aligned} P(H)_{NF} &= h_0, \\ P(H)_F &= h_0 + [1 - F(\bar{\alpha}_S)] r\eta\bar{g} [E[\alpha|\alpha \geq \bar{\alpha}_S] - 1] - F(\bar{\alpha}_S) r\eta S, \text{and} \\ P(H)_{OO} &= h_0 + [1 - F(1)] r\eta\bar{g} [E[\alpha|\alpha \geq 1] - 1] - F(1) rh_0 \end{aligned}$$

Proof. In the No-Flyer group, the probability of being home is just the baseline h_0. In the Flyer group, the probability is $(1-r)h_0 + r(h_0 + \eta \int \max(\bar{g}[\alpha - 1], -S) dF(\alpha)) = h_0 + r\eta \int_{\bar{\alpha}_S}^{\infty} \bar{g}[\alpha - 1] dF(\alpha) + r\eta \int_{-\infty}^{\bar{\alpha}_S} (-S) dF(\alpha)$, which leads to the expression above. In the Opt-Out group, the probability is $(1-r)h_0 + r\left(\int_1^{\infty} (h_0 + \eta\bar{g}[\alpha - 1]) dF(\alpha) + \int_{-\infty}^{1} 0 dF(\alpha)\right) = h_0 - F(1) rh_0 + r\eta \int_1^{\infty} \bar{g}[\alpha - 1] dF(\alpha)$, as in the expression above.

The unconditional probability $P(G)$ that the giver G will give is

$$\begin{aligned} P(G)_{NF} &= [1 - F(\bar{\alpha}_S)] h_0, \\ P(G)_F &= [1 - F(\bar{\alpha}_S)] (h_0 + r\eta\bar{g} [E[\alpha|\alpha \geq \bar{\alpha}_S] - 1]), \text{ and} \\ P(G)_{OO} &= [1 - F(\bar{\alpha}_S)] h_0 - [F(1) - F(\bar{\alpha}_S)] rh_0 + [1 - F(1)] r\eta\bar{g} [E[\alpha|\alpha \geq 1] - 1] \end{aligned}$$

Proof. The unconditional probability of giving $P(G)$ equals $\int P(H|\alpha) P(G|H, \alpha) dF(\alpha)$, which is to say the average across altruism types of the product of the probability of being at home ($P(H|\alpha)$) and of the probability of giving conditional on being at home ($P(G|H, \alpha)$). For the No-flyer group, the decision to be at home is orthogonal to the altruism parameter α and hence $P(G)_{NF} = P(H) \int P(G|H, \alpha) dF(\alpha) = h_0 \int_{\bar{\alpha}_S}^{\infty} dF(\alpha) = [1 - F(\bar{\alpha}_S)] h_0$. For the Flyer group, taking into account that there is only a probability r of receiving the notice, we can write $P(G)_F = (1-r)[1 - F(\bar{\alpha}_S)] h_0 + r \int_{\bar{\alpha}_S}^{\infty} P(H|\alpha) P(G|H, \alpha) dF(\alpha) + r \int_{-\infty}^{\bar{\alpha}_S} P(H|\alpha) P(G|H, \alpha) dF(\alpha)]$. Using the expression for $P(H|\alpha)$, we obtain $P(G)_F = (1-r)[1 - F(\bar{\alpha}_S)] h_0 + r \int_{\bar{\alpha}_S}^{\infty} (h_0 + \eta\bar{g}[\alpha - 1]) 1 dF(\alpha) + r \int_{-\infty}^{\bar{\alpha}_S} (h_0 - \eta S) * 0 dF(\alpha)$, which equals the desired expression. For the opt-out case, we obtain $P(G)_{OO} = (1-r)[1 - F(\bar{\alpha}_S)] h_0 + r \int_1^{\infty} (h_0 + \eta\bar{g}[\alpha - 1]) 1 dF(\alpha)$, leading to the result.

In the survey treatments, the probability of home $P(H)$ and the unconditional probability of answering the survey $P(SV)$ in the Survey No-Flyer (SNF) and Survey Flyer (F) treatments are

$$\begin{aligned} P(H)_{SNF} &= h_0 \\ P(H)_{SF} &= h_0 + [1 - F_S(\bar{s}_S^{m,c})] r\eta([E[s|s \geq \bar{s}_S^{m,c}] + (m - c)]) - F(\bar{s}_S^{m,c}) r\eta S \\ P(SV)_{SNF} &= [1 - F_S(\bar{s}_S^{m,c})] h_0 \\ P(SV)_{SF} &= [1 - F_S(\bar{s}_S^{m,c})] (h_0 + r\eta([E[s|s \geq \bar{s}_S^{m,c}] + (m - c)])). \end{aligned}$$

The proof is along the lines of the proofs above.

B Appendix B - Charity and Survey Scripts

La Rabida Children's Hospital [ECU] – Script

(If a minor answers the door, please ask to speak to a parent. Never enter a house.)

"Hi, my name is _____. I am a student volunteering for the University of Chicago visiting Chicago area households today on behalf of La Rabida Children's Hospital [*the East Carolina University Center for Natural Hazards Research.*].

(Hand brochure to the resident.)

La Rabida is one of Illinois' foremost children's hospitals, dedicated to caring for children with chronic illnesses, disabilities, or who have been abused or neglected.

La Rabida's mission is to provide family-centered care that goes beyond a child's medical needs to help them experience as normal a childhood as possible - regardless of a family's ability to pay. La Rabida is a non-profit organization.

[*The ECU Center provides support and coordination for research on natural hazard risks, such as hurricanes, tornadoes, and flooding.*

The ECU Center's mission is to reduce the loss of life and property damages due to severe weather events through research, outreach, and public education work.]

To help La Rabida [*the ECU Center*] fulfill its mission, we are collecting contributions for La Rabida Children's hospital [*the ECU Center for Natural Hazards Research*] today.

Would you like to make a contribution today?

(If you receive a contribution, please write a receipt that includes their name and contribution amount.)

[AFTER they decide whether or not to give]:

If I may ask you one quick question - did you see our flyer on your door yesterday?

[Record answer in log]

If you have questions regarding La Rabida [*the ECU Center*] or want additional information, there is a phone number and web site address provided in this brochure.

Thank you."

Survey Script

(If a minor answers the door, ask to speak to an adult. Never enter a house.)

Hi, my name is _____, and I am a student working for the University of Chicago. I am working for a professor who is doing research on people's pro-social behavior.

We are conducting confidential ___ minute surveys in _____ today. [*You would be paid $___ for your participation.*] Do you think you might be interested?

If not interested: Thank you for your time. If I may ask you one quick question, though – did you see our flyer on your door? [Show door-hanger and record answer in your log]

If interested: Great! Before we get started, I'd like to tell you a little bit about the survey and what we are doing to keep your answers confidential. First, we will not put your name on the survey. Second, when we put your answers in our computer, we will not enter your address information. Third, the computerized data will not be shared with third parties outside of this research project without your consent. So there is a very low risk of a breach of the confidentiality of your answers. Also, I'd like to make sure that you know that you don't have to answer any questions you're uncomfortable with, and you can stop your participation in this survey at any time. Finally, if you have any questions about your rights in this research study you can contact the University's Institutional Review Board, and I can provide you their contact information later.

So, would you like to take the survey?

If yes: Great! Let's get started.

If no: Thank you for your time. If I may ask you one quick question, though – did you see our flyer on your door? [Show door-hanger and record answer in your log]

[If they ask for IRB contact information, give it to them: Social & Behavioral Sciences Insti-

tutional Review Board, The University of Chicago, 5835 South Kimbark- Judd Hall, Chicago, IL 60637, Phone: +1 773 834-7835]

[After they are done:

- Pay $___, if applicable
- Have them sign the payment sheet
- Thank them
- Record the outcome in your log]

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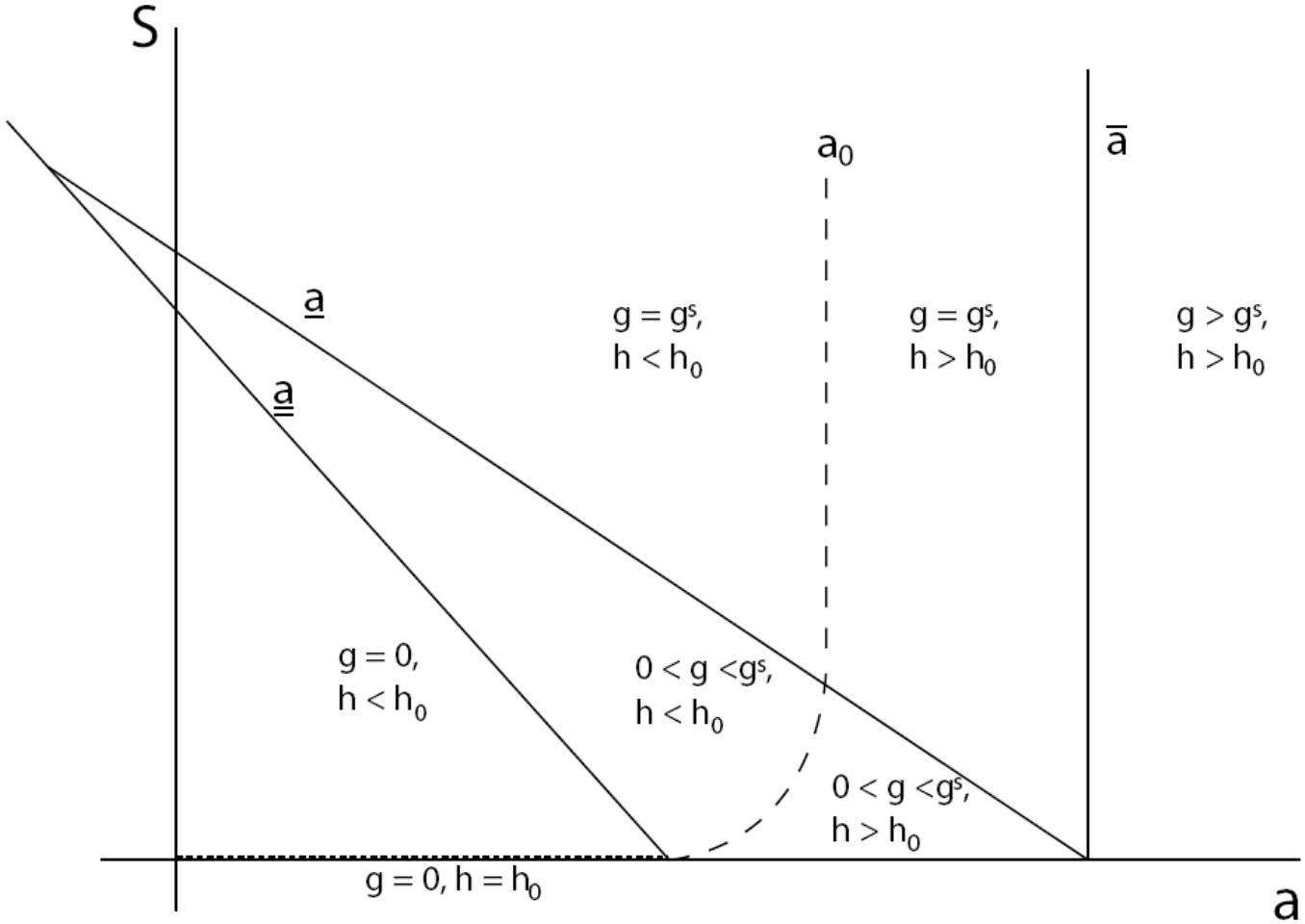
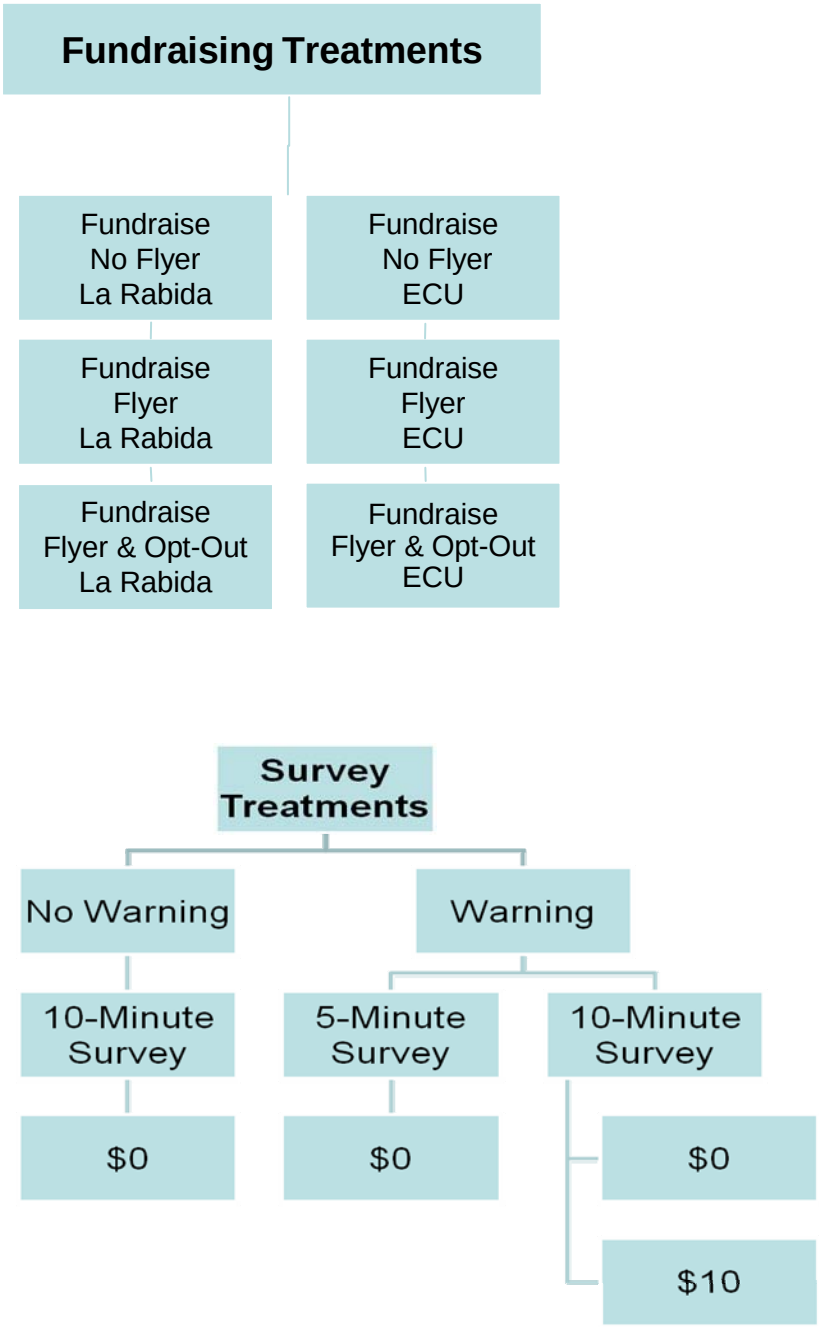
Figure 1. Giving g and Probability of Home Presence h as Function of Parameters



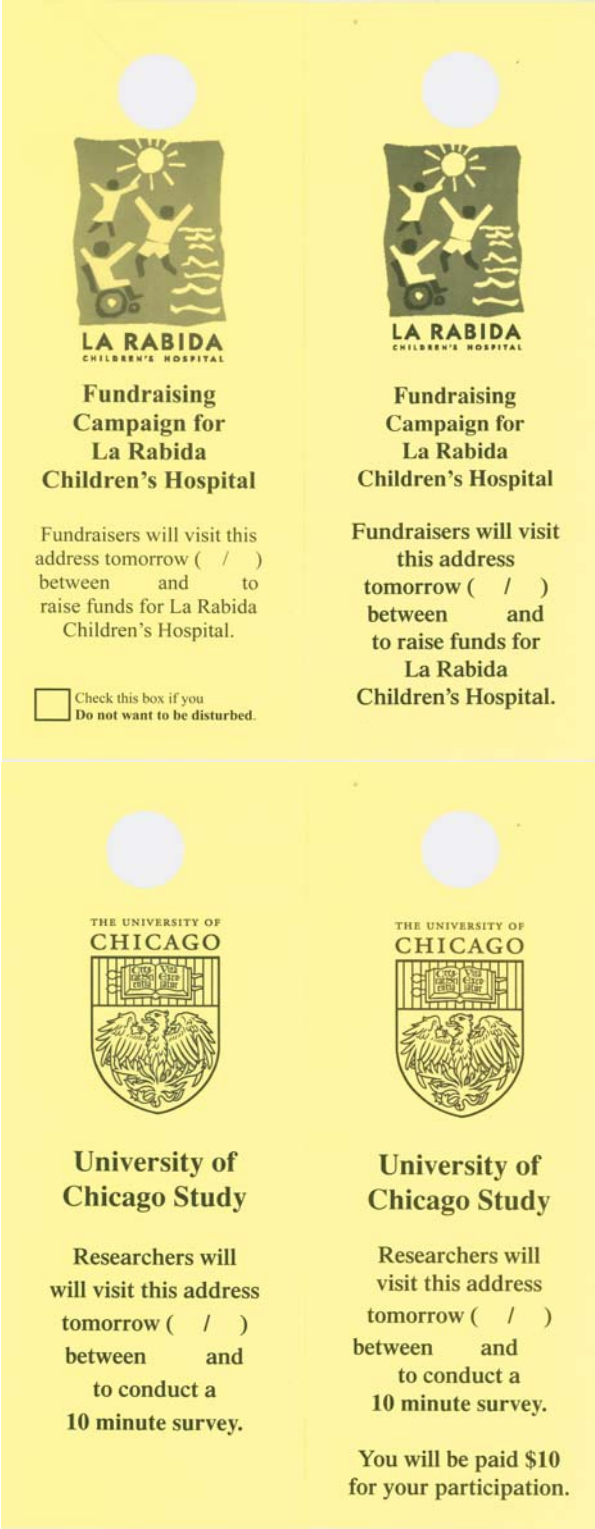
Notes: The Figure indicates the different regions for giving (no giving–g=0, small giving–$0<g<g^s$, giving equal to g^s, and large giving–$g> g^s$) and for probability of being at home (avoidance of solicitor--$h<h_0$, seeking solicitor–$h> h_0$). The regions are a function of the altruism parameter *a* and of the social pressure parameter *S*.

Figure 2. Summary of Treatments



Notes: This Figure indicates the treatments run in the field experiment. La Rabida and ECU are the names of the two charities for which the fund-raising took place.

Figure 3. Examples of Flyers Utilized in the Field Experiment



Note: This Figure displays two examples of flyers for the fund-raising treatments (top row) and flyers for the survey treatments (bottom row). The top-left flyer is for the Opt-Out treatment, while the top-right flyer is for a Flyer treatment. The bottom-row flyers are both for a 10-minute survey with Flyer, the left one for no payment, the right one for a $10 payment.

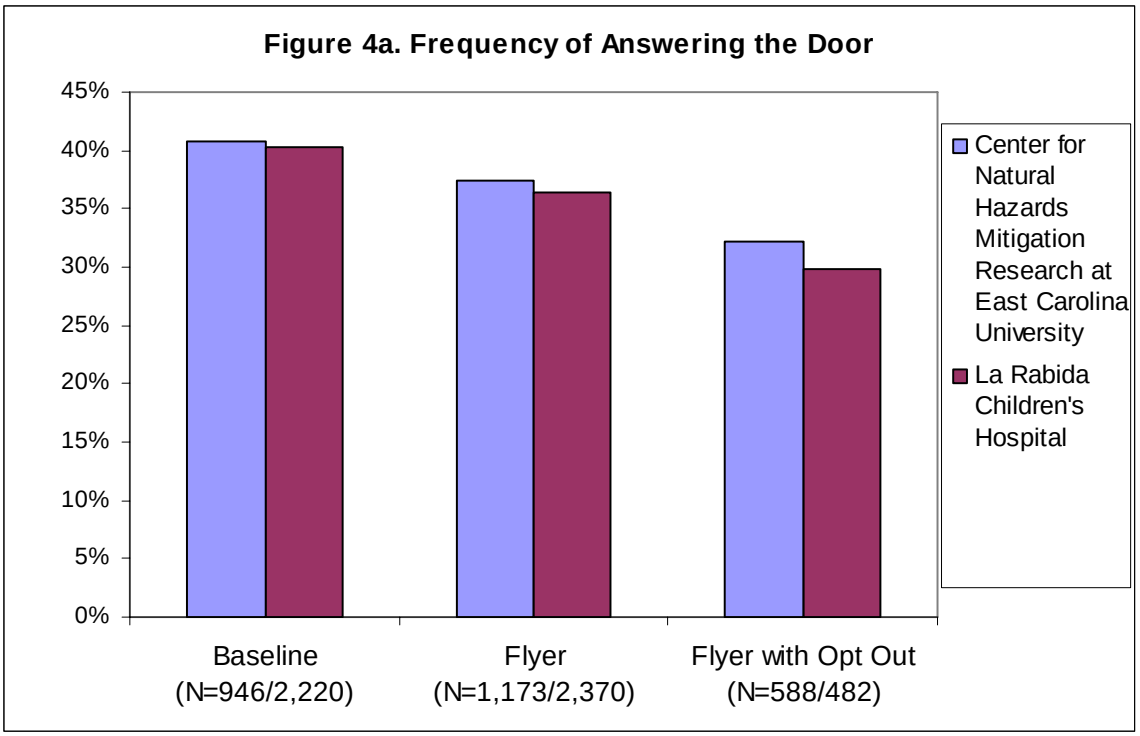


Figure 4a. Frequency of Answering the Door
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Baseline (N=946/2,220)
Flyer (N=1,173/2,370)
Flyer with Opt Out (N=588/482)
Center for Natural Hazards Mitigation Research at East Carolina University
La Rabida Children's Hospital

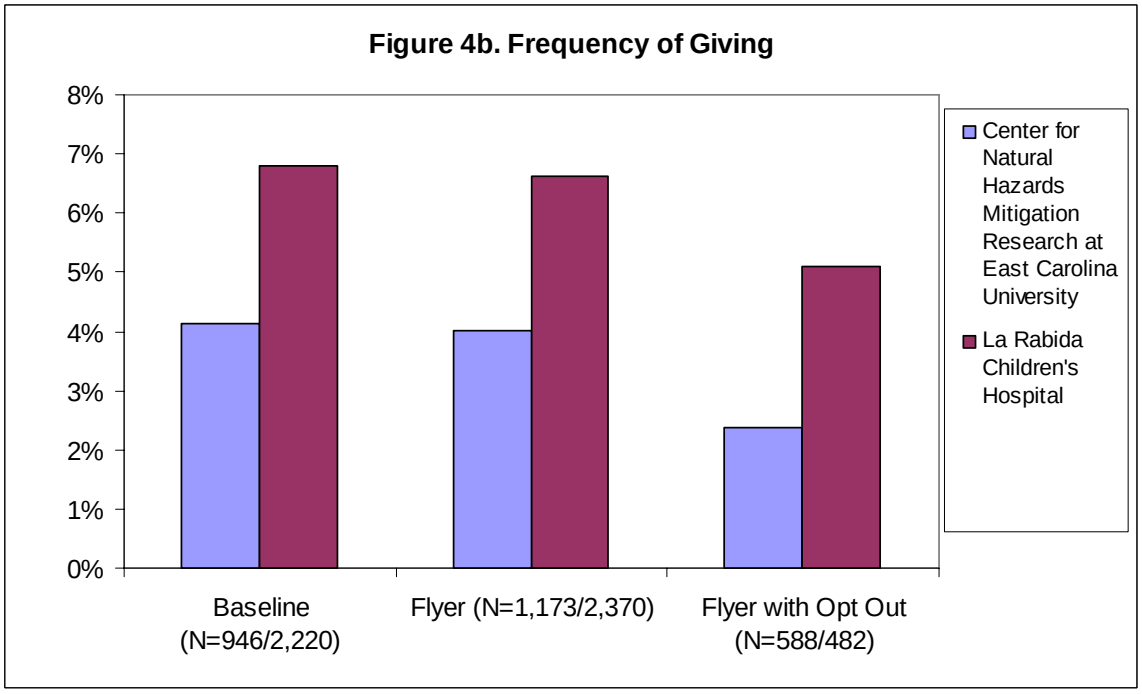


Figure 4b. Frequency of Giving
8%
7%
6%
5%
4%
3%
2%
1%
0%
Baseline (N=946/2,220)
Flyer (N=1,173/2,370)
Flyer with Opt Out (N=588/482)
Center for Natural Hazards Mitigation Research at East Carolina University
La Rabida Children's Hospital

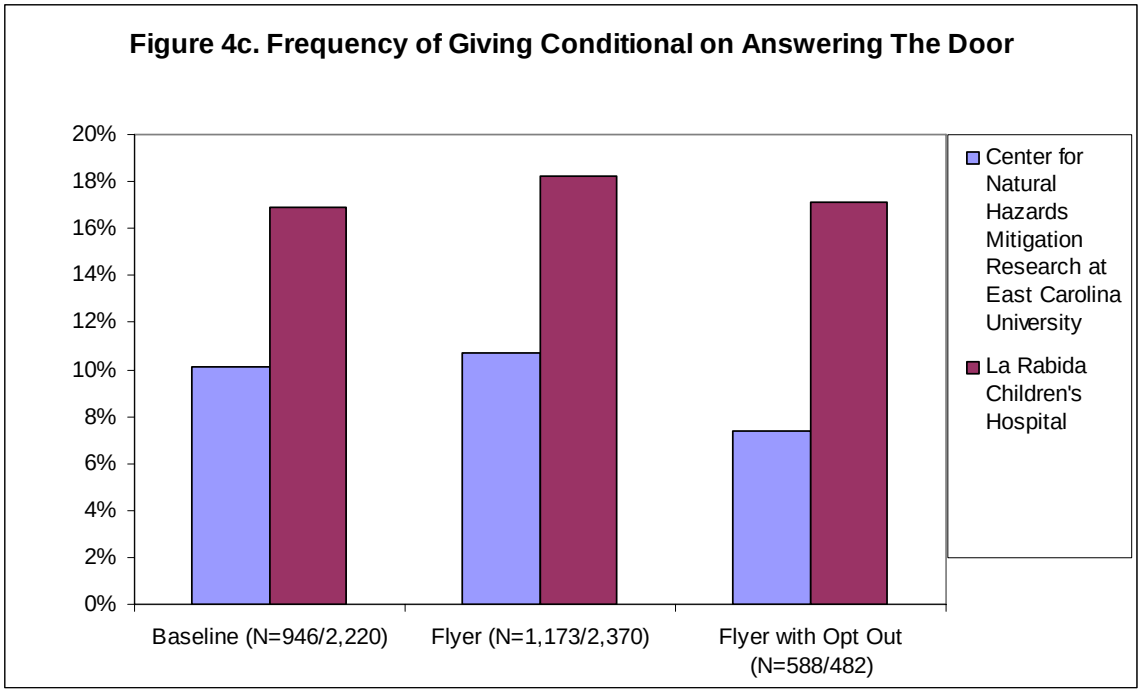
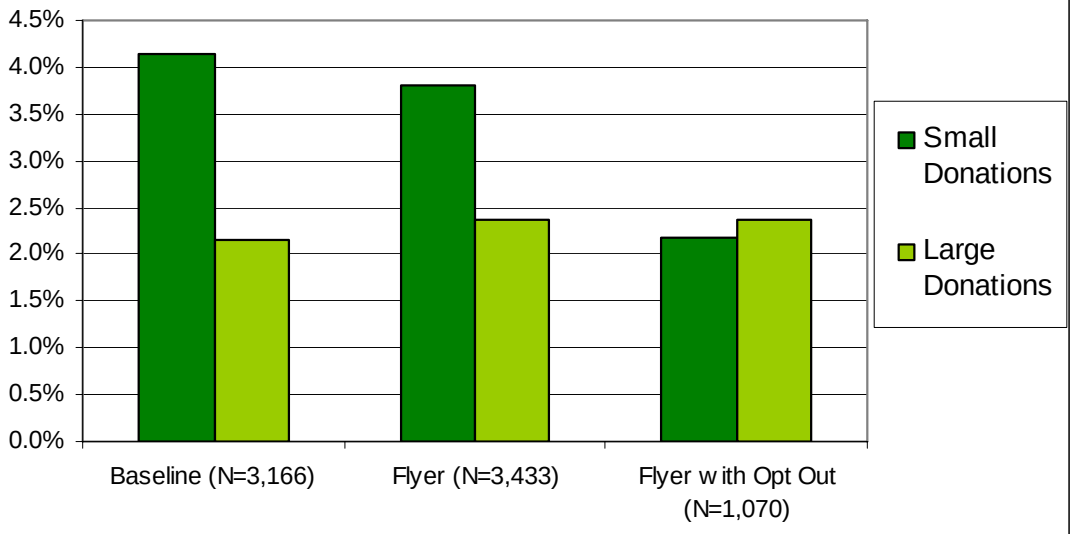


Figure 4c. Frequency of Giving Conditional on Answering The Door
20%
18%
16%
14%
12%
10%
8%
6%
4%
2%
0%
Baseline (N=946/2,220)
Flyer (N=1,173/2,370)
Flyer with Opt Out (N=588/482)
Center for Natural Hazards Mitigation Research at East Carolina University
La Rabida Children's Hospital

Figure 5. Frequency of Giving: Small versus Large (*pooled*)



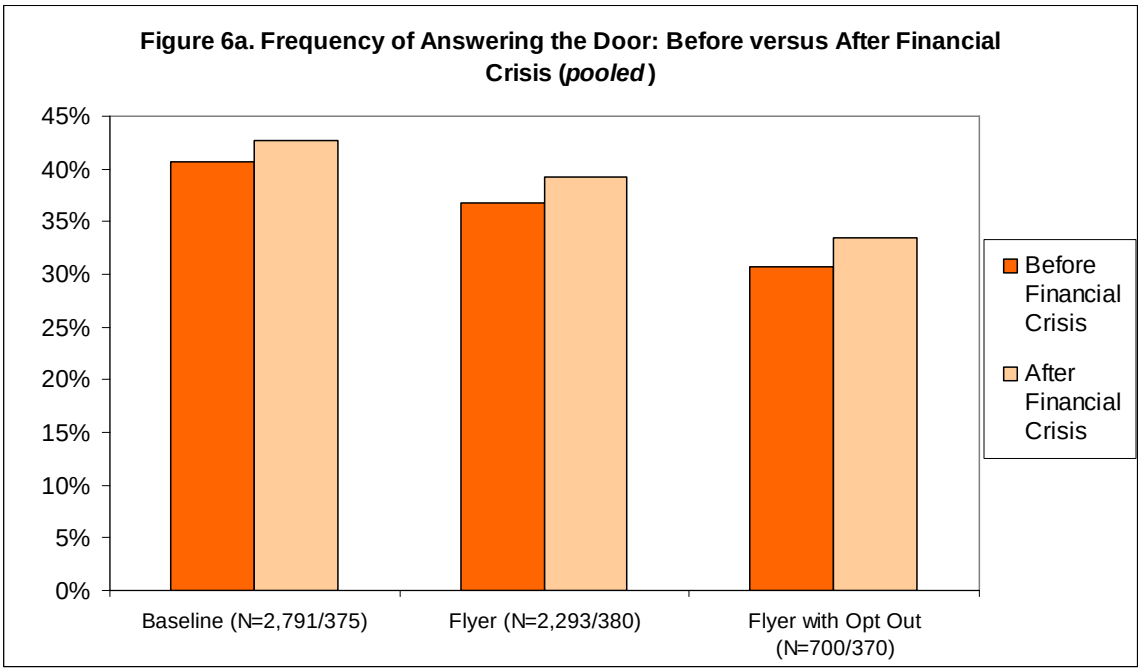


Figure 6a. Frequency of Answering the Door: Before versus After Financial Crisis (*pooled*)
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Baseline (N=2,791/375)
Flyer (N=2,293/380)
Flyer with Opt Out (N=700/370)
Before Financial Crisis
After Financial Crisis

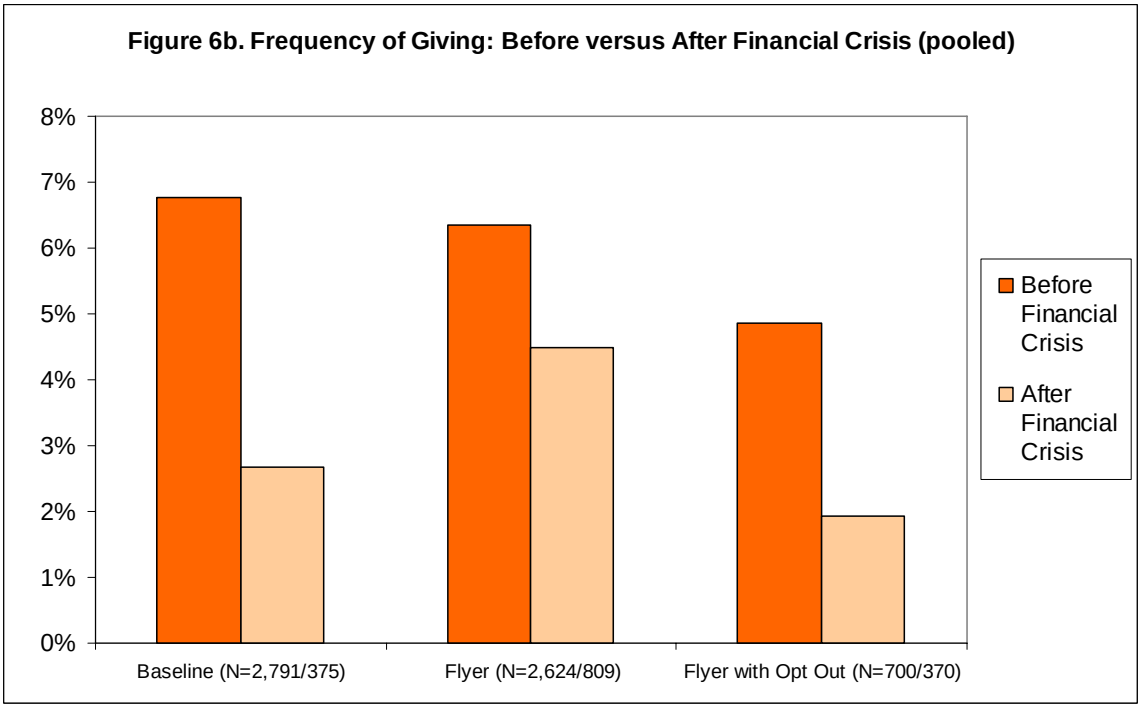


Figure 6b. Frequency of Giving: Before versus After Financial Crisis (pooled)
8%
7%
6%
5%
4%
3%
2%
1%
0%
Baseline (N=2,791/375)
Flyer (N=2,624/809)
Flyer with Opt Out (N=700/370)
Before Financial Crisis
After Financial Crisis

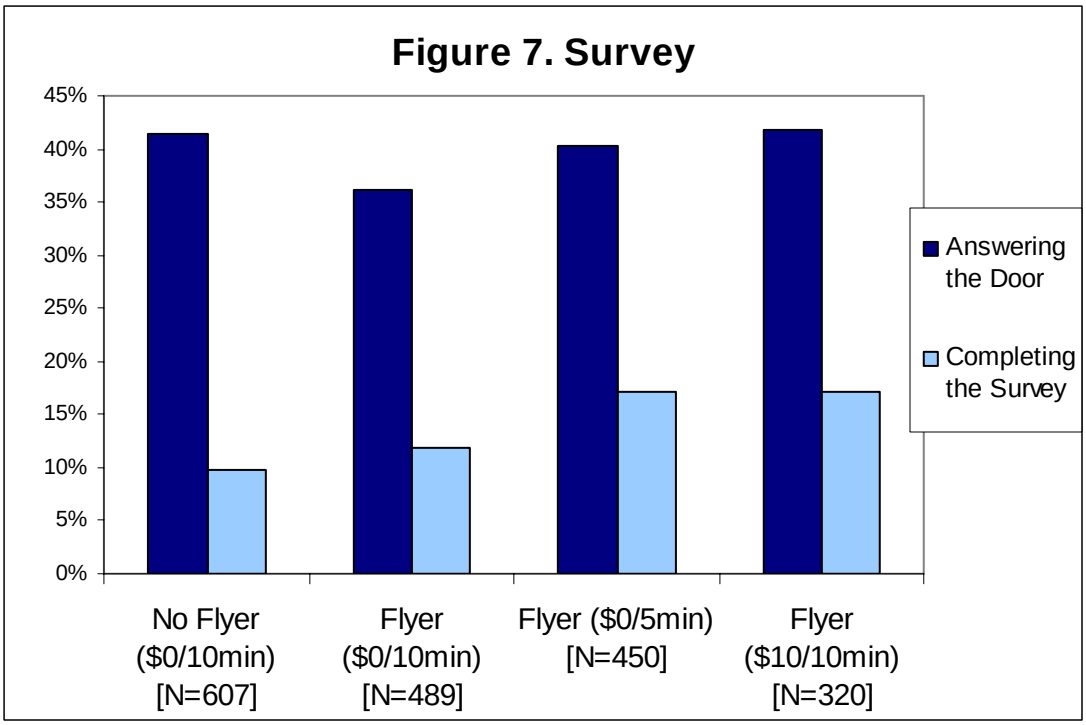


Figure 7. Survey
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
No Flyer ($0/10min) [N=607]
Flyer ($0/10min) [N=489]
Flyer ($0/5min) [N=450]
Flyer ($10/10min) [N=320]
Answering the Door
Completing the Survey

Table 1. Summary Statistics

Panel A: Fund-Raising Treatments

Variable:	**Share of Households Answering the Door**			**Share of Households Giving**		
Sample:	Pooled	ECU	La Rabida	Pooled	ECU	La Rabida
	(1)	(2)	(3)	(4)	(5)	(6)
Baseline (No-Flyer) Treatment	0.409	0.4228	0.4032	0.0629	0.0507	0.0680
Flyer Treatment	0.3755	0.3998	0.3628	0.0585	0.0460	0.0650
Flyer with opt out Treatment	0.3355	0.3503	0.3175	0.0514	0.0289	0.0788
N	N = 7669	N = 2707	N = 4962	N = 7669	N = 2707	N = 4962

Panel B: Survey Treatments

Variable:	**Share of Households Answering the Door** (1)	**Share of Households Completing the Survey** (2)
No-Flyer ($0/10min) Treatment	0.4135	0.0972
Flyer ($0/10min) Treatment	0.3681	0.1186
Flyer ($0/5min) Treatment	0.3933	0.1711
Flyer ($10/10min) Treatment	0.4156	0.1719
N	N = 1866	N = 1866

Notes:

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 1. Summary Statistics

Panel A: Fund-Raising Treatments

Variable:	Share of Households Answering the Door			Share of Households Giving (In-Person)			Share of Households Giving (Mail/Internet)
Sample:	Pooled	ECU	La Rabida	Pooled	ECU	La Rabida	ECU
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Baseline (No-Flyer) Treatment	0.409	0.4228	0.4032	0.0629	0.0507	0.0680	0.0000
Flyer Treatment	0.3755	0.3998	0.3628	0.0585	0.0460	0.0650	0.0000
Flyer with opt out Treatment	0.3355	0.3503	0.3175	0.0514	0.0289	0.0788	0.0000
N	N = 7669	N = 2707	N = 4962	N = 7669	N = 2707	N = 4962	N = 2707

Panel B: Survey Treatments

Variable:	Share of Households Answering the Door	Share of Households Completing the Survey
	(1)	(2)
No-Flyer ($0/10min) Treatment	0.4135	0.0972
Flyer ($0/10min) Treatment	0.3681	0.1186
Flyer ($0/5min) Treatment	0.3933	0.1711
Flyer ($10/10min) Treatment	0.4156	0.1719
N	N = 1866	N = 1866

Notes:

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 2. Results for Fund-Raising Treatments

Specification:	OLS Regressions									
Dep. Var.:	Indicator for Answering the Door			Indicator for Giving			Indicator for Giving Small Amount (= $10)	Indicator for Giving Large Amount (> $10)	Indicator for Giving Prior to Crisis (9/1/2008)	Indicator for Giving Post Crisis (9/1/2008)
Sample:	Pooled	ECU	La Rabida	Pooled	ECU	La Rabida	Pooled		Pooled	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Flyer Treatment	-0.038	-0.0323	-0.0397	-0.0013	0.0034	-0.0014	-0.0034	0.0021	-0.0043	0.0182
	(0.0139)***	(0.0324)	(0.0150)**	(0.0062)	(0.0070)	(0.0080)	(0.0052)	(0.0035)	(0.0071)	(0.0097)*
Flyer with opt out Treatment	-0.0946	-0.0902	-0.1019	-0.0174	-0.0173	-0.0155	-0.0197	0.0023	-0.0190	-0.0075
	(0.0193)***	(0.0276)***	(0.0313)***	(0.0079)**	(0.0099)*	(0.0135)	(0.0076)**	(0.0051)	(0.0100)*	(0.0121)
Mean of Dep. Var. for Baseline Group	0.409	0.4228	0.4032	0.0629	0.0507	0.068	0.0414	0.0215	0.0677	0.0267
Control Variables:										
Solicitor-Date Fixed Effects	X	X	X	X	X	X	X	X	X	X
N	N = 7669	N = 2707	N = 4962	N = 7669	N = 2707	N = 4962	N = 7669	N = 7669	N = 6115	N = 1554

Notes: Estimates for a linear probability model, with standard errors clustered by solicitor-date in parenthesis. The omitted treatment is the Baseline No-Flyer fund-rasigin treatment. The regressions include controls for solicitor-date fixed effects, as well as a 0-10 rating of home values in the block.
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 3. Results for Survey Treatments

Specification:	OLS Regressions			
Dependent Variable:	Indicator for Answering the Door	Indicator for Completing Survey		
			Prior to Crisis (9/1/2008)	Post Crisis (9/1/2008)
	(1)	(2)	(3)	(4)
Flyer ($0/10min) Treatment	-0.0514	-0.0041	-0.0109	0.0234
	(0.0385)	(0.0262)	(0.0303)	(0.0353)
Flyer ($0/5min) Treatment	-0.0107	0.0716	0.0882	0.0333
	(0.0328)	(0.0229)***	(0.0301)***	(0.0250)
Flyer ($10/10min) Treatment	0.0044	0.0752	0.0934	0.0329
	(0.0416)	(0.0278)**	(0.0364)**	(0.0290)
Mean of Dep. Var. for No Flyer ($0/10min)	0.4135	0.0972	0.109	0.0576
Control Variables:				
Randomization Fixed Effects	X	X	X	X
N	N = 1866	N = 1866	N = 1378	N = 488

Notes: Estimates for a linear probability model, with standard errors clustered by solicitor-date in parenthesis. The omitted treatment is the Baseline No-Flyer $0-10 minutes survey. The regressions include controls for solicitor-date fixed effects, as well as a 0-10 rating of home values in the block.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4. Empirical Moments and Estimated Moments

Specification:	Minimum-Distance Estimates			
Charity	La Rabida Charity		ECU Charity	
Moments for Charity	Empirical Moments	Estimated Moments	Empirical Moments	Estimated Moments
Moments	(1)	(2)	(3)	(4)
P(Home) No Flyer	0.4131	0.4180	0.4174	0.4180
P(Home) Flyer	0.3728	0.3733	0.3813	0.3814
P(Home) Opt-Out	0.3071	0.3082	0.3286	0.3193
P(Giving) No Flyer	0.0716	0.0731	0.0454	0.0389
P(Giving) Flyer	0.0703	0.0668	0.0456	0.0426
P(Giving) Opt-Out	0.0516	0.0540	0.0267	0.0398
P(Opt Out) Opt-Out	0.1202	0.1098	0.0988	0.1032
N	N = 4962	N = 4962	N = 2707	N = 2707
	P(Home)		P(Do Survey)	
Moments for Survey	Empirical Moments	Estimated Moments	Empirical Moments	Estimated Moments
Moments	(1)	(2)	(3)	(4)
No Flyer $0, 10min	0.4136	0.4180	0.1025	0.0918
Flyer $0, 10min	0.3576	0.3733	0.1024	0.1061
Flyer $0, 5min	0.4132	0.4006	0.1815	0.1860
Flyer $10, 10min	0.4035	0.3964	0.1719	0.1744
N	N = 1866	N = 1866	N = 1866	N = 1866

Notes: Estimates from minimum-distance estimator.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5. Minimum-Distance Estimates of Model Parameters

Specification:	Minimum-Distance Estimates					
Elasticity Eta:	Estimated Eta		Fixed Low Eta		Fixed High Eta	
Charity	La Rabida Charity	ECU Charity	La Rabida Charity	ECU Charity	La Rabida Charity	ECU Charity
Parameters	(1)	(2)	(1)	(2)	(1)	(2)
Prob. Opening Door (h)	0.4180		0.4176		0.4180	
	(0.0055)		(0.0055)		(0.0054)	
Prob. Observing Flyer (r)	0.2629		0.2642		0.2607	
	(0.0076)		(0.0076)		(0.0076)	
Elasticity of Home Presence (eta)	0.0486		0.0200		0.5000	
	(0.0590)		(fixed)		(fixed)	
Charity Parameters						
Mean of Altruism (1 = Full Altruism)	0.4946	-1.3789	-0.2170	-5.1335	0.9508	0.7847
	(0.9345)	(3.8957)	(1.6679)	(6.7139)	(0.0673)	(0.2270)
Std. Dev. of Altruism	0.1510	1.5355	0.3672	3.9905	0.0145	0.1377
	(0.6925)	(2.6250)	(1.6111)	(4.7700)	(0.0649)	(0.1614)
Social Pressure Cost of Saying No to Charity	3.6416	3.4754	8.7399	8.4040	0.3564	0.3369
	(4.6259)	(4.6891)	(2.6549)	(4.4276)	(0.1074)	(0.1791)
Survey Parameters						
Mean Utility of Doing 10-Minute Survey	-25.6460		-28.0080		-24.5540	
	(7.2196)		(6.7757)		(7.5742)	
Std. Dev. of Utility of Doing Survey	25.5070		24.5180		28.1510	
	(9.1079)		(8.8928)		(10.1010)	
Social Pressure Cost of Saying No to Survey	5.9140		10.6200		0.7180	
	(5.5826)		(2.1501)		(0.1124)	
Value of Time of One-Hour Survey	137.9300		142.5000		138.9800	
	(45.6620)		(46.9900)		(49.7890)	
Cost of Altering Prob. Home by 10 pctg. Pts.	$0.21	$0.21	$0.50	$0.50	$0.02	$0.02

Notes: Estimates from minimum-distance estimator with weights given by identity matrix. See text for details.