

# The Importance of Being Marginal: Gender Differences in Generosity<sup>1</sup>

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## Abstract

Do men and women have different social preferences? Previous findings are contradictory. We provide a potential explanation using evidence from a field experiment. In a door-to-door solicitation, men and women are equally generous, but women become less generous when it becomes easy to avoid the solicitor. Our structural estimates of the social preference parameters suggest an explanation: women are more likely to be on the margin of giving, partly because of a less dispersed distribution of altruism. We find similar results for the willingness to complete an unpaid survey: women are more likely to be on the margin of participation.

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In modern economies, private organizations are relied on to provide important public goods and services. Indeed, since 1971 individual contributions to charitable causes have increased from roughly \$130 billion to nearly \$300 billion, or about 2% of GDP. Despite much interest in understanding the ‘whys?’ and ‘whats?’ of giving, however, fundraisers and academics alike have faced some persistent puzzles when trying to predict which individual will give for which cause. The predictive power of demographic and other individual characteristics varies widely across data sets and studies. In the case of gender, the focus of our study, there are conflicting views on which is the more charitable gender. In the laboratory, using variants of the dictator game, Bolton and Katok (1995) find no evidence of gender differences in generosity, while Eckel and Grossman (1998) find that women share twice as much on average.

The same puzzle exists in field data. Looking at the statistics of blood donation, women sometimes are overrepresented (e.g., among first-time Norwegian blood donors in Misje, Bosnes, and Heier, 2010) and sometimes underrepresented (e.g., in most European countries in the meta analysis of Bani and Guissani, 2010) relative to men.

We provide new evidence from a field experiment that can help reconcile prior conflicting findings. We argue that seeming inconsistencies in gender-specific patterns of pro-social behavior reflect, at least partly, distributional differences in altruism between genders. Even in cases where men and women do not differ in their mean inclination to give, differences in heterogeneity can lead to a higher share of women being on the margin of giving. Hence, small differences in the giving request (such as in the cost of saying no) can have sizeable effects on women’s pro-social behavior relative to men. Hence, it is important to estimate the within-gender heterogeneity in social preferences to better understand the gender differences.

Our analysis builds on recent attempts to tie models of pro-social behavior more closely to

empirical tests, obtaining structural estimates of the underlying preferences. Specifically, DellaVigna et al. (2012) use a door-to-door fund-raising campaign and survey to disentangle the importance of warm-glow altruism versus social pressure in charitable giving. Their estimates suggest that the social pressure cost of saying no to a solicitor plays an important role in high-pressure giving requests such as door-to-door campaigns. In this paper, we exploit the rich design in DellaVigna et al. (2012) to estimate the distribution of social preferences by gender.

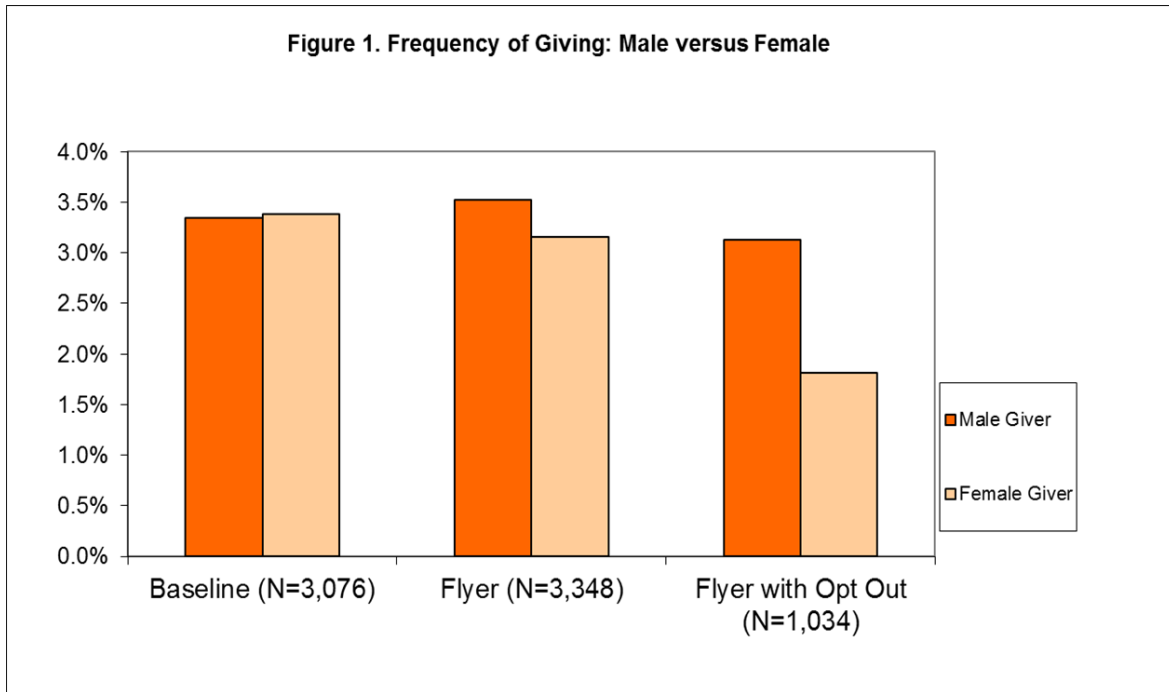
DellaVigna et al. (2012) compare the incidence of giving in a control treatment, in which subjects receive an unannounced door-to-door visit, to two flyer treatments, in which subjects are notified a day in advance of the upcoming door-to-door campaign via a flyer on the door knob. The flyer treatments allow donors who give due to altruistic motives to sort in; and they allow donors who give due to social pressure to sort out. In one of the two flyer treatments, the flyer also includes an opt-out box, which makes it easy to avoid the solicitor (the solicitor does not contact the household if the box is checked). The main findings are that (i) the simple flyer lowers the share answering the door, relative to the control group, but does not affect the share giving; and that (ii) the opt-out option lowers both the share answering the door and the share of individuals giving. These findings suggest that both altruism and social pressure are at play. The desire to avoid social pressure explains the drop in giving in the opt-out treatment.

In this paper, we decompose these findings by gender of the respondents. In Figure 1 we plot for each treatment the share of households in which a male person answers and gives to the charity out of all the households contacted; similarly, we compute a share of females answering and giving to the charity. The sum of the two shares equals approximately the unconditional share of givers out of all the individuals contacted.<sup>2</sup> As Figure 1 shows, the shares of male and

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<sup>2</sup> For a small fraction of respondents, gender was not recorded. Notice also that we do not observe the gender of the potential giver in the case of households not answering the door.

female givers are about the same in the baseline treatment. Given that the shares of males and females answering the door (not shown) are also similar in this treatment, we conclude that generosity in the baseline treatment does not differ by gender. The shares remain similar in the simple flyer treatment. In the opt-out treatment, however, women are significantly *less* likely to give. The decrease in male giving in the opt-out treatment is instead small.



**Figure 1. Share of households contacted giving to a charity, by gender and treatment**

These results provide yet another example of the seemingly inconsistent findings in giving behavior: In a setting where individuals cannot (easily) avoid a giving request, we find no gender differences; in a setting where individuals can sort out at a low cost, instead, the data suggests significant gender differences in giving behavior. Considering these findings jointly, however, we conclude that women are more responsive to a simple avoidance strategy, the opt-out box.

We estimate the social preference parameters separately by gender. Using all the empirical moments in the data (not just those displayed in Figure 1), and allowing the key parameters to differ by gender, we find a significant difference not only in the mean, but also in the variance of

the gender-specific altruism distributions. The implied distributions indicate that a higher share of women is on the margin of giving, and hence responsive to a low-cost opportunity to opt out (since marginal givers prefer not to be asked in the first place). We also find evidence of a similar pattern with respect to the pro-social willingness to answer a survey request.

Our findings point to the importance of considering differences in the overall distribution of social preferences and, in particular, marginality. When put under pressure, women may give more, and contribute more to public goods because they are more likely to be on the margin, and hence sensitive to an extra push. But they may say no if given a simple option to do so.

The finding in this paper are consistent with the hypothesis that women are more malleable or more sensitive to social cues in determining appropriate behavior (see, e.g., Kahn et al., 1971; Croson and Gneezy, 2009).<sup>3</sup> Our findings are not inconsistent with the findings cited above that suggest that women are more generous than men. A natural interpretation is that the presence of a larger share of marginal givers leads women to give more in certain situations, but not in others. We would like to emphasize, though, that the results in this paper should be seen as suggestive and that more evidence will be necessary. Finally, this paper highlights the benefits of the literature on Structural Behavioral Economics. While the reduced-form findings on gender differences in giving are of first order importance, it is the estimation of the underlying giving preferences which suggests a possible explanation of differences in giving across settings.

## I. Framework and Experimental Design

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<sup>3</sup> Our findings also complement the price sensitivity of giving established by Andreoni and Vesterlund (2001), who show that women are more generous than men when it is relatively expensive to give, but that men begin to give more than women as the price of giving decreases.

Framework. Consider a two-stage game between a solicitor and a potential giver (solicitee).<sup>4</sup> In the first stage, the solicitee may receive a warning of the upcoming solicitation via a flyer at the door, which she notices with probability  $r \in (0,1]$ . In the second stage, the solicitor visits the home. The solicitee opens the door with probability  $h \in [0,1]$ . If she did not notice the flyer (or did not receive one), then  $h$  is equal to  $h_0 \in (0,1)$ . If she noticed the flyer, then she can adjust the probability to  $h$  at a cost  $c(h)$ , with  $c(h_0) = 0$ ,  $c'(h_0) = 0$ , and  $c''(\cdot) > 0$ .

If the solicitee opens the door, then she donates  $g \geq 0$ . If she does not open the door, there is no donation ( $g = 0$ ). In our set-up, a solicitee of gender  $i \in \{female, male\}$  has utility given by:

$$U^i(g) = u^i(W - g) + a^i v^i(g, G) - s^i(g). \quad (1)$$

The overall utility  $U^i$  of an individual of gender  $i$  is composed of three terms. (For simplicity, we suppress the index for each individual.) First, private consumption is denoted by  $u^i$ , which includes wealth  $W$  minus the individual's donation  $g$ . We model this private utility as satisfying standard properties:  $(u^i)' > 0$  and  $(u^i)'' \leq 0$ . The second term in (1),  $a^i v^i$ , allows for pure and impure altruism (warm glow). In the case of pure altruism, the agent cares about the total contributions to the charity,  $G + g$ , where  $G$  is the giving of others. In the case of impure altruism, the agent cares about the warm glow from giving  $g$ , and  $v^i$  does not depend on the giving of others. The altruism parameter  $a^i \geq 0$  captures the intensity of the warm glow (the case  $a^i < 0$  captures the possibility of spite). Importantly,  $a^i$  is assumed to be heterogeneous across people of gender  $i$ , with a distribution  $F^i$ .

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<sup>4</sup> We only summarize the framework here, directing the interested reader to the details and the slightly more general model in DellaVigna et al. (2012).

The third component of (1) is social pressure. The solicitee absorbs a utility cost  $s^i(g) = S^i \cdot (g^n - g) \cdot 1_{g < g^n} \geq 0$  for not giving (or for giving a small amount), with this cost decreasing linearly in  $g$ . The giver does not incur a social pressure cost if she is away from home during the visit. The special case of  $S^i = 0$  (no social pressure) and  $a^i = 0$  (no altruism or warm glow) represents the standard model.

The model yields several testable implications. When altruism dominates social pressure, the flyer increases home presence and giving relative to the control group since some agents seek to meet the solicitor. When social pressure dominates, instead, the flyer treatments, and especially the opt-out ones, lead to lower rates of answering the door and of donations. We allow these effects to differ by gender.

We also model the decision to respond to a survey request, which is a form of giving, namely of giving time for a survey. We assume that individuals of gender  $i$  receive a utility  $sv^i$  (which could be positive or negative) from completing a 10-minute survey for no monetary payment. In addition, individuals receive utility from a payment  $m^i$  for completing the survey, and receive disutility from the time cost  $t^i$  of the survey, both of which are deterministic. The overall utility from completing a survey hence is  $sv + m - t$ . We assume that each individual has a pro-social value  $sv^i$  drawn from a normal distribution.

We structurally estimate the model to provide evidence on the social preference parameters for men and women.

Experimental Design. Our design combines two elements. First, we raise money in a door-to-door fundraising drive for two charities: La Rabida Children's Hospital and the East Carolina Hazard Center (ECU). Second, we conduct surveys of varying lengths (and varying

monetary incentives as inducements) to estimate the elasticity of the presence at home and of the response rate to incentives.

In the control treatments, solicitors knock on the door or ring the bell and, if they reach a person, proceed through the script. In case of the charity solicitation, they inform the household about the charity (La Rabida or ECU) and ask if they are willing to make a donation. In case of the survey solicitation, they inquire whether the household member is willing to answer a survey about charitable giving. The solicitor informs the household member about the duration of the survey (5 or 10 minutes) and about the payment for completing the survey, if any (\$10, \$5, or none). In the flyer treatments, the solicitor's script is identical, but in addition a different solicitor leaves a flyer on the doorknob the day before the solicitation. The professionally prepared flyer indicates the time of the upcoming fund-raising (or survey) visit within a one-hour time interval. In the treatments with opt-out, these flyers include a box that says: "Check this box if you do not want to be disturbed." If the solicitors find the box checked, they do not knock on the door.

The field experiment took place on Saturdays and Sundays between April 2008 and October 2008. We employed 92 solicitors and surveyors, mostly undergraduate students at the University of Chicago.

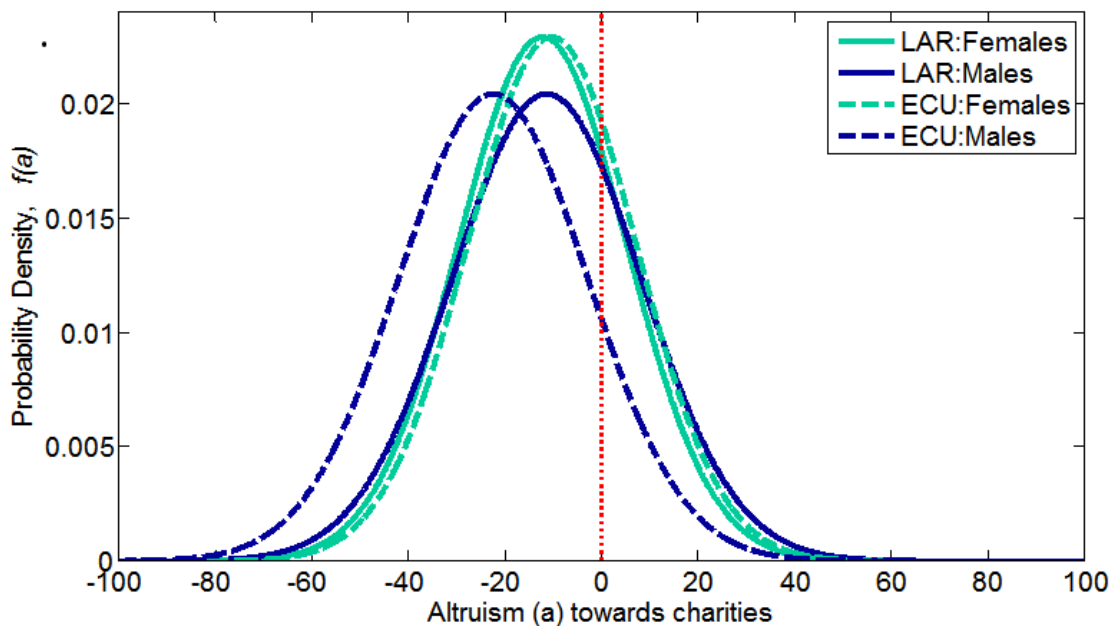
## II. Structural Estimates

We estimate the parameters of the model using a minimum distance estimator following the same procedure as in DellaVigna et al. (2012), to which we refer for details. We allow some of the key parameters to differ by gender, namely the parameters determining the distribution of altruism  $a$  towards the charities: the mean and the standard deviation of altruism. We also allow for a different social pressure cost of turning down a solicitor for males and females. Finally, we



model the willingness to complete an unpaid 10-minute survey as a normal distribution, with mean and standard deviation that differ by gender.

The resulting estimates are reported in Table 1 of the Online Appendix. Among the most relevant parameters, the standard deviation of the altruism distribution is smaller for women (17.4) than for men (19.5); in addition, there is a sizeable difference in the mean altruism towards the out-of-state charity (ECU). Figure 2 plots the implied density of the altruism distribution for the two charities, separately for each gender. Noted is the threshold for positive utility from giving.<sup>5</sup> As Figure 2 shows, for the out-of-state charity (ECU) the share of types that are on the margin of giving – that is the types at the threshold – is significantly larger for women. There is a smaller difference for the in-state charity. The larger density of estimated types at the margin for women implies that women will be more responsive to shifts in features of the environment, or in the cost of sorting out.



<sup>5</sup> The actual threshold for giving is  $a = (1-S)G$  and thus depends on the estimated social pressure cost which differs by charity and by gender; this threshold lies between 0 (plotted in the figure) and  $G (= 10)$ , the threshold with no social pressure.

## Figure 2. Implied distribution of altruism towards the two charities, by gender

While the emphasis so far is on giving of money, what about giving of time? We use the field experiment on door-to-door survey completion to estimate the willingness to complete an unpaid 5-minute survey. Figure 1 in the Online Appendix shows that the share of women completing the survey decreases significantly from the flyer treatment to the flyer with opt-out, consistent with the charitable giving results. Table 1 in the Online Appendix shows that the estimated standard deviation of the pro-social utility of completing a survey is again smaller for females (26.3) than for males (34.0), although the difference is not statistically significant at conventional levels. Figure 3 displays the implied distribution of pro-social utility from survey completion, which again shows that women are more likely to be at the marginal point.<sup>6</sup>

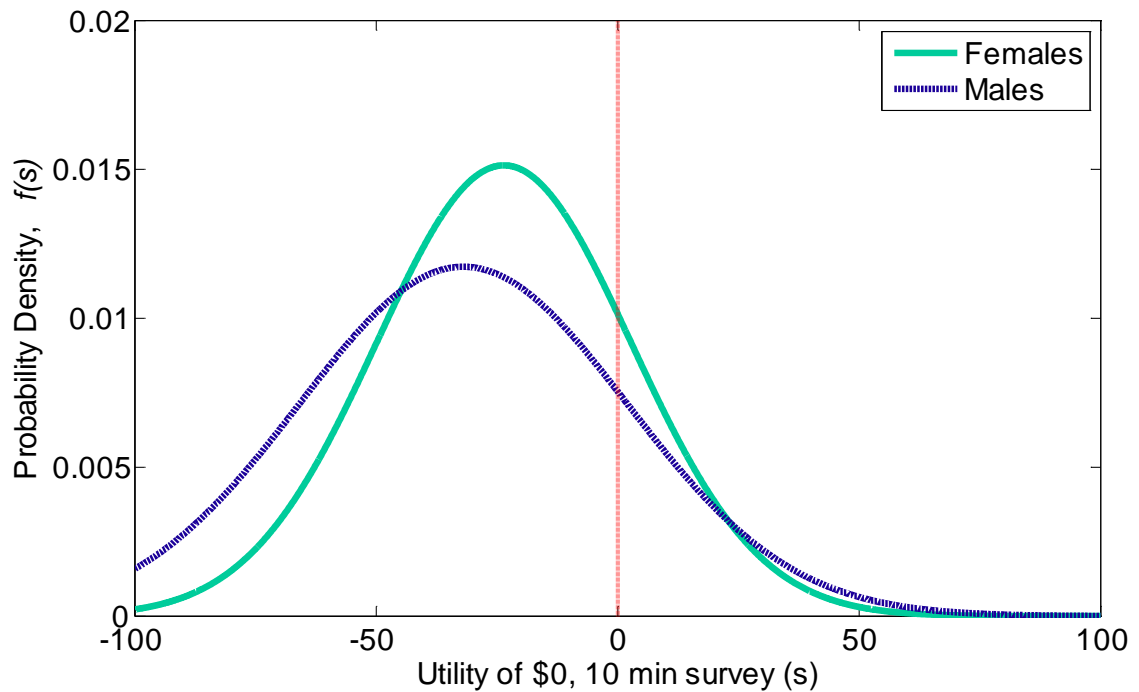


Figure 3. Implied distribution of willingness to complete a 5-minute unpaid survey.

<sup>6</sup> As in the case of giving money, the figure plots the threshold for positive willingness to do a survey; the threshold for survey completion is  $-S$ .

### III. Conclusions

This study uncovers an important relationship between gender and giving patterns: there are gender differences in social preferences, but it is important to go beyond considering differences in means –important gender differences may be at the margin. This leads women to give more in certain situations, but not in others, and also to be more sensitive to social cues.

Our study revolves around an experimental design that is tightly linked to a theory of altruism and social pressure. The results naturally permit to improve our understanding of the quantitative importance of each determinant of charitable giving. Differentiating by gender reveals a novel explanation for seemingly contradictory findings in previous literature, and our methodology is applicable to other determinants of giving.

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