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Adriaan R. Soetevent

Faculty of Economics & Business, University of Amsterdam, and Tinbergen Institute.

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1082 MS Amsterdam
The Netherlands
Tel.: +31(0)20 525 8579

Payment Choice, Image Motivation and Contributions to Charity:

Evidence from a Field Experiment

Adriaan R. Soetevent*

Universiteit van Amsterdam and Tinbergen Institute

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Abstract

This paper examines the impact of payment choice on charitable giving with a door-to-door fund-raising field experiment. Respondents can donate cash only, use debit only, or have both options. Cash donations have lower visibility *vis-á-vis* solicitors than debit card donations. When debit replaces cash, participation drops by 87 percent. Conditional on participation, donors in the Debit-only treatment give more than donors in Cash-only. In Cash&Debit, almost all donors prefer cash; participation decreases compared to Cash-only. Physical attractiveness of both female and male solicitors increases contributions. Solicitor self-confidence has a negative impact.

JEL classification: C93; D64; E42; H41
Keywords: Payment choice, field experiment, image motivation

*University of Amsterdam, Roetersstraat 11, 1018 WB Amsterdam, The Netherlands, Ph: +31 - (0) 20 - 525 73 51; a.r.soetevent@uva.nl. The Editor, Alan Auerbach, and two anonymous referees provided remarks that significantly improved the manuscript. This research project was financially supported by CCV; KPN Netherlands supplied the data transmission technology necessary to record the individual debit card transactions. Thanks to Carolien Hoogerwaard (CCV), Liesbeth van El, John van Dijk (Reumafonds) and CREED for their support in setting up this experiment. The study significantly benefited from comments provided by Lorenz Goette. Philip Hans Franses and Jeanine Kippers generously provided their data set on euro cash payments. Peter Heemeijer, Jeroen Hinloopen, Sander Onderstal, Hessel Oosterbeek, Erik Plug, Maarten van Rooij, Christian Traxler, participants at the 2008 Boston Fed workshop on Consumer Behavior and Payment Choice, ESA 2008, RES 2010, and participants at several seminars provided valuable comments. Soetevent's research is supported by the Netherlands Organisation for Scientific Research under grant 451-07-010. The usual disclaimer applies.

1 Introduction

Consumers have increasingly shifted from conventional payment instruments like cash and checks to plastic payment instruments like credit cards and debit cards in point of sale (POS) transactions. In the US, annual debit card transactions now exceed credit card transactions (Borzekowski, Kiser and Ahmed, 2008). In the Netherlands, debit card use is very common, with 98 percent of the adults owning one or more debit cards and the average household owning about 2.8. Despite these shifts in consumer payment behavior, the literature on the economics of charity has not yet addressed the question how payment options affect charitable giving.[1] Whereas in retail settings the value of the transaction is known to both seller and buyer, donors in a charity context can influence the visibility of the amount given in their choice of a particular payment instrument. Therefore, and dependent on the extent to which individuals care about how they are perceived by others, the menu of payment options offered by the charity is likely to affect the number of households that participate in the fund-raising drive (extensive margin) and the level of individual contributions of participating households (intensive margin). Visibility however is only one product dimension in which the cash and debit experiment differ. Other relevant product dimensions include time-cost (a preference for speed), convenience (the weight of cash), restraint (a desire to limit overspending), security (the risk of debit card fraud) and the salience of the instrument (cash is more salient in physical form than debit). Each of these variables may induce a preference for either cash or

[1] See Andreoni (2008) and Harrison and List (2004) for surveys of this literature.

debit.[2]

In this paper, I report the results of a door-to-door fund-raising field experiment designed to uncover the effects of changes in payment options in charitable giving. In collaboration with a large Dutch charity, solicitors approached about 3,500 households and each solicitor was randomly assigned to one of three treatments. These treatments differed in the set of payment instruments available to make a donation: households could either donate cash only, donate cash or use their debit card or use debit only. I refer to these treatments as the Cash-only, Cash&Debit and Debit-only treatment, respectively. Respondents who use the portable debit card terminal have to tell the solicitor the amount they want to donate. Because of this, debit card donations have higher visibility *vis-à-vis* solicitors than cash donations.[3]

The analysis contains the following main findings. First, I find that almost no donor chooses to donate by debit as long as the cash option is also available. Second, participation drops significantly from 67 percent in the Cash-only treatment to 9 percent in the Debit-only treatment. Both results indicate that donors do not like debit. Third, conditional on participation, the average donor in the Debit-only treatment gives €4.16 and is significantly more generous than the average donor in the Cash-only treatment, who gives €1.85 The switch from cash to debit triggers a significant drop in the fraction of donations less than €5, whereas the incidence of donations of €5 and higher is not affected. A propensity score matching estimator suggests that households in the Debit-only treatment are more generous than similar

[2]See Jonker, 2007, Borzekowski *et al.*, (2008), Zinman (2009) and Soman (2003) for empirical research on payment choice in different point-of-sale contexts.

[3]The solicitor types in this amount and then gives the terminal to the respondent to authorize the transaction by inserting her personal identification number. This procedure is similar in retail settings where the seller inserts the amount due. Both in retail settings as in the current study, the rationale for this division of tasks is to avoid that buyers/donors pay the wrong amount.

households in the Cash-only treatment.

Finally, I replicate Landry *et al.* (2006) and collect information on physical and personal characteristics of solicitors to see their effect on the amounts contributed to the charity. This replication exercise is useful because randomization is at the solicitor level, and the number of solicitors employed per treatment is modest in this and similar door-to-door fund-raising experiments. Consistent with Landry *et al.* (2006), I find that solicitor self-confidence and sociability have a negative impact on the amount given. The estimates show that the physical attractiveness of the solicitors increases contributions and, contrary to Landry *et al.* (2006), suggest that this effect is driven by female and male solicitors alike. For both male and female solicitors, a one-standard deviation increase in attractiveness is correlated with an extra €0.25-€0.30 donated. Landry *et al.* (2006) find a comparable point estimate for females; their estimate for males is negative but insignificant.

Motivated by these findings, I extend the Bénabou and Tirole's (2006) theoretical model on prosocial behavior to situations where participation and the visibility of the donation are choice variables. Individuals engage in prosocial acts like giving to charity because there are intrinsically motivated (they care for other's well-being), extrinsically motivated (there is a material reward or benefit associated with giving) and/or image-motivated (they care about how they are perceived by others). Bénabou and Tirole (2006) show that individuals donate more when their contribution is revealed. Their model predicts that the more important image concerns, the higher this excess donation. The modified model shows that when people can choose whether or not to participate and to reveal, they prefer to opt-in and reveal whenever the intrinsic distaste for using the non-anonymous instrument is small compared to the intrinsic motivation to donate and the excess donation

needed is relatively small. The empirical findings in this paper reveal a strong distaste for using debit and suggest that only individuals with a strong intrinsic motivation continue to donate in the Debit-only treatment and make an excess donation.

In a direct test of the Bénabou and Tirole model, Ariely, Bracha and Meier (2009) have identified that, both in the laboratory and in the field, image motivation interacts with extrinsic motives.[4] The empirical analysis in this paper aims to identify whether any observed differences in donation decisions across treatments are driven by image motivation or by other characteristics that lead people to prefer cash over debit or vice versa. I use the model characteristic that image-motivation, if present, induces people to donate more when their contribution is revealed, whereas other payment drivers only influence the choice for cash or debit.

2 Image Motivation

This section develops a modified version of the Bénabou and Tirole (2006) model on prosocial behavior. I extend this model to incorporate situations where agents are free to participate or not and can choose to reveal the amount given. The model provides qualitative and testable hypotheses about the impact of payment options on prosocial behavior and the interaction between payment choice and image motivation. These hypotheses will frame the subsequent empirical analysis.

[4]A number of laboratory and field experimental studies have been published on reputational concerns in giving to charity. Grossman (2009) presents evidence that in experimental dictator games, social signaling and not self-signaling is what induces dictators to give. A number of other studies have also found a positive effect of visibility on prosocial behavior (Andreoni and Petrie, 2004; Rege and Telle, 2004; Soetevent, 2005; Alpizar, Carlsson and Johansson-Stenman, 2008).

An agent's utility is specified by the additive quadratic utility function

$$U(a, m; M) = va + R(a, m; M) - C(a), \tag{1}$$

with $a \in \mathbb{R}^+$ the amount given, $m \in M$ the payment instrument used and M the set of available payment instruments; $M = \{c\}, \{d\}, \{c, d\}$ in the Cash-only, Debit-only, and Cash&Debit treatment, respectively; c indicates a cash donation and d a debit card donation. An individual's incentives to behave prosocially consist of two components. Besides an intrinsic motivation to donate a certain amount (v), agents are susceptible to image motivation ($R(a, m; M)$).[5] The direct benefit of participation at level a is va and $C(a)$ the associated cost. I assume $v \sim \mathcal{N}(\mu, \sigma^2)$ distributed with $\mu > 0$ and the cost function taking the form

$$C(a) = a^2/2 + \phi I(a > 0) + \delta I(a > 0 \wedge m = d),$$

with $I(\cdot)$ indicator functions. The parameter $\phi \geq 0$ reflects the effort, say, time cost associated with making a donation; δ absorbs the difference in utility between cash and debit donations. When donors do not like debit, $\delta > 0$. The reputational payoff function $R(a, m; M)$ is defined as:

$$R(a, m; M) \equiv \gamma E(v|a, m; M), \text{ with } \gamma \geq 0.^6 \tag{2}$$

In contrast to Bénabou and Tirole (2006), agents can choose the visibility of the amount given by the choice of a payment instrument m. When the

[5]The component in the Bénabou and Tirole (2006) model that represents extrinsic motivation is not included because extrinsic or monetary rewards are absent in the current experimental design. Debit users may receive a tax deduction when they keep their receipt and when their total donations to charity in a given year exceed 1% of gross income. The vast majority of households does however not meet this threshold and moreover, solicitors do not observe who is eligible for a deduction. For these reasons, this possibility is ignored. Empirical evidence on the effectiveness of tax deductions on charitable giving is mixed (Andreoni, 2008; Fack and Landais, 2007).

[6]The definition in Bénabou and Tirole (2006) contains an additional parameter x which measures the visibility of action a. Here, differences in visibility between treatments are accounted for in the conditional expectations.

respondent uses her debit card, the exact amount given is visible to the solicitor; when cash is used, the solicitor observes that a donation is made but not its value. For this reason, the reputational payoff of donating cash is independent of the amount given, i.e. $R(a, c; M) = R(c; M)$. Agents maximize (1) by choosing the optimal donation a and payment instrument m, conditional on the set of available payment instruments M.

The behavioral implications of this model for the three experimental treatments $M = \{c\}, \{d\}, \{c, d\}$ are as follows. First consider the optimal individual supply of prosocial activity a^* for agents with $v > 0$, conditional on available and chosen payment instruments M and m. Given identical image concerns γ for all agents, Bénabou and Tirole (2006, p. 1661) show that in equilibrium, participating individuals donate at the level:

$$a^*(c; M) = v + r(c; M) = v \qquad \text{if } m = c \text{ and } M = \{c\} \text{ or } \{c, d\}; \tag{3}$$

$$a^*(d; M) = v + r(d; M) = v + \gamma \quad \text{if } m = d \text{ and } M = \{d\} \text{ or } \{c, d\}, \tag{4}$$

with $r(m, M) = \partial R(a, m; M)/\partial a$ denoting the (constant) marginal image motivation, which is independent of a. In the case of cash donations, agents have no incentive to donate more than their intrinsic value because the exact amount given is unobserved. When individual donations are revealed and image motivation positively affects prosocial behavior ($\gamma > 0$), an agent's optimal donation equals her intrinsic motivation plus an excess donation γ.[7] In both cases, participating agents contribute more than an arbitrarily small amount ϵ ($0 < \epsilon < v$) and I refer to them as non-marginal donors. Below, I will describe how marginal donors (agents who contribute a minimal amount ϵ purely motivated by image concerns) may occur in the treatments with cash.

[7]The experimental design in this paper rules out the possibility that $\gamma < 0$ because of the absence of extrinsic or monetary rewards.

Prior to making a decision on which amount to give, agents have to decide whether or not to participate in the fund raise, and, when they choose to participate, which payment instrument to use. This in contrast to the experiments by Ariely *et al.* (2009), where subjects sign up for the experiment and subsequently learn the treatment. An agent's utility of non-participation in treatment M is

$$U(0;M) = \gamma E[v|0;M] \equiv R(0;M). \tag{5}$$

In any Bayesian-Nash equilibrium of this game, if agents of type $\hat{v}$ (do not) participate, all agents with $v > \hat{v}$ ($v < \hat{v}$) will also (not) participate.[8] Using (5) and inserting (3), and (4) in (1), one finds that all agents with $v > \sqrt{2\phi}$ ($v > \sqrt{\gamma^2 + 2(\phi+\delta)}$) strictly prefer to give cash (debit) over non-participation.

Cash-only treatment ($M = \{c\}$) In the Cash-only treatment, agents with $v > \sqrt{2\phi}$ will participate and contribute exactly v. Reputational payoffs of donating cash and non-participation equal

$$R(c;\{c\}) = \gamma E[v|c,\{c\}] \geq \gamma\mu \qquad \text{and} \qquad R(0;\{c\}) < 0,$$

respectively. Solving $U(\epsilon, c;\{c\}) = U(0;\{c\})$ for v shows that the agent with $v_0^{\{c\}}$ equal to

$$v_0^{\{c\}} = \epsilon/2 + \frac{\phi - \gamma(E[v|v \geq v_0^{\{c\}}] - E[v|v < v_0^{\{c\}}])}{\epsilon}, \tag{6}$$

is indifferent between not participating and donating a small amount ϵ of cash. Therefore, agents with $v_{0|C}^{\{c\}} \equiv \min\{v_0^{\{c\}}, \sqrt{2\phi}\} \leq v \leq \sqrt{2\phi}$ will also

[8]This implies that the reputational payoff from non-participation will never exceed the reputational payoff obtained from donating cash, $R(0;M) = E(v|0;M) \leq E(v|c;M) = R(c;M)$. In what follows, the value of $\hat{v}$ marking the participation separation in Cash-only, Cash&Debit and Debit-only, will be denoted $v_{0|C}^{\{c\}}$, $v_{0|D}^{\{d\}}$ and $v_{0|C}^{\{c,d\}}$, respectively

participate and donate a minimal amount motivated by image concerns. In donating a small amount, they signal to the solicitor that they are 'good'. I refer to these participants as 'marginal donors'.[9]

If the effort associated with making a donation is zero or small compared to image concerns ($\phi << \gamma$), $\lim_{\epsilon \downarrow 0} v_0^{\{c\}} = -\infty$ and we will observe full participation with all agents making at least a minimal contribution. The intuition is that the normality of v and the relatively fat tails of the normal distribution allow the intrinsic motivation to take extreme values. For γ large, all agents have strong incentives to separate themselves from the group with lower intrinsic motivation by donating a minimal amount.[10] If image concerns are small compared to the time cost of donating ($\phi >> \gamma$) marginal donors are ruled out for reasonably low values of ϵ because $v_0^{\{c\}}$ will exceed $\sqrt{2\phi}$. When image concerns are absent ($\gamma = 0$), $\lim_{\epsilon \downarrow 0} v_0^{\{c\}} = +\infty$.[11]

Debit-only treatment ($M = \{d\}$) In the Debit-only treatment, agents with intrinsic valuation $v < -\gamma$ will not participate in equilibrium because for them, $U(0, \{d\}) > U(v + \gamma, d, \{d\})$. Solving $U(0, \{d\}) = U(v + \gamma, d, \{d\})$

[9]Note that $v_0^{\{c\}}$ in equation (6) is endogenous and has one or two solutions, depending on the values for ϕ, γ and ϵ. In cases with two solutions, v^L and v^H ($> v^L$), only v^H constitutes a stable equilibrium in the sense that if we start close enough to v^H, we will remain close to v^H. In the remainder, I will limit attention to stable equilibria.

[10]Equations of the form $y = \theta(E[x|x \geq y] - E[x|x < y])$ with x normally distributed have one or two solutions for a given θ. For large θ, the only solution is $v_0^{\{c\}} = -\infty$. Technically, normality of v makes $E[v|v \geq v_0^{\{c\}}] - E[v|v < v_0^{\{c\}}]$ very large for extreme choices of $v_0^{\{c\}} < \mu$. This pushes the right-hand side of equation (6) down to $-\infty$ unless either γ is very small and/or ϵ in the denominator is large enough. Bénabou and Tirole (2006, p. 1660 fn. 18) likewise mention that often, "...normality yields great tractability at the cost of allowing certain variables to take implausible negative values."

[11]In practice, an agent's value of ϵ depends on his particular wallet content at the moment of solicitation. Data used by Franses and Kippers (2007) reveal that about 70 percent of Dutch consumers have at least one coin with a value of €0.20 or less in their wallet. This suggests that wallet content does not constrain the observed number of marginal donors.

for v shows that the agent with $v_0^{\{d\}}$ equal to

$$v_0^{\{d\}} = -\gamma + \sqrt{2\gamma\left(\gamma + E[v|v < v_0^{\{d\}}]\right) + 2(\phi+\delta)} \leq -\gamma + \sqrt{2\gamma(\gamma+\mu) + 2(\phi+\delta)}, \tag{7}$$

is indifferent between not participating and making a debit card transaction.[12] Agents with $v \geq v_{0|D}^{\{d\}} \equiv \max\{-\gamma, v_0^{\{d\}}\}$ will participate and donate $a(d;\{d\})^* = v + \gamma$. Note that, because of the upper bound in equation (7), agents with a high enough intrinsic motivation will prefer to use the debit terminal over non-participation. However, note as well that the upper bound is increasing in ϕ, δ, and in γ (for $\mu > 0$). It may therefore happen that none of these donors is solicited when either the time-cost of donating is large, the experienced disutility of donating by debit instead of cash is large, or when image concerns receive high weight, respectively.

The reputational incentive thus has two offsetting effects on participation. On the one hand, higher values of γ give agents larger incentives to donate in order to separate themselves from non-participants. On the other hand, the higher γ, the higher $a^*(d;\{d\})$ and with that the cost of participation. Under normality of v, the separation motive is the dominant force for small values of γ. For γ large, more and more agents opt-out because the cost of donating exceeds the benefits of separating from the group of non-participants.

Cash&Debit-treatment ($M = \{c,d\}$) In the Cash&Debit treatment, agents have to decide both on participation and on the use of a payment instrument. For agents with $v > 0$, the utility of donating cash is

$$U(a^*(c;\{c,d\}),c;\{c,d\}) = v^2/2 + \gamma E[v|v_{0|C}^{\{c,d\}} \leq v < v_{C|D}^{\{c,d\}}] - \phi, \tag{8}$$

[12] The upper bound on $v_0^{\{d\}}$ follows because $E[v|v < v_0^{\{d\}}]$ is bounded above by μ.

and the utility of donating debit is

$$U(a^*(d;\{c,d\}),d;\{c,d\}) = (v^2-\gamma^2)/2 + \gamma v - (\phi+\delta). \tag{9}$$

In equation (8), $v_{0|C}^{\{c,d\}} = \min\{v_0^{\{c,d\}}, \sqrt{2\phi}\}$ with $v_0^{\{c,d\}}$ the agent indifferent between not participating and donating a small amount ϵ in cash; $v_{C|D}^{\{c,d\}}$ denotes the agent indifferent between donating cash and using debit. One can write

$$v_0^{\{c,d\}} = \epsilon/2 + \frac{\phi - \gamma(E[v|v_{0|C}^{\{c,d\}} \leq v < v_{C|D}^{\{c,d\}}] - E[v|v < v_{0|C}^{\{c,d\}}])}{\epsilon}, \tag{10}$$

and

$$v_{C|D}^{\{c,d\}} = \gamma/2 + E[v|v_{0|C}^{\{c,d\}} \leq v < v_{C|D}^{\{c,d\}}] + \delta/\gamma \quad \text{for } \gamma > 0 \tag{11}$$

The second expression follows from equating (9) and (8) and solving for v. When $\gamma = 0$, the preference for cash or debit donations is solely dependent on δ: all donors use cash (debit) if $\delta > 0$ ($\delta < 0$). As in the cash-only case, either none or all agents with $v < \sqrt{2\phi}$ will be marginal donors in equilibrium for ϵ sufficiently small. Note that $v_{C|D}^{\{c,d\}}$ in equation (11) increases with γ: when the excess donation is small (low γ), all solicited agents may choose to reveal and donate by debit card; but when this excess donation is high, most agents may prefer to donate cash.

Table 1 gives numerical evaluations for some model specifications ($\mu = 1.24$ and $\sigma = 1.37$ correspond to the empirically observed mean and standard deviation of donations in the Cash-only treatment).[13] As expected, introduction of the time-cost ϕ of making a donation has the effect of reducing participation, thereby increasing the average donation of agents who do give (compare columns 1 and 2); an intrinsic distaste for debit ($\delta > 0$) results in low participation rates and high conditional donations in the Debit-only

[13]Matlab code to perform these calculations is available from the author upon request.

treatment, and in no one using the terminal in the Cash&Debit treatment (columns 2 and 3). The implications of image motivation are increased participation and higher donations by those donors who would also donate absent image concerns in the Debit-only treatment (columns 1 vs. 4, and 3 vs. 5). When the time-cost of donating is small compared to image concerns, image motivation results in full participation in the treatments with cash because of the presence of marginal donors (columns 1 vs. 4, and 3 vs. 6).

[Table 1 about here]

In sum, we have the following research hypotheses about the relation between payment choice, reputational concerns and contributions to charity:

1. DISTASTE FOR DEBIT AND PAYMENT CHOICE

- $\gamma = 0$**:** If agents dislike using debit (cash), i.e. $\delta > 0$ ($\delta < 0$), they will choose to use cash (debit) in the Cash&Debit treatment and this choice is unrelated to the agent's intrinsic motivation v.

- $\gamma > 0$**:** If $\delta = 0$, many agents will use debit in the Cash&Debit treatment as long as γ is moderate.
  If $\delta > 0$, the use of cash and debit depends on the relative size of γ and δ; if $\delta \gg \gamma$, only agents with high intrinsic motivation will use debit. For all values of δ, the debit instrument will be used by donors with high intrinsic motivation in the Cash&Debit treatment; agents with low intrinsic motivation will prefer to donate cash.

2. IMAGE MOTIVATION AND EXCESS DONATIONS If $\gamma = 0$, donors will not make excess donations when revealed. If $\gamma > 0$, contributing agents will make an excess donation when their donation is revealed.

3. PRESENCE OF MARGINAL DONORS When image concerns γ are important compared to the time cost of donating ϕ, agents who would not participate otherwise will donate a marginal amount in the treatments with cash, implying full participation. These marginal donors will not participate if either $\gamma = 0$ or ϕ is large compared to γ.

3 Experimental Design

This experiment has been performed in collaboration with the Reumafonds, the Dutch rheumatism fund. This fund supports people with rheumatic diseases and finances research on rheumatism. The fund is widely known and is one of the largest charities in the Netherlands in terms of income out of door-to-door fund-raising. In 2006, the fund-raising drive brought in €3.2 million, on a total income of €16.1 million.[14] Other partners were CCV, which supplied the solicitors with mobile debit terminals, and KPN, a major Dutch telecommunications firm which supplied the data transmission technology necessary to record the individual debit card transactions.

Door-to-door fund-raising campaigns in the Netherlands are coordinated by the Central Bureau on Fund-raising (CBF). This bureau assigns each charity a particular week to organize a nation-wide fund-raising drive. This ensures that households are never approached by more than one charity a week and that charities can publicize their fund-raising drive on national television and in newspapers.[15] The Reumafonds is traditionally allocated a fund-raising slot in the first week of March. This experiment was conducted during this particular week in 2008 in selected districts in Amsterdam. Solic-

[14]The Dutch Cancer Society tops the list with €8.8 million, followed by the Kidney Foundation (€4.5 mln.), the Netherlands Heart Foundation (€4.4 mln.) and the Rheumatism Fund (€3.2 mln.). (CBF, 2006).

[15]This may explain partly a higher percentage of households participate in the Cash-only treatment than in the VCM treatment of Landry *et al.* (2006) (67 versus 25 percent).

itors were randomly allocated to treatments and efforts were made to ensure that neighborhoods and streets were comparable across treatments in terms of household characteristics. The fund received the gross revenues raised.

The experiment consists of three treatments which differ in the set of payment instruments accepted by solicitors: households in the first treatment can only donate cash, this is the approach currently used by all Dutch charities; households in the second treatment can donate either cash or make a debit card donation; those in the third treatment can only use debit. Respondents who use the debit terminal have to tell the solicitor the exact amount they want to donate and for this reason, debit card donations have higher visibility than cash donations. This does not mean that cash donations are entirely unobservable, since donors may reveal the amount given to the solicitor, or the solicitor may infer something about the value of the gift when hearing the clinking of the coins.

Solicitors in the treatments that included cash, received a sealed collection box and two small packages of envelopes which carried the official logo of the charity. The envelopes were numbered on the inside to track the token composition of each donation and to link donations afterwards to the solicitee's background characteristics. Households were asked to put their donation in the envelope and to put the filled envelope into the box.

Solicitors in the treatments that included the debit terminal participated in a training session in which an instructor from CCV explained how to use the debit terminals. After a plenary instruction, students practiced by sliding through their own debit cards and making donations of one eurocent. In the end, everyone understood how to operate the terminal. Similar to the collection boxes, the debit card terminals carried the name of the Reumafonds. Transaction summaries were printed when a terminal was returned.

In this way individual debit card donations could be linked to the background characteristics of the contributors. Donors who used the terminal received a printed receipt from the solicitor as proof of their payment. Neither the donor nor the charity had to pay a fee for using the debit terminal and the donation was immediately debited from the donor's deposit account.

Care was taken that this framed field experiment resembled ordinary door-to-door fund-raising drives as closely as the nature of our setup allowed. For example, the student-solicitors used the same type of collection boxes as the other solicitors of the fund, they carried a bag and portfolio with the official logo of the fund and the informational brochures and the balloons they could give to small children at the door were identical to the ones used by other solicitors of the fund.

Solicitors were recruited by e-mail among students of the University of Amsterdam and were paid €75 after the data collection had been completed. Solicitors participated in a ten-minute intake interview in which they completed an application form. For the sake of comparison, the questions in the form show a great overlap with the questions asked by Landry *et al.* (2006); I asked about one's work experience, experience with fund-raising activities and included questions about weight and height to calculate a solicitor's body mass index (BMI). Moveover, I used the same categorical-response questions as in Landry *et al.* (2006) to compose measure of assertiveness, sociability, self-efficacy, performance motivation and self-confidence.[16] This results in individual measures for the personality traits in the range $\{-8, -7, \ldots, 8\}$. As in Landry *et al.* (2006) a measure of physical attractiveness was derived for each solicitor. For this reason, digital photographs of the solicitors were taken during the intake interview. Photos of two solicitors were randomly

[16]See Landry *et al.* (2006) for details.

paired and printed in color on a sheet of paper. These photos were evaluated by 93 different observers who each were given five randomly selected prints to evaluate, leading to a total of 930 personal attractiveness rankings. The evaluators were students of the Hogeschool van Amsterdam and the ranking ranged from (1) extremely unattractive, to (10) handsome. Each rater's scores were normalized to arrive at a standardized scale across raters. Summary statistics of the solicitor characteristics by treatment are shown in Table 2. Despite the relatively small number of solicitors, average solicitor characteristics are similar across treatments. The last column reproduces the mean solicitors characteristics reported in Landry *et al.* (2006). This comparison shows that compared to their study, solicitors in the current study have a lower BMI and somewhat higher hourly earnings. The percentage of male solicitors is comparable. Except for self-efficacy, solicitors in the Landry (2006) on average score one or more points higher for each personality trait. The difference is particularly large for performance motivation. These differences might reflect real cross-cultural differences in personality traits between US students and Dutch students, but may also result from cross-cultural differences in answering this type of questions.

[Table 2 about here]

In the week before the actual fund-raising drive, three separate training sessions were organized, one for each treatment group in order to prevent cross-contamination and information exchange across treatments. These sessions lasted 40 to 50 minutes. Each session was led by the same researcher, the same spokesperson of Reumafonds and the same instructor from CCV. In the first part of the training, the setup of the project was explained and solicitors were supplied with materials. In the second part, the spokesperson

of the Reumafonds provided the solicitors with background information on the fund and reviewed the fund's mission statement. Explicit attention was given to the way volunteers of the fund tend to approach people to solicit donations. In case small children opened the door, solicitors were advised to ask for one of their parents.

Like ordinary volunteers of the Reumafonds, our solicitors were free to choose which day(s) in the week March 10-15 they went out soliciting contributions, as long as they went out between 4-8.30 p.m., when most people are at home. In total solicitors had to work for about four hours; most chose to solicit one day, but some split work in two days of about two hours each. A short summary of the experimental design is presented in Table 3. The table shows that the days chosen by the solicitors are comparable across treatments.

[Table 3 about here]

4 Experimental Results

Section 4.1 reports descriptive statistics of the experiment and explores the general effects of offering different sets of payment instruments on revenues and participation. The analysis in Sections 4.2-4.3 evaluate each of the research hypotheses posed at the end of Section 2. Section 4.4 contains regression estimates that relate individual donation decisions to observable solicitor and solicitee characteristics.

4.1 Descriptive statistics

Table 4 provides summary statistics on contributions in each treatment. In total, €826, €814, and €292 was raised in the three treatments.[17] Per contact (i.e. including all persons who answered the door), this amounts to €1.24 in the Cash-only treatment, €1.09 in the Cash&Debit treatment and €0.38 in the Debit-only treatment. So, it turns out that the revenues per contact are significantly higher in the treatments where cash is allowed than in the Debit-only treatment ($p < 0.001$).[18] The average donation per contact in the Cash-only treatment is 14 percent (= 1.24/1.09) higher than in the Cash&Debit treatment but not significant ($p = 0.324$). Figure 1 for each treatment depicts the average amount per contact raised by each solicitor. The figure shows that the result that average contributions are much higher when cash is accepted is not caused by individual outliers at the solicitor level.

[Table 4 and Figure 1 about here]

The bottom panel of Table 4 provides summary statistics per treatment on the age and gender composition of households that answered the door. The table also gives the percentage of (fe)males that contributes, the percentage of (fe)males that donates cash or debit for each treatment, and the average estimated age of contributing respondents. This in itself is of interest, but also serves as a check whether the routes are similar across treatments.[19]

[17] This amounts to €83, €75 and €27, respectively, per solicitor. For comparison, the average amount raised by a Reumafonds solicitor is about €55. In our case, average revenues are higher because our solicitors were supplied with about 120 addresses in order to obtain sufficient observations. Normal routes contain about 80 addresses.

[18] Unless stated otherwise, the reported p-values in this section are based on Mann Whitney rank sum tests. Average donations are independent across treatments, but dependent within treatments because a given solicitor approaches a number of households. I follow Landry *et al.* (2006) in using a conservative test at the solicitor level by calculating for each solicitor the average donation and then rank solicitors on basis of these averages.

[19] Solicitors estimate the age of respondents and a systematic bias by one or more solicitors might cause the observed difference in age across treatments. A regression [not

A regression of the age and gender of households members on treatment dummies does not reveal differences in gender distribution across treatments but individuals in the Debit-only treatment are somewhat younger than those in the two other treatments. This difference is significant but of similar magnitude as the difference in age across treatments reported by Landry *et al.* (2006). Empirical studies have identified a negative correlation between age and the use of electronic payment instruments (Stavins, 2001; Borzekowski and Kiser, 2008; Jonker, 2007). This implies that the observed difference in age distribution might bias participation rates in the Debit-only treatment slightly upward.

When we consider the presence of marginal donors, Table 4 does not show full participation in the treatments with cash: about 35 to 40 percent of the contacts does not participate. This is consistent with a situation where image concerns are absent or small compared to the time-cost of donating. As an alternative to non-participation, households with a low intrinsic valuation may seize the opportunity to rid themselves of loose change in their wallet: given that one feels obliged to participate in order to look good, the optimal small donation may be one that also empties one's wallet of bulky small change that is perceived worthless.

[Figure 2 about here]

To investigate whether coin disposal is an important consideration, I consider individual donations. Figure 2 displays for each treatment the cumulative distribution functions of the amount given, conditional on donating a positive amount. For the treatments with cash, the figure shows bunching at values of €0.50, €1 and €2, values that coincide with a token value, but also many

reported but available upon request] of the age of the respondents on the age and gender of the solicitor does however not reveal such a bias.

donations at intermediate values.[20] Bunching is even more prominent in the Debit-only treatment. This is remarkable because debit card transactions do not involve the transaction of physical tokens and the set of euro coins and notes therefore does not impose any constraints on the value of the contribution. Nevertheless, the majority of debit donations has a value of 1, 2, 5 or 10 euro. This supports the hypothesis that some donors use the opportunity to rid themselves of loose change: they drop out when the cash option is not offered.

4.2 Participation and payment choice

Table 4 shows that introduction of the debit terminal next to the box reduces participation from 66.9 to 59.0 percent ($p = 0.049$). Although the difference is on the border of being significant, it is remarkable that extending the set of payment options does not help to increase participation. This is in contrast to simple neoclassical theories of consumer demand. One explanation is that respondents distrust solicitors with a debit terminal, even when the cash instrument is also available. An alternative explanation is that larger menus trigger decision-making paralysis.[21]

Participation in the fund-raising drive drops to 9.0 percent in the Debit-only treatment. Success rates in the Debit-only treatment are significantly lower than in both the Cash-only and the Cash&Debit treatment ($p < 0.001$ in both comparisons). Figure 3 plots the percentage of households that contributes at the solicitor level.

[20]Euro cash consists of eight coins with values 0.01, 0.02, 0.05, 0.10, 0.20, 0.50, 1 and 2 and seven banknotes with values 5, 10, 20, 50, 100, 200 and 500. DellaVigna *et al.* (2009) find similar bunching effects at $5 and $10.

[21]Iyengar and Lepper, 2000; Redelmeier and Shafir (1995) report increased decision difficulty when the number of options increases from one to two; Bertrand *et al.* (2010) find that loan takeup increases when consumers receive a mailer with only one instead of four example loans.

[Figure 3 about here]

The small number of participating households in the Debit-only treatment and the observation (Table 4) that in the Cash&Debit treatment only 3 out of 441 respondents use debit are both consistent with the hypothesis that donors do not like debit ($\delta > 0$). The empirical payment choice literature identifies a number of reasons for why people may prefer cash instead of debit. First, a security issue surrounding debit card use is the risk of fraud (Jonker, 2007, p. 295). Indeed a number of respondents said they were turned-off by the presence of the debit-terminal for reasons of security.[22] Second, people tend to dislike cash because of the weight (Zinman, 2009; Jonker, 2007) but finding a solicitor at the doorstep gives donors the opportunity to get rid of loose change. On the other hand, Soman (2003) argues that, because payments by cash are more salient both in physical form and in amount, the pain of giving is higher for donations by cash. This may induce a preference for donations by debit card. Finally, cash-on-hand constraints and not having a sufficiently positive balance on ones debit card account may give respondents a preference for donations by debit and cash, respectively.[23] The data clearly show that the net effect on participation of replacing cash by debit is negative.

4.3 Image motivation

The hypothesis on image motivation makes two predictions. First, if reputational concerns matter, donating households will make an excess donation

[22]Solicitors did not systematically collect information on this but they sometimes wrote down that a solicitee did not trust using the terminal. In the Cash&Debit treatment two such remarks were recorded against nine in the Debit-only treatment.

[23]Information on individual wallet contents is not available in this experiment. Given that the experiment takes place at the beginning of the month when most people have just received their paychecks, it is likely that most households approached have a positive balance at their debit card account.

when their donation is revealed. Second, in the treatment with both cash and debit, donors will separate and the donors with the highest intrinsic motivation will choose debit. The data do not shed much light on the second effect because only three respondents use debit in the Cash&Debit treatment. Although their gifts are (€2, €2.50 and €5) are above average, they are by no means exceptional: 186 cash donors in this treatment donate €2 or more and 12 of them give more than €5. An alternative, but untestable explanation for the debit card use of these three particular donors is that they were not motivated by image concerns but by cash-on-hand constraints. In the remainder of this section, I will focus on the first effect of excess donations by comparing behavior in the Cash-only and Debit-only treatment

[Figure 4 about here]

Table 4 shows that conditional on contributing, donors in the Cash&Debit and Debit-only treatment donate €4.16, which is 125% more than those in the Cash-only treatment ($p = 0.017$). Additional information on the distribution of the amount given across the different treatments, displayed in Figure 4, shows this even more clearly. The most important finding illustrated by Figure 4 is the substantial decrease in gifts smaller than €5 in the Debit-only treatment compared to the Cash-only treatment on the one hand. Donations between €0.01-€0.99, €1.00-€1.99 and €2.00-€4.99 drop by 12.8, 21.7 and 24.8 percentage points, respectively, and all these differences are significant at the 0.1%-level.[24] On the other hand, the same replacement somewhat increases (0.5 percentage points) the incidence of large donations, though not significantly.

[24]Significance is measured by creating indicator functions for each of the above donation categories and performing for each indicator a probit regression on treatment dummies (while including control variables in the form of day and neighborhood fixed effects and clustering standard errors by solicitor). The decreases in the Cash&Debit treatments are 0.2, 2.4, 6.3 and 0.7 percentage points, respectively, none of them significant.

Since each household participates in one treatment only, we do not observe the counterfactual. That is, for households in the Cash-only treatment, we do not observe the amount they would have given in the Debit-only treatment and *vice versa*. As a consequence, the evidence does not tell to which extent the relatively high incidence of large donations in the Debit-only treatment is due to self-selection (only households with high intrinsic motivation continue to participate when only debit donations are possible) or due to excess donations (households donate more than their intrinsic motivation because their contribution is visible): the models in columns (3) and (5) of Table 1 are almost observationally equivalent. It is important to disentangle the two explanations because excess donations are only triggered if image concerns are important. The slight *increase* in large donations provides some indication that the debit terminal induces some households to be more generous. The observation that the largest debit card donation (out of 73) of €35 is almost twice as large as the largest cash donation (€20, out of 885) also suggests that respondents who use debit make higher donations than they would have made in cash.

I investigate this issue in a more formal way by performing a probit regression of the participation decision of households in the Cash-only treatment on their observable exogenous characteristics age and gender. Data from the other two treatments are not used. Results are reported in Table 5. I use the estimated coefficients on age and gender to calculate for each respondent in the Cash-only and the Debit-only treatment the propensity score: the predicted probability that a respondent will donate given the respondent's background characteristics. This propensity score can be interpreted as a proxy for a respondent's intrinsic motivation to donate, insofar this motivation is correlated with age and gender.

[Table 5 and Figure 5 about here]

Figure 5 plots per treatment for each respondent the relationship between the estimated propensity score and the actual donation. The figure leads to two observations. First, in accordance with the distaste-for-debit hypothesis, few respondents with a low propensity score (< 0.60) "continue" to donate in the Debit-only treatment whereas more respondents with a stronger feel toward the charity are more likely to continue donating via debit when that is the only option. Second, I construct a matching estimator that effectively compares donation decisions by households in the Debit-only treatment to those by households in the Cash-only treatment with similar observable characteristics.[25] Each household in the Debit-only treatment is matched with the four closest households in the Cash-only treatment and *vice versa*, where closeness is measured in terms of the distance between estimated propensity scores. The average effect on participating households of replacing cash by the debit instrument is calculated by comparing for each household the average donation a_i with the average donation $\hat{a}_i$ made by the matched households :

$$\hat{\tau}_a = \frac{1}{N}\left[\sum_{i\in\text{Debit}}(a_i - \hat{a}_i) + \sum_{i\in\text{Cash}}(\hat{a}_i - a_i)\right],$$

with N the total number of positive donations in the Cash-only and Debit-only treatments.[26] The average effect is estimated to be €2.37 ($p < 0.001$), this is the amount participating households in the Debit-only treatment give more compared to participating households with similar characteristics in the Cash-only treatment. Part of this effect is due to donors with low tastes will dropping out disproportionably in the Debit-only treatment. However, also

[25]This method dates back to Rosenbaum and Rubin (1983).

[26]I implemented this procedure using the psmatch2-module developed for STATA by Leuven and Sianesi (2009). Robust analytical standard errors are computed following Abadie and Imbens (2006).

for the sub-sample of households with a 'high' estimated propensity score (> 0.60), the estimated average treatment effect of €1.54 is positive and very significant ($p < 0.001$). This suggests that highly intrinsically motivated individuals will make an excess donation when using debit instead of cash.

Explanations other than image concerns are however possible to explain the observed excess donations. Donors may feel less restraint to make larger donations when they use their debit card because they do not physically observe the amount they transfer. It is also possible that despite the abolishment of surcharges, people still associate use of debit with larger amounts.[27]

4.4 The role of individual characteristics

The small cell sizes (10 to 11 solicitors per treatment) and the potentially unbalanced composition across treatments in terms of solicitor and solicitee characteristics entails that one has to control for a number of covariates that potentially affect both participation and household contribution levels. In this section, I closely follow Landry *et al.* (2006) and estimate a series of linear regression models that explicitly control for observable and unobservable differences across solicitors and neighborhoods.

In giving to charity, households make two separate but closely related decisions; the decision whether or not to participate and the decision which amount to give. First, I estimate a linear regression model of the amount contributed by each respondent (including zero contributions) on treatment dummies and a number of other covariates:

$$L_{ij} = \mathbf{Z}_{ij}\delta + \mathbf{X}_{ij}\beta + \epsilon_{ij} \tag{12}$$

In this equation, L_{ij} is the contribution of household j to solicitor i and

[27] Until recently, many merchants in the Netherlands used to charge a small fee (€0.10-€0.20) for payments below €10 (Brits and Winder, 2005).

further contains a vector of treatment dummies $\mathbf{Z}$ and a vector $\mathbf{X}$ containing observable solicitor and solicitee characteristics and day-dummies to account for temporal heterogeneity in giving rates, e.g. due to changing weather conditions. The errors are clustered at the solicitor level to account for unobservable heterogeneity across solicitors. I assume that the errors are normally distributed. Table 6 presents estimates for different specifications of this model. Second, to increase our understanding of why households decide to participate in the fund raise, I introduce a latent variable C_{ij}^*, which is related as follows to the observed participation decision C_{ij}:

$$\begin{cases} C_{ij}^* = \mathbf{Z}_{ij}\delta + \mathbf{X}_{ij}\beta + \upsilon_{ij} & \\ C_{ij} = 1 & \text{if } C_{ij}^* > 0 \\ C_{ij} = 0 & \text{if } C_{ij}^* \leq 0 \end{cases} \tag{13}$$

C_{ij} equals one if solicitor i receives a positive contribution from household j and zero otherwise. The explanatory variables are the same as in equation (12). The standard errors are again clustered by solicitor. Estimates for different specifications of this model are presented in Table 7.

[Tables 6 and 7 about here]

In column 1 of Tables 6 and 7, only the treatment dummies, a constant and a set of neighborhood specific fixed effects to control for unobserved differences between neighborhoods, like e.g. household's income, are included.[28] The estimates confirm the findings in previous sections: households contribute €0.77 less in the Debit-only treatment than in the Cash-only treatment and households are about 55 percent less likely to contribute if they were approached by a solicitor equipped with a debit terminal only.

[28]The municipality of Amsterdam identifies five different neighborhoods in the area selected for this field experiment. With on average 800 homes, these neighborhoods seem sufficiently small to be somewhat confident that *within* neighborhood, solicitee characteristics are fairly homogenous. I dropped observations that could not be linked with certainty to a specific neighborhood. This slightly reduces the sample size.

All these differences are significant at the $p < 0.01$ level. The possibility to pay by debit terminal next to the option of paying cash has a negative but insignificant impact on both participation and contributions.

The specification in columns 2 and 3 of both tables add day fixed effects and extend the model with solicitor's physical and personal characteristics like their beauty, assertiveness, self-confidence, BMI etc. Column 3 also includes information about the solicitee's gender and age. The age variable is interacted with treatment dummies because of empirical evidence that the probability of debit card use is higher among younger people. Consistent with this finding, the estimates in Table 7 show that in the Debit-only treatment, participation is relatively higher among respondents younger than 30 ($p < 0.10$). In line with most empirical evidence (see Bekkers and Wiepking, 2007), none of the estimates indicates a significant difference between the donations of male and female solicitees. Column 4 again adds the neighborhood dummies. These are jointly significant and therefore included in the remaining regressions.

Before discussing the results on personality traits and physical attractiveness, remember that the results are obtained from only a small number of solicitors. Therefore, I explore the sensitivity of the results to potential outliers by dropping the most and least successful solicitor in each treatment (with success measured as the average donation per household that answered the door) from the sample. Estimates based on the selected sample are reported in column 5 of Tables 6 and 7. A comparison with the estimates in column 4 shows only minor differences.

Overconfident solicitors seem to "turn off" solicitees: columns 3 of Tables 6 and 7 indicate that a one unit increase in solicitor self-confidence generates an approximate €0.08 decrease in average contribution levels (the

95% confidence interval runs from -0.16 to -0.02), partly driven by an approximate 2 percent decrease in the average probability of eliciting a contribution. The sign and magnitude of these effects is similar to Landry *et al.* (2006), who report a $0.11 and 1 percent decrease, respectively. Similarly, Table 7 shows that solicitor assertiveness has no discernable impact on participation. Landry *et al.* instead find a negative and significant impact of solicitor assertiveness. Solicitor's sociability has a significantly negative (€0.04) impact on contribution levels, and much of this effect seems to stem from a negative impact of about 3 percent on the probability of eliciting a contribution (column 4 of Table 7). In Landry *et al.*, the effect of sociability is also consistently negative in all regressions but almost never significant. Table 6 shows that solicitor self-efficacy has a positive impact on average household contributions but it is only significant in the specifications without neighborhood dummies. A one unit increase in solicitor self-efficacy in the model presented in the third column generates an approximate €0.14 increase in average contribution levels. The estimate is well congruent with Landry *et al.* (2006) who arrive at a significant point estimate of $0.18. Their evidence indicates that much of this increase comes from the positive impact on average participation rate, with a one-unit increase in self-efficacy generating an approximate 2 percent increase in the average probability of eliciting a contribution. The point estimates reported in Table 7, although of the same order of magnitude, are never significant. Performance motivation has a positive impact on the probability of soliciting a contribution but this effect is only significant ($p < 0.05$) in specifications with neighborhood controls. Different from Landry *et al.* (2006), this effect does not translate into higher average household contributions.

The results with regard to solicitor attractiveness are strikingly differ-

ent from those obtained by Landry *et al.* (2006). Whereas they find that only female physical attractiveness is correlated with higher contributions and participation rates, estimates in column 4 of Tables 7 instead show a significant effect of attractiveness for both female and male solicitors. The effects of attractiveness however disappear when interaction terms between the gender of the solicitor and the solicitee are included, as in column 7 of Table 7.[29] It turns out that, irrespective of the gender of the solicitee, female solicitors are more effective in eliciting a contribution: male and female household members are both about 23 percent more likely to participate if they are approached by a female solicitor. Finally, Table 7 suggests that overweight solicitors are more successful in soliciting a donation, but since only two solicitors have a BMI that exceeds 25, this result should not be overinterpreted.

5 Conclusions

In the context of a door-to-door fund-raising experiment, this study has investigated how the menu of payment options offered by the charity influences charitable giving. The empirical results show that when donors can use only debit, contributions and participation rates severely drop compared to the treatments with cash. Hardly any donor in the Cash&Debit treatment uses the terminal. These observations are consistent with the hypothesis that people do not like the use of debit in charitable giving. Conditional on participation, propensity score matching estimates suggest that contributing households in the Debit-only treatment are more generous than similar households in the Cash-only treatment. This lends some support to the

[29]The models whose estimates are reported in columns 6 and 7 of Tables 6 and 7 exactly match models D and E in Landry *et al.* (2006), except for the age/payment-instrument interaction dummies.

hypothesis that part of the donations is image-motivated. However, excess donations can also arise because donors experience less pain of giving when they do not observe the amount they transfer. Image concerns seem to be small compared to the time-cost of giving, judging from the result that not all households participate in the treatments with cash. The results on the impact of solicitor's personality are very similar to those in Landry *et al.* (2006). Beauty does matter, but contrary to Landry et al. (2006), I find that contributions are positively affected by the attractiveness of both female and male solicitors.

My results help charities in organizing fund-raising drives in a society where plastic payment instruments are increasingly used. From the point of maximizing revenues per contact, my results strongly suggest that charities should continue to collect cash. However, in order to test theory, conditions in this experiment were held equal as much as possible across treatments. From a policy perspective, charities might instead be interested in a number of endogenous responses associated with changes in the menu of payment options not covered by this study, like e.g. changes in the speed of solicitation and solicitors adjusting their routes when carrying more cash.

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Table 1: Numerical evaluation of the theoretical model for specific parameter values; $v \sim N(\mu, \sigma)$ with $\mu = 1.24$ and $\sigma = 1.37$.

	(1)	(2)	(3)	(4)	(5)	(6)
Parameter values						
ϕ	0	0.5	0.5	0	0.5	0.5
δ	0	0	4	0	4	4
γ	0	0	0	0.2	0.2	0.3
Outcomes						
$v_{0\|C}^{\{c\}}$	0	1	1	$-\infty$	1	$-\infty$
$v_{0\|D}^{\{d\}}$	0	1	3	-0.2	2.88	2.88
$v_{0\|C}^{\{c,d\}}$	0	1	1	$-\infty$	1	$-\infty$
$v_{C\|D}^{\{c,d\}}$	–	–	$+\infty$	-0.2	22.29	14.72
Participation (fraction)						
Cash-only	0.817	0.570	0.570	1.000	0.570	1.000
Cash&Debit	0.817	0.570	0.570	1.000	0.570	1.000
cash-donors	–	–	0.570	0.147	0.570	1.000
debit-donors	–	–	0.000	0.853	0.000	0.000
Debit-only	0.817	0.570	0.099	0.853	0.116	0.124
Average amount given						
Cash-only	1.38	1.24	1.24	1.38	1.24	1.24
Cash&Debit	1.38	1.24	1.24	1.55	1.24	1.24
Debit-only	1.38	1.24	0.36	1.54	0.44	0.47
Conditional contributions						
Cash-only	1.68	2.19	2.19	1.38	2.19	1.24
Cash&Debit	1.68	2.19	2.19	1.55	2.19	1.24
cash-donors	–	–	2.19	0.00	2.19	2.19
debit-donors	–	–	–	1.81	$+\infty$	$+\infty$
Debit-only	1.68	2.19	3.65	1.81	3.74	3.80

Model parameters: ϕ: time-cost of donating; δ: distaste for debit; γ: importance image motivation; $v_{0|C}^{\{c\}}, v_{0|C}^{\{c,d\}}$ and $v_{0|D}^{\{d\}}$: intrinsic motivation of the agent indifferent between participating and not participating in the Cash-only, Cash&Debit and Debit-only treatment, resp. $v_{C|D}^{\{c,d\}}$: intrinsic motivation of the agent indifferent between a cash and debit donation in the Cash&Debit treatment.

Table 2: Summary Statistics Solicitor Characteristics (s.e. within parentheses).

	Cash only	Cash& Debit	Debit only	Landry *et al.* (2006)
Total # of solicitors	10	11	11	44
Average earnings per hour‡	€12.28	€13.10	€12.60	$ 10.00
Mean beauty rating	-0.05	0.08	-0.01	0.10
	(0.22)	(0.18)	(0.20)	
Mean body mass index	20.58	22.28	20.87	24.39
	(0.65)	(1.06)	(0.55)	(0.72)
male solicitors (%)	50.0	36.4	45.5	47.7
Age	20.60	22.64	21.09	–
	(0.38)	(1.47)	(0.96)	
Mean sociability	4.40	4.27	3.18	5.09
	(0.57)	(0.45)	(0.44)	(0.35)
Mean assertiveness	4.00	4.64	3.64	5.6
	(0.32)	(0.41)	(0.49)	(0.26)
Mean self-efficacy	4.70	4.55	4.18	4.70
	(0.49)	(0.36)	(0.30)	(0.31)
Mean performance	2.00	1.64	2.27	5.52
motivation	(0.43)	(0.74)	(0.84)	(0.31)
Mean self-confidence	4.10	4.00	3.64	5.41
	(0.46)	(0.67)	(0.88)	(0.29)

‡ based on time spent including the training session and the intake interview; €1=$1.55 at the time of the experiment.

Table 3: Experimental design.

		Number of solicitors that went out on...						
		Mo.	Tu.	We.	Th.	Fr.	Sa.	Su.
Cash-only	1104 Approach							
10 Solicitors	668 Home	1	2	3	5	0	0	0
Cash&Debit	1118 Approach							
11 Solicitors	748 Home	2	1	4	1	3	1	0
Debit-only	1256 Approach							
11 Solicitors	777 Home	2	1	3	5	2	0	0

Table 4: Summary Statistics (standard errors within parentheses).

	Cash-only	Cash&Debit	Debit-only
Total households approached	1104	1118	1256
Total housholds home	668	748	777
	SUMMARY STATISTICS CONTRIBUTIONS		
Total amount raised	€825.88	€813.88	€291.50
Average donation per household	€1.24	€1.09	€0.38
that answered the door	(0.05)	(0.07)	(0.07)
# households that contributed	447	441	70
# households that			
use debit terminal	–	3	70
Percent of households contributing	66.9%	59.0%	9.0%
	Average donation per household that contributed		
Cash contributions	€1.85	€1.84	–
	(0.06)	(0.10)	
Debit contributions	–	€3.17	€4.16
		(0.93)	(0.55)
	Median donation per household that contributed		
Cash contributions	€1.75	€1.50	–
Debit contributions	–	€2.50	€2.75
	SUMMARY STATISTICS SOLICITEES		
% of male solicitees	41.8%	40.2%	45.7%
	Percent of males		
Non-contributors	36.0%	40.0%	93.0%
Contributors - Cash	64.0%	59.0%	
Contributors - Debit		1.0%	7.0%
	Percent of females		
Non-contributors	31.0%	41.7%	89.3%
Contributors - Cash	69.0%	58.3%	
Contributors - Debit		0.0%	10.7%
	Estimated mean age		
Overall	46.51	48.83	41.78
	(0.64)	(0.66)	(0.54)
Cash payments	45.22	48.99	
	(0.83)	(0.94)	
Debit payments		35.00	38.77
		(7.64)	(1.64)
Non-contributors	48.31	48.82	42.08
	(0.99)	(0.92)	(0.57)
	Estimated median age		
Overall	45	45	40
Cash payments	45	45	-
Debit payments	-	30	35
Non-contributors	50	50	40

Table 5: Probit regression of donation dummy on explanatory variables.

	(1)	
Sample:	Full	
Mean (Dependent Variable):	0.6608	
	coefficient	s.e.
Age	-0.0040**	(0.0015)
Female	0.0403	(0.0407)
Neighborhood dummies		
N62	0.1823**	(0.0443)
N63	0.1596*	(0.0599)
N64	0.0565	(0.0658)
# obs.	579	
Pseudo R^2	0.0294	
P-value	0.0005	
LR chi2(2)	21.92	

Note: Reported results are marginal effects. The regressions only include the observations of the Cash-treatment. †: Significant at the 10% level; * : Significant at the 5% level; ** : Significant at the 1% level.

Table 6: Linear regression model: Total household contributions.

Sample:	Full	Full	Full	Full	Non-extreme	Full	Full
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
constant –	1.131**	1.243**	1.236**	1.547**	1.726**	1.360**	1.170**
Cash is baseline	(0.137)	(0.291)	(0.269)	(0.165)	(0.167)	(0.175)	(0.178)
Cash&Debit	-0.079	-0.178	-0.229†	-0.335**	-0.322**	-0.336**	-0.284*
	(0.117)	(0.124)	(0.124)	(0.128)	(0.121)	(0.121)	(0.135)
Debit	-0.774**	-0.835**	-0.672**	-0.697**	-0.692**	-0.699**	-0.671**
	(0.148)	(0.101)	(0.122)	(0.118)	(0.115)	(0.107)	(0.112)
(age $\leq$ 30)*Cash			-0.009	0.061	0.053	0.062	0.068
			(0.149)	(0.137)	(0.180)	(0.140)	(0.140)
(age $\leq$ 30)*(Cash&Debit)			-0.018	-0.029	-0.022	-0.005	-0.012
			(0.173)	(0.175)	(0.223)	(0.173)	(0.169)
(age $\leq$ 30)*Debit			-0.065	-0.035	0.004	-0.033	-0.034
			(0.117)	(0.115)	(0.135)	(0.113)	(0.112)
(age $>$ 60)*Cash			0.031	-0.116	-0.122	-0.093	-0.071
			(0.176)	(0.198)	(0.274)	(0.212)	(0.220)
(age $>$ 60)*(Cash&Debit)			0.361	0.383	0.437†	0.359	0.335
			(0.233)	(0.234)	(0.244)	(0.231)	(0.231)
(age $>$ 60)*Debit			-0.314	-0.300	-0.388	-0.321	-0.314
			(0.276)	(0.278)	(0.398)	(0.274)	(0.277)
Male solicitee			-0.002	-0.003	0.000		
			(0.066)	(0.072)	(0.080)		
Male solicitor –						0.011	0.087
female solicitee						(0.071)	(0.082)
Female solicitor –						0.243	0.369*
male solicitee						(0.162)	(0.179)
Female solicitor –						0.216	0.350*
female solicitee						(0.162)	(0.167)
Solicitor beauty		0.224**					
rating		(0.077)					
Beauty – male			0.280*	0.297**	0.217*	0.173	
solicitor			(0.137)	(0.100)	(0.099)	(0.117)	
Beauty – female			0.180	0.253**	0.290**	0.176*	
solicitor			(0.135)	(0.092)	(0.087)	(0.078)	
Assertiveness of		-0.058	-0.062	0.016	-0.021	0.021	0.015
solicitor		(0.043)	(0.039)	(0.023)	(0.021)	(0.020)	(0.021)
Sociability of		0.029	0.043	-0.037†	-0.056*	-0.050*	-0.043†
solicitor		(0.059)	(0.061)	(0.021)	(0.025)	(0.023)	(0.025)
Self-efficacy		0.144*	0.140†	0.032	0.023	0.049	0.062
solicitor		(0.071)	(0.079)	(0.035)	(0.025)	(0.031)	(0.045)
Performance		0.019	0.019	-0.003	0.005	-0.016	-0.019
motivation		(0.024)	(0.019)	(0.016)	(0.014)	(0.017)	(0.020)
Self-confidence		-0.075*	-0.082*	-0.077**	-0.058**	-0.064*	-0.063*
solicitor		(0.030)	(0.033)	(0.028)	(0.021)	(0.030)	(0.031)
BMI $\geq$ 25		0.403†	0.223	-0.068	0.501**	-0.108	-0.175
		(0.211)	(0.235)	(0.202)	(0.172)	(0.183)	(0.173)
Beauty – male							-0.008
solicitor & male solicitee							(0.165)
Beauty – male							0.137
solicitor & female solicitee							(0.150)
Beauty – female							0.079
solicitor & male solicitee							(0.266)
Beauty – female							0.061
solicitor & female solicitee							(0.221)
R^2	0.055	0.068	0.078	0.085	0.075	0.086	0.085
day FE	NO	YES	YES	YES	YES	YES	YES
neighborhood FE	YES	NO	NO	YES	NO	YES	YES
obs.	2156	2193	2193	2156	1749	2156	2156

$^{**}p < 0.01$;$^{*}\ p < 0.05$;$^{\dagger}\ p < 0.10$. Errors clustered at the solicitor level. Controls for missing age and gender included in columns (3)-(7). Column (5): most and least successful solicitor in each treatment excluded from the sample. Cash-only taken as baseline treatment.

Table 7: Probit model: Household participation decision.

Sample:					Non-		
	Full	Full	Full	Full	extreme	Full	Full
Mean (Dep. Var.):	0.3996	0.3939	0.3899	0.3909	0.4060	0.3873	0.3873
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Cash&Debit	-0.087†	-0.066	-0.095†	-0.159**	-0.084	-0.148**	-0.147**
	(0.045)	(0.052)	(0.055)	(0.048)	(0.052)	(0.047)	(0.047)
Debit	-0.549**	-0.593**	-0.609**	-0.593**	-0.612**	-0.600**	-0.599**
	(0.041)	(0.024)	(0.034)	(0.032)	(0.032)	(0.030)	(0.030)
(age $\leq$ 30)*Cash			0.027	0.042	0.086	0.043	0.041
			(0.066)	(0.067)	(0.084)	(0.066)	(0.065)
(age $\leq$ 30)*(Cash&Debit)			0.006	0.025	0.031	0.042	0.041
			(0.065)	(0.061)	(0.079)	(0.061)	(0.062)
(age $\leq$ 30)*Debit			0.090†	0.101*	0.100†	0.114*	0.115*
			(0.054)	(0.051)	(0.058)	(0.053)	(0.054)
(age $>$ 60)*Cash			-0.069	-0.081	-0.062	-0.072	-0.072
			(0.066)	(0.068)	(0.085)	(0.068)	(0.069)
(age $>$ 60)*(Cash&Debit)			0.014	-0.003	0.010	-0.013	-0.012
			(0.065)	(0.064)	(0.068)	(0.063)	(0.063)
(age $>$ 60)*Debit			-0.125	-0.116	-0.094	-0.135	-0.133
			(0.102)	(0.103)	(0.157)	(0.099)	(0.100)
Male solicitee			-0.034	-0.035	-0.027		
			(0.026)	(0.027)	(0.031)		
Male solicitor –						0.055	0.111
female solicitee						(0.047)	(0.069)
Female solicitor –						0.192**	0.231**
male solicitee						(0.052)	(0.065)
Female solicitor –						0.210**	0.240**
female solicitee						(0.043)	(0.056)
Solicitor beauty		0.087**					
rating		(0.029)					
Beauty – male			0.183**	0.179**	0.199**	0.053	
solicitor			(0.062)	(0.068)	(0.050)	(0.069)	
Beauty – female			0.048	0.052	0.029	-0.008	
solicitor			(0.040)	(0.037)	(0.026)	(0.034)	
Assertiveness of		-0.016	-0.010	0.018	0.001	0.017	0.017
solicitor		(0.020)	(0.017)	(0.013)	(0.008)	(0.011)	(0.011)
Sociability of		-0.009	-0.011	-0.029**	-0.027**	-0.041**	-0.041**
solicitor		(0.014)	(0.013)	(0.008)	(0.006)	(0.009)	(0.009)
Self-efficacy		0.020	0.022	-0.026	-0.011	-0.011	-0.011
solicitor		(0.022)	(0.021)	(0.016)	(0.014)	(0.013)	(0.014)
Performance		0.014	0.012	0.027**	0.004	0.017*	0.017*
motivation		(0.011)	(0.010)	(0.008)	(0.010)	(0.008)	(0.008)
Self-confidence		-0.022†	-0.023†	-0.001	-0.005	0.004	0.004
solicitor		(0.013)	(0.013)	(0.008)	(0.008)	(0.007)	(0.007)
BMI $\geq$ 25		0.191**	0.180**	0.202**	0.153**	0.175**	0.174**
		(0.072)	(0.068)	(0.065)	(0.043)	(0.049)	(0.048)
Beauty – male							-0.010
solicitor & male solicitee							(0.080)
Beauty – male							0.097
solicitor & female solicitee							(0.081)
Beauty – female							-0.020
solicitor & male solicitee							(0.054)
Beauty – female							-0.001
solicitor & female solicitee							(0.032)
Pseudo R^2	0.240	0.250	0.254	0.261	0.261	0.266	0.266
day FE	NO	YES	YES	YES	YES	YES	YES
neighborhood FE	YES	NO	NO	YES	NO	YES	YES
obs.	2090	2127	2127	2090	1700	2090	2090

$^{**}p < 0.01$;$^{*}p < 0.05$;$^{\dagger}p < 0.10$. Errors clustered at the solicitor level. Reported results are marginal effects. Column (5): most and least successful solicitor in each treatment excluded from the sample. Cash-only taken as baseline treatment.

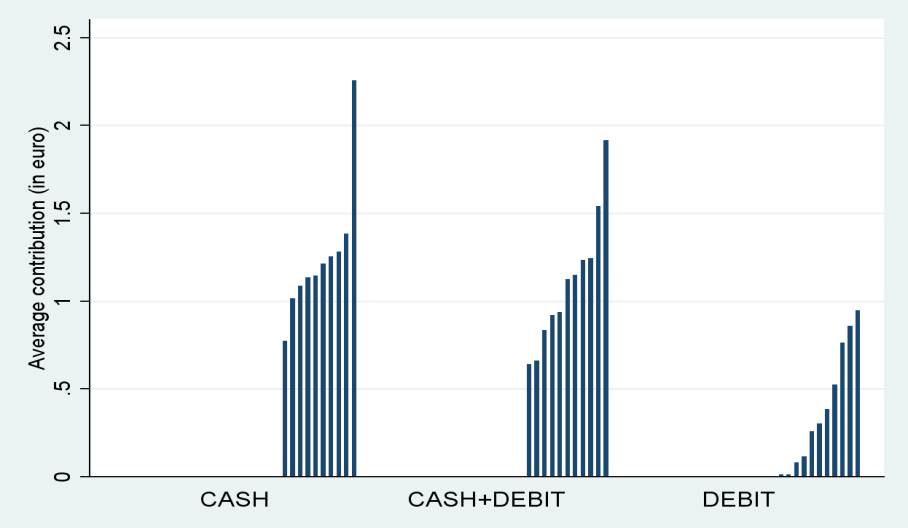

Figure 1: Average contributions per household: solicitor level
Note: This figure presents on the solicitor level the average donation received per household, conditioned on answering the door.

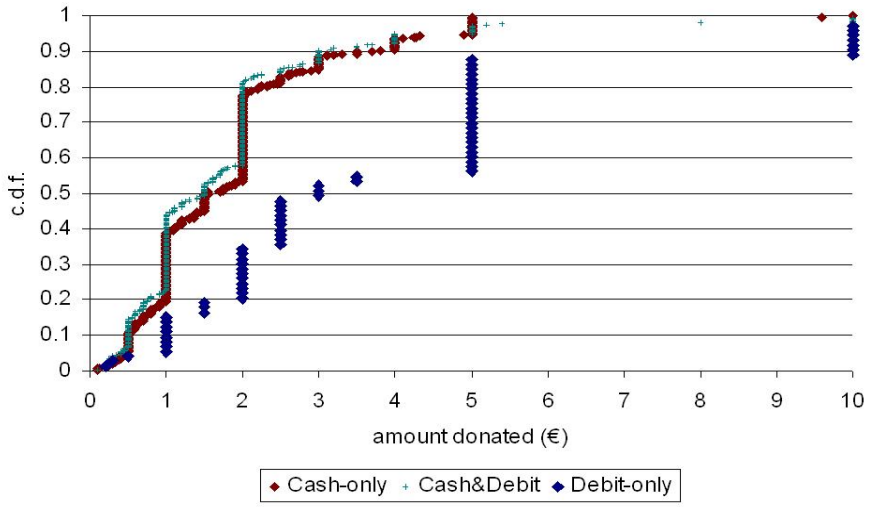

Figure 2: Per treatment cumulative distribution function of conditional amount donated under different treatments.
Note: This figure excludes the share of households donating €0 and the figure does not display households donating over €10: in the Cash-only treatment no such donations were received, 3 in the Cash&Debit treatment (1x€15, 2x€20) and 2 in the Debit-only treatment (1x€15 and 1x€35).

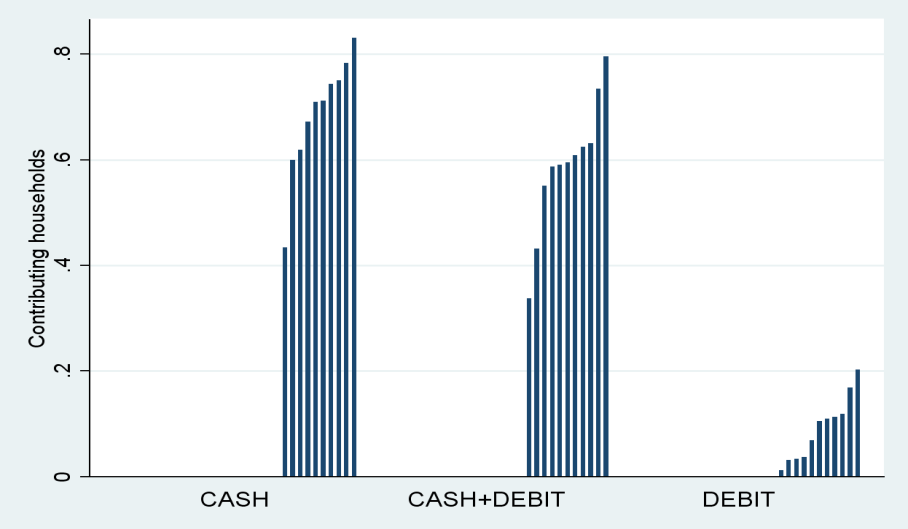

Figure 3: Percent of households contributing: solicitor level

Note: This figure presents on the solicitor level the percent of households that give to the charity out of all households in the treatment group (excluding those that did not answer the door).

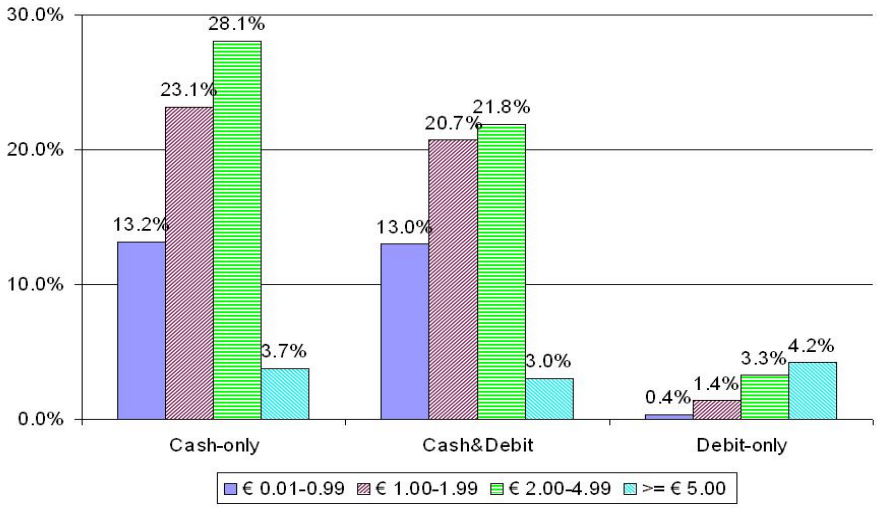

Figure 4: Frequency of unconditional giving split by amount given.

Note: This figure shows the results on unconditional giving of donations of different size across the treatments, conditioned on answering the door.

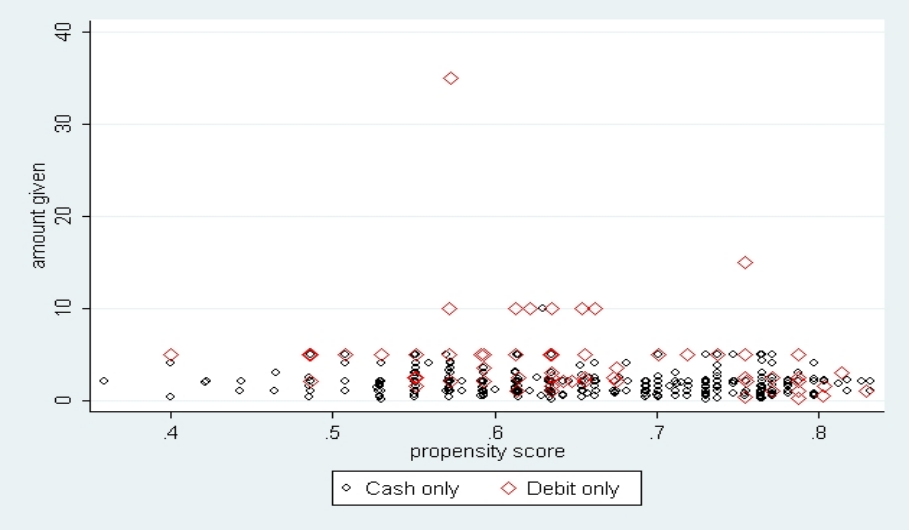

Figure 5: Relationship between a household's estimated propensity to give and its actual donation in the Cash-only and the Debit-only treatment.
Note: This figure only considers participating households.