Don't Be Ashamed to Say You Didn't Get Much:

Redistributive Effects of Information Disclosure in Donations and Inequity-Aversion in Charitable Giving

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Abstract

We run a modified dictator game experiment to investigate the determinants of donation choices to nine top philanthropic organizations. We find experimentally that the adoption of a simple form of accountability such as the disclosure of information on the ranking of aggregate contributions received by organizations has important redistributive effects on donations, leading donors to reallocate significantly their giving from top to bottom performers. Our findings support the hypothesis that individuals have preferences on total donations and their "ideal" distribution and not just on their own giving. Policy consequences of our findings in terms of contribution disclosure rules are discussed.

Keywords: altruism, strategic information, charitable-giving.

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1. Introduction

In 2009 in the United States charitable giving totalled $303.75 billion. Annual individual giving generally exceeds 2% of GDP, with 90% of people giving money to at least one charity (Giving USA 2010). In other high-income countries philanthropy is also widespread (Andreoni 2001 and 2006). In Europe, for instance, 53 percent of the population give money to charities (73 percent in UK, 62 in Italy, 31 in France) while 23 percent provide voluntary work to non-profit organizations (29 percent in UK, 16 in Italy, 22 in France).[1]

It is therefore not surprising that such a relevant economic phenomenon attracted the interest of many economists. The vast economic literature on charitable giving has focused its analysis on three main domains: the definition of pro-social and altruistic components of individual preferences (Andreoni, 1989 and 1990; Harbaugh, 1998; Goeree et al., 2002; Ribar and Wilhelm, 2002; see also Camerer, 2003, for a comprehensive review), the role of monetary and non-monetary incentives on giving (Morgan, 2000; List and Lucking-Reiley, 2002; Rege and Telle, 2004) and the interaction of motives and incentives in terms of complementarity or substitutability (Schiff, 1985; Bergstrom et al., 1986; Andreoni, 1988; Steinberg, 1990; Randolph, 1995; Auten et al., 2002). However, in this large and steadily growing body of research there is no empirical evidence, to our knowledge, on the effects of organizational accountability on individual donations. This is actually a very relevant direction of research which may help to understand the role of an important factor in donors' decisions when they allocate their giving among different organizations.

In this paper we focus on a very basic form of accountability, namely, the public availability of information on aggregate private donations received by the organization. The effects of this kind of information on the level of donations and on its distribution are not clear. On the one hand, top-ranking organizations may be able to attract more donations if the total amount received is interpreted as a signal of worthiness of the cause supported by the organization by a potential new donor. On the other hand, donors may prefer a pluralism of well-funded organizations and may be negatively surprised if organizations which they deem important receive much less funds than they expect. In the first case, information would increase the

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[1] See Charities Aid Foundation's *The World Giving Index 2010* (www.cafonline.org)

donations towards the top of the ranking, in the second case, we would observe some form of redistribution from the top to the bottom of the ranking.

Based on these considerations we sketch a simple theoretical model "impure" altruism with some variants and test its behavioral implications in a laboratory experiment in which participants decide how to allocate a sum of money to their preferred charitable organizations. The subjects play a modified version of the dictator game in which they can choose both the amount to send and the recipient's identity. The recipient is chosen among nine top organizations working in different domains (environment, health, peace-keeping, human rights, blood donation, medical research). In the control group the decision is blind (no information is provided apart from names and field of activity). In the treatment group participants are provided with additional information about total donations received by each of the nine organizations in the previous fiscal year prior to making their choice.

We find that this information has significant redistributive effects on donations, since it leads participants to reallocate some money from top to bottom performers. We interpret our findings as evidence that individuals have preferences not only on their own but also on other people giving and, as a consequence, that individual giving creates externalities affecting other donors' preferences. We also remark that the redistributive effect is compatible with the hypothesis that individual donors have also preferences on the distribution of giving and, more specifically, some form of inequity aversion in charitable giving, that is, aversion toward contribution shares which are beyond the (lower and upper) boundaries of the region of shares which they deem fair.

Our findings are potentially rich in terms of normative consequences even though the latter need to be drawn with caution. If we agree with conclusions of Benz and Meier (2008) and Falk et al. (2010), on the correlation between lab and field experiments when people donate, that is, if people tend to behave in a similar way when money is distributed (in the lab) as well as when it is earned (in the the field), public disclosure of aggregate donations may have important redistributive effects and organizations that get less should not be ashamed to say it since this could represent a comparative advantage that may increase giving toward them. The fact that their comparative advertising may however create negative externalities on top performing organizations deserves further reflection on whether such comparative advertising (especially, as in our experiment, the one in which the focus is restricted on aggregate contributions of just a few organizations) should be allowed.

Based on what is mentioned above the rest of the paper is organized as follows. In section 2 we present a theoretical model formulating hypotheses on "purely" or "impurely" altruistic preferences that will be tested in the empirical analysis. In section 3 we describe the experimental design. In section 4 we present descriptive findings, balancing properties of the two treatments, nonparametric tests and econometric analysis with robustness checks. In section 5 we discuss implications of our findings. Section 6 concludes.

2. Impurely altruistic preferences: the theoretical framework

Consider the i-th "fully impure" altruistic[2] participant to our experiment who cares only about her own donating action. Her utility function is

$$U^i(Z_i, G_{ij}) \quad \text{for} \quad i=1,\ldots,N \quad \text{and} \quad j=1,\ldots,M \tag{1}$$

where Z is the monetary sum available for consumption goods and G_{ij} is her donation to the j-th organization. The impure altruist maximizes the following

$$L= U^i(Z_i, G_{i1,\ldots,}G_{iM})-\lambda(Z_i+\textstyle\sum_j G_{ij}-M)$$

where M is the value of the endowment given by the experimenter in equal amount to all participants and λ is the Lagrange multiplier of the constrained maximisation. Note that $M=\alpha\Omega$ where Ω is the endowment in ECUs (experiment currency units) and α the conversion factor which turns one ECU into one euro.

First order conditions are

$$\partial U^i/\partial G_{ij} - \partial U^i/\partial Z_i =0 \quad \text{for each } j$$

since $\Delta G=-\Delta Z$. Hence, the i-th individual will equalize at optimum the marginal utility of donating to each organization with the marginal disutility of subtracting one monetary unit to consumption. As a consequence marginal utilities of donating to each of the nine

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[2] As it is clear from (1) we denote as "fully impure" altruist a subject who cares for one's own donating action only, with no regard for the total amount received by the organization. The implicit assumption is that, if an individual is purely altruistic and considers the activity of the organization worthwhile, she should care about the total amount received by that organization vis à vis the other organizations and how her own donating choice may affect it. Note that this specification is a special case of the "impure altruism" hypothesis in the Andreoni (1990) benchmark when we extend it to multiple donating options. In Andreoni (1990) utility depends on one's own gift (the impure component) and on the total amount of public good. If we remove the second argument and we increase the number of donors' opportunities we have our case.

organizations should be equal at optimum. The availability of public information on aggregate donations does not change her choice.

Prediction 1: *if all participants of our experiment have "fully impure" altruistic preferences in the sense implied by (1), the null of no significant changes between a situation in which the individual has or has not information on aggregate contributions received by the j-th organization should not be rejected.*

Consider now the following variation of (1)

$$U^i (Z_i, G_{ij}, |\gamma_j - \gamma_j^*{}_{(i)}|G_j)) \qquad\qquad (2)$$

where the last argument of the utility function enters with negative sign, G_j is the total giving received by the j-th organization, γ_j is the share of aggregate donations received by the j-th organization and $\gamma_j^*{}_{(i)}$ the share corresponding to i-th player optimal allocation of resources among the nine organizations. In essence, with (2) we assume that the individual experiences a disutility in observing aggregate shares that are different from her preferred allocation.

First order conditions turn into

$$\partial U^i / \partial G_{ij} + \partial U^i / \partial G_j * \partial G_j / \gamma_j - \partial U^i / \partial Z_i = 0 \text{ for each j}$$

with $\partial U^i / \partial G_j * \partial G_j / \gamma_j > 0$ if $\gamma_j < \gamma_j^*{}_{(i)}$ and $\partial U^i / \partial G_j * \partial G_j / \gamma_j < 0$ if $\gamma_j > \gamma_j^*{}_{(i)}$

Consider that the individual does not know γ_j but formulates an expectation on it by observing past aggregate contributions collected by the M organizations. Hence $E[\gamma_{jt}] = \gamma_{j,t-1}$ with $\gamma_{jt} = \gamma_j$ for notational simplicity. The difference in this first order condition is that an additional unit donated to a given organization has now two effects. The first is the 'warm-glow' effect from donating, the second is the change in the share obtained by the organization that has positive (negative) effect on player's utility if the aggregate share received by that organization is below (above) the optimal one for the donor.

To sum up preferences in (2) (but not in (1)) imply rejection of the null of no difference between a situation in which the individual has or has not information on aggregate contributions received by the j-th organization and are consistent with the hypothesis that disclosure of information about aggregate contributions generates significant effects.

However, a variant of (2) may be a case in which players experience a disutility if an organization gets less (more) than a lower (upper) bound share which delimits the region of shares that they consider to be compatible with fairness or equitability.[3]

More formally, this implies that

$$U^i (Z_i, G_{ij}, |\gamma^{UP}-\gamma_j|G_j) \text{ if } \gamma_j > \gamma^{HIGH}, |\gamma^{LOW}-\gamma_j|G_j \text{ if } \gamma_j <\gamma^{LOW}) \qquad (2')$$

First order conditions turn into

$$\partial U^i/\partial G_{ij}+\partial U^i/\partial G_j *\partial G_j/\partial \gamma_k- \partial U^i/\partial Z =0 \text{ for each j}$$

with $\partial U^i/\partial G_j*\partial G_j/\partial \gamma_j >0$ if $\gamma_j <\gamma^{LOW}$

$$\partial U^i/\partial G_j*\partial G_j/\partial \gamma_j =0 \text{ if } \gamma_j \in [\gamma^{LOW}, \gamma^{HIGH}]$$

$$\partial U^i/\partial G_j*\partial G_j/\partial \gamma_j <0 \text{ if } \gamma_j >\gamma^{HIGH}$$

which in turn implies our second theoretical prediction

Prediction 2: *at optimum, individuals with preferences as in (2') will donate differently in the situation in which information on aggregate contributions is available and, more specifically, will redistribute from organizations with shares above the maximum to organizations below the minimum considered fair.*

3. The Experiment

In what follows we shortly describe the experimental design, our hypotheses and the procedure adopted in the experiment.

3.1. Experimental Design and Hypotheses.

The experiment is designed to reveal the effect of information disclosure on donations'

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[3] In (2') we simplify by assuming that upper and lower bounds are the same, whatever the organization and the player. The underlying assumption is that players have common general bounds and, reasonably, do not know exactly how much an organization needs for its activities and about the differences among such needs across organisations.

aggregate level and distribution having as a reference the alternative theoretical assumptions on purely and impurely altruistic preferences illustrated in (1), (2) and (2'). We consider a one-shot version of a modified dictator game in which the dictator has to choose both the share of her endowment (100 experimental currency units) she wants to give and the recipient's identity. A unique recipient can be chosen from a set of nine well-known non-profit organizations.

The organizations are, in alphabetical order: *ADMO* – Bone Marrow Donors Association, *Amnesty International* (Italian Section), *AIRC* - Italian Association for Cancer Research, *AVIS* – Italian Blood Donors Association , *CARITAS*, *Red Cross* (Italian Section), *Emergency*, *Greenpeace* and *WWF* - World Wildlife Foundation Italy.[4]

To assess the effect of information on aggregate donations on giving decisions, we consider a between-subject design in which we compare subjects' choices under two different treatments: the 'no-information treatment' (NIT) and the 'with information treatment' (WIT). The two conditions differ only with respect to the information about the total donations received by the nine organizations in the previous fiscal year that are made available to the subjects in the WIT but not in the NIT. Our goal is to investigate whether the information on the total amount of funds raised by each organization in the previous year leads to a modification in

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[4] Emergency is an independent NGO, founded in Italy in 1994. Its goal is to provide high quality and free of charge health care to the war and poverty victims. The organization has worked since its origin in 15 countries, building hospitals, Surgical Centres, Rehabilitation Centres, Pediatric Clinics, First Aid Posts, Health Care Centres, a Maternity Centre and a Centre for Cardiac Surgery. Subsequent to request from local authorities and other organizations, Emergency has also helped to renovate and equip pre-existing health facilities. (http://www.emergency.it/en-index.html). AIRC (Associazione Italiana per la Ricerca contro il Cancro) is an association funded in 1965 which collects funds for the promotion of research against cancer. It is by far the leading organization in this field in Italy with a longstanding tradition of rigorous and transparent selection of research projects. The organization has around 1.800.000 members and 17 regional committees (http://www.airc.it/associazione/obiettivi-risultati.asp). ADMO's main goal is the information of Italian population on the opportunities that bone marrow transplants may provide to cure leukemias, lymphomas, myelomas and other blood disorders. To highlight the importance of its action the organization claims on its website that in the 1990, the year in which ADMO is born, bone marrow donors were 2,500, while they are 370.000 today (http://www.admo.it/). AVIS is the most important Italian blood donors' organisation. Funded in 1927 it has 3.180 centers at council level, 111 centers at provincial level and 22 centers at regional level. It also has 773 groups in the largest private and public Italian corporations (http://www.avis.it/usr_view.php/ID=0). Red Cross Italy is the Italian section of the Red Cross (http://cri.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/1). Greenpeace Italy is the Italian section of Greenpeace, an independent organisation which promote global campaigns for peace and environmental protection. Greenpeace is present in 40 countries across Europe, the Americas, Asia, Africa and the Pacific (http://www.greenpeace.org/international/en/about/).Caritas Italiana is an organisation created by the Italian Catholic Episcopal Conference to promote charitable activities with the goal of human promotion, social justice and peace. (http://www.caritasitaliana.it/home_page/00000004_Home_Page.html). WWF is the world's largest and most experienced indipendent conservation organization, which addresses issues from the survival of species and habitats to climate change, sustainable business and environmental education (http://www.wwf.org/). Amnesty International is a global movement with more than 3 million supporters, members and activists in more than 150 countries and territories. Its goal is to campaign against grave human rights abuses (http://www.amnesty.org/).

the distribution of donations among the different organizations.

If we denote with $G_{j\ (NIT)}$ the total amount of donations received by the j-th organization in the NIT and with $G_{j(WIT)}$ the amount received in the WIT, our first hypothesis[5] can be described as

H$_0$: $G_{j(NIT)} = G_{j(WIT)}$

H$_A$: $G_{j(NIT)} \neq G_{j(WIT)}$

We sketch our null in this way since we argue that violation of equality between NIT and WIT contributions for only one organization implies the rejection of the hypothesis of fully impure altruistic preferences in the sense postulated by (1). Note as well that an individual can have fully impure altruistic preferences and the null not be rejected in the special case in which the observed shares of donations of different organizations are consistent with the desired ones. Hence, while rejection of the null for just one organization is sufficient to reject the fully impure altruism postulated by (1), non rejection of the null is not a sufficient condition to accept the validity of the impure altruism from (1).

Besides the donation choices we gather information on socio-demographic and attitudinal characteristics of participants through a World Values Survey-type questionnaire. We finally measure subjects' Empathy Quotient (EQ) and their guilt-propensity through two psychometric tests, the Cambridge Empathy Quotient questionnaire (Baron-Cohen and Wheelwright, 2004) and the Test of Self-Conscious Affect (TOSCA) (Tangney et al. 1989).[6]

3.2. Procedures.

Data refers to a total of 230 subjects recruited via posters and e-mails, among first-year economics students at University of Cagliari, where the experiment was conducted in February 2011. At their arrival in the lab each subject received an ID card with a random number and a booklet containing the instructions, the experimental task and the questionnaires. Participants were invited to write the ID number in the booklet and keep the card. Instructions were read aloud and questions about the procedure and the payment rules were answered privately. Each subject was presented with the dictator game and a list of nine organizations among which to pick their recipient organization. Within each of the two (WIT and NIT) treatments half of the subjects completed the WVS-type questionnaire before the choice task and half after the task. In the final part of the session the subjects completed the

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[6] The general questionnaire as well as those used to measure empathy and guilt propensity are in Appendix.

Cambridge Empathy Quotient Questionnaire (EQ) and the Test of Self-Conscious Affect (TOSCA). A final question, to check the saliency of the incentives, asked if the subject was willing to be contacted in case of future experiments.[7] At this point the booklets were collected and the individual earning calculated. Money was put in an envelope with the ID number of the corresponding player and distributed the day after the experiment, by members of the administrative staff to comply with the double blind procedure. The sessions lasted approximately 1 hour. No show-up fee was paid. The average reward was 3.10 euros (with an exchange rate Euro/ECU equal to 0.10). The total amount given to each organization was actually donated to the corresponding organization by the experimenters and the receipts were made available on the research group website[8].

4. Empirical findings

In what follows we present and discuss our empirical findings looking at descriptive evidence (section 4.1), satisfaction of balancing properties between treatment and control groups, nonparametric tests (section 4.2) and econometric evidence (section 4.3) on our experimental hypothesis.

4.1 Descriptive findings

A first element we are interested in is the descriptive statistics of the relevant variables of our inquiry. We observe that 42 percent of participants are males and the average number of members of their household is 4.2 (Table 2). Plain donation scores of the nine organizations in the two experimental treatments (WIT and NIT), with their relative change in performance when information is introduced, are provided in Table 2, while the comparison among official shares and those in the treatment and control sample is in Figure 1. By observing our data a first interesting finding is, in our opinion, the strong distance between *AIRC* (research against

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[7] Around 94 percent of subjects participating in the experiment answer positively. The dummy taking value of one in case of positive answer does not affect econometric findings which follow. Results including it among regressors are omitted for reasons of space and available upon request.
[8] http://people.unica.it/berg/

cancer) and all other destinations. The former gets on average around 35 ECU from each participant, seven times more than the second ranked destination (*Emergency*).[9]

The other relevant descriptive result, more directly related to our experiment, is the change in organization shares after information on donation rankings is revealed.

On this point note that *ADMO* and *AVIS* (respectively the bone marrow and blood donation organisations) received only 0.02 and 0.01 *percent* (2 and 1 Euros over 10,000) of total contributions according to official aggregate contributions (much less than what they get by experiment participants in the NIT case, that is, around 10 and 5 percent respectively), while *Emergency* had the lion's share with around 49 percent of aggregate contributions (much more than the share obtained by NIT players which is around 11 percent).

Findings from our experiment seem to show that participants react significantly to this information. The two organizations which are by far at the bottom (*ADMO* and *AVIS*) receive in the WIT almost twice as much, while *Emergency* sees its contributions more than halved (from around 6.70 to around 3.14 ECUs per player). The third lowest receiver under official contributions (*Caritas*) - which has nonetheless a much higher share than *ADMO* and *AVIS* (around 1 percent) - sees, consistent with our redistribution hypothesis, a moderate increase in average contribution from the NIT to the WIT. Beyond redistributive effects, it is also worth mentioning the (positive) change for *WWF* which moves from around 1.3 to 4.2 ECUs. Finally, note that, on aggregate, donations are slightly higher under the WIT than under the NIT case (around 4 ECUs more).

Since players can choose to donate to one organisation only changes in contribution shares mirror changes in the number of donors. More specifically, by considering the two organizations with lowest aggregate official contributions, donors to *AVIS* move from 5 to 11 and those to Admo from 10 to 20 when players are informed about official contributions received by the organizations. By considering organizations with highest aggregate official contributions, donors to *AIRC* fall from 67 to 59 and those to *Emergency* from 12 to 5.

If we interpret our findings in terms of preferences in (2') we find them consistent with the hypothesis that players may consider that the *ADMO* and *AVIS* shares are below and the

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[9] A plausible interpretation is that a self-interested component drives players' choices who may easily think or perceive that this destination is more likely to have the highest marginal effect on their life duration. The issue on how much donations are driven by self-interest is however beyond the scope of the present inquiry.

Emergency share above the region of fair and equitable donating shares. This therefore generates a redistribution effect from the NIT to the WIT. Such effect increases donations for the two organizations below the lower bound (*ADMO* and *AVIS*) and reduces those for the organization above the upper bound (*Emergency*). The same reasoning may apply to *Caritas* (if we also consider it below the lower bound), even though the effect seems smaller. In the sections that follow we will see whether our descriptive findings are robust to non-parametric and econometric testing.

4.2 Non-parametric tests

Since we are adopting a between-subject design (different individuals participate to different treatments) we are first and foremost interested in verifying whether balancing properties are met. We find that this is the case for the control factors measured by our questionnaire and used in the empirical analysis that follows. In no case do we find significant differences in means for the 23 considered variables between the two groups even considering an 8 percent significance threshold (see Table 3). Since it may be a limit to look just at one element of the distribution we also perform the Kolmogorov-Smirnov test on the equality of distributions and find again that the null of no difference is not rejected for all the considered variables.

After checking for the randomness of selection into treatment we test with non-parametric rank tests our null hypothesis that donations are unchanged between the WIT and the NIT. The null hypothesis is not rejected at 10 percent for *ADMO* (*p*-value 0.054), at 5 percent for *WWF* (*p*-value 0.024), while it is not rejected for *AVIS* (*p*-value 0.101). P-values are much higher in all the other cases (Table 4). [10]

Note that, if we sum donations for the two organizations which are at the bottom of official donations according to the WIT information sheet (*ADMO* and *AVIS*), the null of no

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[10] Note that, since players in our experiment may choose only one organization, they may not be able to reach the constrained optimum which maximizes preferences in (1), (2) or (2') under the budget constraint. As a consequence they may just choose to donate to the organisation which brings them closer to such solution. This implies that we may have cases in which the null would have been rejected in case of possibility of donating to more than one organization while not under our treatment.

difference in donations between the WIT and the NIT is rejected at a stronger significance level (*p*-value .012). If we add one organization to the group (*Caritas*), and consider the aggregate donations to the three worst performers in official donations, we still observe a significant difference between the WIT and the NIT (*p*-value .03).[11] In order to test the assumption that players experience a disutility when observing official donation shares beyond boundaries which they deem fair (and assuming that *Emergency*, *ADMO* and *AVIS* official shares are beyond those boundaries), we create a rebalance variable where we sum *ADMO* and *AVIS* and subtract *Emergency* donations (REBALANCE=*ADMO*+*AVIS*-*Emergency*). The rationale for summing donations is that players who want to redistribute may do it by choosing only one of the two worst performers or the top performer since they cannot send their money to more than one organization by design. As a consequence, the number of participants who redistribute toward or away from *at least one* of the three can be higher than the number of those who redistribute toward or away from just one of them. The rebalance index picks up the first type of choice. With information on aggregate donations the rebalance index moves from 2 to 13 ECUs. The null of no change between the NIT and the WIT is rejected at the strongest significance level of all our non-parametric tests (*p*-value .004).

4.3 Econometric findings

Even though non-parametric tests are considered benchmark findings in economic experiments when balancing properties between treatment and control samples are met, we nonetheless deem important to run regressions for several reasons. First, we can control for the impact of observable confounding factors affecting players' decisions. Second, we can correct for fixed effects related to the specific experiment session by variance clustering. Third, we may evaluate the magnitude and significance of the differences in donations between the WIT and the NIT, net of such controls. Fourth, we may take into account the correlated nature of donating decisions to each organization by means of estimating a simultaneous equation system and, fifth, we may take into account the specific nature of our dependent variable which has lower and upper bounds.

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[11] Note that significance vanishes if we add the fourth worst performer (p-value .18).

Given our set of observables we start our econometric analysis by estimating the following model separately for each j-th organisation

$$G_{ij}=\alpha_{0j} + \alpha_{1j}WIT_{ij} +\sum_k\beta_k X_{kij} +\varepsilon_{ij} \tag{3}$$

where G_{ij} is the amount that the i-th player donates to the j-th organization (j=1,…,9), WIT is a dummy taking value of one in the WIT in which players may have access to information about performance and ranking of the nine organizations in terms of aggregate donations before making their choice. The k X-controls in the baseline estimate include a male gender dummy, respondent's weekly income, the number of household members, the number of friends on Facebook, a dummy taking value one (zero) if the questionnaire has been administered before (after) the experiment and a measure of political preferences on a discrete multinomial left-right axis. Note that all participants attend the same undergraduate year and have the same age by experimental design so that we do not include these two variables among controls. Variance in all specifications is clustered at session level.

The choice of the estimation method depends on our assumption on the distribution of our dependent variable. The individual donation has clearly an upper bound (individuals cannot donate more than their endowment of 100 ECUs even if they would) and a lower bound in the zero value as well if we admit the possibility of negative donations (individuals might in principle desire to subtract money to some organizations in order to give more to others). Hence, the observed distribution of donations to a given organization is actually a distorted proxy of the actual unbounded distribution. This is why we must use a Tobit model for our estimate. The choice between a model with just an upper bound or also a lower bound depends on whether we think that the possibility of negative donations would make a difference or, alternatively, if we assume that the zero choices are true zero choices which would not turn into negative choices in case the possibility would be allowed.[12] We propose estimates that consider both options.

Upper bound tobit estimates shown in Table 5 document that the WIT dummy is negative and significant for *Emergency* (*p*-value <.01), positive for *ADMO* and negative for *AIRC* (*p*-value <.05). It is not significant for the other five organizations.

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[12] Note that the problem of hitting lower and upper bounds does not apply when we consider as dependent variable the rebalance index or sum of donation indicators.

Information disclosure is strongly significant on all our hypotheses that combine donations to the organizations whose official shares are at the extremes of the distribution. Our players give in the WIT significantly more to *AVIS* and *ADMO* jointly considered (around 10 ECUs) and to *AVIS*, *ADMO* and *Caritas* (same magnitude) with *p*-value <.05. The effect of information disclosure on the rebalance variable (donations to *AVIS* and *ADMO* minus donations to *Emergency*) is strongly significant, consistently with what is found in the non parametric tests (*p*-value<.01).

Two sided bound Tobit estimates yield results in the same direction of one-sided Tobit estimates with stronger significance but also inflated magnitudes (Table 6). This might suggest that the assumption that zero donations could have actually been negative donations, would the latter be allowed, is too strong. One-sided bounds are therefore preferred.

4.4 Robustness checks

In order to evaluate the robustness of our main findings (significance of the information effect for *ADMO, Emergency*, the sum of donations to *ADMO* and *AVIS*, the rebalance index) we perform a robustness check. More specifically, we verify whether the significance of our findings persists under alternative specifications which include: i) nonlinear specification of income and number of household members; ii) introduction of psychometric measures of empathy and guilt-propensity[13]; iii) introduction of self-reported measures of time spent in different activities by participants; iv) introduction of variables measuring participants' affiliation to different organizations.

Our findings on the significance of the WIT dummy for donations to individual organisations are quite robust to the introduction of all these variables. Results for *ADMO*, *Emergency*, the sum of *ADMO* and *AVIS* and the rebalancing index are generally confirmed in the robustness checks (Table 8).[14]

Finally, consider that donating choices to the nine different organizations are correlated (giving more to one of them reduces what can be given to another). Hence, a proper way to

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[13] These two factors have often been considered in the psychological literature as determinants of pro-social behavior (see, among others, Leith and Baumeister, 1998; Davis et al., 1999; Hoffman, 2000; Pelligra, 2011)

[14] Table 8 reports results only for the main regressors of interest. Full details of the estimates are omitted for reasons of space and available upon request.

estimate our model is with an equation system where correlation among residuals of the individual equations is accounted for. We therefore estimate with 3-stage least squares the system composed by nine different equations specified as in (1) in which the dependent variable is the sum that the i-th individual donates to the j-th organisation.

Our findings show that the information dummy remains positive and significant for *ADMO* and *Emergency* (even though weakly so in the last case) (Table 7, column 7). Consider that in this case we do not take into account upper and lower bounds of our variable. We also estimate a restricted 3SLS model where donations to *AVIS*, *ADMO* and *Emergency* are summed (the rebalance index). In such a case the number of equations of the system drops to seven. The WIT dummy in the rebalance index equation is strongly positive and significant confirming previous findings from non-parametric tests and single equation Tobit estimates. The same significant result is found in other restricted equation systems for the sum of donations to the two (AVIS and ADMO) and to the three (AVIS, ADMO and *Caritas*) worst performers.

We also verify the determinants of aggregate donations with an OLS estimate (bounds are not binding here as in donations to individual organisations) and find that the WIT variable is weakly significant with players donating on average around 6 ECUs more in the WIT (Table 8). The result is however not robust to the inclusion of additional controls. A variable which is strongly significant in the first specification is the number of household members. Each additional member generates 10 more ECUs in terms of donations in the linear specification. The quadratic specification is however shown to fit better the data with a strongly positive and significant term in household size and negative and significant squared number of household members. The significance of household members disappears when we introduce the empathy and guilt-propensity indexes which are both positive and significant. To sum up, individuals in large families donate more and this seems to be due to their higher empathy and guilt propensity.

Other interesting results to document are that i) females donate significantly more for *AIRC*-cancer research (the magnitude of the effect is strong and around 16 ECUs); ii) left-wing political orientation increases donations for *Emergency*[15] and for *Amnesty International*.

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[15] The founder of *Emergency*, Gino Strada, has not concealed in the past his left wing political orientation.

Based on all this evidence we can conclude that the redistributive hypothesis is not rejected by our findings even though the latter does not explain all changes from the WIT to the NIT (and, especially, the WIT effect on *WWF*). The two organizations (*ADMO* and *AVIS*) with markedly lower official aggregate donations have significantly more donations cumulatively in the WIT, while the organization that plays the lion's share in the official donations (*Emergency*) gets significantly less. The economic significance is relevant since the first two, when taken together, almost double and the third more than halves their contributions. The effect is significant for *ADMO* and *Emergency* in individual Tobit estimates, while it is much weaker for *AVIS* individually taken. When we consider jointly the effect of information disclosure in our experiment (between effect from the NIT to the WIT) on *ADMO*, *AVIS* and *Emergency* organizations by building the rebalance index we find that the latter is strongly significant in non-parametric tests and in all kind of econometric estimates and robustness checks performed. We find evidence of similar robustness in our findings when we consider the sum of donation to *AVIS* and *ADMO* only.

5. External consistency and policy implications

The advantage of our experiment lies in its simplicity and external validity. The design is clean and the only difference between the WIT and the NIT is in the information sheet in which players can learn about total contributions received and ranking of the nine considered organizations. Players do not mimic a role since they are effectively donors of the organizations (i.e. their money actually goes to them) and what they give reduces their own payoff in the experiment.

As in any lab experiment there are obvious limits to external validity. For example, the possibility of knowing donation figures actually exists since past aggregate contributions are publicly revealed and available online. Furthermore, aggregate contributions are generally commented in newspaper articles when official figures are released. However, in our experiment the organizations on which we focus are only a restricted number and the information is directly provided to players with no (search) costs (hence comparisons are easier). In other terms the framing effect generated by the experiment generates a much stronger focus on relative comparisons than what is the case in real life.

Since not much money is at stake one might wonder whether observed findings are due to chance. It does not seem so given results of our hypothesis testing and since the redistributive direction of differences in donations between the WIT and NIT case seems clear. Moreover, side findings about household size, empathy, guilt-propensity and female preference for cancer research make sense. Players seem to take seriously their role.

Interesting policy considerations can be drawn from our findings. If actual behavior is consistent with lab behavior, publicly available (and easily comparable) information on aggregate contributions generates redistributive (from top to bottom performers) effects on donations. Individual players have their own preferences but, if they choose having information about preferences of the others, they may coordinate and take into account this additional information for a better choice.

A policy implication of our analysis is that the commonly observed practice to redistribute tax donations of givers who do not specify organization names proportionally to the aggregate amount received by each organization (this is, for instance, the rule of 5 per thousand tax donation in Italy) goes against the observed inequity aversion in charitable giving. Alternative mechanisms containing redistributive effects could be preferred by donors.

A second implication is that bottom ranked organizations should not be ashamed to say publicly that they did not get much or, more precisely, that they can get benefit by advertising their ranking in terms of aggregate donations. However, we saw that such a strategy could generate negative externalities for top ranked organizations. The question is therefore whether regulators should allow such organizations to do comparative advertising. If however the information on rankings is publicly available, it may be difficult for regulators to prevent bottom ranked institutions to make reference to these available rankings in their advertising. A more targeted issue is whether it should be allowed for the latter to create a restricted focus similar to the one we use in the experiment design, that is, a more straightforward comparative information in which only some organizations are compared with others with a much stronger probability of generating negative externalities on the top ranked organizations which are selected in the restricted information sheet.

6. Conclusions

The literature on charitable giving has mainly focused its attention on the relationship between giving and monetary and non-monetary incentives. However, a very important and unexplored issue is whether and how donating choices are affected by the publicly available information on aggregate contributions received by different organizations.

We address this issue with a simple experiment where in the treatment group players are informed about aggregate contributions received by organisations in the recent past before choosing how much and to whom they donate.

Our findings document that the null of no change between treatment and control group is rejected. More specifically, players who receive the information increase significantly their donations to the two bottom performers and reduce it significantly to the top performer.

This redistributive effect is not compatible with fully impure altruistic preferences where individuals care only about their own contributions. It is instead compatible with preferences in which aggregate donations are included among arguments of the utility function. Furthermore, since the two bottom performers have an extremely low share (below 0.03 percent), and the top performer a very high share (around 49 percent) of aggregate donations, our findings are consistent with predictions from a preference structure in which individuals experience a disutility when aggregate donations received by a given organization are outside the boundaries of a region of shares which they may deem fair and equitable. Note that it is not possible with our data to discriminate between these last two hypotheses or, more specifically, about the presence or not of this inequity aversion element, even though we strongly suspect that such an element exists, given the structure of our data and our results.

On the normative side, our results pose a question on whether comparative advertising on aggregate donations (especially restricting the focus on just a few organizations as we did in the experiment) should be allowed since the benefits of increased donations to bottom performers should be traded off with the costs of reduced donations to top performers. Furthermore, the inequity aversion in charitable giving we document in our paper suggests that some redistributive mechanisms might fit better with donors preferences with respect to the commonly observed proportional redistribution (based on the aggregate donations received) of tax donations from givers who do not specify any organization.

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Table 1 Descriptive statistics of the main variables of interest

Variable	Definition	Obs	Mean	Std. Dev.	Min	Max
Donation	*Total amount donated*	230	62.956	28.202	0	100
Greenpeace	*Amount donated to Greenpeace*	230	1.304	9.980	0	100
Emergency	*Amount donated to Emergency*	230	4.870	19.106	0	100
Red Cross	*Amount donated to Red Cross*	230	1.065	8.323	0	100
Caritas	*Amount donated to Caritas*	230	2.957	13.661	0	100
Avis	*Amount donated to Avis (blood donating organisation)*	230	4.522	18.133	0	100
Cancer research	*Amount donated to Cancer Research*	230	34.587	37.877	0	100
Amnesty	*Amount donated to Amnesty International*	230	2.739	15.094	0	100
Admo	*Amount donated to Admo*	230	8.087	23.016	0	100
WWF	*Amount donated to the World Wildlife Fund*	230	2.826	13.808	0	100
Avis+Admo-Emergency		230	7.739	35.686	-100	100
Avis+Admo		230	12.609	28.019	0	100
Avis+Admo+Caritas		230	15.565	29.947	0	100
Session	*Session number*	230	2.778	1.207	1	5
Householdvol	*At least one household member is volunteer*	230	0.417	0.494	0	1
Householdsize	*Number of household members*	230	4.239	1.065	1	10
Trust	*Most people can be trusted*	230	0.178	0.384	0	1
Income	*Weekly income*	224	63.962	72.562	0	500
Male	*Dummy taking value one for males*	230	0.422	0.495	0	1
Facebookfriends	*Number of friends on Facebook*	230	244.352	205.617	0	1400
Guilt propensity	*Psychometric measure of guilt-propensity*	230	57.343	6.325	37	71
Empathy	*Psychometric measure of empathy*	230	43.109	9.037	15	75
LeftWing	*1-4 index of political orientation (1=right,..,4=left)*	230	2.152	1.250	0	4
ChurchMembership	*Active membership in church*	229	0.380	0.486	0	1
SportMembership	*Active membership in Sport organisations*	230	0.509	0.501	0	1
ArtMusEdMembership	*Active membership in art, music education*	229	0.201	0.402	0	1
TUnionMembership	*Active membership in Trade Unions*	230	0.165	0.372	0	1
PolPartyMembership	*Active membership in LeftWingl parties*	230	0.104	0.306	0	1
EnvironmentMembership	*Active membership in environmental organizations*	230	0.065	0.247	0	1
ProfessMembership	*Active membership in professional organizations*	229	0.218	0.414	0	1
CharityMembership	*Active membership in charitable organizations*	230	0.200	0.401	0	1
MembOther	*Active membership in other organisations*	230	0.257	0.438	0	1
TimeRel	*Time spent with parents or oth. relatives*	229	3.616	0.714	1	4
TimeFriends	*Time spent with friends*	229	3.699	0.539	1	4

TimeColleagues	*Time spent with working colleagues*	229	3.061	1.316	0	4
TimeChurch	*Time spent in Church*	230	0.904	1.133	0	4
TimeOther	*Time spent with friends with people at sports clubs or voluntary or service organization*	230	1.922	1.455	0	4

Table 2 Donations (total amounts and shares) in the experiment with and without information on official aggregate donations

	WIT (ECU)	NIT (ECU)	OFFICIAL (Euros)	WIT minus NIT share	NIT minus official share
Greenpeace	0.847	1.786	555,372	-0.0163	-0.0008
Emergency	3.136	6.696	9,111,565	-0.0617	-0.3782
Red Cross	0.678	1.473	679,532	-0.0138	-0.0125
Caritas	3.136	2.768	233,769	0.0028	0.0322
Avis	6.017	2.946	2940	0.0443	0.0473
Cancer research	33.220	36.027	5,972,402	-0.0799	0.2804
Amnesty Intl.	3.390	2.054	846,910	0.0185	-0.0121
Admo	10.254	5.804	4382	0.0627	0.0933
WWF	4.237	1.339	1,336,551	0.0433	-0.0497
Total	64.915	60.893	18,743,423		

WIT: treatment with information; NIT: treatment without information; OFFICIAL: total amount of donations received by the organizations in the year 2010.

Figure 1 Contribution shares of the nine organizations: aggregate official data (Official), experiment contributions when players know (WIT) and do not know (NIT) official data
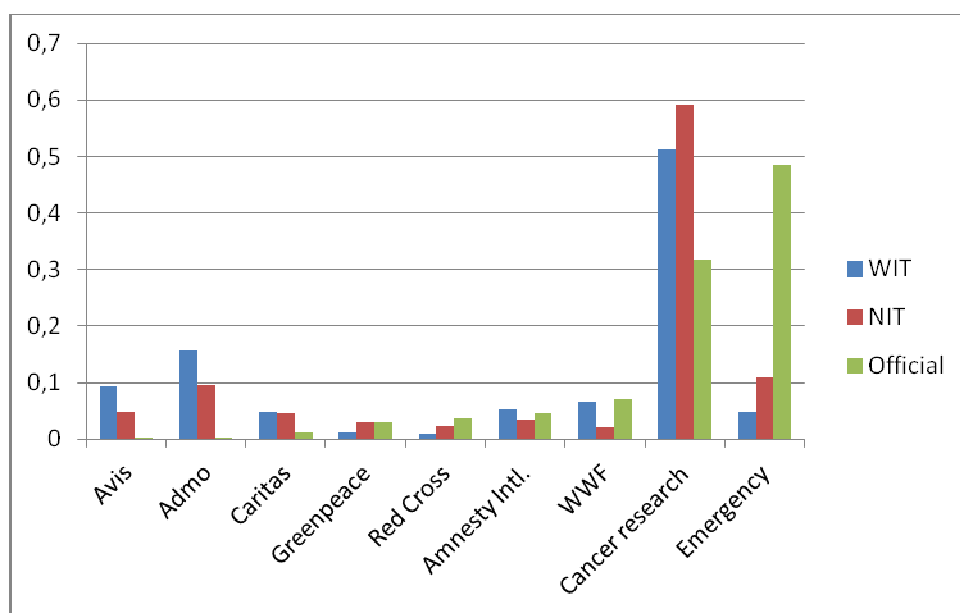
Table 3 Balancing properties

	NIT	WIT	H_0: no significant difference in means (P-value)	H_0: no significant difference in the distributions (P-value)
Householdvol	0.464	0.373	(0.16)	(0.67)
Householdsize	4.214	4.263	(0.31)	(0.86)
Trust	0.179	0.178	(0.99)	(0.99)
Income	63.899	64.022	(0.95)	(0.97)
Male	0.473	0.373	(0.12)	(0.61)
Facebookfriends	257.071	232.280	(0.46)	(0.95)
GuiltPropensity	57.214	57.466	(0.98)	(0.84)
Empathy	41.545	44.593	(0.25)	(0.12)
LeftWing	2.063	2.237	(0.25)	(0.63)
ChurchMembership	0.384	0.376	(0.90)	(0.99)
SportMembership	0.536	0.483	(0.42)	(0.99)
ArtMusEdMembership	0.270	0.136	(0.01)	(0.25)
TUnionMembership	0.170	0.161	(0.86)	(0.99)
PolPartyMembership	0.080	0.127	(0.24)	(0.99)
EnvironmentMembership	0.036	0.093	(0.08)	(0.99)
ProfessMembership	0.216	0.220	(0.94)	(0.99)
CharityMembership	0.214	0.186	(0.64)	(0.99)
MembOther	0.232	0.280	(0.41)	(0.99)
TimeRel	3.613	3.619	(0.98)	(0.99)
TimeFriends	3.750	3.650	(0.22)	(0.95)
TimeColleagues	3.045	3.077	(0.91)	(0.99)
TimeChurch	0.759	1.042	(0.23)	(0.52)
TimeOther	1.911	1.932	(0.96)	(0.83)

Table 4. Non parametric test of the significance of the information treatment

	Non parametric rank sum test (H_0:NIT=WIT)	
	z-stat	**p-value**
Greenpeace	0.065	(0.948)
Emergency	1.560	(0.119)
Red Cross	0.514	(0.607)
Caritas	-0.480	(0.625)
Avis	-1.640	(0.101)
AIRC (Cancer research)	0.534	(0.593)
Amnesty Intl.	-0.650	(0.516)
Admo	-1.920	(0.054)
WWF	-2.254	(0.024)
Two worst performers (Avis+Admo)	-2.51	(0.012)
Three worst performers (Avis+Admo+Caritas)	-2.167	(0.030)
Rebalancing index (Avis+Admo-Emergency)	-2.894	(0.004)

Table 5. The determinants of donating choices to different organizations (one sided Tobit)

Dep. Var.	Admo	Wwf	Avis	Caritas	AIRC	Amnesty International	Red Cross	Emergency	Greenpeace	Avis+Admo	Avis+Admo+Caritas	Avis+Admo-Emergency
WIT	5.785**	3.110*	3.812	0.641	-7.122**	0.430	-0.725	-4.362***	-0.784	9.756**	10.386***	14.230***
	(2.886)	(1.826)	(2.981)	(0.742)	(3.434)	(2.133)	(0.649)	(1.628)	(1.042)	(4.214)	(3.673)	(5.230)
Facebookfriends	-0.002	-0.001	0.003	-0.003	-0.026*	0.002	-0.000	0.008	0.000	0.001	-0.002	-0.006
	(0.002)	(0.003)	(0.010)	(0.004)	(0.014)	(0.004)	(0.001)	(0.007)	(0.004)	(0.009)	(0.010)	(0.015)
Income	-0.033***	-0.016	-0.009	0.010	-0.016	0.021	-0.002	0.002	0.003	-0.043*	-0.034	-0.046
	(0.012)	(0.017)	(0.016)	(0.013)	(0.036)	(0.031)	(0.002)	(0.011)	(0.007)	(0.025)	(0.024)	(0.034)
Male	1.393	-0.362	3.838	2.818	-15.935***	-0.286	0.701	-4.048	2.717	5.240	8.123***	9.137**
	(3.802)	(0.553)	(2.577)	(2.904)	(3.418)	(1.453)	(0.700)	(2.916)	(2.101)	(5.311)	(2.897)	(4.587)
LeftWing	-1.357	-0.342	-0.274	-0.614	2.265	0.558	-0.234	2.803***	0.708	-1.627	-2.266	-4.390**
	(1.558)	(0.516)	(0.808)	(0.783)	(3.118)	(0.374)	(0.480)	(0.800)	(0.516)	(1.662)	(1.688)	(1.721)
Householdsize	3.328	-1.100	-3.396	-0.992	-1.953	-0.666	-0.841*	0.688	-0.746	0.040	0.579	0.293
	(2.405)	(1.188)	(2.406)	(1.677)	(7.286)	(1.647)	(0.499)	(2.437)	(1.303)	(1.471)	(1.044)	(0.929)
SurveyTiming	1.191	-1.543	-1.143***	0.513	1.755	0.107	0.054	-0.249	-0.197	-0.146	-1.226	-0.918
	(1.452)	(1.026)	(0.164)	(1.427)	(1.795)	(0.626)	(0.415)	(1.253)	(0.234)	(2.133)	(1.759)	(3.731)
Constant	3.299	10.676**	8.128**	1.199	43.871***	-0.923	2.107	1.790	-0.042	11.576	12.834**	10.011**
	(6.567)	(4.905)	(3.234)	(7.430)	(8.002)	(2.164)	(2.849)	(5.117)	(2.137)	(8.626)	(6.505)	(4.905)
Observations	224	224	224	224	224	224	224	224	224	224	224	224

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6. The determinants of donating choices to different organizations (two sided Tobit)

Dep. Var.	Admo	Wwf	Avis	Caritas	AIRC	Amnesty International	Red Cross	Emergency	Greenpeace	Avis+Admo	Avis+Admo+ Caritas	Avis+Admo -Emergency
WIT	56.403***	108.864**	96.729	9.408	-20.713**	38.431	-25.974	-90.151**	-35.349	65.606***	50.474***	14.230***
	(18.973)	(48.138)	(63.396)	(11.743)	(8.933)	(118.499)	(47.536)	(39.393)	(63.427)	(18.475)	(14.558)	(5.230)
Facebookfriends	0.002	0.029	0.005	-0.014	-0.052	0.145	-0.055	0.188***	0.108	-0.000	-0.003	-0.006
	(0.014)	(0.065)	(0.121)	(0.073)	(0.035)	(0.218)	(0.098)	(0.067)	(0.114)	(0.048)	(0.050)	(0.015)
Income	-0.293	-0.378	-0.109	0.254**	-0.034	0.593	-0.213	0.095	0.267	-0.225	-0.066	-0.046
	(0.210)	(0.707)	(0.273)	(0.102)	(0.085)	(0.603)	(0.304)	(0.259)	(0.240)	(0.140)	(0.069)	(0.034)
Male	21.280	-11.182	82.439	46.494	-34.810***	-23.023	55.035	-78.112*	119.425	38.273	41.165**	9.137**
	(31.670)	(19.289)	(62.128)	(39.458)	(6.805)	(62.743)	(34.747)	(41.012)	(124.570)	(35.503)	(17.322)	(4.587)
LeftWing	-16.356	3.749	-10.380	-16.895	3.424	13.067	-31.155**	62.875**	55.639***	-14.124	-14.344*	-4.390**
	(11.895)	(10.095)	(19.004)	(15.963)	(7.873)	(28.864)	(12.941)	(25.333)	(14.023)	(10.423)	(7.416)	(1.721)
Householdsize	17.113*	-37.073	-44.019***	10.038	5.048*	-9.545	11.818	0.947	12.647	1.622	4.339	0.293
	(8.968)	(36.582)	(14.716)	(22.637)	(2.902)	(43.236)	(12.282)	(22.360)	(9.604)	(8.027)	(5.617)	(0.929)
SurveyTiming	27.217	-31.784	-60.450	-14.427	-4.910	-27.400	-35.157	24.196	-44.399	0.583	-5.321	-0.918
	(22.042)	(37.893)	(45.105)	(29.268)	(16.195)	(86.975)	(35.955)	(45.799)	(66.306)	(17.206)	(11.465)	(3.731)
Constant	-224.382***	-130.942*	-154.810*	-251.212**	26.219	-623.751*	-274.312***	-423.726***	-612.540***	-123.495**	-97.877**	10.011**
	(66.866)	(72.210)	(88.934)	(105.481)	(21.199)	(354.797)	(89.925)	(141.807)	(221.499)	(62.499)	(45.190)	(4.905)
Observations	224	224	224	224	224	224	224	224	224		224	224

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7. Robustness check

	(1)	(2)	(3)	(4)	(5)	(6)
Avis+Admo	9.333**	8.990**	10.141**	8.671**	7.896**	10.2333***
	(4.376)	(3.935)	(4.409)	(3.347)	(3.397)	(3.591)
Avis+Admo+Caritas	10.265***	9.762***	10.396**	9.303***	8.073**	10.940***
	(3.689)	(3.377)	(5.02)	(3.162)	(3.436)	(3.842)
Avis+Admo-Emergency	48.105***	45.373***	46.581***	41.023***	50.858***	14.41***
	(16.886)	(15.035)	(13.662)	(12.513)	(13.678)	(4.546)
Admo	5.514**	5.411**	6.523*	6.075**	5.560*	6.033**
	(2.717)	(2.642)	(3.627)	(2.955)	(2.972)	(2.918)
Emergency	-4.643***	-4.233**	-3.571*	-4.480***	-4.377**	-4.181*
	(1.766)	(1.656)	(1.835)	(1.488)	(1.759)	(2.947)
WWF	2.728	3.594*	3.1	3.334	1.889	3.798**
	(1.826)	(1.945)	(2.261)	(2.219)	(2.025)	(1.843)

The table presents coefficient and robust standard errors of the WIT variable in row for the following on sided Tobit specifications: (1) baseline + guilt propensity and empathy; (2) baseline plus quadratic household size, income and number of Facebook friends; (3) baseline + affiliation dummies; (4) baseline + time allocation dummies; (5) baseline + affiliation and time allocation dummies; (6) 3 stage least square results with findings organized as follows: i) coefficients in the last three rows (9 equation system with baseline for each of the nine organizations); ii) coefficient in the first row (8 equation system where the two baseline equations for Avis and Admo are replaced by a unique equation where the dependent variable is the sum of donations to Avis and Admo); iii) coefficient in the second row (7 equation system where the two baseline equations for Avis, Admo and Caritas are replaced by a unique equation where the dependent variable is the sum of donations to Avis, Admo and Caritas) iv) coefficient in the third row (7 equation system where the three baseline equations for Avis, Admo and Emergency are replaced by a unique equation where the dependent variable is the sum of donations to Avis and Admo minus donations to Emergency (rebalance index)). *** p<0.01, ** p<0.05, * p<0.1

Table 8. The determinants of the total amount donated by experiment participants
(Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1)

Dep. Var.: total donations	(1)	(2)	(3)	(4)	(5)	(6)
WIT	6.270*	0.793	2.268	5.800	2.662	-1.432
	(2.720)	(1.246)	(1.802)	(3.248)	(1.850)	(1.106)
Facebookfriends	-0.003	-0.012	-0.043	-0.001	-0.015	-0.012
	(0.014)	(0.008)	(0.024)	(0.015)	(0.009)	(0.009)
Income	0.009	-0.040**	-0.042	0.008	-0.040**	-0.054*
	(0.018)	(0.009)	(0.069)	(0.021)	(0.009)	(0.025)
Male	-2.302	-1.709	-4.566	-2.275	-6.246	-1.560
	(5.009)	(4.372)	(4.314)	(4.320)	(5.843)	(5.255)
LeftWing	7.076**	3.039	4.187*	6.821***	4.566**	2.653
	(1.558)	(1.433)	(1.804)	(1.271)	(1.415)	(1.482)
Householdsize	10.067***	1.237	25.260***	9.966***	2.093	0.381
	(1.531)	(2.829)	(2.537)	(1.746)	(2.827)	(2.775)
SurveyTiming	0.016	-4.778*	-2.143	0.117	-4.364	-5.640*
	(3.323)	(2.057)	(3.481)	(3.620)	(2.240)	(2.359)
ChurchMembership				-0.241		-3.944
				(8.503)		(4.145)
SportMembership				-2.993		-10.586
				(6.244)		(5.114)
ArtMusEdMembership				-0.333		-0.223
				(5.210)		(2.550)
TUnionMembership				2.970		-2.049
				(7.327)		(7.103)
PolPartyMembership				-10.978*		-5.365
				(4.953)		(5.569)
EnvironmentMembership				15.294***		19.222***
				(2.833)		(2.848)
ProfessMembership				4.897		9.461**
				(3.468)		(3.095)
CharityMembership				-0.190		-4.512
				(2.540)		(3.504)
MembOther				4.240		0.727
				(6.433)		(5.300)
GuiltPropensity		0.612***				0.563***
		(0.093)				(0.108)
Empathy		0.550**				0.495***
		(0.121)				(0.082)
[Householdsize]^2			-2.297***			
			(0.416)			
[Facebookfriends]^2			0.0001			
			(0.00001)			
[Income]^2			0.0001			
			(0.0001)			
Timerel					4.945**	1.333
					(1.510)	(1.149)
TimeFriends					7.601**	1.614
					(2.288)	(3.151)
TimeColleagues					1.423	0.157
					(1.690)	(1.562)
TimeChurch					2.867	4.004
					(3.207)	(3.120)
TimeOther					0.129	1.262
					(2.252)	(1.758)
Observations	224	224	224	221	223	220
R-squared	0.810	0.851	0.834	0.816	0.841	0.862

Appendix A: Instructions

The Dictator game (with information treatment)

You are endowed with 100 experimental points. You can give any amount (between 0 and 100) to a charity among those listed below. The remaining point will be converted in euros and paid at the end of the experiment (exchange rate 10 ECU=1 Euro)

Thick ☑ the organization you want to give your money:

	Association	Funds received in 2008 (euros)
☐	ADMO - Associazione Donatori Midollo Osseo	4.382
☐	Amnesty International sezione Italiana	846.910
☐	Associazione Italiana per la Ricerca sul Cancro	5.972.402
☐	AVIS - Associazione Volontari Italiani Del Sangue	2.940
☐	Caritas Italiana	233.769
☐	Croce Rossa Italiana	679.532
☐	Emergency	9.111.565
☐	Greenpeace	555.372
☐	WWF - World Wildlife Foundation Italia	1.336.551

Write the amount you want to give (between 0 and 100): ECU……………….

Appendix B: Empathy Quotient Questionnaire

Read carefully and thick your preffered answer

		Strongly agree	Slightly agree	Slightly disagree	Strongly disagree
1.	I can easily tell if someone else wants to enter a conversation.				
2.	I find it difficult to explain to others things that I understand easily, when they don't understand it first time.				
3.	I really enjoy caring for other people.				
4.	I find it hard to know what to do in a social situation.				
5.	People often tell me that I went too far in driving my point home in a discussion.				
6.	It doesn't bother me too much if I am late meeting a friend.				
7.	Friendships and relationships are just too difficult, so I tend not to bother with them.				
8.	I often find it difficult to judge if something is rude or polite.				
9.	In a conversation, I tend to focus on my own thoughts rather than on what my listener might be thinking.				
10.	When I was a child, I enjoyed cutting up worms to see what would happen.				
11.	I can pick up quickly if someone says one thing but means another.				
12.	It is hard for me to see why some things upset people so much.				
13.	I find it easy to put myself in somebody else's shoes.				
14.	I am good at predicting how someone will feel.				
15.	I am quick to spot when someone in a group is feeling awkward or uncomfortable.				
16.	If I say something that someone else is offended by, I think that that's their problem, not mine.				
17.	If anyone asked me if I like their haricut, I would reply truthfully, even if I didn't like it.				
18.	I can't always see why someone should have felt offended by a remark.				
19.	Seeing people cry doesn't really upset me.				
20.	I am very blunt, which some people take to be rudeness, even though this is unintentional.				
21.	I don't tend to find social situations confusing				

22.	Other people tell me I am good at understanding how they are feeling and what they are thinking.				
		Strongly agree	**Slightly agree**	**Slightly disagree**	**Strongly disagree**
23.	When I talk to people, I tend to talk about their experiences rather than my own				
24.	It upsets me to see animals in pain.				
25.	I am able to make decisions without being influenced by people's feelings.				
26.	I can easily tell if someone else is interested or bored with what I am saying.				
27.	I get upset if I see people suffering on news programmes.				
28.	Friends usually talk to me about their problems as they say I am very understanding.				
29.	I can sense if I am intruding, even if the other personn doesn't tell me.				
30.	People sometimes tell me that I have gone too far with teasing.				
31.	Other people often say that I am insensitive, though I don't always see why.				
32.	If I see a stranger in a group, I think that it is up to them to make an effort to join in.				
33.	I usually stay emotionally detached when watching a film.				
34.	I can tune into how someone else feels rapidly and intuitively.				
35.	I can easily work out what another person might want to talk about.				
36.	I can tell if someone is masking their true emotion.				
37.	I don't consciously work out the rules of social situations.				
38.	I am good at predicting what someone will do.				
39.	I tend to get emotionally involved with a friend's problems.				
40.	I can usually appreciate the other person's viewpoint, even if I don't agree with it.				

		Strongly agree	**Slightly agree**	**Slightly disagree**	**Strongly disagree**

Appendix C: World Values Survey-Type Questionnaire

1.   You or your family usually give money to charitable or non-profit organizations

☐ Yes

☐ No

2.   Are you an active member or not a member of any type of voluntary organization? (Read out and code one answer for each organization):

	Active Member	Not a member
Church or religious organization	☐	☐
Sport or recreational organization	☐	☐
Art, music or educational organization	☐	☐
Labor Union	☐	☐
Political party	☐	☐
Environmental organization	☐	☐
Professional association	☐	☐
Humanitarian or charitable organizations	☐	☐
Any other	☐	☐

3.   You or any other member of your family provide volontary work for one of these organizations?

☐ YES

☐ NO

4.   How many members has your family?_____

5. For each of the following activities, would you say you do them every week or nearly every week; once or twice a month; only a few times a year; or not at all?

	Weekly/	nearly every week	Once or twice a month	Only a few times a year	Not at all
Spend time with parents or other relatives	☐	☐	☐	☐	☐
Spend time with friends	☐	☐	☐	☐	☐
Spend time socially with colleagues from work or your profession	☐	☐	☐	☐	☐
Spend time with people at your church	☐	☐	☐	☐	☐
Spend time socially with people at sports clubs or voluntary or service organization	☐	☐	☐	☐	☐

6 Taking all things together, would you say you are (read out and code one answer):

☐ Very happy
☐ Rather happy
☐ Not very happy
☐ Not at all happy
☐ I dont' know

7. How satisfied are you with the financial situation of your household? (Code one number):

1 = Completely dissatisfied, 10 = Completely satisfied

☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
1	2	3	4	5	6	7	8	9	10

8.   All things considered, how satisfied are you with your life as a whole these days? (Code one number):

1 = Completely dissatisfied, 10 = Completely satisfied

☐   ☐   ☐   ☐   ☐   ☐   ☐   ☐   ☐   ☐

1   2   3   4   5   6   7   8   9   10

9.   In political matters, people talk of "the left" and "the right." How would you place your views on this scale, generally speaking? (Code one number):

    ☐   left
    ☐   center-left
    ☐   center
    ☐   center-right
    ☐   right

10.   Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? (Code one answer):

☐ Most people can be trusted

☐ Need to be very careful.

11.   For each of the following organizations, could you tell how much confidence you have in them: (Read out and code one answer for each):

	Trust	No Trust	I don't know
The press	☐	☐	☐
The radio	☐	☐	☐
National TV	☐	☐	☐
Regional TV	☐	☐	☐
The courts	☐	☐	☐
The Police	☐	☐	☐
The armed forces	☐	☐	☐
The Churches	☐	☐	☐
Labor unions	☐	☐	☐
Political Parties	☐	☐	☐
Corporations	☐	☐	☐

	Trust	No Trust	I don't know
The government	☐	☐	☐
The Parliament	☐	☐	☐
The European Union	☐	☐	☐
The United Nations	☐	☐	☐
The Regional Parliament	☐	☐	☐
The Regional Government	☐	☐	☐
The Provincial Government	☐	☐	☐
The Local government	☐	☐	☐
The National Health Service	☐	☐	☐
Charitable or humanitarian organizations	☐	☐	☐
The Public School	☐	☐	☐
The Banks	☐	☐	☐
The Bankers	☐	☐	☐
The Financial Market	☐	☐	☐
The Universities	☐	☐	☐

12.   What is, approximately, your weakly income?

Euro ………………

13.   What is your gender?

☐   Male
☐   Female

14.   How many friends, aproximately, you have in your Facebook profile?

Friends' number ………………