

## **Nudging Charitable Giving: Evidence from the Laboratory and Field**

Oct 2, 2013

Homa Zarghamee  
*Barnard College ·Columbia University*

Jubo Yan  
*Cornell University*

Kent D. Messer  
*University of Delaware*

William D. Schulze  
*Cornell University*

### **Abstract**

The option of recurring automatic donations is increasingly employed by charities to raise funds through self-renewing gifts using credit cards, payroll deductions, or scheduled withdrawals from bank accounts. This experimental research demonstrates that sustained high efficiencies can be obtained using voluntary contributions in a linear public good game when a “self-selected status quo” of giving is available through automatic donation and a social norm can be established through discussion and voting, as occurs in many charitable organizations. This choice architecture is also tested in a parallel field experiment where a sustained 47.3% increase in monthly donations to an HIV/AIDS prevention charity was obtained during a ten-month study period.

Keywords: voluntary contributions mechanism; behavioral economics; social norms; context; charitable giving; field experiment; automatic donations

\* The authors would like to acknowledge support from the Decision, Risk, and Management Science Program at the National Science Foundation. In addition, we are extremely grateful to the Rev. Kent Millard and St. Luke's United Methodist Church in Indianapolis, Indiana, and The Center for the Church and Global AIDS for their cooperation with this research. Important support was provided by the staff of Cornell University's Laboratory for Experimental Economics and Decision Research.

## 1. Introduction

Every year, U.S. citizens donate large amounts of time and money to charity. Excluding charitable bequests, corporate giving, and foundation grant-making, individual donations to charities in the U.S. in 2008 were approximately \$229.28 billion, or 1.6% of GDP (Giving USA 2009). Charitable giving is not an artifact of the generosity of a small proportion of the population. Rather, 225 million people in the U.S., almost three quarters of the population, donate money each year for various causes. In fact, over the last half-century, charitable contributions have generally followed a positive trend, increasing in both inflation-adjusted terms and as a proportion of household income (Brooks 2006). In sharp contrast to these observed sustained contributions, traditional economic theory predicts free-riding. As shown in the laboratory by Isaac and Walker (1988), Andreoni (1988), and others, the voluntary contribution mechanism (VCM) shows initial contributions significantly greater than zero that, with repetition, soon decay to levels consistent with theory. While some newer behavioral theories—for example, the theory of conditional cooperation (see Fehr and Gächter 2000a and 2000b; Fiscbacher and Gächter 2010; and Sugden 1984 and 1985)—are quite successful at predicting both initial positive giving and decay over successive rounds, *sustained* public good contributions have been explained with very limited success. Given that charitable organizations *are* able to sustain their operations with voluntarily contributed funds, a number of important questions emerge:

- What are the underlying factors responsible for sustained giving outside of the lab?
- Can these factors be accounted for in the lab?
- Does accounting for these factors render the VCM efficient?

We hypothesize that the critical difference between the laboratory and the field lies in what Thaler and Sunstein's *Nudge* (2008) calls "choice architecture," the specific features that combine to shape our choice environment and profoundly impact the decisions we make. In Messer et al (2007) (hereafter referred to simply as MZKS), the authors demonstrate that three contextual features—(1) discussion of the proposed project (see Bochet et al 2006; Brosig et al 2003; and Isaac and Walker 1988), (2) an up or down vote (see Alm et al 1999; Cinyabuguma et al 2005; Feld and Tyran 2002; Kroll et al 2007; Messer et al 2005; and Walker et al 2000), and (3) the establishment of an externally determined status quo of giving (see Andreoni 1995; Johnson et al 2002; Messer et al 2005)—lead to sustained contributions with near-100%

efficiency when combined; it is hypothesized that the three features—cheap talk, voting, and status quo of giving, for short—produce sustained contributions because they together establish a social norm of giving.

These findings are relevant for many charities. For example, charities often directly—or indirectly through election of board members—utilize a democratic process of discussion and voting in selecting activities to support. Less commonplace, though, is the *externally imposed* status quo of giving. Although some exceptions exist—for example, automatic payroll deductions required by unions and deductions from revenues at the point of sale for some commodity promotion organizations—establishing a system of compulsory giving with refunds by request is not feasible for most public goods. An externally established status quo of giving is therefore unlikely to be responsible for most sustained contributions observed outside of the lab. A viable alternative, though, would be allowing the status quo of giving to be established not by an external entity, but rather by the consumer of the public good. Under such a system, the consumer could opt into a contribution plan that would give the provider access to the consumer’s funds and would specify an amount to be withdrawn on a periodic basis by the provider. The palatability of such a mechanism, which we call *automatic donation*, would likely be high from the donor’s perspective given the results of MZKS. There, it was observed that the combination of cheap talk and voting produces near-100% contribution of the endowment to the public good in the first round for both a status quo of giving and not giving. This suggests that cheap talk and voting alone may make contributors feel cooperative enough in the first round to be attracted to automatic donation. The choice of automatic donation would then effectively establish a status quo of giving for future rounds which, through status quo bias, may tend to sustain contributions (Andreoni 1995; Coursey et al 1987; Johnson et al 1993; Johnson et al 2002; Johnson and Goldstein 2003; Kahneman et al 1990, 1991; Kahneman and Tversky 1979; Knetsch and Sinden 1984; Madrian and Shea 2001; MZKS; and Samuelson and Zeckhauser 1988).

Real-world instances of automatic donation schemes abound, supporting the theory that they play a key role in sustaining real charitable contributions. The American Cancer Society, Feed the Children, World Vision, Habitat for Humanity International, and Food for the Poor, all top twenty U.S. charities in terms of donations in 2008 (Chronicle of Philanthropy 2009), have automatic donation as a method of payment. In some cases, automatic donation is the primary

contribution method. For example, Dollar-Help, an organization in St. Louis, Missouri, which provides energy-assistance to needy families, has offered a payment option called “Automatic Giving” for over twenty years, whereby an amount specified by the donor is automatically added to the donor’s monthly energy bill. In 2008, 90% of the roughly \$1,000,000 contributed in total came via Automatic Giving.

This paper provides evidence from laboratory and field experiments that automatic donation can establish a status quo of giving. Our laboratory results show that the availability of the automatic donation option, while ineffectual without cheap talk and voting, successfully mimics the externally imposed status quo of giving when combined with these contextual features. The result suggests that the context in which we make decisions about giving to real charities has a decisive impact on the efficiency of contributions. This has profound implications for the VCM: in particular, it suggests that, without a realistic choice architecture, the VCM is not a complete model of contribution decisions outside the lab. However, with a more realistic choice architecture in the lab, it is no longer necessarily an inefficient mechanism. We also conduct a field experiment that serves to stress test the hypothesis that the opportunity for automatic donation can create a social norm of sustained giving. Monthly donations to a charitable fund were tracked for two groups, one with preliminary cheap talk and voting, and the other without. The patterns of contributions over the ten months of the experiment support the laboratory findings. The laboratory and field experiments are presented in Parts 2 and 3, respectively, and Part 4 offers some summary remarks and conclusions.

## **2. Automatic Donation and Self-Selection of Status Quo**

### **2.1. Experimental Design: Laboratory Study of Automatic Donation**

The design of the experiments reported here follows MZKS using a linear voluntary contributions mechanism (VCM) as the baseline experiment. In MZKS, a full factorial design is employed with three treatments, five minutes of pre-play cheap talk, a majority vote on whether to engage in the VCM instead of a private lottery, and framing the decision with a status quo of not giving with the option of a contribution, or a status quo of giving with the option of requesting a refund from the public account. While individually these contextual factors are insufficient to combat the decay of contributions over the ten rounds of the experiment, together, they are successful not only at counteracting decay but at producing very close to 100%

contributions and efficiency over 10 rounds. As discussed in the previous section that status quo is rarely externally imposed, we hope that automatic donation might establish a self selected rather than externally imposed status quo of giving. Here, eight versions of the linear contributions game (VCM) are conducted, varying combinations of three factors: automatic donation, cheap talk and voting. Automatic donation is a payment option in half of the eight versions. Table 1 shows the experimental design and descriptions of specific versions. Of particular interest will be (i) the automatic donation only (AD) version, which differs from the traditional VCM only in that automatic donation can be utilized, and (ii) the fully interacted version (AD-CT-VT), which combines the option of automatic donation with both cheap talk and voting. The other six versions are also listed in Table 1.

For each of the eight versions, five sessions were conducted, each with seven subjects, for a total of 280 subjects. Subjects were recruited from undergraduate business and economics courses at Cornell University. Subjects sat at individual computer terminals equipped with privacy shields, and all decisions were made using Excel spreadsheets programmed with Visual Basic for Applications. Subjects were asked to read the experiment's instructions, were given an oral presentation regarding the protocols, and were allowed to ask the administrator questions (Sample instructions are provided in Reviewer Appendix A).

The experiment lasted twenty rounds, but the subjects were not aware of the number of rounds. The experiment involved two activities: a private lottery and the funding of a public good via the VCM. Money was non-transferable across activities, and, for both activities, money was non-transferable across rounds. Tabkle 1 lists all the versions and explains each version. The private lottery occurred in all rounds in all treatments; hence, *all* subjects started each round with an endowment of \$2, \$1 of which was for use in the private lottery. In each round of the private lottery, subjects confidentially decided whether to purchase a \$1 lottery ticket. The lottery outcome was determined by a coin toss each round, with heads returning \$2 (net gain of \$1) and tails \$0 (net loss of \$1) to ticket-buyers. The coin was lent to the experiment's administrator by a subject and was tossed by a different subject each round.

For the public good component of the experiment, subjects were placed in groups of seven. Each round, subjects had to split the second dollar of their per-round endowment between a private account, where the value of money was unchanged, and a public account where money increased in value by 50% but was redistributed evenly among group members regardless of

whether they gave to the public account, giving a marginal per capita return (MPCR) of 0.21. After each round, the subjects' computer spreadsheets displayed how much was given by their group to the group account and what the group account payoff was for that round. Parameters of the VCM were chosen for comparability with previous studies: group size and MPCR are identical to those in MZKS and comparable to Mechanism and Control groups 2 in Falkinger et al (2000), where group size is eight, MPCR is 0.2, and the focus of the research is an experimental test of the efficiency of the incentive-compatible Falkinger mechanism (Falkinger 1996).

Depending on the specific versions, either/both cheap talk or/and voting were administered following instruction and before the start of first round. In the versions with cheap talk (CT), subjects were given the opportunity to talk openly with the other members of their groups, barring any deal-making or threats. After five minutes, cheap talk was concluded, and subjects were asked to refrain from all communication with their group members until the end of the experiment was announced. In the versions with voting (VT), subjects voted independently on whether they wanted their group to engage in funding the public good. If the public good activity was accepted by majority vote, then the experiment proceeded exactly as for the untreated groups. The alternative was keeping the additional dollar of the per-round endowment in the private account without the option of allocating it to a public account. The outcome (*not* split) of the vote was then revealed to the subjects, and the first round commenced.

In addition to the traditional method of voluntary contribution, which we refer to as “round-by-round,” subjects in half of the sessions had the option of contributing via automatic donation. If automatic donation is available, in the first round, each subject had to choose one of the two methods of contribution. A choice of round-by-round meant that in each round the subject would choose to confidentially submit the amount s/he wished to donate in that round. Under automatic donation, however, the subject would choose to submit an amount from \$0 to \$1 that, until otherwise specified, would be automatically withdrawn from the subject's private account each period and contributed to the group account. At the beginning of each round, subjects were free to switch contribution methods, and subjects using automatic donation could alter their per-round contribution. For instance, if automatic donation was being used to donate \$0.50 starting in round 4, in any subsequent round the subject could change this amount (i.e. change to \$0.30) or switch to round-by-round and specify any contribution amount (i.e. \$0.70).

Both the written and oral instructions emphasize this freedom to change the payment method and amount in an attempt to make clear that automatic donation was not a permanent commitment mechanism. In the other half of the sessions, automatic donation option was not available. Subjects could only use “round-by-round” method to make contributions.

## **2.2. Results: Contribution Rates in the Laboratory Study**

Automatic donation alone results in contribution behavior consistent with past VCM experiments. As shown in Figure 1, average contributions in the AD version started at 48.1% of the endowment, decayed to 20% after ten rounds and to 4% at the end of twenty rounds. In the baseline version, average contributions were 60.9% in the first round, decayed to 20.6% after ten rounds and to 5.2% at the end of twenty rounds, statistically indistinguishable from each other ( $p = 0.221$ ,  $p = 0.735$  and  $p = 0.768$  for first, tenth round and twentieth round contributions, respectively). Although the externally imposed status quo of giving in the MZKS experiments had no statistical effect on reducing decay over rounds, it did increase initial contributions by 21 percentage points, an effect that is not mimicked with the availability of automatic donation. In the present study, only 17.1% of subjects in the AD version use automatic donation in the first round, a proportion that decreases to zero by the fifteenth round, as shown in Figure 2. Hence, in isolation, the automatic donation method is neither frequently utilized by subjects, nor does its availability affect contribution rates.

However, when combined with cheap talk and voting, which likely creates a social norm of giving, significantly different results emerge. All 35 subjects in the AD-CT-VT sessions vote in favor of the VCM, and in all sessions, substantially more subjects use automatic donation in the first round than in the absence of cheap talk and voting: 54.3% of subjects in this treatment use automatic donation to contribute in the first round, and this proportion increases to 74.3% by the twentieth round, a statistically significant increase ( $p = 0.006$ ) (see Figure 2).

Most importantly, as depicted in the bottom graph of Figure 1, contribution rates start and remain high in the AD-CT-VT groups.<sup>1</sup> The combination of cheap talk, voting, and the option of automatic donation elicits 100% contributions for the first 16 rounds, with contributions reaching a minimum of 97.1% in the 17<sup>th</sup> round and rising slightly thereafter to 97.9% in the last round.

---

<sup>1</sup> The difference in contributions between treated and untreated subjects in the first round is highly significant ( $p = 4.43 \times 10^{-8}$ ). Analogous p-values for subsequent rounds are even smaller.

The difference between the highest and lowest contributions in the AD-CT-VT groups is statistically insignificant ( $p = 0.324$ ).<sup>2</sup> In other words, cheap talk and voting along with the availability of automatic donation mitigate the decay in the repeated VCM. The lack of attrition shown in the full-interaction treatment of MZKS, where average contributions wavered between 97.1% and 94.3% over 10 rounds, is maintained for 20 rounds here (in addition, our results are indistinguishable from those of MZKS:  $p = 0.324$  and  $p=0.160$  for the first and tenth round, respectively). Importantly, if automatic donation were ineffectual, we would expect results similar to the CT-VT treatment where average contributions dropped from 100% in the first round (same as first round contribution in AD-CT-VT) to 57.5% by the last round (significantly different from last round contributions of 97.9% in AD-CT-VT treatment,  $p = 0.000$ ). Our results are also comparable to, if not stronger than, those of the incentive-compatible Falkinger mechanism tested in Falkinger et al (2000).

We use regressions to analyze the treatment effects and results of various specifications are summarized in Table 2. To account for within subject correlations, we report clustered standard errors in all regressions. All specifications show a highly significant and sizable effect of automatic donation option on contributions. Column 1 is OLS regression at individual level. Column 2 is fixed-effects model at individual level which leaves out all the treatment effects. Column 3 is OLS regression at group level.<sup>3</sup> Test shows that automatic donation - when combined with cheap talk and voting - does not affect contribution in the first round at the group level ( $p=0.215$ ) but this effect is significant at individual level ( $p=0.029$ ). In the CT-VT treatment, predicted first round contribution is 56.7% while this number is 52.9% in the AD-CT-VT treatment. By looking at Figure 1, we are more interested in the effect of automatic donation on decay. Bottom graph in Figure 1 shows when combined with cheap talk and voting, automatic donation successfully prevents decay in contribution rate. This has been further confirmed by our regression results. The slope of the fitted line for AD-CT-VT treatment is not statistically different from 0 ( $p=0.281$  at group level;  $p=0.300$  at individual level). Automatic

---

<sup>2</sup> Thirty-three of the 35 treated subjects gave 100% of the endowment in all 20 rounds, one subject gave 90% in the 18th round and 100% in all other rounds, and another subject gave 100% in the first 16 rounds, 0% in the 17<sup>th</sup> round, and 25% in the last three rounds.

<sup>3</sup> Some argue that Tobit models should be used since subjects' choices are limited between \$0 and \$1. We think OLS regression is proper for our purpose but have also included analysis with Tobit models in the appendix. We believe that all economic decisions are constrained not particularly in this experiment. Censoring refers to unobservable decisions not constrained decisions. For detailed discussion, please see the Tobit model chapter in Green (2003)

donation alone, however, neither increase initial contribution nor prevent decay. Tests show first round contribution in AD treatment is not statistically different from the baseline treatment ( $p=0.543$  at individual level). The decay in AD treatment is statistically different from 0 ( $p=0.002$  at group level). When combined cheap talk OR voting, automatic donation neither increases initial contribution nor improves decay.

In summary, in a laboratory setting with student subjects, automatic donation by itself (or combined with cheap talk/voting alone) seems to have no effect on contributions to the public good. However, when featured in conjunction with cheap talk AND voting, automatic donation is as effective at sustaining efficient rates of contribution as is an externally imposed status quo of giving. That is, under a tractable choice architecture, voluntary contributions can achieve nearly perfect social efficiency, even in the absence of traditional incentive-compatibility.

### **3. Field Experiment**

Given the face-to-face nature of cheap talk and voting in the laboratory experiments described above and the results of Brosig et al (2003) asserting the importance of face-to-face, interactive communication<sup>4</sup>, effective realization of cheap talk and voting for large, geographically dispersed organizations may involve clustering at the local level. Historically, the top two recipients of charitable gifts by category in the U.S. have been religious organizations and education, both of which usually involve personal interaction in the giving process. In a field experiment, we test the real-world applicability of the laboratory results described above to a charitable organization fitting this profile. The field study falls into the category of *framed field experiments* set by Harrison and List (2004), defined as being similar to laboratory experiments but with non-standard (non-collegiate) subjects and “with field context in either the commodity, task, or information set that the subjects can use (Harrison and List 2004).” As will be discussed below, this experiment maintains a field context in all of these dimensions, but the subjects were recruited into and were fully aware of being in the experiment.

#### **3.1. Experimental Design: Field Study**

---

<sup>4</sup> In Brosig et al (2003), the authors deconstruct cheap talk, as practiced in most laboratory public goods games, to understand precisely what component of it affects contributions. Information is separated from various forms of contact (face-to-face, over the computer) and communication (talking, typing messages, watching broadcast information from an external source) between group members.

This field study closely replicates the laboratory study described above. However, the realities of working in the field required several modifications. The subjects were adults recruited from the congregation of St. Luke's United Methodist church in Indianapolis, Indiana. Starting a month in advance of the experiment, the upcoming research sessions were announced in the weekly worship services, and a brief description of the research and related charity was included in the weekly church bulletin. Participants were invited to eat from a free catered brunch, and the church received \$20 for each household that participated in the study. Since the church has multiple worship services, the experiment was administered in three separate forty-five minute sessions immediately after the regularly scheduled services.

A total of 71 subjects participated in the field experiment. In some cases, two subjects, usually a husband and wife, were from the same household and were asked to participate jointly. Consequently, the sample contains 59 households that served as the basic units of observation.

The repeated time-period of observation was selected to be a month, not a couple of minutes like the rounds of the laboratory experiment. Therefore, the study lasted for a ten-month period from September 2006 until June 2007. As in the lab experiments, subjects were not told the number of rounds.

The public good in the field study did not provide a monetary payoff to group members. In fact, it was selected to have little to no direct connection to the participants and their immediate families. The public good was support for the care of children living with HIV/AIDS and orphaned children whose parents died from HIV/AIDS in developing countries. Subjects were informed that their contributions would go to a non-profit, 501(c)(3) charitable organization called the Center for the Church and Global AIDS, which would re-direct their funds to support the Grace Children's Home, an AIDS orphanage in Eldoret, Kenya, and The Pediatric AIDS Center in Namakkal, India. Subjects were informed that the grant supporting the research would support all the administrative costs involved with the project, so that 100% of their donated funds would support the children.

At the start of each experimental session, the administrator briefed the subjects on the protocols that would be followed during the session. Consent forms and brief questionnaires were filled out. Then the Executive Director of The Center for the Church and Global AIDS gave a 30-minute multi-media presentation about the two projects in India and Kenya and made

an appeal for financial support. To keep the information flow consistent across experimental sessions, questions were limited to just those regarding the experimental protocol.

After listening to the presentation, subjects were randomly divided into two groups of roughly equal size and escorted to two separate rooms. The Executive Director was not in either room. One group—corresponding to the untreated (AD) laboratory group—was taken to a room with stations, consisting of desks and chairs, along the perimeter, facing away from the center of the room. Each station had a pen, a contribution form, and an envelope. Subjects were asked to make their confidential individual donation decisions for that month—both the amount of the donation and the means of the donation—and to put this donation paperwork into a sealed envelop. The amount of the donation was limited to \$20. The \$20-maximum monthly donation was designed to address the issue of inherent varied endowments while still giving participants the ability to contribute a maximum of \$200 over the duration of the experiment.<sup>5</sup> Each subject could make contributions in any of four different ways: (1) by cash, (2) by check, (3) by completing a form authorizing that her credit card be charged a certain amount on a one-time basis, or (4) by signing up for a specific amount to be donated automatically from the her credit card on a self-renewing monthly basis. Once everyone had made their decision, the sealed envelopes were picked up by the administrator and the group was disbanded.

The other group, corresponding to the treated (AD-CT-VT) laboratory group, entered a room where chairs were arranged in a circle, facing each other. The group then engaged in cheap talk and voting. The rules of the five minute cheap talk where identical to those used in the laboratory where no binding deals or threats were permitted. As with the laboratory experiment, the subjects voted confidentially on whether they, as a group, would be allowed to contribute to the charity as part of the research project. The results of the votes were tabulated and the outcome was announced. If the group voted against the option of contributing to the charity, then the session ended immediately and subjects were welcome to leave; otherwise, the chairs were turned around to face tables lining the room’s perimeter, as in the untreated group. Subjects then were asked to make their donation decision for that month and to put the paperwork into sealed envelopes using the same procedures employed with the untreated group.

---

<sup>5</sup> It should be noted that, as a consequence, in our attempts to maintain experimental control in a field setting, we lost observations from likely contributors who simply preferred to make a larger one-time donation – an option that was possible with alternative charity groups working on HIV/AIDS outside the environment of this experiment.

Once everyone had made their decisions, the sealed envelopes were picked up by the administrator, and the group was disbanded.

After the initial contribution opportunity in the church, the administrator contacted each subject by monthly by mail.<sup>6</sup> The monthly mail package included a summary sheet that contained three pieces of information: (1) the subject's past contributions, (2) the average contributions by the members of her group, and (3) the aggregate contributions by the members of her group. The information on contributions was designed to mimic the information feedback associated with the laboratory experiments. Also included was a self-addressed, stamped-envelope that could be used to either send donations for that month or to opt in or out of automatic donation (See Reviewer Appendix B). All donations were tabulated by the 24<sup>th</sup> of each month. Subjects using automatic donation did not need to return their forms for their donation to be made. This communication with the subjects continued for the subsequent months, unless the subjects requested to withdraw from the experiment or moved away without leaving a forwarding address. One month after the last mailing, subjects received a final letter, informing them that the project was over. Clearly, the decision-making environment of the first month—on-site at the church in the presence of other group members—was very different from the subsequent environment—the privacy of one's own home. The on-site donation opportunity was a condition set by the Center for the Church and Global AIDS to boost donations. This point will be returned to in the results, where the analysis is separated for September.

Finally, as would be expected in a field experiment of this type, the subjects differed in terms of both endowment and valuation of the public good, and in both these dimensions, subjects differed in fairly unobservable ways. While the multi-media presentation and fundraising solicitation could rouse similar sentiments across subjects regarding the urgency of aid to affected children, we do not suppose that this appeal was sufficient to overcome either variations in long-standing attitudes toward the relevant issues—HIV/AIDS, the developing world, and charitable giving—or the effects of individual donation-history to similar funds. Such factors may be reflected in the results.

### **3.2. Results: Field Study**

---

<sup>6</sup> If the treated group voted against the option of giving, members of that group were not contacted.

Before presenting the results, there are some important points to address. Since the start of the experiment, two households voluntarily dropped out, one after the second month and one after the sixth month, and a third moved with no forwarding address after the sixth month. These households are included in the analyses as having contributed zero for all subsequent rounds. Also, subjects in the second treated session voted 4-3 *against* the option of giving money to the charity as part of the research and therefore did not receive monthly mailings. The donation behavior for this group is difficult to interpret, as part of the expressed rationale for some of the group members to vote against the option was the experimental protocol that placed a \$20 limit on monthly donations and the subsequent contact via mail. Therefore, the results here are presented in two ways, one where these households are included as contributing \$0 each month, and, in parentheses, one where these households are removed from the sample.

No matter how the contributions of treated group 2 are dealt with, treated subjects give more on average over the ten months of observation than do untreated subjects. Including (excluding) treated group 2, treated subjects give an average of \$66.81 (\$85.52), while untreated subjects give only \$45.56. Figure 3 shows average contributions for the two different treatments by month, and Table 3 gives average contributions over time by group, comparing untreated and treated groups from the same session.

In the first month, subjects make their contribution decisions at their church, in the same room as the other members of their group. If we include treated group 2 as giving \$0, the untreated group gives more money on average than the treated group—\$11.11 versus \$10.09. However, if we exclude treated group 2, then the treated donations in the first month average to \$12.92, greater than the untreated group. Both with and without treated group 2, though, the difference in contributions between the treated and untreated groups is insignificant ( $p = 0.680$  and  $p = 0.482$ , respectively).

For the next nine consecutive months, the treated households have higher donation rates than the untreated households (Figure 3). The average monthly contributions from October through June are \$3.83 for untreated subjects and \$6.30 for treated subjects (including group 2). That is, average monthly contributions are 64.5% higher for treated than untreated subjects ( $p = 0.222$ ). This difference gains in magnitude and significance when treated group 2 is excluded. The average monthly donation for treated subjects becomes \$8.07, 111% higher than average untreated contributions ( $p = 0.054$ ). Table 3 also shows Wilcoxon Rank Sum test results. If

treated group 2 is excluded from analysis, treatment effect was significant at 1 percent level in 8 months.

In the laboratory, group size was controlled, but in the field, groups vary in size from 4 to 21. While group size does not vary by treatment—thus, we would not expect that it is driving the results—the effect of group size is interesting in and of itself. The last point to consider is the use of automatic donation. Use of automatic donation is relatively equal between the two treatments, ranging from 14.8% to 24.0% (Table 3). An important difference between the field and the laboratory is evident in people’s attitudes about credit card use. There are a number of subjects who seem devoted to giving, as much so as those using automatic donation with a credit card, but instead of using credit cards, they use monthly checks. Despite the fact that they are not using a recurring credit card withdrawal to donate, subjects who give every month have essentially chosen a status quo of giving for themselves. Twenty-two percent of the households give every month. Thirty-eight percent of these are untreated, and while some of these households initially contribute with cash or check, by the fourth month all are contributing automatically with their credit cards. The other 62 percent of the monthly contributing households are from treated groups, but only half of these households use the automatic credit card method; the other half of the households send monthly checks. So, as a proportion of all households in the same treatment, 18.5% of the untreated households give every month, while 25.0% (32%) of treated households give every month. In other words, treated subjects were more likely than untreated subjects to self-select a status quo of giving, irrespective of payment method, although the difference is not statistically significant ( $p=0.5496$  ( $p=0.262$ )).

#### **4. Discussion and Conclusion**

We show that subjects’ contributions are sensitive to changes in context in the laboratory. In particular, we follow up on the work of MZKS to show that a status quo of giving need not be imposed by an external agent, but can arise with the introduction of the option of automatic donation. Cheap talk and voting remain important prerequisites for establishment of the status quo of giving and the ensuing high rates of contribution. Together, cheap talk, voting, and automatic donation result in sustained giving of nearly 100% over twenty-rounds of the VCM. The three factors represent important features of the contexts in which real charitable decisions

are made. These features, their role in the field, and what they suggest about the efficiency of the VCM are discussed below.

One is hard-pressed to think of any real decision-making made in the total absence of cheap talk, and voting is a natural way to make decisions as a group. But what exactly do cheap talk and voting capture? Brosig et al (2003) compares VCM results under various forms of cheap talk—unidirectional vs. interactive, linguistic vs nonlinguistic, auditory vs. visual, physically present vs. electronic communication—and shows that only face-to-face communication effectively increases contributions. According to the authors, face-to-face communication is critical for evolutionary reasons harking back to early human socialization within small groups that promoted social norms of cooperation. Cheap talk works, therefore, not simply through the dispersion of information, but apparently by tapping into a deep well of social cooperation. Voting likely bolsters this sense in two ways. First, it involves members in the group, which increases a sense of belonging. Second, it gives the group's members evidence that the other members share common objectives. This sense of connection naturally occurs when real charitable decisions are being made, as all members of a charitable organization have selected into it and therefore share some common values. In other words, the bond one feels to other members of an organization by simply being part of the group or believing in its cause is a phenomenon that precedes and profoundly affects the charitable decision. Cheap talk and voting are, albeit short-lived, ways to proxy for this phenomenon in the laboratory.

Why does automatic donation work? In a broad sense, we can think of automatic donation as increasing the utility of charitably contributing both in a social and more private sense. Conditional on high initial contributions, it may provide agents with assurance that other potential contributors will sustain high contributions and not free-ride in the future. In other words, along with cheap talk and voting, it helps create a social norm of giving. In terms of private benefits, it allows the individual the time-saving and stress-reducing benefits of a “second-order decision” (Schwartz 2003), a decision made to reduce a class of choices into one. This can be done by simply establishing a rule of thumb—“I will give ten dollars a month to the public good”—to relieve the *mental* duty of choosing an amount to contribute each month (Thaler and Sunstein 2008). Automatic donation also has the additional benefit of getting rid of the *physical* process of, for example, writing and sending a new check each month, thereby

collapsing the decision and enactment of how much to give each month to just one choice and one action.

Automatic donation is not the only way to self-select a status quo of giving. As is quite common in churches, the large church utilized in the field study primarily uses pledges to fund activities that are often chosen through discussion and voting by the church membership. Ninety-six percent of such pledges are honored by the church membership. The sample is one with a strong sense of community already accustomed to a status quo of giving. This likely explains two discrepancies between our laboratory and field results: (1) the difference between donation rates for treated and untreated subjects is not as large in the field as in the laboratory, and (2) we do not observe contributions by the church's untreated group decay as we do in the laboratory.

Since cheap talk, voting, and automatic donation are lab devices intended to mimic, at a small-scale and relatively short time horizon, the pre-existing bonds and social norms already at play in the church group, it may actually seem strange that they had any effect at all on the church group. The effectiveness of such relatively small-scale factors speaks to how critical virtually all aspects of choice architecture are. Subjects know they are all part of the same church and accustomed to a system of pledges—that is, subjects are all part of the church's greater choice architecture, which may account for giving among untreated subjects. However, heterogeneities in, for example, endowments or tastes for the public good may remain. The short-term effect of chatting with each other and voting together—small tweaks to the choice architecture—may be enough to overcome such differences in the treated group.

If real charities understand the science of choice architecture enough to sustain contributions, a laboratory public goods game that ignores key ingredients of this architecture should not be expected to predict real charities' results. The traditional VCM gives rise to inefficient contributions to the public fund in the laboratory and predicts free-riding in the field. The enriched VCM presented in the current paper, though, accounts for what charitable organizations have understood for a long time: that context is key. With context accounted for, the enriched VCM produces results as efficient as incentive-compatible mechanisms while remaining grounded in tractable, real-world procedures.

## REFERENCES

- Alm, J., G. McClelland, G., W.D. Schulze. 1999. "Changing the social norm of tax compliance by voting." *Kyklos*: 52(2): 141–171.
- Andreoni, J. 1995. "Warm-Glow versus Cold-Prickle: The Effects of Positive and Negative Framing on Cooperation in Experiments." *The Quarterly Journal of Economics* 110(1):1–21.
- Andreoni, J. 1988. "Why free ride? : Strategies and learning in public goods experiments." *Journal of Public Economics* 37(3): 291-304.
- Bochet, O., P. Talbot, and L. Puterman. 2006. "Communication and punishment in voluntary contribution experiments." *Journal of Economic Behavior and Organization* 60: 11–26.
- Brooks, A.C. 2006. *Who Really Cares: The Surprising Truth About Compassionate Conservatism Who Gives, Who Doesn't, and Why It Matters*. New York: Basic Books.
- Brosig, J., J. Weimann, J., and A. Ockenfels. 2003. "The Effect of Communication Media on Cooperation." *German Economic Review* 4: 217-242.
- Chronicle of Philanthropy*, 2009.  
[http://philanthropy.com/premium/stats/philanthropy400/index.php?state>All+the+states&year=2009&Name\\_Type>All+the+organizations&search+=Go+](http://philanthropy.com/premium/stats/philanthropy400/index.php?state>All+the+states&year=2009&Name_Type>All+the+organizations&search+=Go+) (accessed May 5, 2010).
- Cinyabuguma, M., T. Page, and L. Puterman. 2005. "Cooperation under the threat of expulsion in a public goods experiment." *Journal of Public Economics* 89: 1421–1435.
- Coursey, D.L., J.L. Hovis, and W.D. Schulze. 1987. "The Disparity between Willingness to Accept and Willingness to Pay Measures of Value." *The Quarterly Journal of Economics* 102(3): 679–690.
- Falkinger, J., E. Fehr, S. Gächter, and R. Winter-Ebmer. 2000. "A Simple Mechanism for the Efficient Provision of Public Goods – Experimental Evidence." *American Economic Review* 90(1): 247–264.
- Fehr, E., and S. Gächter. 2000a. "Cooperation and punishment in public goods experiments." *American Economic Review* 90(4): 980–994.
- Fehr, E., and S G ächter. 2000b. "Fairness and retaliation: the economics of reciprocity." *Journal of Economic Perspectives* 14: 159–181.
- Feld, L., and J. Tyran. 2002. "Tax evasion and voting: an experimental analysis." *Kyklos* 55 (2): 197–221.

Fischbacher,U., and S, G ächter. 2010. "Social Preferences, Beliefs, and the Dynamics of Free Riding in Public Goods Experiments." *American Economic Review* 100(1): 541–556.

*Giving USA*, 2009. A publication of Giving USA Foundation™, researched and written by the Center on Philanthropy at Indiana University.

Greene, W. "Econometric Analysis." New Jersey: Prentice Hall.

Harrison, G.W., and J.A. List. 2004. "Field Experiments." *Journal of Economic Literature* XLII: 1009-1055.

Isaac, R.M. and J. M. Walker. 1988. Communication and free-riding behavior: the voluntary contribution mechanism." *Economic Inquiry* 26 (4), 585–608.

Johnson, E.J., S. Bellman, and G.L. Lohse. 2002. "Defaults, Framing and Privacy: Why Opting In-Opting Out." *Marketing Letters* 13(1): 5–15.

Johnson, E.J., and D. Goldstein, D. 2003. "Do Defaults Save Lives?" *Science* 302(5649): 1338–1339.

Johnson, E.J., J. Hershey, J. Meszaros, and H Kunreuther. 1993. "Framing, Probability Distortions, and Insurance Decisions." *Journal of Risk and Uncertainty* 7(1): 35–53.

Kahneman, D., J.L. Knetsch, and R. Thaler. 1990. "Experimental Tests on the Endowment Effect and the Coase Theorem." *Journal of Political Economy* 98(6): 1325–1348.

Kahneman, D., J.L. Knetsch, and R. Thaler. 1991. "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias." *Journal of Economic Perspectives* 5(1) (1991):193–206.

Kahneman, D., and A.Tversky. 1979. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica* 47(2):263–291.

Knetsch, J.L., and J.A. Sinden. 1984. "Willingness to Pay and Compensation Demanded: Experimental Evidence of an Unexpected Disparity in Measures of Value." *The Quarterly Journal of Economics* 99(3): 507–521.

Kroll, S., T.L. Cherry, and J.F. Shogren. 2007. "Voting, punishment, and public goods." *Economic Inquiry* 45 (3): 557–570.

Madrian, B.C., and D. Shea. 2001."The Power of Suggestion: Inertia in 401(k) Participation and Saving Behavior." *Quarterly Journal of Economics* 116(4): 1149–1187.

Messer, K.D., H. Zarghamee, H.M. Kaiser and W.D. Schulze. 2007. "New Hope for the Voluntary Contribution Mechanism: The Effects of Framing and Context." *Journal of Public Economics* 91(9): 1783-1799.

- Messer, K.D., T.M. Schmit and H.M. Kaiser. 2005. "Optimal Institution Designs for Generic Advertising: An Experimental Analysis." *American Journal of Agricultural Economics* 87(4): 1046-1060.
- Samuelson, W., and R. Zeckhauser. 1988 "Status Quo Bias in Decision Making." *Journal of Risk and Uncertainty* 1(1): 7–59.
- Schwartz, B. 2003. *The Paradox of Choice: Why More Is Less*. New York: Ecco Press.
- Thaler, R.H., and C. R. Sunstein. 2008. *Nudge: Improving Decisions About Health, Wealth, and Happiness*. New Haven: Yale University Press.
- Walker, J., R. Gardner, A. Herr, and E. Ostrom. 2000. "Collective choice in the commons: experimental results on proposed allocation rules and votes." *The Economic Journal* 110(460): 212–234.

**Table 1. Experimental Design**

<i>No Automatic Donation Option</i>		
	No Voting	Voting
No Cheap Talk	Baseline	VT
Cheap Talk	CT	CT-VT
<i>Automatic Donation Option</i>		
	No Voting	Voting
No Cheap Talk	AD	AD-VT
Cheap Talk	AD-CT	AD-CT-VT

<i>Treatments</i>	
Automatic Donation (AD)	Choose either automatic donation option or pay as you go option
Cheap Talk (CT)	Up to five minutes discussion with group members
Voting (VT)	Majority vote to determine if the public account game is played in addition to the private lottery game
<i>Public Account Parameters</i>	
Amount of Donation	$g_i \in [\$0.00, \$1.00]$
Payoff from Group Account	$1.5 * \left( g_i + \sum_{j \neq i} g_j \right) / 7 *$
Per-round earnings	$1 - g_i + 1.5 * \left( g_i + \sum_{j \neq i} g_j \right) / 7$
<i>Private Lottery Parameters</i>	
If lottery ticket purchased:	\$2.00 if Heads; \$0.00 if Tails
If lottery ticket not purchased:	\$1.00

\* In the table,  $g_i$  refers to subject  $i$ 's contribution to the group account.

**Table 2. OLS Regression results. Contributions to group account by treatment and round.**

	Individual OLS	Individual Fixed-effects	Group OLS
CT	-0.138* (0.0694)	--	-0.138 (0.118)
VT	0.507*** (0.0729)	--	0.507*** (0.131)
CT-VT	0.567*** (0.0603)	--	0.567*** (0.116)
AD	-0.0556 (0.0912)	--	-0.0556 (0.187)
AD-CT	-0.156* (0.0725)	--	-0.156 (0.146)
AD-VT	0.396*** (0.0692)	--	0.396** (0.134)
AD-CT-VT	0.529*** (0.0584)	--	0.529*** (0.112)
Round	-0.0241*** (0.00288)	-0.0241*** (0.00288)	-0.0241*** (0.00358)
CT*Round	0.00299 (0.00383)	0.00299 (0.00383)	0.00299 (0.00393)
VT*Round	0.000485 (0.00623)	0.000485 (0.00622)	0.000485 (0.0140)
CT-VT*Round	0.00463 (0.00531)	0.00463 (0.00531)	0.00463 (0.0122)
AD*Round	0.00152 (0.00489)	0.00152 (0.00488)	0.00152 (0.00768)
AD-CT*Round	0.00355 (0.00448)	0.00355 (0.00448)	0.00355 (0.00783)
AD-VT*Round	0.00627 (0.00499)	0.00627 (0.00498)	0.00627 (0.0106)

AD-CT-VT*Round	0.0229*** (0.00308)	0.0229*** (0.00308)	0.0229*** (0.00373)
Constant	0.477*** (0.0581)	0.683*** (0.0125)	0.477*** (0.112)
Observations	5600	5600	800

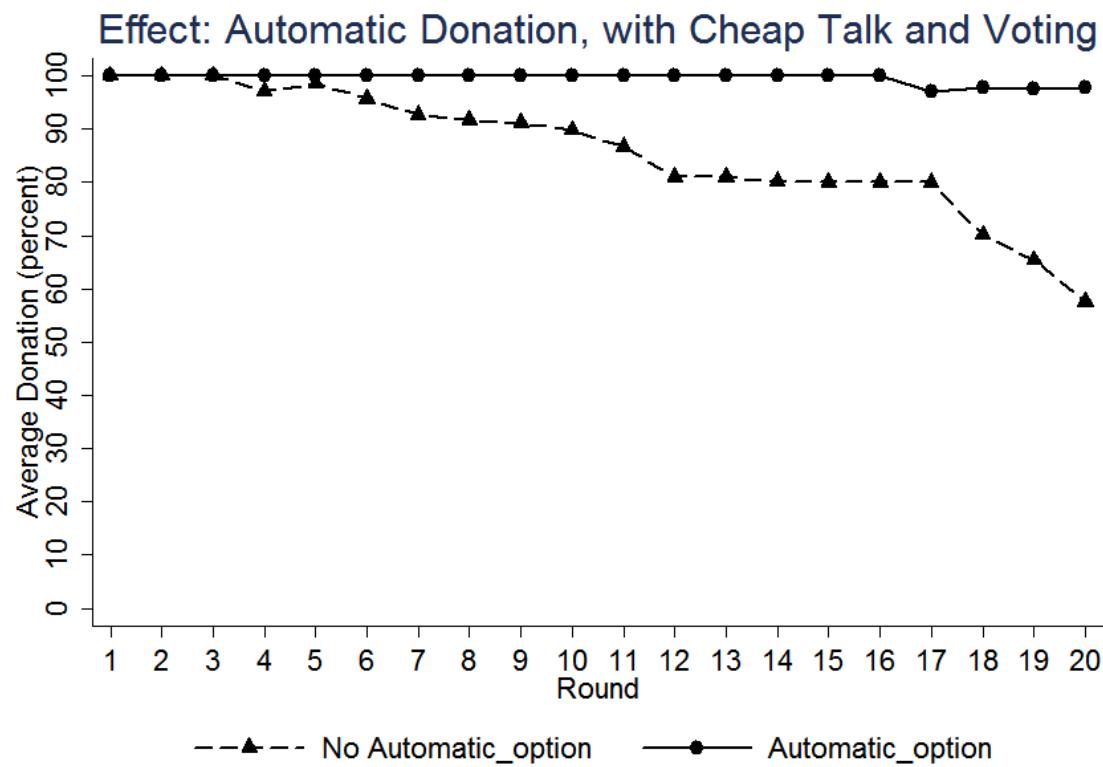
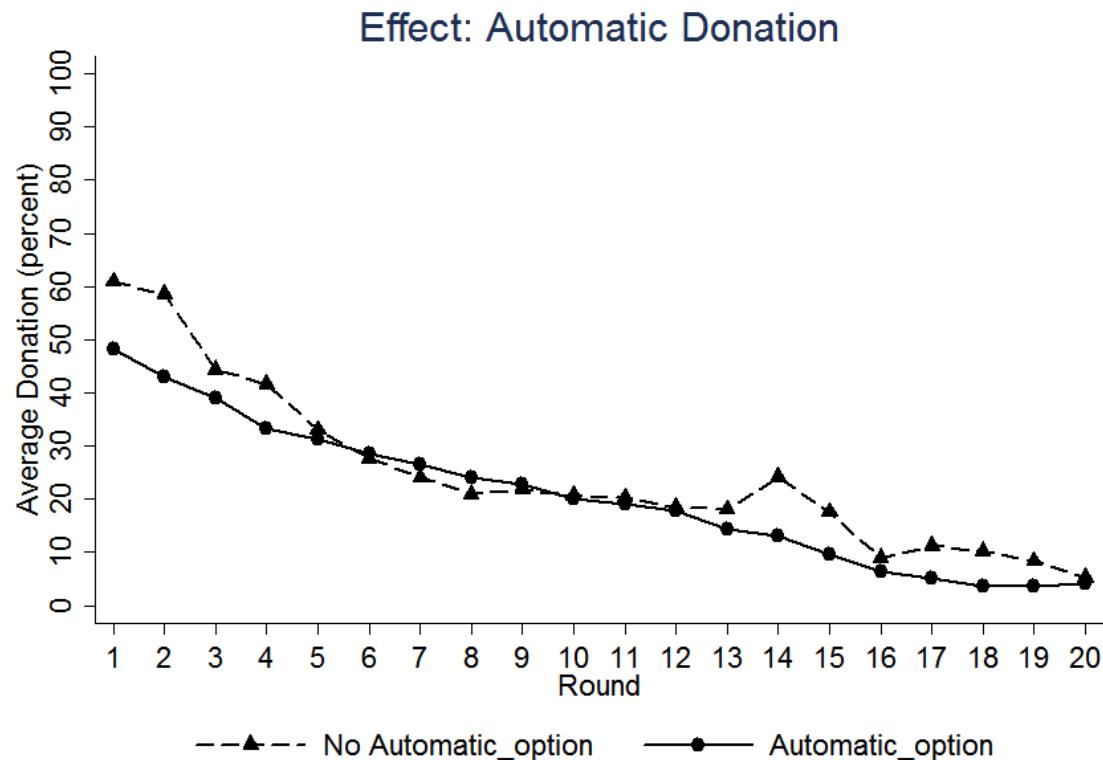
Notes: \* significant at the 5% level; \*\* significant at the 1% level; \*\*\* significant at the 0.1% level

**Table 3. Descriptive Statistics of Field Study**

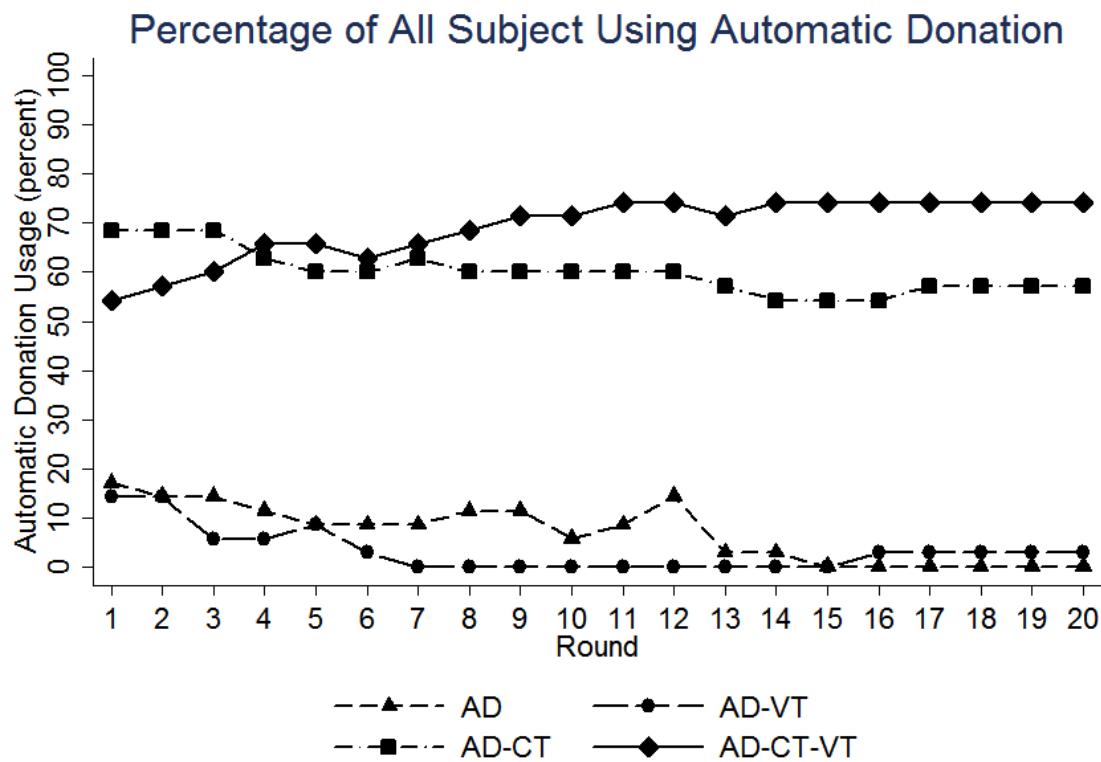
	N	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
<i>Average Contributions by Group</i>											
Untreated Group 1	4	\$ 15.00	\$ 10.00	\$ 10.00	\$ 10.00	\$ 10.00	\$ 7.50	\$ 10.00	\$ 10.00	\$ 7.50	\$ 7.50
Untreated Group 2	5	\$ 12.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Untreated Group 3	18	\$ 10.00	\$ 5.00	\$ 3.33	\$ 2.94	\$ 3.89	\$ 3.89	\$ 3.89	\$ 2.94	\$ 3.89	\$ 3.89
<b>Total Untreated</b>	<b>27</b>	<b>\$ 11.11</b>	<b>\$ 4.81</b>	<b>\$ 3.70</b>	<b>\$ 3.44</b>	<b>\$ 4.07</b>	<b>\$ 3.70</b>	<b>\$ 4.07</b>	<b>\$ 3.44</b>	<b>\$ 3.70</b>	<b>\$ 3.70</b>
Treated Group 1	5	\$ 21.00	\$ 16.00	\$ 16.00	\$ 16.00	\$ 16.00	\$ 12.00	\$ 12.00	\$ 12.00	\$ 12.00	\$ 12.00
Treated Group 2	7	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Treated Group 3	20	\$ 10.90	\$ 6.00	\$ 6.00	\$ 7.00	\$ 6.75	\$ 7.75	\$ 6.75	\$ 6.75	\$ 6.50	\$ 6.25
<b>Total Treated (w/ Group 2)</b>	<b>32</b>	<b>\$ 10.09</b>	<b>\$ 6.25</b>	<b>\$ 6.25</b>	<b>\$ 6.88*</b>	<b>\$ 6.72</b>	<b>\$ 6.72</b>	<b>\$ 6.09</b>	<b>\$ 6.09</b>	<b>\$ 5.94</b>	<b>\$ 5.78</b>
<b>Total Treated (w/o Group 2)</b>	<b>25</b>	<b>\$ 12.92</b>	<b>\$ 8.00*</b>	<b>\$ 8.00**</b>	<b>\$ 8.80***</b>	<b>\$ 8.60**</b>	<b>\$ 8.60</b>	<b>\$ 7.80*</b>	<b>\$ 7.80*</b>	<b>\$ 7.60*</b>	<b>\$ 7.40</b>
All Groups (w/ Group 2 Treated)	59	\$ 10.56	\$ 5.59	\$ 5.08	\$ 5.30	\$ 5.51	\$ 5.34	\$ 5.17	\$ 4.88	\$ 4.92	\$ 4.83
All Groups (w/ Group 2 Treated)	52	\$ 11.98	\$ 6.35	\$ 5.77	\$ 6.02	\$ 6.25	\$ 6.06	\$ 5.87	\$ 5.54	\$ 5.58	\$ 5.48
<i>Percentage of subjects using automatic donations , by treatment and month</i>											
	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	
Untreated	18.5%	18.5%	14.8%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%	18.5%
Treated (w/ Group 2)	15.6%	22.2%	22.2%	22.2%	22.2%	22.2%	22.2%	18.5%	18.5%	18.5%	18.5%
Treated (w/o Group 2)	20.0%	24.0%	24.0%	24.0%	24.0%	24.0%	24.0%	20.0%	20.0%	20.0%	20.0%
<b>All Groups (w/ Group 2)</b>	<b>16.9%</b>	<b>18.6%</b>	<b>16.9%</b>	<b>18.6%</b>	<b>18.6%</b>	<b>18.6%</b>	<b>18.6%</b>	<b>16.9%</b>	<b>16.9%</b>	<b>16.9%</b>	<b>16.9%</b>
<b>All Groups (w/o Group 2)</b>	<b>19.2%</b>	<b>21.2%</b>	<b>19.2%</b>	<b>21.2%</b>	<b>21.2%</b>	<b>21.2%</b>	<b>21.2%</b>	<b>19.2%</b>	<b>19.2%</b>	<b>19.2%</b>	<b>19.2%</b>

Wilcoxon Test for donation in each month. \* denotes significant treatment effect at 10% level. \*\* denotes significant treatment effect at 5% level. \*\*\* denotes significant treatment effect at 1% level.

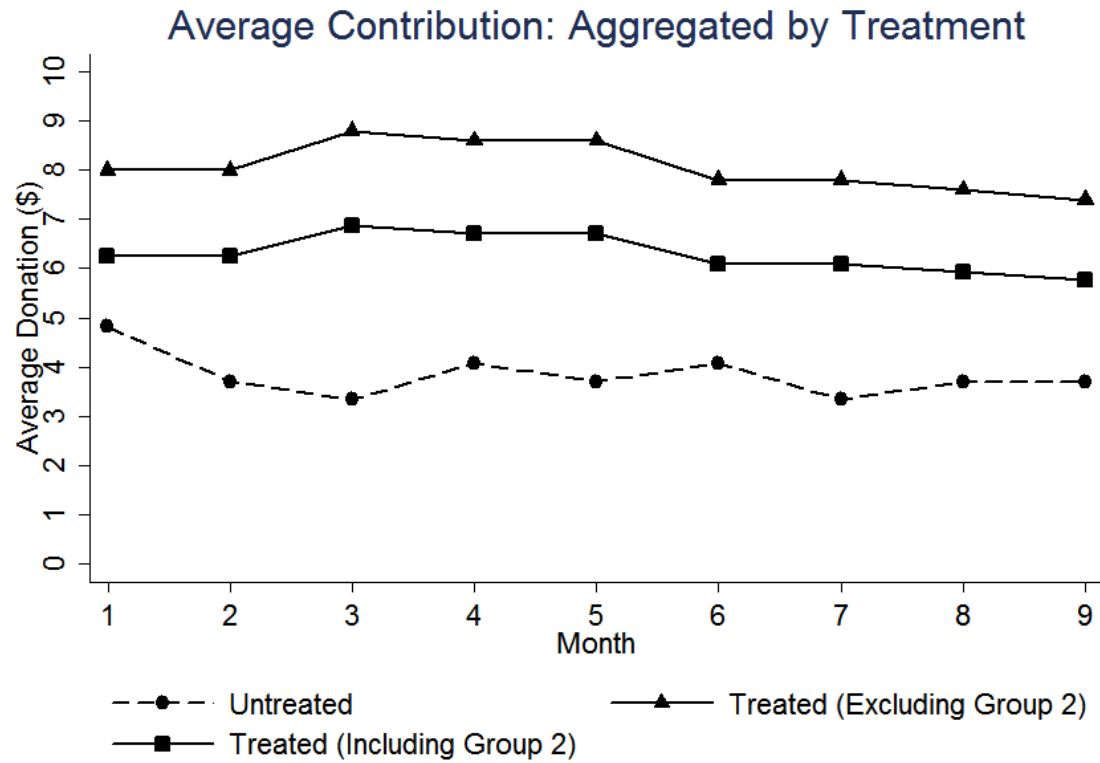
**Figure 1. Effect of Automatic Donation** (Top - Automatic Donation Only; Bottom - Automatic Donation with Cheap Talk and Voting)



**Figure 2. Percentage of All Subject Using Automatic Donation to Donate, by Treatment by Round<sup>7</sup>**



<sup>7</sup> The percentage of subjects using automatic donation is conditional on positive donation. If a subject uses automatic donation but donates nothing in a certain round, he/she is not counted as using automatic donation to donate. Unconditional graph is available upon request.

**Figure 3. Field Study: Average Contributions, Aggregated by Treatment**

## REVIEWER APPENDIX - A

### Experiment Instructions – Baseline

Welcome to an experiment in the economics of decision making. In the course of the experiment, you will have opportunities to earn money. Any money earned during this experiment is yours to keep. Please read these instructions carefully and do not communicate with any other participants during the experiment.

In today's experiment, you will participate in a number of rounds. The number of rounds has been determined prior to the start of the experiment. Each round, the order of activities is **Group Account**, then **Private Lottery**. You, and everyone else in your group, will be given \$00 in **Initial Balances** for each round. \$1.00 is allotted for use in Private Lottery, and \$1.00 for use in the Group Account. You **cannot** transfer money between the Private Lottery and Group Account. The two activities are described below:

- 1) ***Group Account.*** You, and everyone else in your group, will need to decide whether to make a **contribution** to the **Group Account** from your \$1.00. Any contribution you make for a given round will be taken from your Initial Balance and placed into the Group Account; the remaining money will be placed into your **Private Account**.

Whatever money is donated to the Group Account will be multiplied by 1.5 by the administrators and distributed evenly amongst all members of your group. The table on the next page shows how the **Group Account Payoff** will vary depending upon the amount of money donated to the Group Account. In each round, your earnings will be sum of your Private Account and the Group Account Payoff.

At the start of the first round, you will be given the opportunity to choose your individual payment method for contribution to the Group Account. You will select your preference in your spreadsheet by clicking the “Switch” button for Round 1. To select Round-by-Round, click it once. To select Automatic, click twice. The cells of the row corresponding to your preferred payment method will turn yellow. This means that the payment method you chose has been implemented for you. There are two possible payment methods:

- A) ***Round-by-Round.*** Each round, you will choose an amount to donate to the Group Account. To make a contribution from your initial balance, enter the amount of the contribution, if any, into the spreadsheet, hit “Enter” and then click the “Submit” button, which should become darker upon being clicked.

To stop Round-by-Round and switch to the Automatic payment method at any point, click on the “Switch” button. When you switch to Automatic, the current and future cells in the “Automatic” row will turn yellow.

- B)** **Automatic.** Initially, you will choose one amount to donate to the Group Account for that and future rounds. To set this amount, enter it into the “Automatic” cell for Round 1, hit “Enter” and then click the “Submit” button, which should become darker upon being clicked. In all future rounds, this amount will be **automatically** deducted from your Initial Balance and donated to the Group Account.

You also have the option each period of changing the amount for that and future rounds to an amount less than or greater than the amount you initially chose. To do this, enter the new amount in the “Automatic” cell for that round, hit “Enter” and then click the “Submit” button, which should become darker upon being clicked.

To stop Automatic and switch your payment method to Round-by-Round, click on the “Switch” button. When you switch to Round-by-Round, the current and future cells in the “Round-by-Round” row will turn yellow.

After every subject has submitted their total donation for the round, if any, the administrator will calculate the Group Account Payoff. You will then be instructed to click the “Update” button. Your earnings will be calculated automatically. You will then proceed to the next round and follow the same procedures.

- 2)** **Private Lottery.** At the start of each round, you will need to decide whether you would like to keep your \$1.00 or buy a lottery ticket with it. In the “Purchase” row, which will be tinted light blue, enter “Yes” to purchase a lottery ticket and “No” not to. If you buy the lottery ticket, a coin toss will determine the payoff for this lottery ticket. If the coin toss is **heads**, the payoff is \$00. If the coin toss is **tails**, the payoff is \$0.00. The coin will be provided and flipped by a volunteer subject; therefore the odds for either a heads or a tails are equal.

The computer will keep track of your cumulative earnings. Your Total Payoff will be a sum of your Private Lottery Payoff and your Group Account Payoff:

$$\text{Total Payoff} = \text{Private Lottery Payoff} + \text{Group Account Payoff}$$

The exchange rate between experimental dollars and USD that will be used is 3:1. This means that 3 experimental dollars is equivalent to 1 USD.

*It is important that you clearly understand these instructions.*

*Please raise your hand if you have any questions.*

<b>Donations to Group Account</b>	<b>Group Account Payoff</b>
\$0.00	\$0.00
\$0.25	\$0.05
\$0.50	\$0.11
\$0.75	\$0.16
\$1.00	\$0.21
\$1.25	\$0.27
\$1.50	\$0.32
\$1.75	\$0.38
\$2.00	\$0.43
\$2.25	\$0.48
\$2.50	\$0.54
\$2.75	\$0.59
\$3.00	\$0.64
\$3.25	\$0.70
\$3.50	\$0.75
\$3.75	\$0.80
\$4.00	\$0.86
\$4.25	\$0.91
\$4.50	\$0.96
\$4.75	\$1.02
\$5.00	\$1.07
\$5.25	\$1.13
\$5.50	\$1.18
\$5.75	\$1.23
\$6.00	\$1.29
\$6.25	\$1.34
\$6.50	\$1.39
\$6.75	\$1.45
\$7.00	\$1.50

### Experiment Instructions – AD-CT-VT

Welcome to an experiment in the economics of decision making. In the course of the experiment, you will have opportunities to earn money. Any money earned during this experiment is yours to keep. Please read these instructions carefully and do not communicate with any other participants during the experiment.

In today's experiment, you will participate in a number of rounds. The number of rounds has been determined prior to the start of the experiment. First, you will have the opportunity to vote on the market rules to be used for your group for the proceeding trading periods. A **majority vote** will determine which market rules will be implemented, as explained below. Your vote will be confidential and will not be shared with other members of the experiment. Before the vote, you will be given **up to five minutes** to discuss your opinions about the vote and donations to the **Group Account** with other subjects in your group. This discussion is free and open, except that no deals or threats are allowed. After the discussion, you will select your preference in your spreadsheet and click the "Submit Vote" button. After all of the votes have been submitted, the administrators will announce the outcome.

Each round, you will participate in at most two activities. You will necessarily participate in the **Private Lottery**, and the majority vote will determine whether or not there will be a **Group Account**, as explained below. The two activities are:

- 1) **Group Account.** You, and everyone else in your group, will need to decide whether to make a **contribution** to the **Group Account** from your \$1.00. Any contribution you make for a given round will be taken from your Initial Balance and placed into the Group Account; the remaining money will be placed into your **Private Account**.

Whatever money is donated to the Group Account will be multiplied by 1.5 by the administrators and distributed evenly amongst all members of your group. The table on the next page shows how the **Group Account Payoff** will vary depending upon the amount of money donated to the Group Account. In each round, your earnings will be sum of your Private Account and the Group Account Payoff.

At the start of the first round, you will be given the opportunity to choose your individual payment method for contribution to the Group Account. You will select your preference in your spreadsheet by clicking the "Switch" button for Round 1. To select Round-by-Round, click it once. To select Automatic, click twice. The cells of the row corresponding to your preferred payment method will turn yellow. This means that the payment method you chose has been implemented for you. There are two possible payment methods:

- A) **Round-by-Round.** Each round, you will choose an amount to donate to the Group Account. To make a contribution from your initial balance, enter the amount of the contribution, if any, into the spreadsheet, hit "Enter" and then click the "Submit" button, which should become darker upon being clicked.

To stop Round-by-Round and switch to the Automatic payment method at any point, click on the “Switch” button. When you switch to Automatic, the current and future cells in the “Automatic” row will turn yellow.

- B)** **Automatic.** Initially, you will choose one amount to donate to the Group Account for that and future rounds. To set this amount, enter it into the “Automatic” cell for Round 1, hit “Enter” and then click the “Submit” button, which should become darker upon being clicked. In all future rounds, this amount will be **automatically** deducted from your Initial Balance and donated to the Group Account.

You also have the option each period of changing the amount for that and future rounds to an amount less than or greater than the amount you initially chose. To do this, enter the new amount in the “Automatic” cell for that round, hit “Enter” and then click the “Submit” button, which should become darker upon being clicked.

To stop Automatic and switch your payment method to Round-by-Round, click on the “Switch” button. When you switch to Round-by-Round, the current and future cells in the “Round-by-Round” row will turn yellow.

After every subject has submitted their total donation for the round, if any, the administrator will calculate the Group Account Payoff. You will then be instructed to click the “Update” button. Your earnings will be calculated automatically. You will then proceed to the next round and follow the same procedures.

- 2)** **Private Lottery.** At the start of each round, you will need to decide whether you would like to keep your \$1.00 or buy a lottery ticket with it. In the “Purchase” row, which will be tinted light blue, enter “Yes” to purchase a lottery ticket and “No” not to. If you buy the lottery ticket, a coin toss will determine the payoff for this lottery ticket. If the coin toss is **heads**, the payoff is \$00. If the coin toss is **tails**, the payoff is \$0.00. The coin will be provided and flipped by a volunteer subject; therefore the odds for either a heads or a tails are equal.

If the majority (at least 4 members) of your group votes “Yes” for the Group Account, then you will participate in a Group Account each round **before** you participate in the Private Lottery. You, and everyone else in your group, will be given \$00 in **Initial Balances** for each round. \$1.00 is allotted for use in Private Lottery, and \$1.00 for use in the Group Account. You **cannot** transfer money between the Private Lottery and Group Account.

If the majority of your group votes “No” for the Group Account, then you will only participate in the Private Lottery each round. You, and everyone else in your group, will be given \$00 in Initial Balances for each round. Each round, you can either purchase a lottery ticket or not. You may **not** purchase more than one lottery ticket in a given round.

The computer will keep track of your cumulative earnings. If the vote results in a Group Account, your total payoff will be given by:

$$\textbf{Total Payoff} = \textbf{Group Account Payoff} + \textbf{Private Lottery Payoff}$$

If the vote results in no Group Account, your total payoff will be given by:

$$\textbf{Total Payoff} = \textbf{Private Lottery Payoff}$$

The exchange rate between experimental dollars and USD that will be used is 3:1. This means that 3 experimental dollars is equivalent to 1 USD.

*It is important that you clearly understand these instructions.*

*Please raise your hand if you have any questions.*

Donations to Group Account	Group Account Payoff
\$0.00	\$0.00
\$0.25	\$0.05
\$0.50	\$0.11
\$0.75	\$0.16
\$1.00	\$0.21
\$1.25	\$0.27
\$1.50	\$0.32
\$1.75	\$0.38
\$2.00	\$0.43
\$2.25	\$0.48
\$2.50	\$0.54
\$2.75	\$0.59
\$3.00	\$0.64
\$3.25	\$0.70
\$3.50	\$0.75
\$3.75	\$0.80
\$4.00	\$0.86
\$4.25	\$0.91
\$4.50	\$0.96
\$4.75	\$1.02
\$5.00	\$1.07
\$5.25	\$1.13
\$5.50	\$1.18
\$5.75	\$1.23
\$6.00	\$1.29
\$6.25	\$1.34
\$6.50	\$1.39
\$6.75	\$1.45
\$7.00	\$1.50

**REVIEWER APPENDIX - B**  
**Sample Letter to Field Study Subject**

Dear [REDACTED],

February 2007

# [REDACTED]

- **Last month, you made a contribution of \$0** to the Center for the Church and Global AIDS for use at the Grace Children's Home (an AIDS orphanage in Eldoret, Kenya) and The Pediatric AIDS Center (in Namakkal, India).
- You are in a group with 3 other members.
- **In total last month, the 4 members of your group contributed \$40.00 to CCG-AIDS, with an average contribution level of \$10.00.**

On the flip side of this page, you are provided with average and total donation charts for your group, by month, since the start of the project.

**If any of the below apply to you, please check the appropriate box and mail this sheet in the stamped envelope provided. IF YOU HAVE ALREADY SIGNED UP FOR AUTOMATIC DONATIONS AND DO NOT WISH TO STOP OR CHANGE THE AMOUNT, OR IF YOU DO NOT WISH TO MAKE A DONATION THIS MONTH, THEN YOU DO NOT NEED TO RETURN THIS SHEET TO US. You will receive a similar sheet in one month.**

G I would like to sign up for automatic monthly donations in the amount of \$\_\_\_\_\_ per month (maximum of \$20). Please provide your credit card information below. Please sign your name on the following line to authorize the Center for the Church and Global AIDS to automatically withdraw the indicated amount each month:

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

G I would like to contribute \$\_\_\_\_\_ today (maximum of \$20) using (please check one):

G Cash: Please send your cash donation with this sheet.

G Personal Check: Please send your check, payable to CCG-AIDS with this sheet.

G Credit Card: Please provide your credit card information below.

G I am signed up for automatic donations and want to change the amount of my future monthly donations to \$\_\_\_\_\_ per month (maximum of \$20).

G I want to discontinue my automatic monthly donations

**CREDIT CARD INFORMATION:**

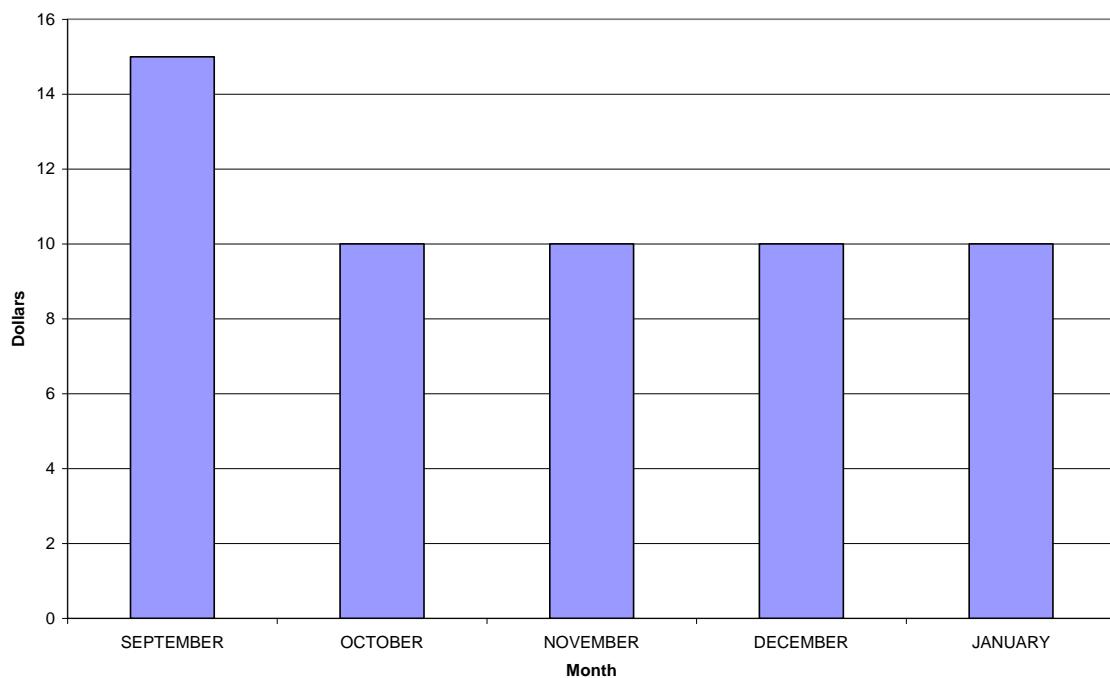
**Cardholder's Name:** \_\_\_\_\_  
 (as it appears on Credit Card)

<b>Card Type:</b>	Visa	MasterCard	American Express	Discover
<b>Card Number:</b>				
<b>Expiration Date:</b>	/			
	Month	Year		

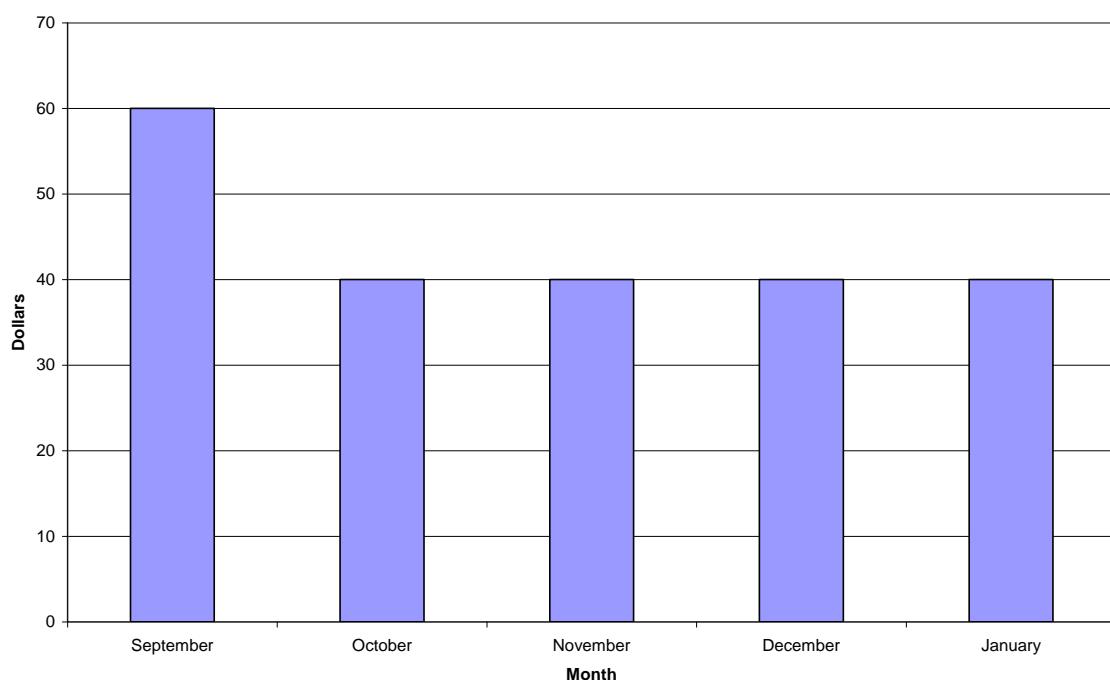
**Billing Address:** \_\_\_\_\_  
 \_\_\_\_\_

**City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **Zip Code:** \_\_\_\_\_

**Average Group Contributions**



**Total Group Contributions**



**REVIEWER APPENDIX – C**  
**Tobit analysis of contributions at individual and group level**

	Individual Tobit	Group Tobit
CT	-0.159 (0.173)	-0.135 (0.114)
VT	1.901 *** (0.349)	0.889 ** (0.294)
CT-VT	2.778 *** (0.353)	1.206 *** (0.279)
AD	-0.163 (0.247)	-0.0583 (0.189)
AD-CT	-0.262 (0.196)	-0.140 (0.150)
AD-VT	1.334 *** (0.254)	0.621 ** (0.220)
AD-CT-VT	6.677 *** (0.577)	2.911 *** (0.357)
Round	-0.0783 *** (0.0118)	-0.0283 *** (0.00366)
CT*Round	-0.0129 (0.0157)	0.00461 (0.00442)
VT*Round	-0.0196 (0.0235)	-0.0130 (0.0210)
CT-VT*Round	-0.0496 ** (0.0190)	-0.0224 (0.0133)
AD*Round	-0.00692 (0.0174)	-0.00318 (0.00611)
AD-CT*Round	-0.0321 (0.0203)	-0.00432 (0.00883)
AD-VT*Round	0.0122 (0.0157)	0.00261 (0.0110)

AD-CT-VT*Round	-0.161 *** (0.0291)	-0.0840 *** (0.0252)
Constant	0.535 *** (0.143)	0.485 *** (0.108)
sigma		
Constant	1.094 *** (0.0913)	0.406 *** (0.0554)
Observations	5600	800

Note: clustered standard errors are reported in parentheses. \* significant at the 5% level. \*\* significant at the 1% level. \*\*\* significant at the 0.1% level.