

ON GIVING, GAMBLING, AND GLOW:  
EXPERIMENTAL EVIDENCE

By

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To my family.

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## INTRODUCTION

A few years back, using the term “few” very broadly, I came across a charitable gift catalogue. Like any other catalogue, it was filled with pictures and descriptions, except that the pictures and descriptions were of charitable goods – a goat for a family in Honduras, a blanket for a child in Moldova – instead of goods that I might purchase for myself. I was a junior in college, taking Intermediate Microeconomics at the time I was first introduced to charitable gift catalogues, and we had just learned that, all else equal, an income subsidy is at least as good as an in-kind subsidy from the point of view of the recipient. But, as I flipped through the pages of the charitable gift catalogue, I was presented with the possibility of purchasing in-kind subsidies. Why would a nonprofit seek contributions in such a manner? Perhaps “all else” is not equal when one can purchase a charitable gift rather than make a charitable donation. This theory led to Chapter 1 of the dissertation, in which I utilize experiments to test for effects that gift catalogues have on charitable giving. Holding constant various components of a catalogue, I find a significant extra effect from the ability to purchase a charitable gift that is not present when one can only make a charitable donation. This extra effect suggests that contributors and potential contributors mentally code charitable gifts in a unique way, different from the coding of charitable donations.

While gathering information and designing experiments for Chapter 1, phone calls and letters to some of the nonprofits utilizing charitable gift catalogues highlighted another avenue for research. Many charitable gift catalogues offer contributors the ability to make a charitable gift purchase in honor of a friend, family member, or loved one, replacing (or augmenting) a traditional holiday or birthday gift. If transforming a charitable donation into a charitable gift

can lead to changes in behavior, one might hypothesize that transforming a charitable gift into a substitute for a traditional gift (or an addition to it) may also yield differences in contributions. For Chapter 2, I test for such an effect again utilizing experiments, and I find that there indeed appears to be a significant added effect from framing a charitable gift as a substitute for or addition to a traditional gift. This effect indicates that the transformation is likely causing people to mentally code the charitable gift as either a traditional gift or as both charitable and traditional gift, perhaps even double counting it. Part of the effect may be a result of holiday cheer (or lack thereof – the holiday was Valentine’s Day) perhaps altering the glow from giving.

Finally, while running some pilot experiments for Chapter 1, I noticed some unusual behavior among subjects, which led to Chapter 3. Subjects in the pilot experiment were asked to make multiple allocation decisions, dividing money between themselves and charity, and told that one of the decisions would be randomly chosen and enacted. A sizable proportion of the subjects engaged in, what I like to call, charitable gambling – they gave large (small) amounts in most of the allocation decisions but small (large) amounts in one or two. In effect, subjects created lotteries for themselves. This risky behavior led to questions about the salience of experimental payments when stake sizes or payment probabilities are varied. The stakes in the pilot experiment were small, perhaps leading to risky behavior, but increasing stake size to increase risk aversion (the often-assumed outcome of a rise in stakes) is costly. Could risk aversion be increased by increasing stake size but reducing the probability of payment? For Chapter 3 I conduct an experiment to analyze the effects of varying probabilities of payment (from 0% to 100%, with 10, 20, and 30% treatments as well) in a high stakes environment. The findings are quite curious. When the probability of payment decreases, risk aversion insignificantly increases, though the sample size is rather small, warranting further study.

## CHAPTER I

### SHOP 'TIL POVERTY DROPS? CHARITABLE GIVING THROUGH GIFT CATALOGUES

#### 1 Introduction

In our models of altruism, charitable behavior is often accounted for by one of two main approaches. Both approaches distinguish between a private consumption good and a public (or we might prefer “charitable”) good. In traditional public goods models, contributions arise because people care about the good to which they are contributing or the production stemming from their contribution (for example, Bergstrom, Blume, and Varian, 1974). In models of impure altruism, contributions also arise because people care about the fact that they themselves contributed, providing them with a “warm glow” (for example, Andreoni, 1989, 1990). However, the variety of solicitation techniques utilized by nonprofits (and the amount of money nonprofits spend fundraising) would indicate that many potential factors affect giving. While these factors may enhance warm glow or provide information about the output of one’s contribution, they may not be fully captured in models of altruistic behavior that allow for only one type of charitable contribution.

For example, if I purchase gifts for an Angel Tree child at Christmas, does my utility increase more (or less) than it would if I sent a check to the Salvation Army? Are toys and clothing purchased for a child subtracted from the same account in my budget as a check written directly to charity? Thaler (1985, 1999) provides evidence that people are extremely quirky in the way they divide and subdivide their mental budgets, which can yield different accounts for different types of transactions, time periods, goods, etc. A check to the Salvation Army may be

drawn from a charity account, however loosely or tightly defined, but what about gifts purchased for a child in need? If I purchase items for a child while at Target running errands, the expense may be drawn from a different mental account than if I write a check to charity while paying bills. If utility or even budgets differ when purchasing a charitable gift rather than making a charitable donation (of money), we may see differences in the amounts given, and we may wish to think about augmenting our current models of altruistic behavior to account for charitable gift purchases as well as charitable donations. Nonprofits appear to assume that distinctions exist among different types of charitable contributions, for they continually update their solicitation strategies to allow for them, implying that our mental coding, whether applied only to our objective functions or also to our constraints, provides opportunities for increased giving. But is there a distinction between a charitable donation and a charitable gift?

Intuitively we understand that for some people a difference exists between giving a gift and giving money to a friend, family member, or coworker, and research has addressed some of the causes and consequences of this difference (for example, Burgoyne and Routh, 1991; Waldfogel, 2002; Prendergast and Stole, 2001). The prevalence of in-kind gifts to those we know suggests that such gifts provide more utility for the giver, for the receiver, or for both. The receiver is often unknown in cases of charitable giving, but if the giver derives greater utility from giving gifts than from giving cash in general, we should expect to see different contribution levels towards charitable gifts than towards charitable donations if traditional gift-giving preferences carry over to the charitable setting.

Burgoyne and Routh (1991) and Waldfogel (1993, 2002) conduct surveys which examine gift-giving behavior and the prevalence of gifts relative to cash to and from different sources, noting cash gifts, when given, tend to come from relatively older family members and are given

to relatively younger family members, whereas very few cash gifts are given by the young. The reason posited for the former finding is a lack of information about preferences and a desire to give utility-maximizing cash gifts rather than in-kind gifts that may be of little use to the recipients. The reasons for the latter include inappropriateness or insensitivity of cash given to older recipients and a signaled laziness or uncaring of a cash gift to other young recipients. Although the setting and therefore the reasons differ, if norms (or if preferences driving norms) from other-regarding behavior towards one's family and friends carry over into the realm of other-regarding behavior towards strangers, we might expect to see differences in behavior when people contribute gifts rather than donations. If these norms are a result of different degrees of warm glow or different estimates of or beliefs about the output of contributions for different contribution types, we should expect to see differences in behavior between the younger and the older contributors, for the evidence above would indicate that older contributors realize that their preferences are not representative so they may attain more utility from donating cash rather than purchasing gifts. If instead norms are driving preferences instead of resulting from them, we may not see any differences between the older and the younger in the experiment if they do not apply the social norm in the experimental setting.

Finally, casual observation and conversation indicate that people may give more or less towards charitable gifts than charitable donations because the two may be drawn from different mental accounts and, if drawn from different mental accounts, the probability of giving or the amount given may differ. Thaler (1999) notes that if mental accounting matters, "a purchase is more likely to be made if it can be assigned to an account that is not already in the red." Thus if charitable gift purchases are drawn from a different account than charitable donations, and one account is closer to overdraft than the other, we could see differences in behavior. This

hypothesis is difficult to test, however, because even if we know how much people (and, in specific, people of different age groups) give to charity ex post, we do not know which account various types of contributions were taken from. We will keep this hypothesis in the mix as a possible contributor to behavior, and later discuss some ways that we might be able to distinguish any effects of mental accounting on contributions towards charitable gifts versus charitable donations.

For now, we will focus on finding out if a difference between these two types of contribution exists, as a step towards examining the underlying mental coding of charitable gifts versus charitable donations (whether in utility or also in constraints) that might lead to this difference. To embark on this quest, we will mimic in laboratory experiments a solicitation method that has become quite common among nonprofits. In recent years, *Samaritan's Purse*, *World Vision*, *Oxfam International*, and *Heifer International*, among others, have begun to provide potential donors with charitable gift catalogues from which they may shop. Like any other catalogue, these catalogues contain pictures, descriptions, and prices (framed as “suggested gift amounts”) of items that may be purchased or projects that may be contributed to. For example, from the Samaritan's Purse catalogue, I may contribute towards a dairy goat for a family in Honduras for \$70 or a blanket for a child in Moldova for \$6. Through these catalogues a donor is presented with the opportunity to go shopping for a charitable good, which may make it feel more like a gift purchase than a donation – like placing any other catalogue order, just one for which the good never actually arrives on *your* doorstep.

Although filled with information about a nonprofit's activities and their costs, which may be valuable to donors, a catalogue is presumably expensive to provide. Additionally, if a nonprofit honors the allocations chosen by donors, the organization potentially constrains its use



of funds. Therefore, an analysis of the effects of catalogue components could be valuable to nonprofits, and especially to the recipients of the funds. The analysis would provide for us insight into the behavioral implications of offering the shopping experience to donors – of transforming a charitable donation into a charitable gift purchase. We will conduct this transformation through the experiments to see if there is a shift in behavior. If we find such a shift, we will have support for the inclusion of an additional coding distinction in our models of charitable behavior – the distinction between donation and gift. If certain donors are allowed to shop, poverty may indeed drop.

To analyze the effect on contributions from providing potential donors with gift catalogues, we utilize laboratory experiments first on a student sample and then on a more diverse, online sample. In the experiments, we hold constant descriptions and pictures of charitable goods and vary two components of a catalogue that are crucial to the ability to shop for such goods: choice and prices (suggested gift amounts). Though choice and prices may each affect behavior, it is the effect of their interaction that we are most interested in noting. For, choice alone does not comprise a purchase, as one does not know how much one has bought. Similarly, even when informed of prices a purchase is not possible, as one cannot choose an item to buy. However, when combined, potential donors are given the ability to shop for a charitable gift. It is the interaction between choice and prices (or the combined effect of choice and prices net of the separate individual effects) that we will focus on in this paper, as it will answer our main question: Is there a mental distinction between a charitable gift and a charitable donation? However, we will discuss to some extent each of the two main components of a gift purchase as well (choice and prices), in the hope of refining ideas about their effects on behavior.

Choice in charitable giving, or donor control, has generated much interest in recent academic research (Bilodeau and Slivinski, 1997; Duncan, 2004; Seigel, 2006; and Null, 2008). Theoretically, we have evidence that under certain conditions choice may increase the level of donations by allowing donors to target their preferred bundle of public goods if a charity produces more than one (Bilodeau and Slivinski, 1997). If donors have preferences over charitable goods, then we would expect to see giving increase when they can express those preferences. More broadly, economic theory in general would suggest that donors, at least, benefit from choice because they can optimize over a larger set. However, as Thaler (1980) notes, the avoidance of regret may cause people to choose not to choose in a variety of settings. Wrosch and Heckhausen (2002) note that older people might be prone to experiencing greater regret, as they may have less time to change or reverse regrettable courses of action, though they find similar intensities of regret regardless of age, noting that recent regrets may still easily be addressed and regret management is likely overcoming intensity of long-term regret among older individuals. If regret induces choice avoidance, we should expect to see similar negative effects on contributions among older and younger samples. Additionally, the social psychology literature provides evidence that people may experience choice overload when presented with too many options, reducing the likelihood that they will choose (Iyengar and Lepper, 2000). If potential donors are faced with too many choices, we might see them refrain from contributing. If choice overload is a contributor to behavior, we should expect to see the greatest effects on older contributors, as we have evidence that they are more prone to overload (Besedes, Deck, Sarangi, and Shor, 2009).

However, we might also notice negative effects from choice even if donors like to choose. Another model of charitable behavior, Duncan's (2004) model of impact philanthropy,

suggests that even if public goods are all perfect substitutes, allowing targeted donations to a particular project will increase a donor's perceived impact and may actually decrease her donations. In this model, a donor cares about the marginal production resulting from her personal contribution. Thus, if donors can target donations to specific projects, perceived marginal production is higher for each donor than if they all contribute to all projects. Consider a concave production function for each charitable good. If a donor is the only contributor to a project, marginal productivity is high because the donor is contributing the "first" few dollars which attain a higher marginal productivity than the "last" few dollars, which she assumes are her contribution when choice is not available (because she is adding her contributions to an already large pot). This higher perceived "impact" may lead to more or less giving because each dollar given feels more productive. Thus, if donors are impact philanthropists, we may see negative or even opposing effects from choice, even if donors appear to enjoy choosing.

The work most closely related to the experiments we will examine here is that of Seigel (2006) and that of Null (2008) who both study the effects of donor control or choice in experimental settings. In a field experiment, Seigel (2006) provides donors with two broad categories from which to choose, health and education, finding no difference in giving between those who can allocate to a category and those who are not given the ability to do so. However, as she notes, subjects may not have noticed the ability to choose, as it appeared in small print on the donation form. Utilizing a within-subjects design, Null (2008) tests for substitution between charities when one charity begins to provide choice and another does not. She finds that subjects substitute toward the charity offering choice among two items, though the effect on total donations is unknown, as the total allocated to both charities was held constant by design. In the experiments we will examine, the effects from choice are tested using a between-subjects

laboratory design with choice among five charitable goods. The between-subjects design will allow us to avoid changes in behavior derived from experimenter effects, and choice among five tangible goods will allow for gift purchases in treatments with both choice and prices. We will also be able to compare behavior of different age groups, which will help us to narrow down the set of theories pertaining to choice in charitable giving.

Prices, framed as suggested gift amounts, are another key component of a gift purchase, for they allow one to know how much one is contributing in terms of output. Also popular in the literature is the idea that the level and or the number of suggested contributions or membership thresholds affects donations, though the studies do not or cannot differentiate effects by age. Croson and Marks (2001) find that donations are concentrated around the recommended contribution in a public goods game, and Barbieri and Malueg (2010) find that the number of membership levels changes total contributions to National Public Radio, the direction of the change being a function of the range of incomes, the size of the potential donor base, and outside funding. Additionally, even subtly suggested contributions may affect behavior by establishing a norm which influences donors to give more to public radio if previous callers gave more (Croson and Shang, 2009; Croson, Handy, and Shang, 2009) and dictators or return-givers to be less generous if game norms are altered to allow givers to take (Bardsley, 2008, and List, 2007 (dictators); Kessler, 2009 (return-givers)).

To allow for affordability and, thus, purchases of charitable gifts, in the experiments we will examine price points are all at or below the endowment provided. If this induces a low norm, we should see a negative effect on contributions. However, prices in our setting also provide information about the efficiency of the nonprofit or the purchasing power of charitable dollars. If efficiency or purchasing power is higher or lower than expected, we could see

contributions rise or fall (in either case), depending upon the contributor. For example, suppose I wanted to provide a goat for a family and suppose I would have assumed the cost to be \$100. If I see that the price of a goat is actually only \$70 and I think \$70 is inexpensive, signaling an efficient charity or “strong” charitable dollars, I might increase my contribution from \$100 to \$140 and buy two goats, or I might decrease my contributions to \$70 and provide just the one I was planning to provide. If the information inherent in prices about the productivity of charitable dollars is a significant contributor to behavior, we might see contributions rise or fall when prices are provided to potential donors.

Though choice (or donor control) and prices (or suggested contributions) are each commonly used in practice, they are now often combined through charitable gift catalogues. As will become apparent, this pairing leads to interesting interaction effects that suggest a different mental coding of charitable gift purchases than of charitable donations, even when the projects or goods in question, as well as the charity, remain constant. To the best of my knowledge, the interaction between choice and prices, an interaction which transforms a charitable donation into a charitable gift, has yet to be explored.

We find a negative and significant effect from choice among an undergraduate sample and a negative but insignificant effect for the younger half of a more representative sample of subjects, though we find an insignificant positive effect for the older half of the more representative sample. The prices or suggested gift amounts in the experiments examined here encourage, to some degree, contributions to accrue at the levels provided. Among the student sample and the younger half of the more representative sample, the effect of seeing prices is negative (significant for the former, insignificant for the latter). However, among the older half of the more representative sample, the effect from seeing prices is positive (and significant under

certain specifications). Among the undergraduate sample and the younger half of the online sample, a positive and significant choice-price interaction exists. For the older subsample we find the opposite result – the interaction between choice and prices is significant but negative.

The significant interaction effects suggest a fundamental difference between donating to charity and purchasing charitable gifts. To an economist, these results indicate that donors differentiate between gift purchases and donations in their objective functions and perhaps also in their constraints. To a nonprofit, they highlight avenues for increasing funds raised by altering campaigns to provide donors with more or less (depending upon the person) of a gift purchase experience. To an academic, they direct future work towards the implications of providing substitutable traditional and charitable gifts and of bundling traditional and charitable gifts, increasingly common strategies.<sup>1</sup> If charitable gift catalogues can alter behavior by providing a gift purchase experience, what will be the result if a charitable gift can replace a traditional gift or if it is combined with a traditional gift itself? These questions will be addressed in future work. For now, we turn to the experiments.

## 2 Experiments & Results

After some early pilot experiments aimed at analyzing choice and price effects revealed interesting and significant differences in the distributions of donations of various treatments, the two experiments we will examine were designed to more fully distinguish among causes for these differences, as well as focus more specifically on any effects from the interaction between choice and prices (additional information about the pilots appears in Appendix A).

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<sup>1</sup> Many nonprofits, including *Oxfam* and *Samaritan's Purse*, allow/encourage gifts in honor of friends or loved ones as replacements for traditional gifts, a strategy that will be explored in the next chapter. *World Vision* offers tangible gifts (such as stuffed animals) to donors contributing to their "Maximum Impact Fund," gifts that may be kept for oneself or given as presents to others, a strategy that will be explored in future work.

## 2.1 Experiment 1

The first experiment was run in February of 2009 at the University of Colorado at Colorado Springs in 2 classroom sessions (introductory economics and sociology) during class time with a total of 59 students. Of those 59, 57 provided the needed controls.<sup>2</sup> The experiment contained four treatments: *neither*, *choice*, *price*, and *both*. To avoid confusion between “the control” and “donor control,” all four are called treatments, with the control labeled “neither” as subjects neither had choice nor saw prices. Subjects were randomly assigned to treatments. In all treatments, pictures and five project descriptions were presented to subjects. Those in the *choice* and *both* treatments were able to choose among the projects if they wished to do so. If they did not wish to, they could allow the charity to choose for them by selecting the “area of most need,” a commonly provided category in actual gift catalogues. Those in the *price* and *both* treatments saw prices of the projects, framed as “suggested gift amounts,” listed after the respective project descriptions, and also appearing in one additional sentence per project description detailing what a contribution of that amount would buy.

During the experiment subjects made one decision each, deciding how to allocate \$20 between themselves and charity. Similar to other experiment designs in the charitable giving literature, contributions accrued to an actual charity rather than a group account or public good, following Eckel and Grossman (2000, 2003, 2006) and Eckel, Grossman, and Milano (2007), who provide subjects with a charity or charities to whom they may donate. The charity utilized for this experiment was *Samaritan’s Purse*.<sup>3</sup> The projects described in the experiment were taken from the *Samaritan’s Purse* gift catalogue and had price points of \$4, \$6, \$8, \$9, and \$15,

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<sup>2</sup> Results improve slightly with the inclusion of the 2 dropped subjects: in Table 3 both p-values reporting differences between the *both* and *neither* treatments fall, the Wilcoxon-Mann-Whitney into the significant range (0.089).

<sup>3</sup> *Samaritan’s Purse* was chosen for three reasons. First, it guarantees that contributions designated to a particular project will be utilized for that project or a very similar project if the project is completed. Second, it provides a rather extensive catalogue, which allowed/allows for other experiments to contain different items while holding the charity constant. Third, the *Samaritan’s Purse* catalogue was the catalyst for the ideas behind this paper.

corresponding to the five most tangible items under \$20. The items were milk, a blanket, a soccer ball, baby food, and schooling. A 50% match was included to encourage contributions in the experiment, where they provide data, rather than after it. Payment envelopes and code numbers were utilized to ensure anonymity. All subject decisions were carried out and subjects were offered the ability to confirm this by physically watching as a check was written and/or by receiving through their professor an e-mailed receipt of total contributions. No subject cared to exercise this ability. A post-experiment survey was given to obtain controls (and to satisfy curiosity). Appendix B contains the experiment documents. A summary of the student demographics appears in Table 1.

Table 1: Subject Characteristics, Experiment 1

| Treatment                         | All     | Neither | Choice  | Price  | Both    |
|-----------------------------------|---------|---------|---------|--------|---------|
| Subjects                          | 57      | 14      | 14      | 16     | 13      |
| Gave in the Experiment            | 87.72%  | 100.00% | 78.57%  | 81.25% | 92.31%  |
| Average conditional on giving     | \$11.50 | \$13.57 | \$12.36 | \$9.46 | \$10.50 |
| Unconditional average             | \$10.09 | \$13.57 | \$9.71  | \$7.69 | \$9.69  |
| Gave to charity last year         | 70.18%  | 78.57%  | 71.43%  | 87.50% | 38.46%  |
| Heard of <i>Samaritan's Purse</i> | 19.30%  | 21.43%  | 21.43%  | 18.75% | 15.38%  |
| Age                               | 21      | 20      | 21      | 22     | 19      |
| Male                              | 33.33%  | 28.57%  | 35.71%  | 37.50% | 30.77%  |
| Single                            | 87.72%  | 92.86%  | 78.57%  | 81.25% | 100.00% |
| Live with parents                 | 47.37%  | 28.57%  | 50.00%  | 62.50% | 46.15%  |
| Help/Pay for college              | 43.86%  | 35.71%  | 57.14%  | 50.00% | 30.77%  |
| Family income < \$50,000          | 29.82%  | 21.43%  | 35.71%  | 43.75% | 15.38%  |
| \$50,000-\$79,999                 | 22.81%  | 14.29%  | 21.43%  | 25.00% | 30.77%  |
| \$80,000-\$109,999                | 29.82%  | 42.86%  | 21.43%  | 18.75% | 38.46%  |
| \$110,000-\$139,999               | 5.26%   | 0.00%   | 0.00%   | 6.25%  | 15.38%  |
| \$140,000-\$199,999               | 7.02%   | 7.14%   | 14.29%  | 6.25%  | 0.00%   |
| \$200,000+                        | 5.26%   | 14.29%  | 7.14%   | 0.00%  | 0.00%   |
| Republican                        | 38.60%  | 14.29%  | 50.00%  | 50.00% | 38.46%  |
| Democrat                          | 15.79%  | 28.57%  | 14.29%  | 6.25%  | 15.38%  |
| Independent                       | 17.54%  | 28.57%  | 14.29%  | 12.50% | 15.38%  |
| Other                             | 28.07%  | 28.57%  | 21.43%  | 31.25% | 30.77%  |
| White                             | 70.18%  | 85.71%  | 57.14%  | 62.50% | 76.92%  |
| Hispanic                          | 12.28%  | 7.14%   | 21.43%  | 12.50% | 7.69%   |
| Other                             | 17.54%  | 7.14%   | 21.43%  | 25.00% | 15.38%  |
| Religious (1/week or more)        | 36.84%  | 21.43%  | 50.00%  | 50.00% | 23.08%  |
| Religious (1/month or more)       | 47.37%  | 35.71%  | 50.00%  | 62.50% | 38.46%  |
| Catholic                          | 19.30%  | 21.43%  | 21.43%  | 12.50% | 23.08%  |
| Protestant                        | 56.14%  | 35.71%  | 50.00%  | 68.75% | 69.23%  |



## 2.2 Experiment 1 Results

From Table 1, we saw that the average given per subject was \$10.09, about 50% of the endowment of \$20. This percentage is consistent with that found in similar dictator games in which subjects split an endowment between themselves and charity and contributions are encouraged via a match (Eckel and Grossman 2003 and 2006). Conditional on giving, the average was \$11.50; 88% of subjects gave something in the experiment and 25% gave the entire endowment. We notice from Table 2, which reports giving by subjects (before the match) that the highest average given was in the *neither* treatment, the lowest in the *price* treatment, with *choice* and *both* witnessing roughly the same averages. It would be interesting to note any differences in giving by those who chose a specific project and those who had the option to choose but refrained. However, the donation form, rather than listing the particular projects, left room for subjects to specify project names. This apparently caused a little confusion among subjects, resulting in some who donated, for example, \$6 towards blankets, \$6 towards the “area of most need,” yet \$6 total. The donation form for the next experiment was improved by listing all of the projects along with the “area of most need” to avoid confusion.

Table 2 provides our first clue that the interaction between choice and prices, inherent in a gift purchase, is affecting behavior. If we were to add up the individual negative effects from choice and from seeing prices, we would arrive at a much lower average contribution than we found in the *both* treatment. If we consider the entire distributions of giving in each treatment, we find some differences between the *neither* treatment and the *price* treatment in Table 3 which reports the p-values from nonparametric equality of distribution tests. When controls are included, we will see even more interesting results appear.

Table 2: Average Giving by Treatment

|                               |         |                             |         |
|-------------------------------|---------|-----------------------------|---------|
| <u>Neither treatment (14)</u> | \$13.57 | <u>Price treatment (16)</u> | 7.69*** |
| Donors (14)                   | \$13.57 | Donors (13)                 | 9.46^^  |
| <u>Choice treatment (14)</u>  | 9.71*   | <u>Both treatment (13)</u>  | 9.69*   |
| Donors (11)                   | \$12.36 | Donors (12)                 | \$10.50 |

\*\*\*, \*\*, and \* denote significant differences from the neither treatment at the 1%, 5%, and 10% levels (one-tailed t-tests). Carats are used similarly to denote differences conditional on giving. The number of subjects in each group is in parentheses.

Table 3: Distribution Tests

|                | <u>Choice</u> | <u>Price</u> | <u>Both</u> |     |
|----------------|---------------|--------------|-------------|-----|
| <u>Neither</u> | 0.277         | 0.028        | 0.154       | WMW |
|                | 0.343         | 0.060        | 0.343       | KS  |
| <u>Choice</u>  |               | 0.833        | 0.883       | WMW |
|                |               | 0.656        | 0.525       | KS  |
| <u>Price</u>   |               |              | 0.611       | WMW |
|                |               |              | 0.855       | KS  |

p-values reported from Wilcoxon-Mann-Whitney (WMW) and Kolmogorov-Smirnov (KS) tests.

We estimate Two-way Censored Tobit and OLS models, the latter both unconditional and conditional on giving.<sup>4</sup> Results are reported in Table 4. Giving is estimated as a function of

<sup>4</sup> Following the experimental literature on charitable giving (see, for example, Eckel and Grossman, 2003, Karlan and List, 2007, Breman, 2009, etc.), which estimates Tobit, Conditional OLS, and/or Unconditional OLS models, we utilize all three. Although the use of OLS would appear to constitute a naïve approach when we consider that there are bounds on giving in this experiment, Angrist and Pischke (2009) note that in an environment where 0's represent actual observations rather than censored observations, OLS coefficients may provide useful "average" effects. However, there could exist a latent variable taking on negative values if we consider it possible that some people would take from charity if allowed. (Certainly there are people who use address labels sent by charities without donating to them which, in some sense, comprises a negative contribution, though the example is a bit of a stretch, as those people might prefer that the labels not be sent in the first place.) Additionally, we witness contributions at the upper bound of \$20, accounting for everybody who would contribute \$20, as well as those who would contribute more if allowed. Since it is plausible that a latent variable, taking on values below 0 or (more likely) greater than 20, exists, the Two-way Censored Tobit appears to be a good choice of model. OLS results are reported as well to satisfy readers and to provide a robustness check of sorts. Conditioning on giving allows us to satisfy those with a typical concern about utilizing a Tobit model, mentioned in Wooldridge (2002) – that the effect of a variable on the probability of giving is assumed to have the same sign as its effect on the amount given conditional on positive giving. Coefficient estimates from the two OLS specifications (and evidence from the figures on the next few pages) indicate that the signs are indeed the same for our variables of interest.

treatment indicators as well as binary controls included to account for gender, religiosity,<sup>5</sup> political affiliation, singleness, the responsibility of college expenses, ethnicity, family income, living arrangements, whether the individual gave to charity at all last year (many knew they gave but not how much), and religious affiliation, loosely categorized. Age was also included as a control.<sup>6</sup> Income data were categorical with a median category of \$50,000-\$79,000 which contained 13 individuals. Since median household income (\$52,175) reported by the U.S. Census Bureau (2006-2008 American Community Survey) falls within this interval, two binary income variables were utilized, one for income of \$50,000 or greater and one for income of \$80,000 or greater. As results are similar in either case, we only report results utilizing the latter, since it more evenly splits the sample (53% below and 47% above). An indicator for awareness of *Samaritan's Purse* is included as well but it is not significant; results remain similar if it is dropped.

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<sup>5</sup> Religiosity is defined as attending services, gatherings, or studies once or more per week, similar to Brooks (2006). While this definition is relatively Christian-centric, both datasets are largely composed of subjects falling under the category of "Christian" or no category at all, with very few from other faiths. Thus, the definition of "religious" as attending on a weekly basis seems reasonable.

<sup>6</sup> Since this sample was comprised of students, there was relatively little variation in age, though some did exist since the University attracts a sizable proportion of nontraditional students. Including or excluding age and age squared yields similar results. They are included here because we have evidence that the relationship between age and giving is quadratic (Clotfelter, 2002) and because of the presence of some nontraditional students in the sample.

Table 4: Regression Results, Unconditional and Conditional on Giving

| Dependent Variable:   | Amount Given         |                      |                      |              |                      |                      |                      |
|-----------------------|----------------------|----------------------|----------------------|--------------|----------------------|----------------------|----------------------|
|                       | Tobit                |                      |                      | OLS          |                      |                      |                      |
|                       | (1)                  | (2)                  | (3)                  | (4)          | (5)                  | (6)                  |                      |
| Choice treatment      | -10.19**<br>(3.770)  | -7.247**<br>(2.962)  | -4.809<br>(2.916)    | Choice       | -10.19**<br>(3.770)  | -7.247**<br>(2.962)  | -4.809<br>(2.916)    |
| Price treatment       | -11.23***<br>(3.190) | -8.260***<br>(2.439) | -7.753***<br>(2.306) | Price        | -11.23***<br>(3.190) | -8.260***<br>(2.439) | -7.753***<br>(2.306) |
| Both treatment        | -6.001*<br>(3.322)   | -4.608*<br>(2.355)   | -3.135<br>(1.937)    | Choice*Price | 15.42***<br>(4.517)  | 10.90***<br>(3.660)  | 9.427**<br>(3.850)   |
| Age                   | 2.692<br>(2.371)     | 1.787<br>(1.791)     | -3.613<br>(2.426)    |              | 2.692<br>(2.371)     | 1.787<br>(1.791)     | -3.613<br>(2.426)    |
| Age squared           | -0.041<br>(0.035)    | -0.025<br>(0.026)    | 0.069<br>(0.042)     |              | -0.041<br>(0.035)    | -0.025<br>(0.026)    | 0.069<br>(0.042)     |
| Male                  | -10.45***<br>(2.425) | -6.421***<br>(1.705) | -5.062**<br>(2.318)  |              | -10.45***<br>(2.425) | -6.421***<br>(1.705) | -5.062**<br>(2.318)  |
| Religious             | 8.107***<br>(2.789)  | 5.456**<br>(2.353)   | 7.406***<br>(2.367)  |              | 8.107***<br>(2.789)  | 5.456**<br>(2.353)   | 7.406***<br>(2.367)  |
| Republican            | 8.231***<br>(2.916)  | 5.706**<br>(2.322)   | 5.685**<br>(2.318)   |              | 8.231***<br>(2.916)  | 5.706**<br>(2.322)   | 5.685**<br>(2.318)   |
| Democrat              | 12.18***<br>(4.154)  | 7.955**<br>(2.968)   | 12.46***<br>(2.328)  |              | 12.18***<br>(4.154)  | 7.955**<br>(2.968)   | 12.46***<br>(2.328)  |
| Independent           | 10.06**<br>(3.844)   | 6.632**<br>(3.108)   | 7.247**<br>(3.545)   |              | 10.06**<br>(3.844)   | 6.632**<br>(3.108)   | 7.247**<br>(3.545)   |
| Single                | -8.519<br>(6.135)    | -3.106<br>(4.582)    | -5.438<br>(4.512)    |              | -8.519<br>(6.135)    | -3.106<br>(4.582)    | -5.438<br>(4.512)    |
| Live with parents     | 4.364<br>(2.716)     | 2.300<br>(2.092)     | 3.726*<br>(2.037)    |              | 4.364<br>(2.716)     | 2.300<br>(2.092)     | 3.726*<br>(2.037)    |
| Help/pay for college  | -6.151**<br>(2.639)  | -4.087**<br>(2.003)  | -2.928<br>(1.911)    |              | -6.151**<br>(2.639)  | -4.087**<br>(2.003)  | -2.928<br>(1.911)    |
| Family income > \$80K | -0.894<br>(2.320)    | -1.863<br>(1.746)    | -1.995<br>(2.041)    |              | -0.894<br>(2.320)    | -1.863<br>(1.746)    | -1.995<br>(2.041)    |
| Gave at all last year | -3.760<br>(2.589)    | -2.310<br>(1.944)    | -1.669<br>(1.796)    |              | -3.760<br>(2.589)    | -2.310<br>(1.944)    | -1.669<br>(1.796)    |
| White                 | -6.280*<br>(3.236)   | -4.870*<br>(2.490)   | -2.133<br>(2.310)    |              | -6.280*<br>(3.236)   | -4.870*<br>(2.490)   | -2.133<br>(2.310)    |
| Catholic              | -3.536<br>(4.074)    | -2.409<br>(3.348)    | -4.983*<br>(2.881)   |              | -3.536<br>(4.074)    | -2.409<br>(3.348)    | -4.983*<br>(2.881)   |
| Protestant            | 0.491<br>(3.226)     | 0.287<br>(2.622)     | -2.186<br>(2.567)    |              | 0.491<br>(3.226)     | 0.287<br>(2.622)     | -2.186<br>(2.567)    |
| Heard of SP           | 2.376<br>(2.858)     | 1.586<br>(2.363)     | 1.959<br>(2.413)     |              | 2.376<br>(2.858)     | 1.586<br>(2.363)     | 1.959<br>(2.413)     |
| Constant              | -10.320<br>(35.750)  | -5.502<br>(27.610)   | 62.31*<br>(33.930)   |              | -10.320<br>(35.750)  | -5.502<br>(27.610)   | 62.31*<br>(33.930)   |
| Pseudo/R-squared      | 0.15                 | 0.57                 | 0.61                 |              | 0.15                 | 0.57                 | 0.61                 |
| Prob > F              | 0.0001               | 0.0000               | 0.0000               |              | 0.0001               | 0.0000               | 0.0000               |
| Observations          | 57                   | 57                   | 50                   |              | 57                   | 57                   | 50                   |

7 left-censored, 36 uncensored, 14 right-censored.

Robust standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

When we account for controls, we see that both choice and prices have significant negative effects on giving but their combination diminishes the individual negative effects, suggesting that the ability to purchase a charitable gift alters the transaction in the minds of

potential donors. While the first three columns in Table 4 include treatment indicators, the last three include an indicator for choice (which is allowed in two treatments), for prices (which appear in two treatments), and for the interaction between choice and prices (which is only present in the *both* treatment). The coefficient on the interaction term provides a positive and significant estimate for the effect of transforming a charitable donation into a charitable gift, holding constant the effects of choice and prices. We also notice that the men in this sample are less generous than the women, the religious more generous than the non-religious, and the politically-defined more generous than those reporting no particular political preference/affiliation, while white subjects and subjects who are paying or helping to pay college expenses give somewhat less.<sup>7</sup>

Specifications (3) and (6) report coefficient estimates conditional on giving. Two of our main results weaken, indicating that some of the effects, especially the effects of choice, are derived from changes on the extensive margin. That is, the negative effect from choice is stemming in large part from a decrease in the probability of contributing, while the negative effect from prices is affecting both the probability of contributing and the level of contributions. The positive interaction effect is slightly weaker in specification (6) indicating a small degree of change on the extensive margin as well, evidence that the interaction encourages to some extent a higher probability of contributing, along with higher levels of contribution. Graphical analyses included below provide additional insight into regression findings.

Looking at Figures 1 and 2, which contain cumulative distribution functions and probability density functions by treatment, we can see that the *choice*, *price*, and *both* treatments resulted in relatively high frequencies of low donation amounts, the *price* treatment especially

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<sup>7</sup> As Table 4 indicates, controls significantly affect giving. If we were to drop all controls, we would lose significance on our coefficients of interest, however, this is not due to any one control driving results. Results similar to those reported in Table 4 are found with much shorter, and varied, lists of controls.

so. Indeed, the distribution of contributions in the *price* treatment is almost stochastically dominated by the distribution of contributions in the *both* treatment and is stochastically dominated by the distribution of contributions in the *neither* treatment: for any given level of contributions, the *price* treatment witnesses a larger percentage of subjects giving less than that level (or equivalently, the *neither* treatment witnesses a larger percentage of subjects giving more than that level). Similarly, the distribution of contributions in the *neither* treatment almost dominates the distribution in the *both* treatment and does dominate the distribution in the *choice* treatment.

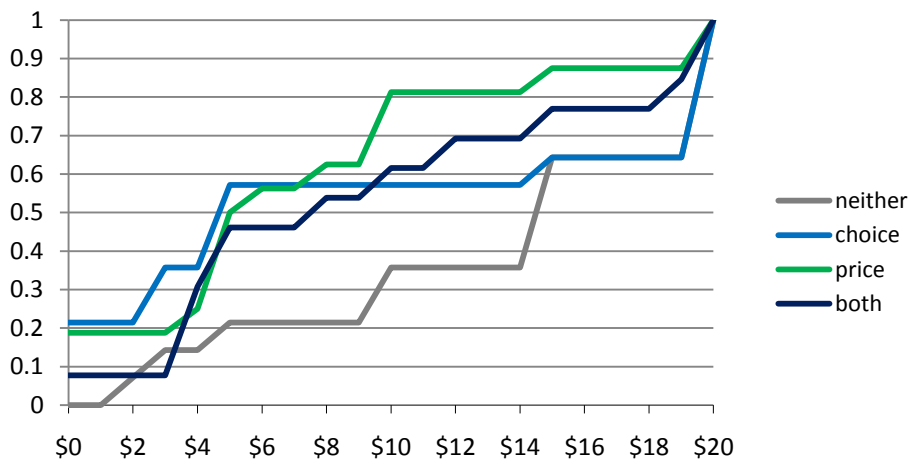


Figure 1: CDF's of Contribution Amounts: % of Subjects Contributing \$X or Less, by Treatment

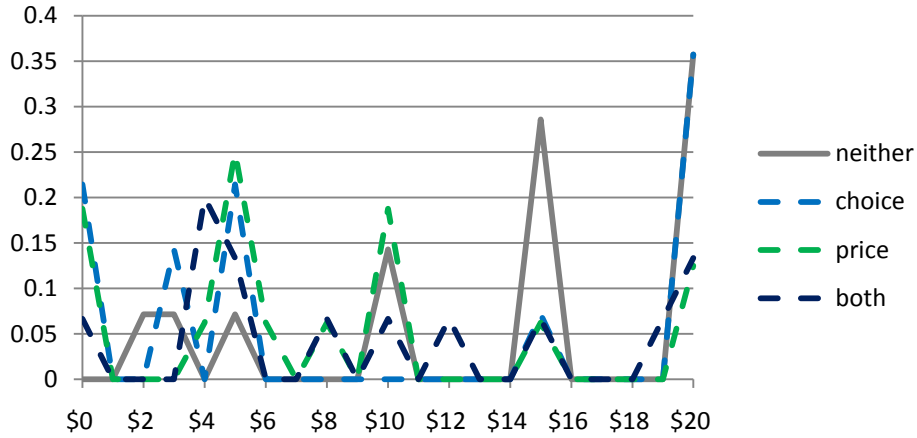


Figure 2: PDF's of Contribution Amounts: % of Subjects Contributing Each Amount, by Treatment

The negative effect from choice is somewhat surprising given the positive or insignificant effects found in the literature so far (Seigel (2006) and Null (2008)), and given that many subjects appear to like choice – they choose even when they don't have to – though such a finding is consistent with Duncan's (2004) model of impact philanthropy. However, we also see that some of the negative effect is deriving from more \$0 contributions in the choice treatment, indicating that choice overload may be present, potentially even causing some subjects to refrain from giving as well as from choosing, similar to behavior found by Iyengar and Lepper (2000), who noted that when faced with too many jam choices, more potential consumers refrain from purchasing than when faced with fewer choices. The number of choices presented here is relatively small, so perhaps even the single choice of whether or not to choose – that is, the choice between choosing or donating to the area of most need – imposes some cost that subjects avoid by refusing to give altogether. Additionally, if the decision between a blanket for one child and food for another is expected to be mentally or emotionally difficult to justify ex post, one might refrain from making the choice, or any choice, ex ante, to avoid regret.

Comparing the *price* treatment with the *neither* treatment and comparing the *both* treatment with the *neither* treatment, we see a little evidence that suggested donation levels (specifically the \$4, \$6, and \$8 thresholds) gather greater frequencies of contributions than we might otherwise expect, also found by Croson and Marks (2001). We also see that relatively low suggested gift amounts appear to be discouraging the maximum donation, which may indicate that prices are affecting norms; if one sees many low suggested contributions, one might think that she is not expected to give much. Because we know from other researchers (including Croson, Handy, and Shang, 2009, and Croson and Shang, 2009) that norms can affect giving, the next experiment will better control for norms by providing price points that are evenly distributed across the \$0-\$20 range. As we noted previously, the information that prices carry about the productivity of charitable dollars could cause giving to increase or decrease and, thus, we will continue to include this hypothesis among our group of potential contributors to the negative price effects.

Finally, we notice from the graphs that the distribution of contributions in the *both* treatment, while it shares some similarities to the distribution in the *price* treatment in that there is a lower frequency of contributions at the maximum, witnesses a lower frequency of contributions at the bottom of the distribution than in either of the distributions in the *choice* or *price* treatments. Something about the interaction is making the distribution of contributions less skewed to the left, suggesting a shift in behavior when one can “shop” for a charitable gift that does not quite exist when one simply makes a charitable donation while choosing or seeing prices alone. If people gain more utility from charitable gift-giving than from donating, then a catalogue might lead to greater contributions if the interaction term is large enough to overpower the two individual negative effects of choice and prices. When we test for these effects on a



broader set of demographics, we find that such a case is possible, though we also find some interesting differences in behavior depending upon one's age.

### 2.3 Experiment 2

To facilitate comparison, the experiment was kept as similar to the previous experiment as possible with the exception of a clarified donation form and an even distribution of price points (\$4, \$8, \$12, \$16, \$20), which partially controls for the potentially low norm that may have been established in the previous experiment.<sup>8</sup> In order to attain the even distribution of prices, items from the *Adventist Development and Relief Association* (henceforth, ADRA) gift catalogue were utilized as well as items from the *Samaritan's Purse* gift catalogue.<sup>9</sup> The items were milk, a soccer ball, school supplies, clean water for a family, and hot lunches for a month. Subjects were told that items came from two different charities, but the names were not revealed until the end of the experiment. Subjects were again given \$20 to split between themselves and charity, and a 50% match of contributions was again utilized. Because subjects could not physically watch a check being written, they were provided with a chance to request confirmation of the total amount given via e-mail through eLab (described below) to ensure anonymity. Subjects were informed that their contact information would not be revealed. 73 subjects requested confirmation.

The online experiment was run on adults ranging in age from 21 to 74, ranging in income from under \$5,000 to over \$100,000, and in education from completing less than high school to holding post-graduate degrees. Subjects were recruited via e-mail through eLab, an online panel

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<sup>8</sup> Previously, in the *neither* treatment, the average of the implied price points was  $10 = (20+0)/2$ , but in the *price* treatment, the average was  $(0+4+6+8+9+15+20)/7 = 8.86$ . Now, with or without prices, there is an implied norm of  $10 = (0+4+8+12+16+20)/6 = (20+0)/2$ .

<sup>9</sup> The *Adventist Development and Relief Agency* contained projects at the required price points and also guaranteed funding would be used where designated. Additionally, its project descriptions and pictures were similar to those of *Samaritan's Purse*, keeping the visual stimulus similar between this and the student experiment.

of survey and experiment participants maintained by Owen Graduate School of Management at Vanderbilt University. The subject pool is grown over time via online postings and currently contains about 80,000 potential participants. These potential subjects file tax information with the University, so duplicates are not a problem, and they provide many controls upon signing up (such as age and education), reducing the need for/length of post-experiment surveys. 132 subjects signed on between October 5<sup>th</sup> and 14<sup>th</sup>, 2009, to participate in the experiment and an additional 12 subjects signed on during the end of October, after the initial study completion date; they are included here along with the initial 132, with the intent to utilize all available data to the extent possible. Subjects were randomly assigned to treatments. Of the 144 subjects, 129 completed the experiment (90% of responders). 16 subjects were removed due to inconsistencies in their survey responses, leaving us with 113 observations with controls from the first experiment.<sup>10,11</sup> Appendix C contains screenshots of the experiment and survey. Summary statistics about the adult sample, as a whole and by treatment, appear in Table 5.

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<sup>10</sup> Among the dropped subjects, some provided education levels or ages (through birth years) below that of their responses when signing up with eLab, calling into question the validity of the other controls they provided. Other subjects incorrectly answered a question in the survey that indicated they were not paying attention. Subjects were asked to estimate the giving of other subjects in the experiment, which could be at most \$20. Subjects entering amounts greater than \$20 were either paying no attention or trying to confuse results, so they were removed from the dataset, though their inclusion or exclusion did little to affect results.

<sup>11</sup> Though three of these subjects did not complete the very end of the survey, which included some questions asked out of curiosity, they still provided all the needed controls and consistency checks. Results are similar if they are excluded.

Table 5: Subject Characteristics, Experiment 2

|                                     | All        | Neither  | Choice     | Price      | Both       |
|-------------------------------------|------------|----------|------------|------------|------------|
| Subjects                            | 113        | 29       | 29         | 29         | 26         |
| Gave in the Experiment              | 90.27%     | 89.66%   | 86.21%     | 86.21%     | 100.00%    |
| Average conditional on giving       | \$14.99    | \$14.38  | \$15.96    | \$15.28    | \$14.38    |
| Unconditional average               | \$13.53    | \$12.90  | \$13.76    | \$13.17    | \$14.38    |
| Given to charity last year          | \$1,631.74 | \$276.55 | \$3,003.00 | \$1,953.79 | \$1,254.62 |
| Heard of <i>Samaritan's Purse</i>   | 16.81%     | 13.79%   | 17.24%     | 27.59%     | 7.69%      |
| Donated to <i>Samaritan's Purse</i> | 8.85%      | 10.34%   | 3.45%      | 13.79%     | 7.69%      |
| Heard of ADRA                       | 1.77%      | 0.00%    | 0.00%      | 3.45%      | 3.85%      |
| Donated to ADRA                     | 0.88%      | 0.00%    | 0.00%      | 3.45%      | 0.00%      |
| Age                                 | 45         | 42       | 47         | 46         | 46         |
| Male                                | 50.44%     | 44.83%   | 65.52%     | 41.38%     | 50.00%     |
| Single, never married               | 23.01%     | 34.48%   | 10.34%     | 17.24%     | 30.77%     |
| Married                             | 57.52%     | 37.93%   | 65.52%     | 65.52%     | 61.54%     |
| Divorced/Separated                  | 15.04%     | 20.69%   | 17.24%     | 13.79%     | 7.69%      |
| Widowed                             | 0.88%      | 0.00%    | 3.45%      | 0.00%      | 0.00%      |
| Domestic Partner                    | 3.54%      | 6.90%    | 3.45%      | 3.45%      | 0.00%      |
| Income < \$5,000                    | 5.31%      | 6.90%    | 3.45%      | 3.45%      | 7.69%      |
| \$5,000-\$9,999                     | 2.65%      | 6.90%    | 3.45%      | 0.00%      | 0.00%      |
| \$10,000-\$14,999                   | 2.65%      | 0.00%    | 3.45%      | 3.45%      | 3.85%      |
| \$15,000-\$24,999                   | 7.08%      | 10.34%   | 3.45%      | 6.90%      | 7.69%      |
| \$25,000-\$34,999                   | 20.35%     | 20.69%   | 24.14%     | 20.69%     | 15.38%     |
| \$35,000-\$49,999                   | 21.24%     | 27.59%   | 13.79%     | 20.69%     | 23.08%     |
| \$50,000-\$74,999                   | 19.47%     | 13.79%   | 20.69%     | 20.69%     | 23.08%     |
| \$75,000-\$99,000                   | 8.85%      | 3.45%    | 13.79%     | 6.90%      | 11.54%     |
| \$100,000 +                         | 12.39%     | 10.34%   | 13.79%     | 17.24%     | 7.69%      |
| Less than High School               | 0.00%      | 0.00%    | 0.00%      | 0.00%      | 0.00%      |
| High School                         | 10.62%     | 10.34%   | 13.79%     | 6.90%      | 11.54%     |
| Some College                        | 33.63%     | 34.48%   | 37.93%     | 34.48%     | 26.92%     |
| College                             | 32.74%     | 31.03%   | 31.03%     | 37.93%     | 30.77%     |
| Some Graduate Studies               | 7.08%      | 3.45%    | 10.34%     | 3.45%      | 11.54%     |
| Graduate Degree                     | 15.93%     | 20.69%   | 6.90%      | 17.24%     | 19.23%     |
| Democrat                            | 30.09%     | 44.83%   | 17.24%     | 20.69%     | 38.46%     |
| Republican                          | 33.63%     | 27.59%   | 37.93%     | 48.28%     | 19.23%     |
| Independent                         | 30.97%     | 24.14%   | 37.93%     | 20.69%     | 42.31%     |
| Other                               | 5.31%      | 3.45%    | 6.90%      | 10.34%     | 0.00%      |
| Asian                               | 3.54%      | 3.45%    | 3.45%      | 0.00%      | 7.69%      |
| Black                               | 3.54%      | 3.45%    | 6.90%      | 3.45%      | 0.00%      |
| Hispanic                            | 0.88%      | 3.45%    | 0.00%      | 0.00%      | 0.00%      |
| White                               | 88.50%     | 89.66%   | 86.21%     | 96.55%     | 80.77%     |
| Other                               | 3.54%      | 0.00%    | 3.45%      | 0.00%      | 11.54%     |
| Religious (1/week or more)          | 24.78%     | 20.69%   | 31.03%     | 20.69%     | 26.92%     |
| Religious (1/month or more)         | 36.28%     | 27.59%   | 51.72%     | 34.48%     | 30.77%     |
| Jewish                              | 4.42%      | 10.34%   | 0.00%      | 3.45%      | 3.85%      |
| Hindu                               | 0.88%      | 0.00%    | 0.00%      | 0.00%      | 3.85%      |
| Muslim                              | 0.00%      | 0.00%    | 0.00%      | 0.00%      | 0.00%      |
| Catholic                            | 17.70%     | 13.79%   | 34.48%     | 13.79%     | 7.69%      |
| Protestant                          | 49.56%     | 51.72%   | 44.83%     | 58.62%     | 42.31%     |
| No religion                         | 18.58%     | 10.34%   | 13.79%     | 17.24%     | 34.62%     |
| Other                               | 8.85%      | 13.79%   | 6.90%      | 6.90%      | 7.69%      |

## 2.4 Experiment 2 Results

As noted in Table 5, average giving in this experiment was \$13.53, rather high relative to the last experiment (\$10.09). Conditional on giving, this average increases to \$14.99. The

fraction of subjects giving something was similar to that of the previous experiment at 90%, though the percent giving everything was much higher: 44% of subjects versus 25% in the previous experiment. These results contradict the findings of Eckel and Grossman (2000) who compare contributions in dictator games between volunteers (participants who are recruited and therefore opt in) and pseudo-volunteers (classroom participants who fail to opt out). They find pseudo-volunteers (classroom participants) to be more generous. However, their volunteers are also students, and their volunteers get paid at the end of the session in cash. Our volunteers (the online subjects) are not physically present and get paid a few weeks later by check. Many of them cited this reason or something similar when describing why they gave (so much) – they didn't have the money in their wallets. Classroom volunteers, on the other hand, though they didn't have the money in their wallets, could see the money pouch and knew that it contained cash. Even though the online experiment appears to encourage higher levels of giving, comparing across treatments should still give an accurate indication of the sign of any noticed differences.

If we examine the average given in each treatment in Table 6, we see weak evidence of the same story we found from the student sample. The *price* treatment still results in relatively low giving, though the *both* treatment results in the highest here. However, the averages are all very similar. The numbers in parentheses indicate the number of people in each category. We notice that donors who have the ability to choose and do so give more than donors who have the ability to choose but refrain, though differences between these donors within their respective treatments are not quite significant (one-tailed t-test p-values of 0.13 and 0.15 for the *choice* and *both* treatments, respectively). Additionally, comparing donors who had the option to choose but didn't exercise it to those who did not have the option (comparing donors in *neither* to those not

choosing in *choice* and donors in *price* to those not choosing in *both*), we see that those with the option to choose give less, though not significantly so (one-tailed t-test p-values were 0.46 and 0.14, respectively). We also notice that there are some \$0 contributions in the *neither*, *choice*, and *price* treatments bringing the averages down, but no \$0's in the *both* treatment. Figures 3 and 4, which contain cumulative distribution functions and probability density functions, respectively, highlight this difference, though it appears to be the only main difference between treatments.

Table 6: Average Giving by Treatment, Experiment 2

|                               |                |                             |                |
|-------------------------------|----------------|-----------------------------|----------------|
| <u>Neither treatment (29)</u> | <u>\$12.89</u> | <u>Price treatment (29)</u> | <u>\$13.17</u> |
| Donors (26)                   | \$14.38        | Donors (25)                 | \$15.28        |
| <u>Choice treatment (29)</u>  | <u>\$13.76</u> | <u>Both treatment (26)</u>  | <u>\$14.38</u> |
| Donors (25)                   | \$15.96        | Donors (26)                 | \$14.38        |
| Choosing (17)                 | \$16.82        | Choosing (19)               | \$15.21        |
| Not choosing (8)              | \$14.13        | Not choosing (7)            | \$12.14        |

\*\*\*, \*\*, and \* denote significant differences from the neither treatment at the 1%, 5%, and 10% levels (one-tailed t-tests). Carats are used similarly to denote differences conditional on giving. The number of subjects in each group is in parentheses.

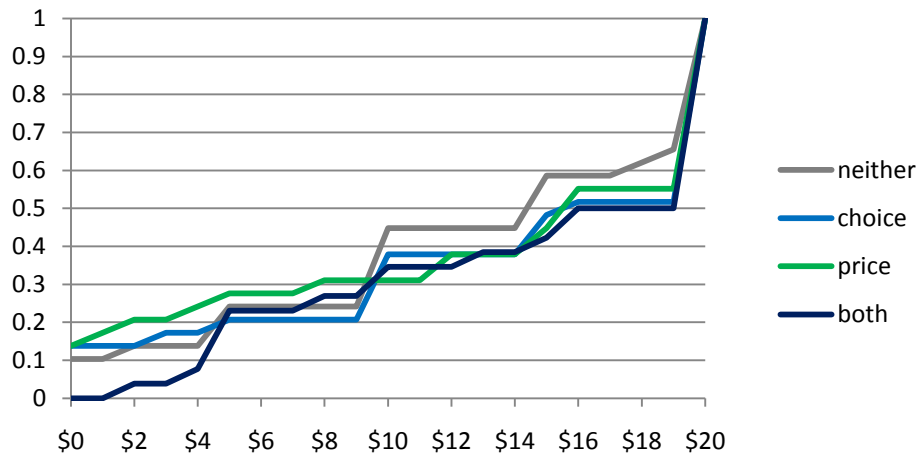


Figure 3: CDF's of Contribution Amounts by Treatment (Experiment 2)

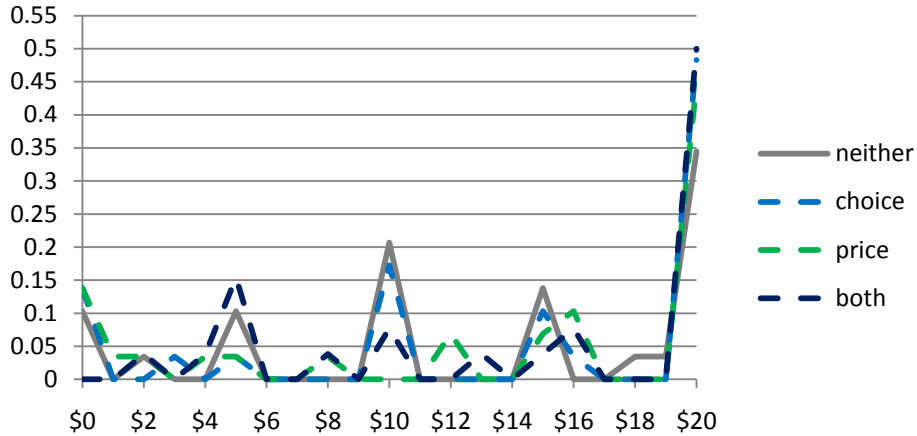


Figure 4: PDF's of Contribution Amounts by Treatment (Experiment 2)

As the above summary data would suggest, initial regression output indicated no significant effects from choice, from prices, or from their interaction. However, as discussed in the introduction, we have reason to believe that some of these effects might differ by age group. Thus, when we split the data by age, and interact an age indicator with treatment indicators, interesting results ensue. First, splitting by age and looking at averages (in Table 7) and densities (in Figures 5 and 6) we find that among the younger group, the highest average giving is in the *both* treatment and the lowest in the *price* treatment. The opposite appears for the older group. We again see that giving by those who chose is higher than giving by those who didn't choose within a particular treatment in all four cases, though significance is not attained (one-tailed t-test p-values of 0.19 and 0.23 for the young in the *choice* and *both* treatments, respectively, and 0.35 and 0.26 for the older). Additionally, giving by those who didn't choose but had the option to is lower than giving by those who didn't choose and didn't have the option to in three of four cases (for each age group, comparing donors who refrained from choosing in *choice* to donors in *neither* and comparing donors who refrained from choosing in *both* to donors in *price*), but with

little significance (one-tailed t-test p-values were 0.41 and 0.35 for the respective groups among the younger and 0.47 and 0.04 among the older).

Table 7: Average Giving by Treatment, Experiment 2

| Younger than 45 (53) \$11.25  |                |                             |                | 45 and Older (60) \$15.55     |                |                             |                |
|-------------------------------|----------------|-----------------------------|----------------|-------------------------------|----------------|-----------------------------|----------------|
| <u>Neither treatment (18)</u> | <u>\$11.89</u> | <u>Price treatment (11)</u> | <u>7.09*</u>   | <u>Neither treatment (11)</u> | <u>\$14.55</u> | <u>Price treatment (18)</u> | <u>\$16.89</u> |
| Donors (16)                   | \$13.38        | Donors (8)                  | \$9.75         | Donors (10)                   | \$16.00        | Donors (17)                 | \$17.88        |
| <u>Choice treatment (11)</u>  | <u>\$10.45</u> | <u>Both treatment (13)</u>  | <u>\$14.54</u> | <u>Choice treatment (18)</u>  | <u>\$15.78</u> | <u>Both treatment (13)</u>  | <u>\$14.23</u> |
| Donors (8)                    | \$14.38        | Donors (13)                 | \$14.54        | Donors (17)                   | \$16.71        | Donors (13)                 | \$14.23        |
| Choosing (4)                  | \$16.25        | Choosing (10)               | \$15.40        | Choosing (13)                 | \$17.00        | Choosing (9)                | \$15.00        |
| Not choosing (4)              | \$12.50        | Not choosing (3)            | \$11.67        | Not choosing (4)              | \$15.75        | Not choosing (4)            | \$12.50        |

\*\*\*, \*\*, and \* denote significant differences from the neither treatment at the 1%, 5%, and 10% levels (one-tailed t-tests). Carats are used similarly to denote differences conditional on giving. The number of subjects in each group is in parentheses.

Looking at Figure 5, we can see how, among the younger half of the sample, the *choice* and *price* treatments resulted in lower donations, especially in the *price* treatment, by accruing many donations at \$0 and many fewer donations at \$20. Among the older half of the sample, the opposite results appear in Figure 6, allowing us to start to identify unlikely theories of behavior. Choice overload and the avoidance of regret, for example, are each difficult to support now that we see a positive effect on giving and, in specific, a positive effect on giving (and only one person refraining) among the older, the group that is more prone to overload (Besedes, Deck, Sarangi, and Shor, 2008). The relatively low norms that our prices may have induced (as most of them were below the endowment) would suggest a possible negative effect from seeing prices for all groups, though we see a positive effect on donations from the older, calling into question the possibility that prices established low norms. We also notice in Figure 5 that the frequency of the maximum contribution is quite high among the young in the *both* treatment but relatively low among the older, consistent with a theory of a distinction between cash donations and

charitable gifts, as the older and the younger display different preferences for or adhere to different norms for giving cash and giving gifts, at least to family. Because differences appear in the experiments, we can postulate that preferences are driving norms rather than the other way around for, if social norms were driving preferences, we might not see differences in behavior between the older and the younger since the experiment abstracted from any social setting.

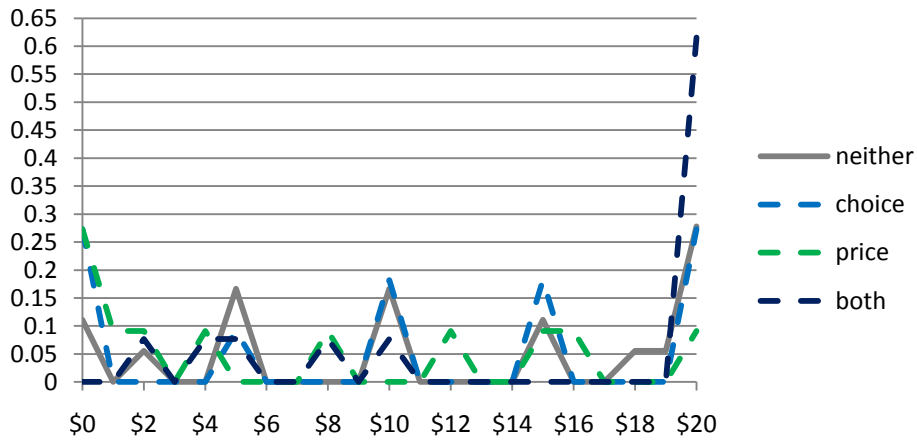


Figure 5: PDF's of Contribution Amounts (Younger than 45) by Treatment

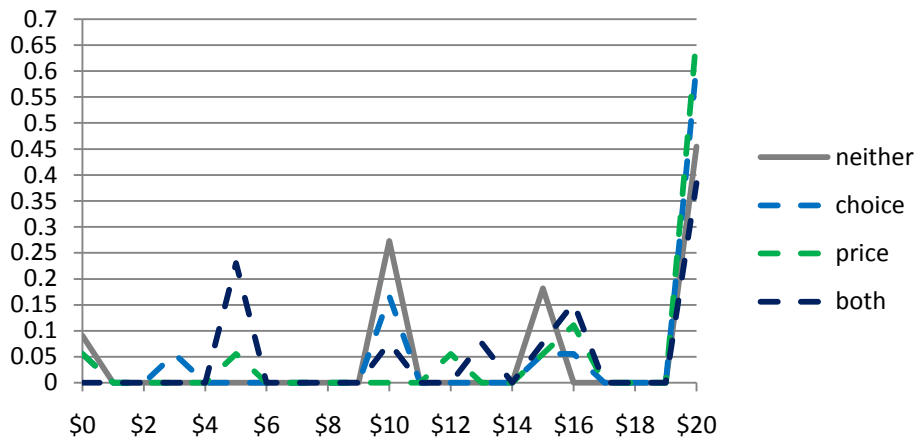


Figure 6: PDF's of Contribution Amounts (45 and Older) by Treatment



Table 8 reports the results of nonparametric equality of distribution tests, highlighting some differences between contributions in the *neither* treatment and the *price* treatment, and between those in the *price* treatment and the *both* treatment among the young, as well as between contributions by the older and the younger for each of the *price* and *choice* treatments. Figure 7 provides a graphical interpretation of these results. We notice that for the younger half of the sample, the distribution of contributions in the *both* treatment stochastically dominates the distributions in any other treatment, and the distribution of contributions in the *price* treatment is dominated by the distributions in all other treatments. We also see that the distributions of contributions from the older half of the sample dominate the distributions from the younger half with the exception of the distribution of contributions by the younger in the *both* treatment. Additionally, stark differences appear between donations of the older and the younger in the *choice* treatment and again between them in the *price* treatment.

Table 8: Distribution Tests

|                       | Younger than 45 |               |              | 45 and Older  |              |             |     |
|-----------------------|-----------------|---------------|--------------|---------------|--------------|-------------|-----|
|                       | <i>Choice</i>   | <i>Price</i>  | <i>Both</i>  | <i>Choice</i> | <i>Price</i> | <i>Both</i> |     |
| <i>Neither</i>        | 0.647           | 0.094         | 0.204        | 0.472         | 0.199        | 0.880       | WMW |
|                       | 0.974           | 0.213         | 0.276        | 0.848         | 0.377        | 1.000       | KS  |
| <i>Choice</i>         |                 | 0.405         | 0.160        |               | 0.606        | 0.353       | WMW |
|                       |                 | 0.833         | 0.374        |               | 0.840        | 0.740       | KS  |
| <i>Price</i>          |                 |               | 0.012        |               |              | 0.136       | WMW |
|                       |                 |               | 0.048        |               |              | 0.465       | KS  |
| Cross-age Comparisons |                 |               |              |               |              |             |     |
|                       | <i>Neither</i>  | <i>Choice</i> | <i>Price</i> | <i>Both</i>   |              |             |     |
|                       | 0.309           | 0.055         | 0.001        | 0.68          | WMW          |             |     |
|                       | 0.725           | 0.173         | 0.009        | 0.697         | KS           |             |     |

p-values reported from Wilcoxon-Mann-Whitney (WMW) and Kolmogorov-Smirnov (KS) tests.

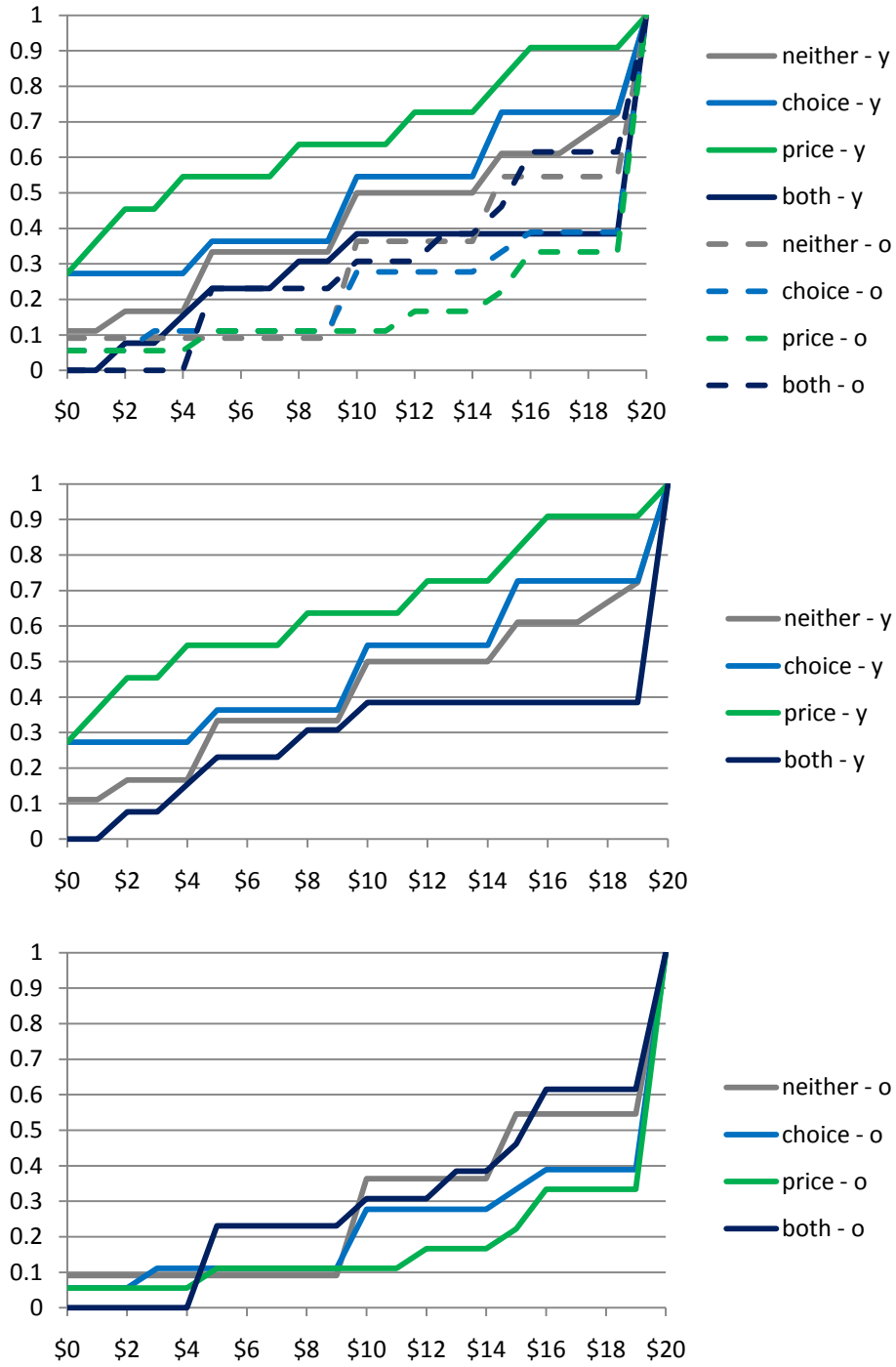


Figure 7: CDF's of Contribution Amounts by Treatment (Experiment 2, Split by Age)

Demand for giving is estimated as before, though we will slice the data by age to see a more descriptive picture of the behavior induced by the components of charitable gift catalogues.

Binary controls were included to account for gender, income, education, religiosity (defined as before), political affiliation, marital status, ethnicity, and broad categories of religious affiliation (Protestant and Catholic). Age was controlled for as well. Self-reported giving to charitable organizations in the previous year was also included, as was an indicator for subjects who had previously donated to either charity (9.7% of the sample; results are marginally weakened by its inclusion).

Income data are categorical with a median category containing income in the range of \$35,000-\$49,000. The 24 individuals in this category were included in the low income group when creating a binary income variable, resulting in a 59/41 split. Such a split seems reasonable given the median household income of \$52,175 reported by the U.S. Census Bureau's 2006-2008 American Community Survey. Similarly, education was also categorical with a median category of "college." The 37 individuals in this category were included in the high education group when creating a binary education variable, resulting in a 44/56 split. The median age of the sample was 46, though we will use 45 as the dividing line for ease of comparison with the next chapter (when combining all of the data from this and the next chapter, the median age is 45); ideally, we would like to compare those in their twenties to the students, but the sample size is not large enough.<sup>12</sup>

Table 9 reports results from "splitting" the sample by age and interacting indicators for each respective half with treatment indicators (specifications (1)-(3)).<sup>13,14</sup> To make clear any

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<sup>12</sup> Reducing the cutoff age of the dividing line somewhat is possible. For example, using an indicator separating by age 40 still yields 46 observations among the young. Results are similar to those reported here, with a little more significance on the coefficients of interest (the choice-price interactions) for the young and a little less for the older. Increasing the cutoff age to 46 yields similar regression coefficients, though one level of significance is lost on the coefficients of interest for the young and some of the coefficients of interest for the older. As we will see, opposite effects are found for the two age groups, with the young behaving similarly to the students. Thus, it is not surprising that increasing the dividing line weakens results slightly.

<sup>13</sup> Though "splitting" as detailed above does include some implicit assumptions that controls affect giving in the same way, regardless of age group, results are similar if we split the sample entirely.

interaction between choice and prices, in the last three columns, instead of treatment indicators, we interact the age indicator with indicators for choice, prices, and *their* interaction. Though any given treatment does not result in statistically different contributions than the baseline *neither* treatment, when we account for the fact that choice is present in the *choice* and *both* treatments and prices are present in the *price* and *both* treatments, we can see a significant interaction effect for each of the two age groups. For the young, the interaction effect is positive and significant, as it was among the student sample. For the older, it is negative and significant, explaining the lack of significance appearing without a split. Specifications (3) and (6) report coefficient estimates conditional on giving. Both interaction effects weaken, indicating that part of these effects are derived from changes on the extensive margin. Controls do not appear to be quite as important to giving among this sample as they were among the student sample, though marital status, political affiliation, and religious affiliation have statistically significant effects on giving.<sup>15</sup>

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<sup>14</sup> Age and age-squared are included along with the young-old indicator as we have evidence that the relationship between age and giving is quadratic (Clotfelter, 2002).

<sup>15</sup> Results are similar when varied groups, or all of the controls, are dropped, though we lose significance of the choice-price interaction among the older and gain some significance of other treatment indicators when very few controls are included.

Table 9: Regression Results, Unconditional and Conditional on Giving

| Dependent Variable:      | Amount Given         |                      |                      |                |                      |                      |                      |
|--------------------------|----------------------|----------------------|----------------------|----------------|----------------------|----------------------|----------------------|
|                          | Tobit                |                      |                      | OLS            |                      |                      |                      |
|                          | (1)                  | (2)                  | (3)                  | (4)            | (5)                  | (6)                  |                      |
| Y*choice treatment       | -5.006<br>(4.272)    | -2.218<br>(2.647)    | -0.281<br>(2.484)    | Y*choice       | -5.006<br>(4.272)    | -2.218<br>(2.647)    | -0.281<br>(2.484)    |
| Y*price treatment        | -6.194<br>(4.700)    | -4.103<br>(3.071)    | -3.394<br>(3.102)    | Y*price        | -6.194<br>(4.700)    | -4.103<br>(3.071)    | -3.394<br>(3.102)    |
| Y*both treatment         | 6.074<br>(5.193)     | 2.065<br>(2.888)     | 0.423<br>(2.716)     | Y*choice*price | 17.27**<br>(8.219)   | 8.386*<br>(4.696)    | 4.098<br>(4.391)     |
| Younger than 45          | 5.173<br>(7.111)     | 1.181<br>(4.052)     | -1.100<br>(3.270)    |                | 5.173<br>(7.111)     | 1.181<br>(4.052)     | -1.100<br>(3.270)    |
| O*choice treatment       | 5.409<br>(5.551)     | 2.049<br>(2.616)     | 0.871<br>(1.792)     | O*choice       | 5.409<br>(5.551)     | 2.049<br>(2.616)     | 0.871<br>(1.792)     |
| O*price treatment        | 9.513*<br>(5.446)    | 3.598<br>(2.704)     | 2.188<br>(1.853)     | O*price        | 9.513*<br>(5.446)    | 3.598<br>(2.704)     | 2.188<br>(1.853)     |
| O*both treatment         | -4.958<br>(4.792)    | -1.863<br>(2.535)    | -2.652<br>(2.184)    | O*choice*price | -19.88***<br>(7.399) | -7.509**<br>(3.651)  | -5.711*<br>(2.910)   |
| Age                      | -0.289<br>(0.722)    | -0.152<br>(0.424)    | -0.223<br>(0.396)    |                | -0.289<br>(0.722)    | -0.152<br>(0.424)    | -0.223<br>(0.396)    |
| Age squared              | 0.009<br>(0.007)     | 0.004<br>(0.004)     | 0.004<br>(0.003)     |                | 0.009<br>(0.007)     | 0.004<br>(0.004)     | 0.004<br>(0.003)     |
| High income              | 3.749<br>(3.188)     | 1.164<br>(1.653)     | 0.775<br>(1.526)     |                | 3.749<br>(3.188)     | 1.164<br>(1.653)     | 0.775<br>(1.526)     |
| Male                     | -2.791<br>(2.873)    | -0.863<br>(1.639)    | -1.198<br>(1.619)    |                | -2.791<br>(2.873)    | -0.863<br>(1.639)    | -1.198<br>(1.619)    |
| Married                  | -7.658**<br>(3.796)  | -3.234*<br>(1.875)   | -3.637**<br>(1.644)  |                | -7.658**<br>(3.796)  | -3.234*<br>(1.875)   | -3.637**<br>(1.644)  |
| Single                   | 1.073<br>(3.937)     | 0.392<br>(2.154)     | -0.267<br>(1.902)    |                | 1.073<br>(3.937)     | 0.392<br>(2.154)     | -0.267<br>(1.902)    |
| High education           | -1.984<br>(2.649)    | -1.034<br>(1.396)    | -0.745<br>(1.249)    |                | -1.984<br>(2.649)    | -1.034<br>(1.396)    | -0.745<br>(1.249)    |
| Religious                | 5.028<br>(3.542)     | 2.112<br>(1.899)     | 3.521**<br>(1.586)   |                | 5.028<br>(3.542)     | 2.112<br>(1.899)     | 3.521**<br>(1.586)   |
| Democrat                 | -10.02***<br>(3.194) | -3.841**<br>(1.614)  | -2.967*<br>(1.628)   |                | -10.02***<br>(3.194) | -3.841**<br>(1.614)  | -2.967*<br>(1.628)   |
| Republican               | -11.18***<br>(3.378) | -4.800***<br>(1.629) | -2.315<br>(1.437)    |                | -11.18***<br>(3.378) | -4.800***<br>(1.629) | -2.315<br>(1.437)    |
| White                    | -5.108<br>(3.415)    | -1.490<br>(1.772)    | -0.350<br>(1.743)    |                | -5.108<br>(3.415)    | -1.490<br>(1.772)    | -0.350<br>(1.743)    |
| Donated before           | -1.281<br>(4.469)    | 0.281<br>(2.107)     | -2.004<br>(1.903)    |                | -1.281<br>(4.469)    | 0.281<br>(2.107)     | -2.004<br>(1.903)    |
| Charitable contributions | 0.000<br>(0.000)     | 0.000<br>(0.000)     | 0.000176*<br>(0.000) |                | 0.000<br>(0.000)     | 0.000<br>(0.000)     | 0.000176*<br>(0.000) |
| Catholic                 | -7.847*<br>(4.629)   | -2.896<br>(2.485)    | -2.698<br>(2.387)    |                | -7.847*<br>(4.629)   | -2.896<br>(2.485)    | -2.698<br>(2.387)    |
| Protestant               | -6.566**<br>(3.264)  | -2.818*<br>(1.639)   | -3.790***<br>(1.381) |                | -6.566**<br>(3.264)  | -2.818*<br>(1.639)   | -3.790***<br>(1.381) |
| Constant                 | 26.75<br>(21.48)     | 18.94<br>(12.82)     | 23.87**<br>(11.80)   |                | 26.75<br>(21.48)     | 18.94<br>(12.82)     | 23.87**<br>(11.80)   |
| Pseudo/R-squared         | 0.10                 | 0.34                 | 0.32                 |                | 0.10                 | 0.34                 | 0.32                 |
| Prob > F                 | 0.0020               | 0.0000               | 0.0005               |                | 0.0020               | 0.0000               | 0.0005               |
| Observations             | 113                  | 113                  | 102                  |                | 113                  | 113                  | 102                  |

11 left-censored, 52 uncensored, 50 right-censored.

Robust standard errors in parentheses. \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1.

### 3 Discussion

After observing the expansion of the *Samaritan's Purse* gift catalogue from 10 to 40 items over the course of a few years, and after noting the appearance of gift catalogues on the

websites of many other nonprofits (*Alternative Gifts International*, *World Vision*, and *Amazima*, to name a few), it seems natural to assume that this strategy results in an increase in contributions. The evidence provided in this paper suggests that it may, though the effect of a catalogue on contributions depends upon the combined effects of its components. For the young, in both the student and online samples the isolated effects of choice and prices are each negative, and the interaction between the two is positive (and significant in both experiments), but the combined effect of the three depends upon the sample. Among the students the combined effect is negative and significant. Among the younger half of the online sample the combined effect is positive and insignificant. Among the older half of the online sample the isolated effects of choice and prices are each positive, and the interaction between the two is negative (and significant), for a combined negative but insignificant effect of the three. Regardless of overall effects of a catalogue found here, it appears that there exists some combination of choice and prices that lead to a positive combined effect: since the interaction effect has the opposite sign of the individual effects, it should be possible to design a catalogue that results in more giving if the positive effect(s) outweigh the negative effect(s), though it also appears that this design will differ for different age groups.

The moral of the story, then, from a nonprofit's point of view is that prices but not choice should be provided for older donors and either both or neither should be provided for younger donors, depending upon the nonprofit's confidence about the combined effect as well as the cost to recipients of potentially binding constraints (from allowing donors to designate). That is, even if more would be contributed through a catalogue, recipients might not necessarily be better off if the items donors choose to contribute to are not the items the recipients themselves need. However, if a large enough proportion of contributions are left undesignated, then designations

will have no effect. It is interesting to note that organizations such as *Heifer International* and *Oxfam America* operate in an environment analogous to the *price* treatments – donors know prices, but they cannot choose the allocation of their donations. (Technically, they can engage in the act of choosing but donations are not allocated according to donor choices, which is clearly stated.) Based on the results of the experiments examined, such a strategy would seem to be the best choice if the majority of donors are in their late-forties or older but the worst choice if the reverse is true.

The moral of the story from an economist's point of view? A fundamental shift occurs when charitable donations become charitable gift purchases through the interaction between choice and prices, an interaction that we found to be significant, though differing in sign by age. For the young, the skeptical reader could argue that choice alone is a nuisance and prices alone are not meaningful, but choice and prices are complementary, providing a significant positive interaction. However, the same argument would not work for the older. Choice is meaningful, prices are meaningful, but together they cease to be? The significant interaction effects we found suggest that by combining choice and prices, charities successfully alter perceptions of the transaction from a charitable donation to a charitable gift purchase, and that the two are not mentally coded in the same fashion. We have seen evidence that donations and gift purchases enter the utility function separately, and they may even be drawn from different budgetary accounts. In any case, we need an additional dimension in our analysis of charitable contributions since a gift is not mentally equivalent to a donation.

To account for this additional dimension, we could suppose that utility is a function of private consumption, one's charitable donations, and one's charitable gifts, where dollars donated cannot be added directly to dollars spent on gifts. A simple utility function could look

something like the following:  $U(x, d, g) = u(x) + v(d) + z(g)$ , where  $x$  represents private consumption,  $d$  dollars spent on charitable donations, and  $g$  dollars spent on charitable gifts, their sum equaling the endowment. Contributions from others are ignored for ease, and choice and prices are assumed to be held constant.<sup>16</sup> We know that they, too, may have some effects on behavior, but we want to focus on the effect of their interaction. The functions  $v(\cdot)$  and  $z(\cdot)$  could be transforming contributions into “warm glow,” appearing in some form or another as early as Becker (1974) and formalized by Andreoni (1989, 1990), or into charitable output (combining intuition from the traditional public goods models (for example, Bergstrom, Blume, and Varian, 1986) with intuition from Duncan (2004), that a person cares about production resulting from *her* contributions), etc., or some amalgam. For our purposes it does not really matter so long as  $v(\cdot) \neq z(\cdot)$  when holding constant prices and choice. That is, when the effects of prices and choice are fixed, if the two functions are the same, glow or charitable output will not change with a shift from charitable donation to charitable gift purchase, but we have seen evidence that the contributor’s utility does change with such a shift. Thus,  $v(\cdot) \neq z(\cdot)$  when holding constant prices and choice.

Utility is additively separable, allowing for the many corner solutions witnessed in the experiments, and similar to others in the literature (for example, DellaVigna, List, and Malmendier, 2009). Let  $u' > 0, v' > 0, z' > 0, u'' < 0, v'' < 0, z'' < 0, u(0) = v(0) = g(0) = 0$ , then beginning at a corner solution of no giving, dollars to charity may increase when charitable donations begin to feel more like purchases of charitable gifts so long as the utility from charitable gift-giving exceeds the utility from donating in the traditional manner; if the

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<sup>16</sup> Technically, we are holding constant not only the suggested gift amounts but also whether or not they appear, as “prices” here are capturing the informational component of suggested gift amounts. A change in prices, here, would mean that the suggested gift amounts are included or excluded. Charities cannot truthfully alter any specific good’s price in order to increase contributions because the prices, or suggested gift amounts, provide contribution levels that cover costs of provision. We assume charities truthfully report these costs.



inequality is reversed, we would continue to see no donations. Beginning at an interior, dollars to charity will increase when charitable donations begin to feel more like purchases of charitable gifts if the marginal utility of gift-giving exceeds the marginal utility of donating; if the inequality is reversed, contributions would decrease. Beginning at a corner solution of no private consumption, dollars to charity will remain at the entire endowment if the utility from gift-giving exceeds the utility from donating; if the reverse inequality holds, contributions may decrease. Thus, if the interaction between choice and prices transforms a donation into a gift purchase, we would expect to see some changes in the amounts given, and we did. Interestingly, these changes differed by age group, suggesting that traditional gift-giving norms affect glow from giving or, alternatively, differences in utility from giving cash versus in-kind gifts may be driving norms. Since it is more likely that we would see differences in behavior in an abstract setting if preferences are driving norms rather than the reverse, we will assume this is the case, though acknowledge that the reverse causality may be possible. If we suppose that older people have had more time and experience to help them to realize that their preferences are not representative, they may derive more utility from giving cash than giving gifts, yielding the norm that we see and the results in the experiment.

Though the distinction between charitable gift and charitable donation may occur only in one's objective function, casual observation and conversation indicate that charitable gift purchases and charitable donations may be drawn from different budget accounts. If charitable gift purchases are mentally coded as something other than traditional charitable donations, it is plausible to suppose that they may be taken out of a private account rather than a traditional charity account, especially if they are purchased at the store while shopping for private consumption goods. In the experiments examined here, subjects were endowed with \$20, a

small windfall that could have been added to any account (or given its own), lessening any potential effects from binding constraints. Thus, even if charitable gifts and charitable donations come out of different accounts, by providing money to subjects to begin with, differences in behavior due to mental accounting are likely to be less pronounced than if subjects were not endowed. If the same experiment was conducted without providing the windfall, mental constraints would be more likely to bind. Comparing behavior of those with an endowment and those without could yield insights about the existence of mental accounting effects on contributions. In any case, the significant interaction between choice and prices, an interaction that provides donors with a gift purchase experience, suggests a fundamental shift in mental coding, either in utility “accounts” alone or also in budget accounts, but a shift nonetheless. Now that we know it exists, it will be an interesting challenge to determine its exact whereabouts and to see when and how the interaction can lead to enhanced giving.

The moral of the story for the academic is that there is much work left to be done, though the study allows us to rule out some unlikely contributors to behavior. With respect to choice, Duncan’s (2004) model of impact philanthropy appears to be most consistent with findings, as it allows for negative or positive effects from choice since in it choice alters donors’ perceived impacts. The opposite effects by age group could be accounted for by a plausible assumption that perceptions of impact may change as one ages, gaining experience as a donor and information about charitable outcomes.

Though we find some negative effects from choice, as mentioned previously, Siegel (2006) finds no effect of choice on charitable contributions in a field experiment soliciting donations for a Dutch nonprofit. However, only two broad categories were provided to choose from and she notes that the option to choose may have been unnoticed on the donation form.

Though Siegel finds no effect from offering donors choice, Null (2008) notes that when subjects are asked to divide a fixed donation between “their” charity (a club or group of which they are a member) and another charity which offers a choice between two items, subjects substitute away from their charity to the one offering choice. However, her experiment utilized a within-subjects design, which may have encouraged subjects to change behavior when parameters were altered. Additionally, the total amount donated to both charities was held fixed by design. The fact that subjects substituted towards the charity offering choice, however, may provide some intuition behind the increasing appearance of gift catalogues. Even if the overall effect on contributions is insignificant or even negative, holding donors constant, providing a charitable gift catalogue may be less harmful than losing donors to other charities. The negative effects from choice found in the between-subjects experiments presented here appear to stem in part from people who refrain from giving entirely. Those who do choose, however, tend to give (insignificantly) more, consistent with Null’s findings of a positive effect from choice.

Finally, we should note that the negative effects we witnessed were among a young sample. Siegel’s sample spanned the age range of donors to the Dutch nonprofit she worked with, presumably a broad range of ages, which might help explain the lack of results as we noticed here opposite (though insignificant) effects of choice on contributions of the younger and the older halves of the online sample. Null conducted experiments among members of Kiwanis, Lions, and Rotary clubs. Though not necessarily older, it is probable that her subjects are relatively older, which might help to explain the positive effect of choice that she found.

Finally, we might wonder why we saw negative price effects for some groups but positive for others when any implied norm or implied efficiency of the charity should be the same for either group. To try to gain understanding about the differing behavior, an out-of-

sample survey of students and a post-experiment survey of the online sample asked subjects to estimate prices of the projects/goods described in the experiments to ascertain whether or not prices were lower or higher than expected. One clear conclusion can be drawn from these survey responses: subjects had no idea what charitable goods cost. Standard deviations were often the size of mean estimates and sometimes much larger, though the median estimates were not terribly far from actual prices in most cases. The reason why these prices produced opposite effects is puzzling, though we will posit that the information they contain about efficiency/productivity could still be driving the opposing effects, even though both groups provided roughly similar price estimates. Recall that prices that are lower or higher than expected can affect contributions in either direction. Thus, opposite effects can be witnessed. We could confirm our theory by “changing” prices across treatments and looking for opposite effects in behavior of the older and younger subjects.<sup>17</sup> Though we cannot deceive subjects about the costs of goods to nonprofits, there do exist some homogeneous goods provided by multiple nonprofits but at different prices (mosquito nets, for example). If “raising” and “lowering” their prices lead to opposite behavior among the older and younger, we could argue that prices are affecting contributions through the information they provide about the efficiency of the charity (or the purchasing power of charitable dollars), causing some subjects to give more when charitable dollars are very productive and some subjects to give less.

#### 4 Concluding Remarks

If young people give more when they can shop for a charitable gift than we would expect them to give based on the separate effects of choice or of prices alone, then we can argue that a

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<sup>17</sup> We already know that changing effective prices (through matching donations) can affect behavior (see Eckel and Grossman, 2003, and Karlan and List, 2007, for example), but this would let us know if changing the informational component of prices (what they imply about the productivity of charitable dollars) can affect behavior.

catalogue creates the potential to turn a donation into a gift purchase in the mental coding of contributors. In fact, in some cases, a good actually arrives on *your* doorstep. The *Samaritan's Purse* gift catalogue is one of a few that contain the option of contributing in honor of a friend or family member in place of a birthday or Christmas gift, for example. I can choose to give a goat to a family in Honduras in honor of my brother instead of buying him a gift directly, and he will receive a card from the charity, describing "his" gift. While an interesting alternative to a traditional gift, how is such a transaction coded? In utility? In one's budget? What are the effects on total contributions? If transforming a charitable donation into a charitable gift can produce an increase in contributions, what will be the effect seen if a charitable gift is transformed into a substitute for a traditional gift or an addition to it? The next chapter begins to address these questions.

Another interesting strategy that might be tapping into the different mental perceptions of donations and gifts is a method utilized by *World Vision*. The nonprofit offers gifts to donors who contribute to their "Maximum Impact Fund," gifts such as stuffed animals or bracelets which may be kept for oneself or given away as presents. If I send money to *World Vision* and receive a present for myself or for a friend or family member, is that present considered private consumption, traditional gift, or charitable donation? How will that mental coding affect the total amount contributed? If transforming a charitable donation into a charitable gift purchase can affect contributions, might we also see a change in behavior when a charitable donation is combined with a traditional gift? These questions will be addressed in future work.

## Appendix A: Pilot Experiments

Early pilots provided some intuition about donor behavior by revealing interesting distributional differences, as evidenced in Table A.1 below, motivating further study.

Table A.1: Distribution Tests

|                | <i>Choice</i> | <i>Price</i> | <i>Both</i> |     |
|----------------|---------------|--------------|-------------|-----|
| <i>Neither</i> | 0.061         | 0.562        | 0.141       | WMW |
|                | 0.160         | 0.029        | 0.114       | KS  |
| <i>Choice</i>  |               | 0.043        | 0.814       | WMW |
|                |               | 0.001        | 0.809       | KS  |
| <i>Price</i>   |               |              | 0.087       | WMW |
|                |               |              | 0.029       | KS  |

p-values reported from Wilcoxon-Mann-Whitney (WMW) and Kolmogorov-Smirnov (KS) tests.

The pilots followed a dictator game design utilized by Andreoni and Vesterlund (2001) and modified by Eckel and Grossman (2000, 2003, 2006). Subjects completed 12 allocation problems with varying endowments and contribution match rates. One of the 12 problems was randomly chosen to be enacted, and subjects and the charity were paid based on that problem. Payment envelopes and code numbers were utilized to ensure anonymity. As in Eckel and Grossman (2000, 2003, 2006), donations accrued to charity, though subjects did not have a choice among charities to avoid confounding effects between choice of charity and choice of project. All donations accrued to *Samaritan's Purse*.

The first pilot was run on 47 students during class time in an introductory economics course at Kennesaw State University in Georgia. It contained two treatments, *choice* and *neither* (Kolmogorov-Smirnov and Wilcoxon-Mann-Whitney p-values of 0.01 and 0.06). In both treatments, pictures and project descriptions were presented to subjects in a fashion meant to

mimic a catalogue of five items. Endowment levels were set at \$8, \$10, and \$12, and matching rates at 0, 25, 50, and 100% for 3x4=12 problems per subject. In the treatment *neither*, the subject divided her endowment in each problem between herself and the charity's "area of most need." In the *choice* treatment, again the subject divided her endowment in each problem between herself and the charity, but she could designate donations to one or more of the five projects listed as well as to the area of most need.

The second pilot was run at the University of Colorado at Colorado Springs in 3 classroom sessions (introductory accounting, economics, and sociology), also during class time, with 75 subjects total. This experiment contained four treatments (*neither*, *choice*, *price*, and *both*, though project prices exceeded endowments in some decisions, so the *both* treatment did not capture a complete effect of combining choice and prices). Again, in all treatments, pictures and project descriptions were presented, similar to providing a catalogue (also, with five items). Subjects in the *choice* and *both* treatments could designate donations to one or more specific projects (or the area of most need). Subjects in the *price* and *both* treatments saw one additional line in each project description providing the price; these subjects also saw the price in a separate line, though it was framed as a "suggested gift amount," the framing that charities use. The same match rates were used as were utilized in the first pilot, but endowments were set to \$25, \$50, and \$75, although only 20% of subjects were paid beyond a \$5 show-up fee. (One out of every five payment envelopes was randomly drawn from a box.) The projects used for this experiment differed from the previous experiment to ensure a broad range of price points (\$6, \$15, \$25, \$45, \$60), a strategy that appears to be employed by nonprofits.

Although we saw distributional differences in many of the pair-wise treatment comparisons, the experiments were redesigned for the following reasons: (1) when every subject

is making 12 choices about *how much* to give, it is difficult to determine effects from *a* choice of *what* to give, (2) when subjects in the *price* and *both* treatments can afford every project in some of the 12 allocation problems but not in others, changes in behavior may be elicited that would not otherwise occur, (3) when some projects are affordable and some are not, it is difficult to capture a true interaction between choice and prices, the focus of this paper, and (4) the 12-problem design resulted in some charitable gambling – a sizable proportion of subjects created lotteries for themselves in which the payoff was high (low) in most of the 12 problems and low (high) in one or two, rendering giving behavior difficult to interpret. Therefore, the experiments were redesigned so that each subject made one decision and all subjects faced the same endowment in that decision. Additionally, the charitable gambling witnessed in the pilot experiments prompted the research of Chapter 3, which addresses the effects of payment salience on risk aversion.



## Appendix B: Experiment 1 Documents

The design of these documents benefited greatly from Eckel and Grossman (2003).

### INSTRUCTIONS

You are asked to participate in a study of decision making. You must be at least 18 to participate. Participation is not required by your professor, nor will your professor know who participated. The study will last about *45 minutes*. You will receive compensation for your participation, which will be paid to you in cash at the end of the study. How you will be compensated is explained below. Please do not discuss this experiment with any other participant until you have left the classroom. Talking during the experiment will result in a loss of compensation. Please do not proceed in the packet until you are told to do so.

To insure the anonymity of all participants' decisions, each participant has been assigned randomly a five-digit code number. This number can be found on the CLAIM SLIP that has been distributed to you. Please keep this CLAIM SLIP and remember this number. You will collect your compensation for participating by this code number.

Each participant has been given an INFORMATION SHEET describing the services provided by *Samaritan's Purse*, a nonprofit organization involved in international relief and development. *Samaritan's Purse* has been given the highest rating (4-stars: exceptional) by *Charity Navigator*, an independent nonprofit evaluator.

Also in your packet is a DECISION SHEET, which contains one problem with an endowment (i.e., an initial amount of money) of \$20. You are asked to decide how much of this money you would like to keep and how much you would like to go to the charity. You will notice that there is a 50% match on all donations. The experimenter will send to the charity an additional \$0.50 for every dollar donated. After you have made your decision, you will place your DECISION SHEETS in a box that I will send around the room. Then you will be given a SURVEY. After you have filled out the survey, you will be paid via envelopes with your code numbers on them.

**In your decision, you may choose any amount for the charity or for yourself, but the amount you pass to the charity plus the amount you keep for yourself must add up to \$20.** The amount you keep will be yours to leave with as payment for your time; it will be placed in your envelope, which will be placed in a box. When you finish the survey, you may come and exchange your claim slip for your envelope.

After the study ends, I will add up all the donations and send them to the charity. Any participant who wishes to monitor this process is welcome to do so. If you would like to receive confirmation from *Samaritan's Purse*, please provide an address at the bottom of your decision sheet (it does not require a name). You may also contact me at [tamara.l.trafton@vanderbilt.edu](mailto:tamara.l.trafton@vanderbilt.edu) to learn of the total amount donated. I will be glad to e-mail and/or mail a copy of the receipt to you should you contact me with such a request.

**If you have any questions about the procedures, please ask now.**

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CLAIM SLIP

CODE NUMBER: \_\_\_\_\_

## INFORMATION SHEET (No Prices)

*Samaritan's Purse* is a nonprofit organization involved in international development and relief efforts in undeveloped regions of the world. The following quote was taken from the nonprofit's mission statement as it appears on the *Charity Navigator* website. The pictures below were taken from the *Samaritan's Purse* website, as were the descriptions of some of the projects that *Samaritan's Purse* is involved in (the descriptions were condensed).



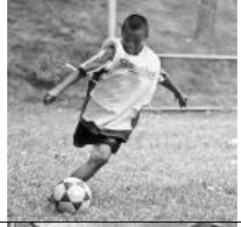


"Our emergency relief programs provide desperately needed assistance to victims of natural disaster, war, disease, and famine. As we offer food, water, and temporary shelter, we meet critical needs and give people a chance to rebuild their lives. We impact the lives of vulnerable children through educational, feeding, clothing, and shelter programs that let them know they are not forgotten. In addition, we carry out medical projects and supply mission hospitals with much needed equipment and supplies. Our programs in impoverished villages and neighborhoods help people break the cycle of poverty and give them hope for a better tomorrow."

|   |   |
|---|---|
|    | <p style="text-align: center;"><b>Milk</b></p> <p style="text-align: center;">Delicious taste and nine essential nutrients make milk an ideal gift to help girls and boys overcome malnutrition. Sadly, milk is hard to come by for children living in poverty. That's why Samaritan's Purse supplies healthy items like milk to schools, orphanages, and hospitals in many impoverished areas.</p> <p style="text-align: center;"><i>Milk &amp; Nutrition Projects 013753</i></p>  |
|   | <p style="text-align: center;"><b>Warm Blankets</b></p> <p style="text-align: center;">A cold night is often a sleepless night for a family left homeless by war or natural disaster.</p> <p style="text-align: center;"><i>Blankets &amp; Bedding 013436</i></p>   |
|  | <p style="text-align: center;"><b>Sports Gear</b></p> <p style="text-align: center;">A soccer ball can turn an empty lot into a playground and bring great joy to children who have seen more than their share of suffering. Yet a soccer ball is a luxury many families cannot afford when they have a hard time meeting basic needs.</p> <p style="text-align: center;"><i>Balls &amp; Recreational Items 013658</i></p>  |
|  | <p style="text-align: center;"><b>Feed a Hungry Baby</b></p> <p style="text-align: center;">A happy baby snuggles in his mother's lap as she spoon-feeds him nutritious porridge. When she brought her son to our feeding center two weeks before, he was too weak to do more than cry. He is one of the fortunate ones. Malnutrition claims millions of young lives each year and leaves many others with physical and mental disabilities.</p> <p style="text-align: center;"><i>Child Feeding Projects 013710</i></p>  |
|  | <p style="text-align: center;"><b>Teach a Child to Read &amp; Write</b></p> <p style="text-align: center;">Without an education, boys and girls in the world's poorest countries stand little chance of escaping a life of hard labor, hunger, and hopelessness. Unfortunately, impoverished parents can barely afford to feed their children and have no money for schooling. Around the world, Samaritan's Purse supports a variety of education and literacy projects that bring children the instruction necessary to build a brighter future.</p> <p style="text-align: center;"><i>Education &amp; Literacy Projects 013700</i></p> |

## INFORMATION SHEET (Prices)

*Samaritan's Purse* is a nonprofit organization involved in international development and relief efforts in undeveloped regions of the world. The following quote was taken from the nonprofit's mission statement as it appears on the *Charity Navigator* website. The pictures below were taken from the *Samaritan's Purse* website, as were the descriptions of some of the projects that *Samaritan's Purse* is involved in (the descriptions were condensed).

"Our emergency relief programs provide desperately needed assistance to victims of natural disaster, war, disease, and famine. As we offer food, water, and temporary shelter, we meet critical needs and give people a chance to rebuild their lives. We impact the lives of vulnerable children through educational, feeding, clothing, and shelter programs that let them know they are not forgotten. In addition, we carry out medical projects and supply mission hospitals with much needed equipment and supplies. Our programs in impoverished villages and neighborhoods help people break the cycle of poverty and give them hope for a better tomorrow."

|   |  |
|---|--|
|    | <p style="text-align: center;"><b>Milk</b></p> <p>Delicious taste and nine essential nutrients make milk an ideal gift to help girls and boys overcome malnutrition. Sadly, milk is hard to come by for children living in poverty. That's why Samaritan's Purse supplies healthy items like milk to schools, orphanages, and hospitals in many impoverished areas. Just \$4 can provide a week's worth of milk.</p> <p style="text-align: center;"><i>Milk &amp; Nutrition Projects 013753      Suggested Gift: \$4</i></p>   |
|   | <p style="text-align: center;"><b>Warm Blankets</b></p> <p>A cold night is often a sleepless night for a family left homeless by war or natural disaster. For \$6, we can provide a victim of war or disaster with a blanket.</p> <p style="text-align: center;"><i>Blankets &amp; Bedding 013436      Suggested Gift: \$6</i></p>   |
|  | <p style="text-align: center;"><b>Sports Gear</b></p> <p>A soccer ball can turn an empty lot into a playground and bring great joy to children who have seen more than their share of suffering. Yet a soccer ball is a luxury many families cannot afford when they have a hard time meeting basic needs. A gift of \$8 can purchase a ball or other sports gear.</p> <p style="text-align: center;"><i>Balls &amp; Recreational Items 013658      Suggested Gift: \$8</i></p>  |
|  | <p style="text-align: center;"><b>Feed a Hungry Baby</b></p> <p>A happy baby snuggles in his mother's lap as she spoon-feeds him nutritious porridge. When she brought her son to our feeding center two weeks before, he was too weak to do more than cry. He is one of the fortunate ones. Malnutrition claims millions of young lives each year and leaves many others with physical and mental disabilities. Your gift of just \$9 can help Samaritan's Purse feed a young child or a nursing mother for a week.</p> <p style="text-align: center;"><i>Child Feeding Projects 013710      Suggested Gift: \$9</i></p>  |
|  | <p style="text-align: center;"><b>Teach a Child to Read &amp; Write</b></p> <p>Without an education, boys and girls in the world's poorest countries stand little chance of escaping a life of hard labor, hunger, and hopelessness. Unfortunately, impoverished parents can barely afford to feed their children and have no money for schooling. Around the world, Samaritan's Purse supports a variety of education and literacy projects that bring children the instruction necessary to build a brighter future. A gift of \$15 can provide a month's tuition or school supplies.</p> <p style="text-align: center;"><i>Education &amp; Literacy Projects 013700      Suggested Gift: \$15</i></p> |

**DECISION SHEET (No Choice)**

CODE NUMBER: \_\_\_\_\_

Please make your decision now. You may take as much time as you need. *Please be sure that the total amount you pass to charity plus the amount you keep adds up to the endowment of \$20 (the match will be calculated for you).*

| Endowment | Match  | Pass to charity (total from you) | Keep for self |
|-----------|--|----------------------------------|---------------|
| \$20.00   | For every dollar you pass to the charity, the experimenter will match it with an additional \$0.50 |                                  |               |

**DECISION SHEET (Choice)**

CODE NUMBER: \_\_\_\_\_

Please make your decision now. You may take as much time as you need. *Please be sure that the total amount you pass to charity plus the amount you keep adds up to the endowment of \$20 (the match will be calculated for you).*

| Endowment | Match  | Designation   | Pass to charity (total from you) | Keep for self |
|-----------|--|---|----------------------------------|---------------|
| \$20.00   | For every dollar you pass to the charity, the experimenter will match it with an additional \$0.50 | Where Most Needed \$ _____<br>Project (s): Amount(s): |                                  |               |





14. How many children do you have? \_\_\_\_\_
15. Approximately how much did you give to charities and nonprofits last year?  
 Church and church affiliated charities? \_\_\_\_\_  
 Other charities? \_\_\_\_\_
16. Have you ever voted in an election?    yes    no
17. Are you registered as a Democrat, Republican, or Independent (or not registered)?
18. Please list the state and country where you were raised: \_\_\_\_\_
19. How much do you think others gave to *Samaritan's Purse*? \_\_\_\_\_
20. For your primary residence, do you:                      Rent                      Own
21. Primary Religious Affiliation:                      Baptist                      Catholic                      Episcopalian                      Evangelical                      Lutheran  
 Methodist                      Presbyterian                      Unitarian                      Latter-Day Saint                      Nondenominational Christian                      Buddhist  
 Hindu                      Jewish                      Muslim                      Other: \_\_\_\_\_                      None
22. How often do you attend religious services, gatherings, or studies?  
 More than once a week    Once a week    More than once a month    Once a month    Less than once a month  
 More than twice a year    Twice a year    Less than twice a year    Never
23. If you are a student, in which year are you?    Freshman    Sophomore    Junior    Senior    Graduate
24. What is your major? \_\_\_\_\_
25. How many economics courses have you taken? \_\_\_\_\_    What courses? \_\_\_\_\_

For questions 26-30, we would like your thoughts about the experiment. For each item, please indicate how strongly you agree or disagree with the statement. PLEASE READ EACH ITEM CAREFULLY BEFORE RESPONDING.

| ANSWER SCALE   |   |   |   |                |   |
|--|---|---|---|----------------|---|
| Strongly DISAGREE  |   |   |   | Strongly AGREE |   |
| 1  | 2 | 3 | 4 | 5              |   |
| <hr/>  |   |   |   |                |   |
| 26. The procedures followed in this experiment preserved your anonymity. | 1 | 2 | 3 | 4              | 5 |
| 27. The dollars you sent to charity will be sent to the charity.         | 1 | 2 | 3 | 4              | 5 |
| 28. The instructions for the experiment were clear and easy to follow.   | 1 | 2 | 3 | 4              | 5 |
| 29. The recipients of donations to the charity are deserving of support. | 1 | 2 | 3 | 4              | 5 |
| <hr/>  |   |   |   |                |   |

30. Other comments:

**SURVEY, PART 2**

**CODE NUMBER:** \_\_\_\_\_

Thank you for taking the time to complete this survey. The use of code numbers is designed to guarantee your anonymity. No identifying information will be collected by the researchers. Completion of this survey will enable the researchers to do a more complete analysis of data obtained.

1. Have you ever heard of *Samaritan's Purse* before today?
2. Have you given to *Samaritan's Purse* before today?
3. What type of charity do you prefer to donate to? Local, National, International?
4. Which charities specifically do you donate to?
  - Time?
  - Money?
5. What is the breakdown of your giving (in percentage terms, total = 100) to
  - Faith-based charities:
  - Non-faith-based charities:
6. What is the breakdown of your giving (in percentage terms, total = 100) to
  - Local charities:
  - National charities:
  - International charities:
7. What determines how much you give?
8. Does your giving depend upon
  - Percentage of Income?
  - How often you are asked?
  - A fixed amount regardless of income?
  - Some combination?
  - Please elaborate:
9. What might induce you to give more than you currently do even if your income stays constant?
10. Do you donate via gift catalogues? (Catalogues containing project descriptions, pictures, and prices, provided by a charity.)
  - If so, why?

11. Do you give more to a catalogue than to a regular request to give?

If yes, does this result in higher total charitable donations or in a switch from one charity to another?

12. Are you likely to give more if you receive something tangible with your donation (poster, mug, stuffed animal, etc.)?

If yes, does this result in higher total charitable donations or in a switch from one charity to another?

13. What is your opinion of Fair Trade goods?

14. Does the Fair Trade logo affect your purchasing decisions?

15. Do you think of Fair Trade purchases as charitable giving? Please explain.

16. Do they substitute for charitable giving? Please explain.

17. Do you go out of your way to buy *Ethos* water? *Red* brand clothing? *Pink* items?

18. Do you know what each of the above brands supports?

19. Do purchases of the above brands (or other similar brands that donate some of their profits) make you feel better than regular purchases? Please explain.

20. If you donated to Samaritan's Purse today, will that cause you to donate less to your preferred charities in the near future? Please explain.

21. If yes to #20, will the substitution be perfect? (\$4 given today means \$4 less given tomorrow?)

21. What causes changes in your giving patterns?

22. How often/when do you give?

23. Why do you give?

24. If there is anything else you would like to add that you feel is of importance but has not been captured in the questions above, please feel free to do so here:

*Thank you for your participation!*



## Appendix C: Experiment 2 Screens

Screen 1 asked subjects about internet capabilities (dial-up, high-speed, etc.) for the benefit of eLab.

### Screen 2, All treatments

**eLab** eLab Experiment

Help

**Instruction Screen**

On the following screen, you will find information describing the services provided by two nonprofits involved in international development and relief efforts. Both nonprofits have been given the highest rating (4 stars – exceptional) by *Charity Navigator*, an independent nonprofit evaluator. The names cannot be specified now for technical reasons but will be provided at the end of the study.

On the next screen, you will be asked to decide how much of \$20 you would like to keep and how much you would like to go to charity. You will notice that there is a 50% match on all donations. The researcher will send to charity an additional \$0.50 for every dollar donated.

**In your decision, you may choose any amount for charity or for yourself, but the amount you give to charity plus the amount you keep for yourself must add up to \$20.** The amount you keep will be sent to you by eLab. The amount you give to charity will be sent to charity. Confirmation will be provided if requested (there is a box you can check on the next screen).

After you have made your decision, you will be given a survey.

Screen 2 of 7 Proceed ►

Screen 3, part 1, Neither and Choice treatments

**Information and Decision Screen**

As mentioned on the previous screen, both charities are involved in development and relief efforts around the world. The pictures and project descriptions below provide summarized information about their work.

|  |  |
|--|--|
|  | <p style="text-align: center;"><b>Milk</b></p> <p>Delicious taste and nine essential nutrients make milk an ideal gift to help girls and boys overcome malnutrition. Sadly, milk is hard to come by for children living in poverty. That's why we supply healthy items like milk to schools, orphanages, and hospitals in many impoverished areas.</p>                                 |
|  | <p style="text-align: center;"><b>Clean Water</b></p> <p>Every hour, people in developing countries die from water-borne diseases caused by unclean water and poor sanitation. We offer a range of solutions from water treatment and storage systems to latrines and hygiene education to provide safe water for drinking, cooking, irrigation, and watering livestock.</p>           |
|  | <p style="text-align: center;"><b>School Supplies</b></p> <p>Many parents cannot afford to buy basic school supplies for their children. This means that some of the children have to stay out of school. Or if they do attend, they fall behind in their class work because they lack paper, pencils, a pencil sharpener, and other supplies.</p>                                     |
|  | <p style="text-align: center;"><b>Sports Gear</b></p> <p>A soccer ball can turn an empty lot into a playground, bring great joy to children who have seen more than their share of suffering, and provide children with healthy exercise. Yet a soccer ball is a luxury many families cannot afford when they have a hard time meeting basic needs.</p>                                |
|  | <p style="text-align: center;"><b>Hot Lunches</b></p> <p>Many parents are not able to feed their family regularly, and many children leave home without breakfast. They lose concentration on their studies and may fall asleep or get ill from chronic malnutrition. Hot lunches will help a child maintain the physical and mental strength to complete schoolwork successfully.</p> |

**Information and Decision Screen**

As mentioned on the previous screen, both charities are involved in development and relief efforts around the world. The pictures and project descriptions below provide summarized information about their work.

|  |   |
|--|---|
|  | <p style="text-align: center;"><b>Milk</b></p> <p>Delicious taste and nine essential nutrients make milk an ideal gift to help girls and boys overcome malnutrition. Sadly, milk is hard to come by for children living in poverty. That's why we supply healthy items like milk to schools, orphanages, and hospitals in many impoverished areas. \$4 can provide a child with milk for a week.</p> <p style="text-align: center;">Suggested Gift: \$4</p>   |
|  | <p style="text-align: center;"><b>Clean Water</b></p> <p>Every hour, people in developing countries die from water-borne diseases caused by unclean water and poor sanitation. We offer a range of solutions from water treatment and storage systems to latrines and hygiene education to provide safe water for drinking, cooking, irrigation, and watering livestock. \$16 can provide a family with clean water.</p> <p style="text-align: center;">Suggested Gift: \$16</p>                      |
|  | <p style="text-align: center;"><b>School Supplies</b></p> <p>Many parents cannot afford to buy basic school supplies for their children. This means that some of the children have to stay out of school. Or if they do attend, they fall behind in their class work because they lack paper, pencils, a pencil sharpener, and other supplies. \$12 can provide a child with school supplies.</p> <p style="text-align: center;">Suggested Gift: \$12</p>   |
|  | <p style="text-align: center;"><b>Sports Gear</b></p> <p>A soccer ball can turn an empty lot into a playground, bring great joy to children who have seen more than their share of suffering, and provide children with healthy exercise. Yet a soccer ball is a luxury many families cannot afford when they have a hard time meeting basic needs. \$8 can provide a child with a soccer ball.</p> <p style="text-align: center;">Suggested Gift: \$8</p>  |
|  | <p style="text-align: center;"><b>Hot Lunches</b></p> <p>Many parents are not able to feed their family regularly, and many children leave home without breakfast. They lose concentration on their studies and may fall asleep or get ill from chronic malnutrition. Hot lunches will help a child maintain the physical and mental strength to complete schoolwork successfully. \$20 can provide a child with hot lunches for a month.</p> <p style="text-align: center;">Suggested Gift: \$20</p> |

### Screen 3, part 2, Neither and Price treatments

Please make your decision now. **Please be sure that the total amount you give to charity plus the amount you keep adds up to the endowment of \$20 (the match will be calculated for you).**

| Endowment | Match  | Give to charity (total from you) | Keep for self           |
|-----------|--|----------------------------------|-------------------------|
| \$20.00   | For every dollar you give to the charity, the experimenter will match it with an additional \$0.50 | \$ <input type="text"/>          | \$ <input type="text"/> |

Check the box to the left to receive a confirmation e-mail within the next few weeks. (The researcher will forward the charities' confirmations to eLab, and eLab will forward them to you. Your contact information will not be given to the researcher or to the charities.)

### Screen 3, part 2, Choice and Both treatments

Please make your decision now. **Please be sure that the total amount you give to charity plus the amount you keep adds up to the endowment of \$20 (the match will be calculated for you).**

| Endowment | Match  | Designation                               | Give to charity (total from you) | Keep for self           |
|-----------|--|---|----------------------------------|-------------------------|
| \$20.00   | For every dollar you give to the charity, the experimenter will match it with an additional \$0.50 | Where Most Needed \$ <input type="text"/> | \$ <input type="text"/>          | \$ <input type="text"/> |
|           |  | Milk \$ <input type="text"/>              |                                  |                         |
|           |  | Clean Water \$ <input type="text"/>       |                                  |                         |
|           |  | School Supplies \$ <input type="text"/>   |                                  |                         |
|           |  | Sports Gear \$ <input type="text"/>       |                                  |                         |
|           |  | Hot Lunches \$ <input type="text"/>       |                                  |                         |

Check the box to the left to receive a confirmation e-mail within the next few weeks. (The researcher will forward the charities' confirmations to eLab, and eLab will forward them to you. Your contact information will not be given to the researcher or to the charities.)



The following survey screens appeared in all treatments. In the Price and Both treatments, Question (6) read: If you had not been told, what would you have thought it cost to provide the goods described previously (they appear in no particular order):

### Survey Screens, All treatments

**eLab** eLab Experiment

Help

---

**Survey**

Thank you for taking the time to complete this survey. Completion of this survey will enable the researchers to do a more complete analysis of data obtained.

**(1) Would you please explain how you made your decisions, noting any factors that contributed to your behavior:**

---

**(2) Income:**

- Under 5,000
- 5,000-9,999
- 10,000-14,999
- 15,000-24,999
- 25,000-34,999
- 35,000-49,999
- 50,000-74,999
- 75,000-99,999
- 100,000 and over

---

**(3) Please list the state where you were raised/consider your childhood home:** Please Select One ▾

---

(4) Please list the state in which you currently live:

---

(5) much do you think others gave today? \$

---

(6) What do you think it costs to provide the goods described previously (they appear in no particular order):

\$  can provide a child with milk for a week

\$  can provide a child with hot lunches for a month

\$  can provide a family with clean water

\$  can provide a child with a soccer ball

\$  can provide a child with school supplies

---

(7) Have you ever heard of *Samaritan's Purse* before today?

Yes  No

---

(8) Have you ever given to *Samaritan's Purse* before today?

Yes  No

---

(9) Have you ever heard of *Adventist Development and Relief Agency* before today?

Yes  No

---

(10) Have you ever given to *Adventist Development and Relief Agency* before today?

Yes  No

---

(11) Approximately how much did you give to charities and nonprofits last year?

How much of that was to a church/temple/house of worship?

How much of that was to other faith-based charities?

How much of that was to non faith-based charities?

---

(12) Approximately how much did you give to individuals last year?

Family/Friends/Acquaintances?

Strangers?

---

(13) Which charities specifically do you donate to?

Time?

Money?

---

(14) What determines how much you give? Please elaborate.

(15) Does your giving depend upon ...

Percentage of income?

Yes  No

How often you are asked?

Yes  No

A fixed amount regardless of income?

Yes  No

Other? Please elaborate:

(16) What might induce you to give more than you currently do even if your income and bills stay the same?

(17) Do you donate via charitable gift catalogues? (Charitable gift catalogues contain descriptions, pictures, and prices of projects provided by a charity, and donors are able to choose items to "purchase.")

Yes  No

Please explain:

(18) Would you give more to a charity or nonprofit if it provided a charitable gift catalogue?

Yes  No

If "yes," would this result in higher total charitable donations or would it result in a switch from one charity to another?

(19) What causes changes in your giving patterns?

(20) How often/when do you give?

(21) Why do you give?

(22) If there is anything else you would like to add that you feel is of importance but has not been captured in the questions above, please feel free to do so here:

(23) What is your opinion of Fair Trade goods?

(24) Does the Fair Trade logo affect your purchasing decisions? Please elaborate.




**(25) Do you think of Fair Trade purchases as charitable giving? Please explain.**

**(26) Do you go out of your way to buy Ethos water, Red brand clothing, or other products for which a portion of profits are donated? Please explain.**

**(27) Do purchases of the above-mentioned brands (or other similar brands that donate some of their profits) make you feel better than regular purchases? Please explain.**

**(28) Please provide your mailing address so that we can respond quickly. (Your address will not be provided to the researcher or to the charities. It will simply allow eLab to more quickly respond based on your decisions.)**

## Conclusion Screen, All treatments

eLab ExperimentHelp

**Conclusion**

You are done. Thank you for your participation in the study. Your answers have been successfully received.

You chose to give \$5.00 to charity. An additional \$2.50 will be donated for a total charitable donation of \$7.50. Based on your decisions you've earned \$15.00 and have been automatically entered into the \$100 prize drawing for this study.

Projects from two charities were presented in this study: *Samaritan's Purse* and *Adventist Development and Relief Agency*. Project pictures and descriptions were adapted from the charity websites (though descriptions were condensed)

Once the data collection is completed and the lottery is drawn, we will contact you at [elabadmin@owen.vanderbilt.edu](mailto:elabadmin@owen.vanderbilt.edu) if you are a winner.

We appreciate your contribution to our research.

[Click here to leave the experiment](#)

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## CHAPTER II

### ONE-STOP SHOPPING? CHARITABLE GIVING THROUGH GIFT CATALOGUES

#### 1 Introduction

When we think of charitable giving, we usually think of dollar donations to a charity, and when we think of gifts for friends and family, we often conjure up images of presents bought at Macy's or Target. However, during the past few Christmas seasons I have received, along with the traditional holiday catalogues from Eddie Bauer and Crate and Barrel, charitable gift catalogues from *Samaritan's Purse* and *World Vision* – catalogues offering charitable substitutes for traditional Christmas gifts. Instead of a shirt for my brother, I can buy a coat for a little girl in Eastern Europe, and give it to her in his honor. Instead of a necklace for my sister, I can buy a pair of ducks for a family in South America, and present my sister with a card from the charity, telling her of the contribution. When nonprofits offer a catalogue of charitable goods, I may be able to complete my Christmas shopping and my charitable giving all in one place. When my brother has everything he needs and many things he wants, why not spend my Christmas budget on somebody who has very little of both? This is the message sent by many charities now providing alternatives to traditional gifts.

In the previous chapter, we found the need for a distinction in our coding of charitable contributions to account for differing outcomes when those contributions take the form of a gift rather than a donation. In this chapter, we will look for an additional effect that may appear when other-regarding behavior yields a gift that is both a charitable gift and a substitute for a traditional gift. If giving has the potential to increase when charitable donations become

charitable gift purchases, as Chapter 1 suggests, how much more might the increase in giving be when a charitable gift purchase can substitute for a traditional gift purchase (or add to it)? In this paper we will examine a first attempt at answering this question.

Instead of substitutes for Christmas gifts, we will look at potential substitutes for Valentine gifts, and we will do so by utilizing laboratory experiments. In the experiments we will differentiate among (1) donating in the traditional fashion, (2) purchasing a charitable gift for an unknown recipient through a charitable gift catalogue, and (3) purchasing a charitable gift as a substitute for a traditional gift, through a charitable gift catalogue with the option to purchase in honor of somebody special for Valentine's Day. In this manner, we will begin to see the effects from transforming a charitable contribution into a substitute for a traditional gift by dissecting the strategy into its component parts: transforming a charitable donation into a charitable gift, and transforming a charitable gift into a substitute for a traditional gift. If such a contribution is mentally coded only as a charitable gift, we should see no difference in behavior when substitutability is introduced. If substitutability alters the coding to that of traditional gift, we may see some differences in behavior if utility from traditional gift purchases differs from utility from charitable gift purchases (and if budgets for each type of gift also differ, as one could imagine possible when we have evidence of the quirky way that people often account for transactions (Thaler, 1985 and 1999)). Finally, if a good that is both charitable gift and traditional gift, wrapped up in one package, is mentally considered a two-for-one deal, we should see some effects of "double counting."

Though we will not be able to differentiate between the last two possibilities, we will find that at least one of them appears to be present when we examine the experiment results in section 3. That is, we find a change in behavior when subjects can substitute a charitable gift for a

traditional gift, up and above the change in behavior that occurs when a charitable donation becomes a charitable gift, the change addressed in the previous chapter. More specifically, we find that the added effect of allowing subjects to contribute in honor of somebody special for Valentine's Day is positive and significant for the younger half of the sample and negative and significant for the older half of the sample. In section 4 we will discuss some potential reasons for these findings. For now, we turn to the details of the experiment design.

## 2 Experiment Design

The experiment consisted of a dictator game, in which each subject made one decision, determining how to allocate \$20 between herself and charity after reading instructions and information about five charitable goods/projects. All subject decisions were carried out. Subjects' contributions accrued to actual charities, as they did in the previous chapter and in Eckel and Grossman (2000, 2003, 2006) and Eckel, Grossman, and Milano (2007). Because subjects could not physically watch a check being written, they were told they would be provided with confirmation via e-mailed copies of receipts (through eLab (described later), to maintain anonymity). Subjects were randomly assigned to three treatments: *neither*, *both*, and *valentine*, where "neither" and "both" are relics of the previous chapter. "Neither" refers to the control or baseline but was labeled thus to avoid confusion in the previous chapter between "control" and "donor control," and "both" refers to the fact that both choice and prices (suggested gift amounts) were presented to subjects, two gift catalogue components that we have reason to believe may affect the levels and rates of contributions, as noted in the previous chapter.

Prior literature also suggests and sometimes finds differences in behavior in a variety of other environments when donor control (choice) or suggested, explicitly or implicitly,



contributions are presented to subjects (Seigel, 2006, and Null, 2008, for the former; Croson and Marks, 2001, Croson and Shang, 2009, Croson, Handy, and Shang, 2009, to name a few related to the latter). The treatments maintain a labeling that will facilitate comparisons between this and the previous chapter, in which we found that the interaction between choice and prices alters behavior in such a way that suggests a mental differentiation between a charitable donation (which occurs when choice and prices are not present together) and a charitable gift purchase (which occurs when both choice and prices are present). The *both* treatment is included to control for the charitable gift purchase component of the *valentine* treatment, as we want to know if there is any additional effect from offering a charitable gift as a substitute for a traditional gift.

In all treatments, the same five pictures and project descriptions were presented to subjects. Those in the *both* and *valentine* treatments were able to choose among the projects if they wished, or allow the charity to choose for them by selecting “where most needed” – a commonly provided category in reality. Subjects in these treatments also saw prices framed as “suggested gift amounts,” along with an additional line in the project description indicating what a particular price would buy. As in the previous chapter, an even distribution of prices was utilized (\$4, \$8, \$12, \$16, \$20) to avoid as much as possible effects from implicitly suggesting low or high expected contributions or norms, which could be inferred by subjects if the distribution of prices was skewed (as examples, Bardsley (2008) List (2007) and Kessler (2009) provide evidence that one can alter subjects’ perceptions of appropriate behavior by altering action spaces to include taking in games that traditionally allowed only giving). To attain this even distribution, items from the *Samaritan’s Purse* and the *Adventist Development and Relief Association* (henceforth, ADRA) gift catalogues were utilized.<sup>1</sup> The five items were milk, a

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<sup>1</sup> *Samaritan’s Purse* was chosen for three reasons. First, it guarantees that contributions designated to a particular project will be utilized for that project or a very similar project if the project is completed. Second, it provides a rather

soccer ball, school supplies, clean water for a family, and hot lunches for a month, corresponding to the five respective price points listed above. Subjects were told that items came from two different charities, but the names were not revealed until the end of the experiment. Subjects in the *valentine* treatment saw in the experiment instructions the additional information and card that appear below in Figure 1. The red box below the example card displays what subjects saw on the decision screen that followed.



Figure 1: Additional Information in the Valentine treatment

The experiment was conducted in an online laboratory, providing a relatively broad set of demographics. Subjects ranged in age from 20 to 73, in income from under \$5000 to over \$100,000, and in education from holding less than a high school diploma to holding a graduate degree, though most of the subjects were relatively highly educated. Subjects were recruited via

---

extensive catalogue, which allowed/allows for other experiments to contain different items while holding the charity constant. Third, the *Samaritan's Purse* catalogue was the catalyst for the ideas behind this paper. The *Adventist Development and Relief Agency* contained projects at the required price points and also guaranteed funding would be used where designated. Additionally, its project descriptions and pictures were similar to those of *Samaritan's Purse*, keeping the visual stimulus similar between projects.

e-mail through eLab, an online panel of survey and experiment participants maintained by Owen Graduate School of Management at Vanderbilt University. The subject pool has grown to about 80,000 participants who file tax information with the university, eliminating the possibility of duplicates. Participants provide many controls upon signing up (such as age and education), reducing the need for post-experiment surveys or at least reducing their length. 94 subjects signed on between January 25<sup>th</sup> and February 1<sup>st</sup>, 2010, and they were randomly assigned to treatments. Of those subjects, 91 completed the experiment (97% of responders). 12 were removed due to inconsistencies,<sup>2</sup> and 3 did not complete enough of the survey to provide controls and consistency checks, leaving us with 76 observations with controls. Screenshots of the experiment and survey appear in the appendix. A summary of subject characteristics appears in Table 1.

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<sup>2</sup> Among the dropped subjects, some provided ages (through birth years) below that of their responses when signing up with eLab, calling into question the validity of the other controls they provided. Other subjects incorrectly answered a question in the survey that indicated they were not paying attention. Subjects were asked to estimate the giving of other subjects in the experiment, which could be at most \$20. Subjects entering amounts greater than \$20 were either paying no attention or trying to confuse results, so they were removed from the dataset, though their inclusion or exclusion did little to affect results.

Table 1: Subject Characteristics

|                                     | All        | Neither  | Both       | Valentines |
|-------------------------------------|------------|----------|------------|------------|
| Subjects                            | 76         | 23       | 28         | 25         |
| Came in the Experiment              | 86.84%     | 78.26%   | 89.29%     | 92.00%     |
| Average conditional on giving       | \$15.32    | \$13.61  | \$15.56    | \$16.39    |
| Unconditional average               | \$13.30    | \$10.65  | \$13.89    | \$15.08    |
| Given to charity last year          | \$1,052.40 | \$866.96 | \$1,147.14 | \$1,116.88 |
| Heard of <i>Samaritan's Purse</i>   | 22.37%     | 13.04%   | 25.00%     | 28.00%     |
| Donated to <i>Samaritan's Purse</i> | 5.26%      | 4.35%    | 7.14%      | 4.00%      |
| Heard of ADRA                       | 5.26%      | 0.00%    | 3.57%      | 12.00%     |
| Donated to ADRA                     | 1.32%      | 0.00%    | 0.00%      | 4.00%      |
| Age                                 | 45         | 43       | 48         | 42         |
| Male                                | 40.79%     | 43.48%   | 46.43%     | 32.00%     |
| Single, never married               | 22.37%     | 26.09%   | 21.43%     | 20.00%     |
| Married                             | 47.37%     | 56.52%   | 53.57%     | 32.00%     |
| Divorced/Separated                  | 18.42%     | 4.35%    | 21.43%     | 28.00%     |
| Widowed                             | 6.58%      | 8.70%    | 3.57%      | 8.00%      |
| Domestic Partner                    | 5.26%      | 4.35%    | 0.00%      | 12.00%     |
| Income < \$5,000                    | 3.95%      | 4.35%    | 7.14%      | 0.00%      |
| \$5,000-\$9,999                     | 5.26%      | 8.70%    | 3.57%      | 4.00%      |
| \$10,000-\$14,999                   | 9.21%      | 8.70%    | 7.14%      | 12.00%     |
| \$15,000-\$24,999                   | 7.89%      | 4.35%    | 7.14%      | 12.00%     |
| \$25,000-\$34,999                   | 10.53%     | 8.70%    | 7.14%      | 16.00%     |
| \$35,000-\$49,999                   | 18.42%     | 26.09%   | 14.29%     | 16.00%     |
| \$50,000-\$74,999                   | 23.68%     | 17.39%   | 25.00%     | 28.00%     |
| \$75,000-\$99,000                   | 14.47%     | 21.74%   | 21.43%     | 0.00%      |
| \$100,000+                          | 6.58%      | 0.00%    | 7.14%      | 12.00%     |
| Less than High School               | 0.00%      | 0.00%    | 0.00%      | 0.00%      |
| High School                         | 13.16%     | 17.39%   | 10.71%     | 12.00%     |
| Some College                        | 36.84%     | 30.43%   | 35.71%     | 44.00%     |
| College                             | 27.63%     | 30.43%   | 25.00%     | 28.00%     |
| Some Graduate Studies               | 5.26%      | 4.35%    | 7.14%      | 4.00%      |
| Graduate Degree                     | 17.11%     | 17.39%   | 21.43%     | 12.00%     |
| Democrat                            | 36.84%     | 30.43%   | 42.86%     | 36.00%     |
| Republican                          | 30.26%     | 34.78%   | 28.57%     | 28.00%     |
| Independent                         | 27.63%     | 30.43%   | 21.43%     | 32.00%     |
| Other                               | 5.26%      | 4.35%    | 7.14%      | 4.00%      |
| Asian                               | 2.63%      | 0.00%    | 3.57%      | 4.00%      |
| Black                               | 2.63%      | 0.00%    | 3.57%      | 4.00%      |
| Hispanic                            | 3.95%      | 0.00%    | 7.14%      | 4.00%      |
| White                               | 90.79%     | 100.00%  | 85.71%     | 88.00%     |
| Other                               | 0.00%      | 0.00%    | 0.00%      | 0.00%      |
| Religious (1/week or more)          | 26.32%     | 34.78%   | 25.00%     | 20.00%     |
| Religious (1/month or more)         | 32.89%     | 47.83%   | 28.57%     | 24.00%     |
| Jewish                              | 5.26%      | 13.04%   | 0.00%      | 4.00%      |
| Hindu                               | 0.00%      | 0.00%    | 0.00%      | 0.00%      |
| Muslim                              | 1.32%      | 0.00%    | 0.00%      | 4.00%      |
| Catholic                            | 30.26%     | 30.43%   | 39.29%     | 20.00%     |
| Protestant                          | 42.11%     | 39.13%   | 50.00%     | 36.00%     |
| No religion                         | 10.53%     | 13.04%   | 7.14%      | 12.00%     |
| Other                               | 10.53%     | 4.35%    | 3.57%      | 24.00%     |

### 3 Results

Average giving for the online experiment in Chapter 1 was \$13.53, with an average conditional on giving of \$14.99; 90% of subjects donated something and 44% donated everything. In the experiment examined here the summary statistics were similar with an average of \$13.30. 84% of subjects gave something in the experiment and 43% contributed the

entire endowment; the average conditional on giving was \$15.32. These similar results are intriguing when we recall that contributions in the previous experiment were matched at a rate of 50% and contributions were unmatched in the experiment described here. A variety of prior work indicates that lowering the effective cost of donating (what a match does) has a significant positive effect on behavior (Eckel and Grossman, 2003 and 2006, and Karlan and List, 2007, to name a few). Thus, we would expect giving to be lower in this experiment than in the last. However, this experiment was run just days after the 2010 earthquakes in Haiti, and past experience indicates that altruistic behavior rises across the board in the wake of tragedy (Fischer, 1994, and Tierney, 2001, cited in Steinberg and Rooney, 2009). Additionally, though each experiment shares two of the same treatments, the other treatments differ, which could help to explain the interesting equality of averages even under differing match rates.

The averages given in each treatment display some differences, with more contributed by those in the *both* treatment as well as those in the *valentine* treatment compared with the *neither* treatment (Table 2). Conditional on giving, average contributions in the *valentine* treatment are still higher than average donations in the *neither* treatment, indicating a difference on both the extensive and intensive margins. Additionally, whether or not we include the subjects who utilized the option of donating in honor of somebody special (and receiving a card to present to them), the *valentine* treatment generates higher contributions than the baseline *neither* treatment, with or without conditioning on giving. The means of the *both* and *valentine* treatments are not significantly different from each other whether or not we condition on giving, though we will start to see some differences between these two treatments shortly.

First, it is interesting to note that 6 out of 25 people in the *valentine* treatment requested a card. While the absolute number is small, it amounts to 24% of the subjects in that condition,

and 26% of the donors. This high percentage provides evidence that the nonprofit has successfully transformed a charitable gift into a viable substitute for a traditional gift.

Table 2: Average Giving by Treatment

| <u>Neither treatment (23)</u>   | <u>\$10.65</u>  | <u>Valentines treatment (25)</u>         | <u>\$15.08**</u> |
|---|-----------------|--|------------------|
| Donors (18)   | \$13.61         | Donors (23)                              | \$16.39^^        |
|   |                 | Choosing (15)                            | \$15.47          |
|   |                 | Not choosing (8)                         | \$18.13          |
| <br>  |                 |  |                  |
| <u>Both treatment (28)</u>  | <u>\$13.89*</u> | <u>Valentines split by card requests</u> |                  |
| Donors (25)   | \$15.56         | <i>No card requested (19)</i>            | \$14.58**        |
| Choosing (20)   | \$15.70         | Donors (17)                              | \$16.29^         |
| Not choosing (5)  | \$15.00         | Card requested (6)                       | \$16.67          |
|   |                 | Choosing (4)                             | \$15.00          |
|   |                 | Not choosing (2)                         | \$20.00          |
| <p>***, **, and * denote significant differences from the <i>neither</i> treatment at the 1%, 5%, and 10% levels (one-tailed t-tests). Carats are used similarly to denote differences conditional on giving. The number of subjects in each group is in parentheses.</p> |                 |  |                  |

If we examine the cumulative distribution functions for each treatment in Figure 2 below, and test for differences (reported in Table 3), we see a similar story emerge as found above. The *both* and *valentine* treatments are resulting in higher contributions than the baseline, *neither*, and their distributions stochastically dominate that of the *neither* treatment – for any given contribution level, the percentage of subjects contributing more than that level is greater in the *both* or *valentine* treatment than in the *neither* baseline. It appears that the treatments result in more giving than the baseline, largely due to many \$20 contributions, as Figure 3 displays, though we see no significant additional effect from including the Valentine gift option ... yet.

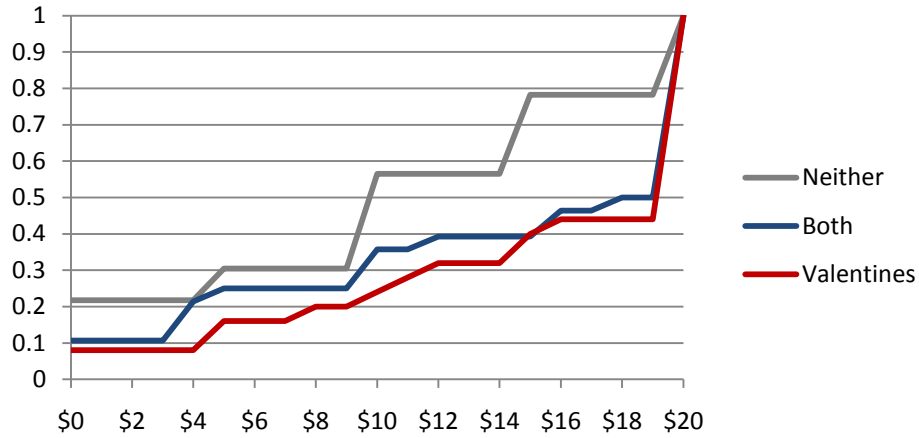


Figure 2: CDF's of Contribution Amounts: % of Subjects Contributing \$X or Less, by Treatment

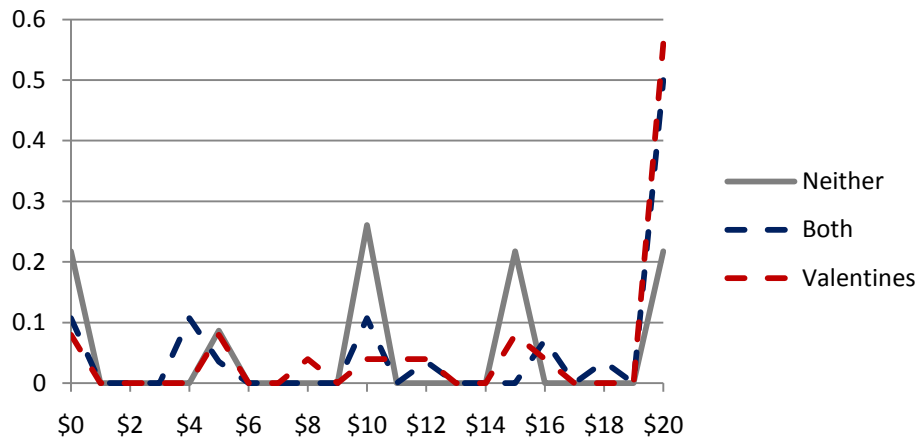


Figure 3: PDF's of Contribution Amounts: % of Subjects Contributing Each Amount, by Treatment

Table 3: Distribution Tests

|                   | <i>Neither</i> | <i>Both</i> |     |
|-------------------|----------------|-------------|-----|
| <i>Both</i>       | 0.077          |             | WMW |
|                   | 0.029          |             | KS  |
| <i>Valentines</i> | 0.020          | 0.562       | WMW |
|                   | 0.042          | 0.930       | KS  |

p-values reported from Wilcoxon-Mann-Whitney (WMW) and Kolmogorov-Smirnov (KS) tests.

If we split the sample by age, we find interesting results. As we saw in Chapter 1, treatments tend to produce opposite effects for the older and younger halves of the sample. We find significant positive effects of the *valentine* treatment relative to *neither* on contributions from the younger half of the sample, indicated in Table 4. Among the young, those in the *valentine* treatment give significantly more than those in the *both* treatment as well (t-test p-values of 0.001 for the two treatment averages, 0.014 conditional on giving). The young in the *valentine* treatment who did not request a card also gave significantly more than those in the *both* treatment (p-values of 0.008 and 0.049, unconditional and conditional on giving). Additionally, those who did request a card gave significantly more than contributors in the *both* treatment (p-value of 0.04). Among the older, those in the *valentine* treatment give less than those in the *both* treatment (t-test p-values of 0.029 and 0.143, unconditional and conditional on giving). The older in the *valentine* treatment who did not request a card also gave less than those in the *both* treatment (p-values of 0.035 and 0.223, unconditional and conditional on giving). Finally, those who did request a card gave less than contributors in the *both* treatment as well (p-value of 0.11).

Table 4: Average Giving by Treatment

| Younger than 45 (37)                 |                | \$12.35                                  |                   | 45 and Older (39)                    |                   | \$14.21                                  |                |
|--------------------------------------|----------------|--|-------------------|--------------------------------------|-------------------|--|----------------|
| <u><i>Neither</i> treatment (12)</u> | <u>\$10.42</u> | <u><i>Valentines</i> treatment (13)</u>  | <u>\$17.31***</u> | <u><i>Neither</i> treatment (11)</u> | <u>\$10.91</u>    | <u><i>Valentines</i> treatment (12)</u>  | <u>\$12.67</u> |
| Donors (9)                           | \$13.89        | Donors (13)                              | \$17.31^          | Donors (9)                           | \$13.33           | Donors (10)                              | \$15.20        |
|                                      |                | Choosing (7)                             | \$15.71           |                                      |                   | Choosing (8)                             | \$15.25        |
|                                      |                | Not choosing (6)                         | \$19.17           |                                      |                   | Not choosing (2)                         | \$15.00        |
| <u><i>Both</i> treatment (12)</u>    | <u>\$8.92</u>  | <u>Valentines split by card requests</u> |                   | <u><i>Both</i> treatment (16)</u>    | <u>\$17.63***</u> | <u>Valentines split by card requests</u> |                |
| Donors (9)                           | \$11.89        | <i>No card requested</i> (9)             | \$16.67**         | Donors (16)                          | 17.63^^           | <i>No card requested</i> (10)            | \$12.70        |
| Choosing (8)                         | \$12.75        | Donors (9)                               | \$16.67           | Choosing (12)                        | \$17.67           | Donors (8)                               | \$15.88        |
| Not choosing (1)                     | \$5.00         | Card requested (4)                       | 18.75^            | Not choosing (4)                     | \$17.50           | Card requested (2)                       | \$12.50        |
|                                      |                | Choosing (2)                             | \$17.50           |                                      |                   | Choosing (2)                             | \$12.50        |
|                                      |                | Not choosing (2)                         | \$20.00           |                                      |                   | Not choosing (0)                         |                |

\*\*\*, \*\*, and \* denote significant differences from the *neither* treatment at the 1%, 5%, and 10% levels (one-tailed t-tests). Carats are used similarly to denote differences conditional on giving. The number of subjects in each group is in parentheses.



It is interesting to note that behavior in the *both* treatment relative to the baseline is different here than in the previous chapter. The *both* treatment produces relatively high contribution levels among the older and typical contribution levels among the younger (relative to the *neither* treatment for each respective group), the opposite of the finding in Chapter 1, where the *both* treatment produced relatively large contributions from the young and average contributions from the older (again, relative to the donations of the respective age groups in the *neither* treatment). Opposite effects appear once more when splitting by age. These effects can be seen quite clearly in Figure 4, which highlights the differences in the distributions of contributions by the older and by the younger in the *both* and in the *valentine* treatments.

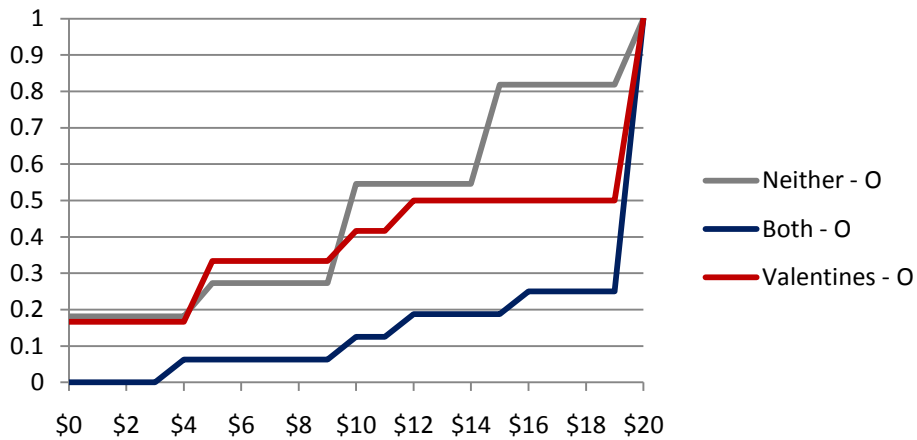
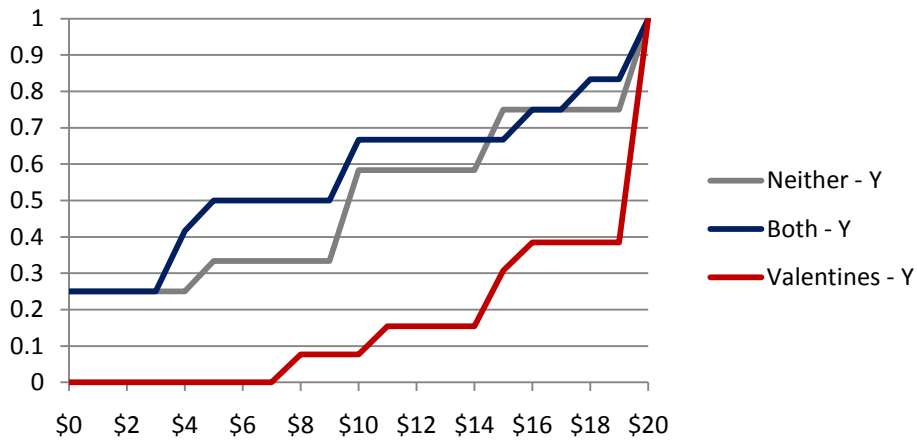
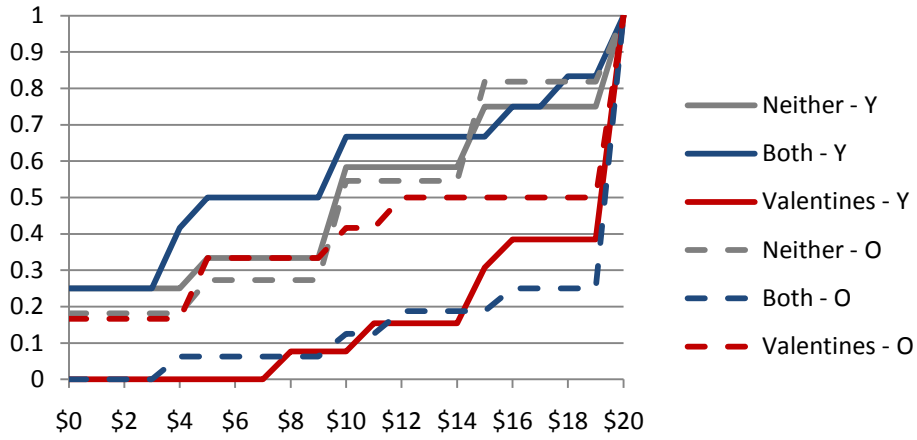


Figure 4: CDF's of Contribution Amounts by Treatment (Split by Age)

Though the above graphs might seem to contradict the findings of Chapter 1, recall that either age group could witness more or less giving in the *both* treatment relative to the baseline

depending upon the sign of the combined effect of choice, prices, and their interaction. The three effects were negative, negative, and positive for the young and positive, positive, and negative for the older. Thus, the overall effect of the *both* treatment for either group could display either sign relative to the baseline for that group.

Of particular interest in this paper, Figure 4 also indicates that the distribution of contributions among the young in the *valentine* treatment stochastically dominates the distribution of contributions from the young in either of the other treatments, and these differences are statistically significant. Table 5 reports p-values from distribution equality tests, confirming the graphical findings above, and Figure 5 displays probability density functions, illustrating how treatments are affecting behavior at corners. The *valentine* treatment results in relatively few maximum contributions among the older and relatively frequent minimum contributions while, among the young, it results in no \$0's and many \$20's. Perhaps the older see the Valentine option as a substitute for a traditional gift and think, "No thanks," whereas the young like the idea. Or perhaps the young see the gift option as packing double the punch - they can contribute to charity and get a substitute Valentine gift thrown in, or they can purchase a Valentine gift and get a charitable contribution thrown in. Whether substituting for a traditional gift or adding to it, the significant differences witnessed suggest that the Valentine option is altering something in objective functions, and perhaps even constraints as well.

Table 5: Distribution Tests

| Younger than 45   |                |             |     | 45 and Older      |             |       |     |
|-------------------|----------------|-------------|-----|-------------------|-------------|-------|-----|
|                   | <i>Neither</i> | <i>Both</i> |     | <i>Neither</i>    | <i>Both</i> |       |     |
| <i>Both</i>       | 0.638          |             | WMW | <i>Both</i>       | 0.004       |       | WMW |
|                   | 0.913          |             | KS  |                   | 0.005       |       | KS  |
| <i>Valentines</i> | 0.017          | 0.006       | WMW | <i>Valentines</i> | 0.467       | 0.104 | WMW |
|                   | 0.064          | 0.019       | KS  |                   | 0.476       | 0.442 | KS  |

Cross-age Comparisons

|  | <i>Neither</i> | <i>Both</i> | <i>Valentines</i> |     |
|--|----------------|-------------|-------------------|-----|
|  | 0.900          | 0.002       | 0.208             | WMW |
|  | 1.000          | 0.011       | 0.343             | KS  |

p-values reported from Wilcoxon-Mann-Whitney (WMW) and Kolmogorov-Smirnov (KS) tests.

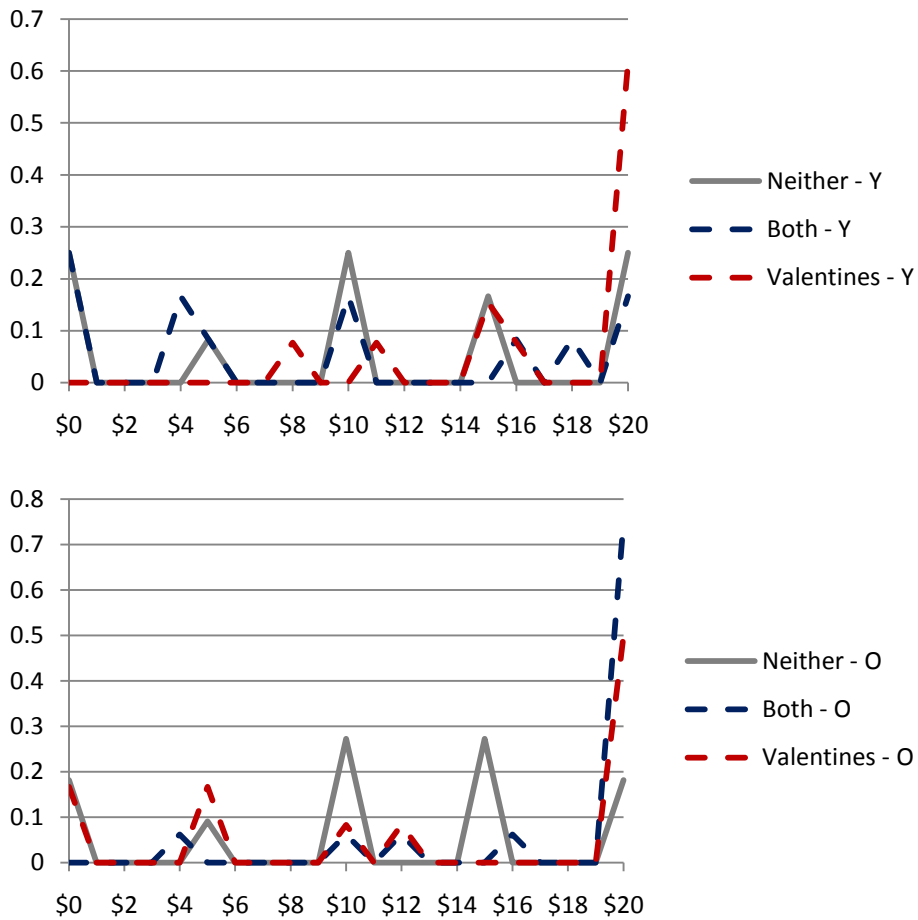


Figure 5: PDF's of Contribution Amounts by Treatment (Split by Age)

Regression results in Table 6 confirm the graphical findings. We estimate Two-way Censored Tobit and OLS models, the latter both unconditional and conditional on giving.<sup>3</sup> Demand for giving is estimated by “splitting” the sample by age and interacting indicators for each respective half with treatment indicators (specifications (1)-(3)).<sup>4</sup> Binary controls are included to account for income, gender, religious attendance,<sup>5</sup> political affiliation, marital status, ethnicity, and broad categories of religious affiliation (Protestant and Catholic). Age was controlled for as well. Self-reported giving to charitable organizations from the previous year was also included, as was an indicator for subjects who had previously donated to *Samaritan’s Purse* or ADRA (6.6% of the sample), though significance of our variables of interest are unaffected by its inclusion. Income data are categorical with a median category containing income in the range of \$35,000-\$49,000. The 14 individuals in this category were included in the low income group when creating a binary income variable, which resulted in a 55/45 split. Such a split seems reasonable given the median household income of \$52,175 reported by the U.S. Census Bureau’s 2006-2008 American Community Survey, and it allows for ease of comparability with the previous chapter. Similarly, education was also categorical with a

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<sup>3</sup> Following the experimental literature on charitable giving (see, for example, Eckel and Grossman, 2003, Karlan and List, 2007, Breman, 2009, etc.), which estimates Tobit, Conditional OLS, and/or Unconditional OLS models, we utilize all three. Although the use of OLS would appear to constitute a naïve approach when we consider that there are bounds on giving in this experiment, Angrist and Pischke (2009) note that in an environment where 0’s represent actual observations rather than censored observations, OLS coefficients may provide useful “average” effects. However, there could exist a latent variable taking on negative values if we consider it possible that some people would take from charity if allowed. Additionally, we witness contributions at the upper bound of \$20, accounting for everybody who would contribute \$20, as well as those who would contribute more if allowed. Since it is plausible that a latent variable, taking on values below 0 or (more likely) greater than 20, exists, the Two-way Censored Tobit appears to be a good choice of model. OLS results are reported as well to satisfy readers and to provide a robustness check of sorts. Conditioning on giving allows us to satisfy those with a typical concern about utilizing a Tobit model, mentioned in Wooldridge (2002) – that the effect of a variable on the probability of giving is assumed to have the same sign as the effect on the amount given conditional on positive giving. Coefficient estimates from the OLS specifications indicate that the signs are indeed the same for our variables of interest – the added effects of the *valentines* treatment, as reported in specifications (4)-(6).

<sup>4</sup> Though “splitting” as detailed above does include some implicit assumptions that controls affect giving in the same way, regardless of age group, results from the previous chapter are similar if we split the sample entirely. This sample is rather small to meaningfully do so here. If we go ahead for curiosity’s sake, coefficient estimates remain similar.

<sup>5</sup> 1 = once or more per week, similar to Brooks (2006). While this definition is relatively Christian-centric, the dataset is largely composed of subjects falling under the category of “Christian” or no category at all, with relatively few from other faiths. Thus, the definition of “religious” as attending on a weekly basis seems reasonable.

median between “some college” and “college.” Thus a binary variable for high education separates along that line, the same dividing line used previously. The median age of the sample was 45. When splitting by age, the 4 individuals of that age are included with the older group.<sup>6</sup>

Table 6: Regression Results, Unconditional and Conditional on Giving

| Dependent Variable:      | Amount Given        |                    |                     |              |                     |                     |                     |
|--------------------------|---------------------|--------------------|---------------------|--------------|---------------------|---------------------|---------------------|
|                          | Tobit               |                    |                     | OLS          |                     |                     |                     |
|                          | (1)                 | (2)                | (3)                 | (4)          | (5)                 | (6)                 |                     |
| Y*both treatment         | -2.232<br>(6.635)   | -1.687<br>(3.875)  | 1.190<br>(3.012)    | Y*both       | -2.232<br>(6.635)   | -1.687<br>(3.875)   | 1.190<br>(3.012)    |
| Y*valentines treatment   | 17.71***<br>(6.554) | 7.322**<br>(3.004) | 4.914*<br>(2.653)   | Y*valentines | 19.94***<br>(6.706) | 9.009***<br>(3.052) | 3.723<br>(2.707)    |
| Younger than 45          | -1.374<br>(7.181)   | -0.668<br>(4.180)  | -1.947<br>(3.144)   |              | -1.374<br>(7.181)   | -0.668<br>(4.180)   | -1.947<br>(3.144)   |
| O*both treatment         | 15.81**<br>(6.130)  | 6.131**<br>(3.019) | 2.144<br>(2.520)    | O*both       | 15.81**<br>(6.130)  | 6.131**<br>(3.019)  | 2.144<br>(2.520)    |
| O*valentines treatment   | -1.150<br>(6.284)   | -0.416<br>(3.686)  | 1.281<br>(2.731)    | O*valentines | -16.96**<br>(7.545) | -6.546*<br>(3.468)  | -0.862<br>(2.624)   |
| Age                      | 1.268<br>(0.878)    | 0.260<br>(0.417)   | -0.414<br>(0.369)   |              | 1.268<br>(0.878)    | 0.260<br>(0.417)    | -0.414<br>(0.369)   |
| Age squared              | -0.011<br>(0.009)   | -0.002<br>(0.004)  | 0.005<br>(0.004)    |              | -0.011<br>(0.009)   | -0.002<br>(0.004)   | 0.005<br>(0.004)    |
| High income              | 5.600<br>(3.733)    | 1.869<br>(2.020)   | 2.859*<br>(1.646)   |              | 5.600<br>(3.733)    | 1.869<br>(2.020)    | 2.859*<br>(1.646)   |
| Male                     | -3.963<br>(3.700)   | -1.552<br>(1.957)  | -2.660*<br>(1.567)  |              | -3.963<br>(3.700)   | -1.552<br>(1.957)   | -2.660*<br>(1.567)  |
| Married                  | -6.346<br>(3.981)   | -2.115<br>(1.778)  | 0.864<br>(1.754)    |              | -6.346<br>(3.981)   | -2.115<br>(1.778)   | 0.864<br>(1.754)    |
| Single                   | 4.254<br>(5.294)    | 0.843<br>(2.587)   | 0.734<br>(2.540)    |              | 4.254<br>(5.294)    | 0.843<br>(2.587)    | 0.734<br>(2.540)    |
| High education           | 3.621<br>(3.748)    | 1.260<br>(1.901)   | 2.172<br>(1.395)    |              | 3.621<br>(3.748)    | 1.260<br>(1.901)    | 2.172<br>(1.395)    |
| Religious                | -1.854<br>(4.755)   | -1.158<br>(2.730)  | -1.534<br>(2.337)   |              | -1.854<br>(4.755)   | -1.158<br>(2.730)   | -1.534<br>(2.337)   |
| Democrat                 | 5.540<br>(4.417)    | 2.308<br>(2.264)   | 0.931<br>(1.796)    |              | 5.540<br>(4.417)    | 2.308<br>(2.264)    | 0.931<br>(1.796)    |
| Republican               | 4.445<br>(4.130)    | 1.347<br>(2.110)   | -0.210<br>(1.952)   |              | 4.445<br>(4.130)    | 1.347<br>(2.110)    | -0.210<br>(1.952)   |
| White                    | 5.757<br>(5.891)    | 2.964<br>(3.011)   | 6.550***<br>(2.325) |              | 5.757<br>(5.891)    | 2.964<br>(3.011)    | 6.550***<br>(2.325) |
| Donated before           | -6.979<br>(9.842)   | -1.030<br>(5.087)  | 5.281*<br>(2.924)   |              | -6.979<br>(9.842)   | -1.030<br>(5.087)   | 5.281*<br>(2.924)   |
| Charitable contributions | 0.001<br>(0.001)    | 0.000<br>(0.000)   | 0.000<br>(0.000)    |              | 0.001<br>(0.001)    | 0.000<br>(0.000)    | 0.000<br>(0.000)    |
| Catholic                 | -8.842<br>(5.508)   | -2.194<br>(2.684)  | 0.232<br>(2.248)    |              | -8.842<br>(5.508)   | -2.194<br>(2.684)   | 0.232<br>(2.248)    |
| Protestant               | -3.883<br>(4.497)   | -1.633<br>(2.253)  | -0.430<br>(1.962)   |              | -3.883<br>(4.497)   | -1.633<br>(2.253)   | -0.430<br>(1.962)   |
| Constant                 | -26.050<br>(21.810) | 1.374<br>(10.530)  | 15.080<br>(9.749)   |              | -26.050<br>(21.810) | 1.374<br>(10.530)   | 15.080<br>(9.749)   |
| Pseudo/R-squared         | 0.10                | 0.32               | 0.36                |              | 0.10                | 0.32                | 0.36                |
| Prob > F                 | 0.0329              | 0.0021             | 0.0011              |              | 0.0329              | 0.0021              | 0.0011              |
| Observations             | 76                  | 76                 | 66                  |              | 76                  | 76                  | 66                  |

10 left-censored, 33 uncensored, 33 right-censored.  
Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

<sup>6</sup> Age and age-squared are included along with the young-old indicator as we have evidence that the relationship between age and giving is quadratic (Clotfelter, 2002).

In specifications (1)-(3) we see that, among the younger, the *valentine* treatment yields significantly higher contributions than the baseline. Accounting for the fact that the *valentine* treatment also contains elements of the *both* treatment – both choice and prices – we see in the second set of results, specifications (4)-(6), that the added effect of the *valentine* treatment on top of the *both* treatment (as opposed to the entire effect from comparing it with the baseline, which is provided in specifications (1)-(3)) is positive and significant for the younger, and negative and significant for the older; *both* yields an insignificant effect among the young and a positive and significant effect among the older. Though different from the findings of Chapter 1, again, results are still consistent with those found previously since the effect of “both” here depends on the effects from choice, prices, and their interaction. In the previous chapter, we were able to separate these effects. Here we have only a combined effect. The results of Chapter 1 indicated that the combined effect could be either positive or negative for either age group, and here the coefficient on “both” is the combined effect. Similar to the previous chapter, controls are rarely significant in this sample, with even fewer significant coefficients than we found in Chapter 1.<sup>7</sup>

The more interesting point, in this paper at least, is the added effect from the *valentine* treatment. When controlling for the components of *both* that appear in *valentine* (specifications (4)-(6)), we still find a positive and significant effect among the young and we find a negative and significant effect among the older. That is, the added effect of *valentine* on top of *both* increases contributions of the young and decreases contributions of the older, yielding a significant effect from allowing a charitable gift purchase to substitute for (or add to) a traditional gift purchase, and indicating that something quirky is happening in the minds of potential donors. If they viewed a transaction in the *valentine* treatment as merely a charitable

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<sup>7</sup> Results are similar when varied groups, or all of the controls, are dropped, though we lose significance of *valentine* for the older when very few controls are included.

gift purchase, we should have witnessed no added effect. However, if they view the transaction as a substitute for a traditional gift purchase, or if it appears to create a two-for-one special, we should expect to find added effects, which we do.

#### 4 Discussion

Considering the findings above – a significant positive added effect of the *valentine* treatment on contributions from the young and a significant negative added effect on contributions from the older half of the sample – the first inclination might be to think that these results are simply picking up a “glow” from the holiday (or the mention of it and the appearance of the pretty red card) that exists for the younger half but is lacking (or even negative) for the older half of the sample.<sup>8</sup> However, when we speak of “the young” in this paper, we are not exactly referring to love-struck teenagers. The younger half of the sample is comprised of people living in their third, fourth, and some in their fifth decades of life. Surely the girl next door has moved away, and Prince Charming has revealed himself to be less than charming on occasion. Additionally, it is unclear why the older would necessarily dislike Valentine’s Day relative to the younger. Though unwilling (and unable) to rule it out completely, the composition of the sample would suggest that something other than holiday warm fuzzies (or lack thereof) is driving the results. The large percentage of contributors who requested a card would imply that for them, at least, the nonprofit has provided a viable Valentine gift which, if coded differently than a charitable gift, could help explain the differences in contributions between the *both* and *valentine* treatments (when split by age). The different effects for different

---

<sup>8</sup> Andreoni (1989, 1990) formalized the idea that giving may result in a “warm glow” or utility component that is not attributable to the outcome of that giving but rather to the knowledge that one gave and how much. Valentine’s Day reminders could enhance that glow for some (and perhaps diminish it for others), not inconsistent with the intuition among nonprofits and those who study their behavior that the Christmas season may be particularly fruitful for donations as a result of holiday cheer (Steinberg and Rooney, 2009).



age groups are still somewhat intriguing though, as we found in the previous chapter, not unusual.

Another reason that might come to mind to explain the results is the composition of marital status by age group. However, it is unclear what our assumption should be about marital status and a need, or lack of need, for a substitute for a Valentine gift. Among those requesting a card, 4 were married, one was single, and one had a domestic partner, although others may have told their significant others about the contribution without requesting a card. Additionally, the numbers are so small that further splits beyond age will render doubtful results. In the *valentine* treatment, there were 5 single people, 8 married, 2 widowed, 7 divorced/separated, and 3 with domestic partners. There were no single people among the older in the *valentine* treatment, and fewer married people in the *valentine* treatment than in the other treatments (8 in total – about a third of the subjects versus closer to half for the other treatments – with 4 in each age group). If we were to split the sample by marital status instead of age, it is unclear who should belong to which group, so we refrain from doing so and allow that the composition of marital status by age group may be having some effect on the results found, as differing marital status might yield differing need for a substitute for a Valentine gift (or differing like or dislike of Valentine’s Day which, unfortunately, we cannot rule out).

Finally, the composition of gender among the two age groups could be driving the results if we have reason to believe that one group is more likely to be in need of a Valentine gift than another, making a substitute gift more appealing to one group than another. If, instead of splitting the sample by age, we split by gender, we find no evidence of this argument. While the first of the three explanations offered above – positive or negative feelings towards the holiday – would blight our theory, either of the last two explanations, if they held, could still be consistent

with a theory suggesting that contributions may change when a charitable gift can substitute for a traditional gift (or add to it). If one group (married, single, etc., male, female) is in more need of a Valentine gift, that group could also be in more need of a substitute for it (or addition to it), which could account for the added Valentine effects seen. Similarly, if two groups differ in their mental coding of the transaction, with one counting it as a charitable gift purchase and another counting it as a traditional gift purchase, or with one counting it once and another “double counting” it, we could see differences in behavior similar to those witnessed here.

## 5 Concluding Remarks

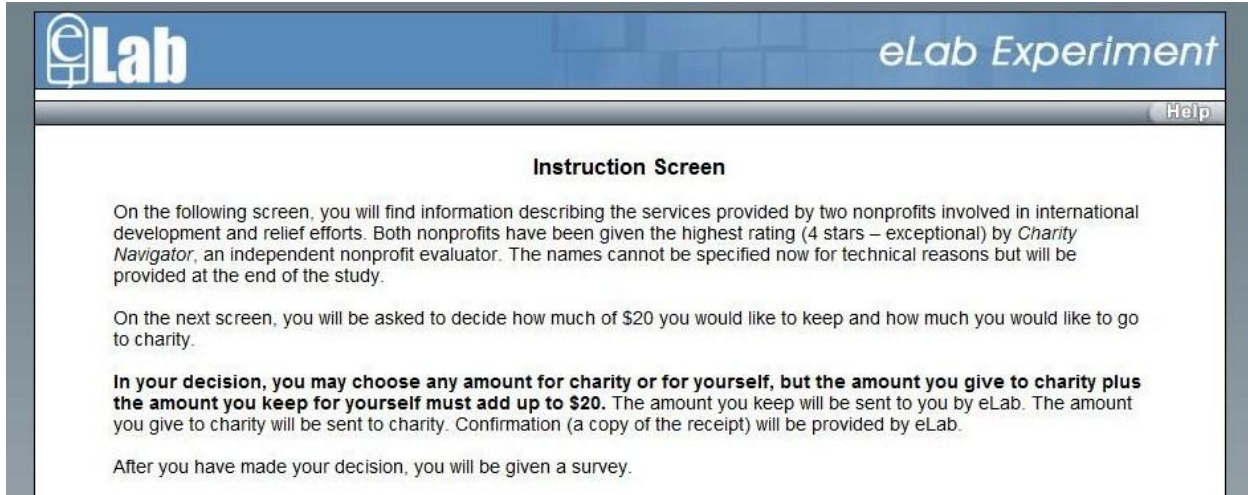
Donors often show themselves to be easily persuaded by different solicitation techniques or giving environments. Andreoni (1995) finds that people are more charitable in public goods games when adding to a public pot than when taking from it. Falk (2007) notes that potential donors in the field are more likely to respond when a small gift is included in the solicitation. Yoruk (2009) utilizes survey data and IRS data to find that one can increase the likelihood of giving simply by asking. Breman (2009) provides evidence that giving will increase more if one asks current donors to commit to increases in their future donations than if one asks them to commit to increases today. All of these findings indicate that donors and potential donors are sensitive to the marketing strategies of nonprofits. Thus, we might think that our subjects here were simply warmed or chilled by the reminder that Valentine’s Day was approaching. However, even if the effects we have seen are merely due to added “glow” (or “dis-glow”) from the holiday, a reason that we cannot completely rule out, the *valentine* treatment performed considerably well overall, regardless of the reason. A charity that cannot differentiate based on demographic characteristics might find such a holiday reminder and gift replacement option a

useful asset in increasing contributions. However, the relatively high percentage of subjects in the *valentine* treatment who requested a card suggests that there is something else at work here. Perhaps that something is the creation of a substitute for or addition to a traditional gift, altering the utility argument into which the good is placed, or perhaps even the budget account from which the expense is drawn. Future work will aim to distinguish more completely the effect of one-stop shopping from a charitable gift catalogue.

## Appendix: Experiment Screens

Screen 1 asked subjects about internet connection capabilities for the benefit of eLab.

### Screen 2, Neither and Both treatments



The screenshot shows a web browser window titled "eLab Experiment". The browser's address bar contains "eLab" on the left and "eLab Experiment" on the right. A "Help" button is visible in the top right corner of the browser window. The main content area is titled "Instruction Screen" and contains the following text:


On the following screen, you will find information describing the services provided by two nonprofits involved in international development and relief efforts. Both nonprofits have been given the highest rating (4 stars – exceptional) by *Charity Navigator*, an independent nonprofit evaluator. The names cannot be specified now for technical reasons but will be provided at the end of the study.

On the next screen, you will be asked to decide how much of \$20 you would like to keep and how much you would like to go to charity.

**In your decision, you may choose any amount for charity or for yourself, but the amount you give to charity plus the amount you keep for yourself must add up to \$20.** The amount you keep will be sent to you by eLab. The amount you give to charity will be sent to charity. Confirmation (a copy of the receipt) will be provided by eLab.

After you have made your decision, you will be given a survey.

## Screen 2, Valentine treatment

eLab ExperimentHelp

### Instruction Screen

On the following screen, you will find information describing the services provided by two nonprofits involved in international development and relief efforts. Both nonprofits have been given the highest rating (4 stars – exceptional) by *Charity Navigator*, an independent nonprofit evaluator. The names cannot be specified now for technical reasons but will be provided at the end of the study.

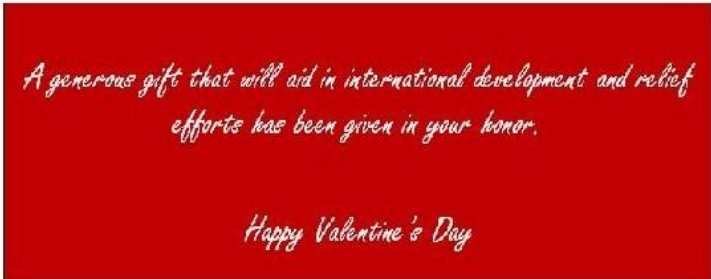
On the next screen, you will be asked to decide how much of \$20 you would like to keep and how much you would like to go to charity.

**In your decision, you may choose any amount for charity or for yourself, but the amount you give to charity plus the amount you keep for yourself must add up to \$20.** The amount you keep will be sent to you by eLab. The amount you give to charity will be sent to charity. Confirmation (a copy of the receipt) will be provided by eLab.

After you have made your decision, you will be given a survey.

An amount given to charity may be given in honor of somebody special for Valentine's Day, if you wish (just check the appropriate box on the following screen).


If you choose to give in honor of somebody special for Valentine's Day, a card (appearing below) will be mailed to you by eLab.



*A generous gift that will aid in international development and relief efforts has been given in your honor.*

*Happy Valentine's Day*

Screen 2 of 8

Proceed 

Screen 3, parts 1 & 2, Neither treatment

**Information and Decision Screen**

As mentioned on the previous screen, both charities are involved in development and relief efforts around the world. The pictures and project descriptions below provide summarized information about their work.

|  |  |
|--|--|
|  | <p style="text-align: center;"><b>Clean Water</b></p> <p>Every hour, people in developing countries die from water-borne diseases caused by unclean water and poor sanitation. We offer a range of solutions from water treatment and storage systems to latrines and hygiene education to provide safe water for drinking, cooking, irrigation, and watering livestock.</p>           |
|  | <p style="text-align: center;"><b>Hot Lunches</b></p> <p>Many parents are not able to feed their family regularly, and many children leave home without breakfast. They lose concentration on their studies and may fall asleep or get ill from chronic malnutrition. Hot lunches will help a child maintain the physical and mental strength to complete schoolwork successfully.</p> |
|  | <p style="text-align: center;"><b>Sports Gear</b></p> <p>A soccer ball can turn an empty lot into a playground, bring great joy to children who have seen more than their share of suffering, and provide children with healthy exercise. Yet a soccer ball is a luxury many families cannot afford when they have a hard time meeting basic needs.</p>                                |
|  | <p style="text-align: center;"><b>Milk</b></p> <p>Delicious taste and nine essential nutrients make milk an ideal gift to help girls and boys overcome malnutrition. Sadly, milk is hard to come by for children living in poverty. That's why we supply healthy items like milk to schools, orphanages, and hospitals in many impoverished areas.</p>                                 |
|  | <p style="text-align: center;"><b>School Supplies</b></p> <p>Many parents cannot afford to buy basic school supplies for their children. This means that some of the children have to stay out of school. Or if they do attend, they fall behind in their class work because they lack paper, pencils, a pencil sharpener, and other supplies.</p>                                     |

Please make your decision now. ***Please be sure that the total amount you give to charity plus the amount you keep adds up to the endowment of \$20.***

| Endowment |  | Give to charity (total from you) | Keep for self           |
|-----------|--|----------------------------------|-------------------------|
| \$20.00   |  | \$ <input type="text"/>          | \$ <input type="text"/> |



Screen3, Both treatment



Help

**Information and Decision Screen**

As mentioned on the previous screen, both charities are involved in development and relief efforts around the world. The pictures and project descriptions below provide summarized information about their work.

|  |   |
|--|---|
|  | <p style="text-align: center;"><b>Clean Water</b></p> <p>Every hour, people in developing countries die from water-borne diseases caused by unclean water and poor sanitation. We offer a range of solutions from water treatment and storage systems to latrines and hygiene education to provide safe water for drinking, cooking, irrigation, and watering livestock. \$16 can provide a family with clean water.</p> <p style="text-align: center;">Suggested Gift: \$16</p>                      |
|  | <p style="text-align: center;"><b>Hot Lunches</b></p> <p>Many parents are not able to feed their family regularly, and many children leave home without breakfast. They lose concentration on their studies and may fall asleep or get ill from chronic malnutrition. Hot lunches will help a child maintain the physical and mental strength to complete schoolwork successfully. \$20 can provide a child with hot lunches for a month.</p> <p style="text-align: center;">Suggested Gift: \$20</p> |
|  | <p style="text-align: center;"><b>Sports Gear</b></p> <p>A soccer ball can turn an empty lot into a playground, bring great joy to children who have seen more than their share of suffering, and provide children with healthy exercise. Yet a soccer ball is a luxury many families cannot afford when they have a hard time meeting basic needs. \$8 can provide a child with a soccer ball.</p> <p style="text-align: center;">Suggested Gift: \$8</p>  |
|  | <p style="text-align: center;"><b>Milk</b></p> <p>Delicious taste and nine essential nutrients make milk an ideal gift to help girls and boys overcome malnutrition. Sadly, milk is hard to come by for children living in poverty. That's why we supply healthy items like milk to schools, orphanages, and hospitals in many impoverished areas. \$4 can provide a child with milk for a week.</p> <p style="text-align: center;">Suggested Gift: \$4</p>   |
|  | <p style="text-align: center;"><b>School Supplies</b></p> <p>Many parents cannot afford to buy basic school supplies for their children. This means that some of the children have to stay out of school. Or if they do attend, they fall behind in their class work because they lack paper, pencils, a pencil sharpener, and other supplies. \$12 can provide a child with school supplies.</p> <p style="text-align: center;">Suggested Gift: \$12</p>   |

Please make your decision now. **Please be sure that the total amount you give to charity plus the amount you keep adds up to the endowment of \$20.**

| Endowment |  | Designation                               | Give to charity (total from you) | Keep for self           |
|-----------|--|---|----------------------------------|-------------------------|
| \$20.00   |  | Where Most Needed \$ <input type="text"/> | \$ <input type="text"/>          | \$ <input type="text"/> |
|           |  | Clean Water \$ <input type="text"/>       |                                  |                         |
|           |  | Hot Lunches \$ <input type="text"/>       |                                  |                         |
|           |  | Sports Gear \$ <input type="text"/>       |                                  |                         |
|           |  | Milk \$ <input type="text"/>              |                                  |                         |
|           |  | School Supplies \$ <input type="text"/>   |                                  |                         |

Screen 3, part 1, Valentine treatment



**Information and Decision Screen**

As mentioned on the previous screen, both charities are involved in development and relief efforts around the world. The pictures and project descriptions below provide summarized information about their work.

|  |   |
|--|---|
|  | <p style="text-align: center;"><b>Clean Water</b></p> <p>Every hour, people in developing countries die from water-borne diseases caused by unclean water and poor sanitation. We offer a range of solutions from water treatment and storage systems to latrines and hygiene education to provide safe water for drinking, cooking, irrigation, and watering livestock. \$16 can provide a family with clean water.</p> <p style="text-align: center;">Suggested Gift: \$16</p>                      |
|  | <p style="text-align: center;"><b>Hot Lunches</b></p> <p>Many parents are not able to feed their family regularly, and many children leave home without breakfast. They lose concentration on their studies and may fall asleep or get ill from chronic malnutrition. Hot lunches will help a child maintain the physical and mental strength to complete schoolwork successfully. \$20 can provide a child with hot lunches for a month.</p> <p style="text-align: center;">Suggested Gift: \$20</p> |
|  | <p style="text-align: center;"><b>Sports Gear</b></p> <p>A soccer ball can turn an empty lot into a playground, bring great joy to children who have seen more than their share of suffering, and provide children with healthy exercise. Yet a soccer ball is a luxury many families cannot afford when they have a hard time meeting basic needs. \$8 can provide a child with a soccer ball.</p> <p style="text-align: center;">Suggested Gift: \$8</p>  |
|  | <p style="text-align: center;"><b>Milk</b></p> <p>Delicious taste and nine essential nutrients make milk an ideal gift to help girls and boys overcome malnutrition. Sadly, milk is hard to come by for children living in poverty. That's why we supply healthy items like milk to schools, orphanages, and hospitals in many impoverished areas. \$4 can provide a child with milk for a week.</p> <p style="text-align: center;">Suggested Gift: \$4</p>   |
|  | <p style="text-align: center;"><b>School Supplies</b></p> <p>Many parents cannot afford to buy basic school supplies for their children. This means that some of the children have to stay out of school. Or if they do attend, they fall behind in their class work because they lack paper, pencils, a pencil sharpener, and other supplies. \$12 can provide a child with school supplies.</p> <p style="text-align: center;">Suggested Gift: \$12</p>   |

If you wish to give in honor of somebody special for Valentine's Day, please check this box before making your decision below. If you check the box, the card appearing previously will be mailed to you before the holiday.




### Screen 3, part 2, Valentine treatment

Please make your decision now. ***Please be sure that the total amount you give to charity plus the amount you keep adds up to the endowment of \$20.***


| Endowment |  | Designation                               | Give to charity<br>(total from you) | Keep for self           |
|-----------|--|---|-------------------------------------|-------------------------|
| \$20.00   |  | Where Most Needed \$ <input type="text"/> |                                     |                         |
|           |  | Clean Water \$ <input type="text"/>       |                                     |                         |
|           |  | Hot Lunches \$ <input type="text"/>       |                                     |                         |
|           |  | Sports Gear \$ <input type="text"/>       | \$ <input type="text"/>             | \$ <input type="text"/> |
|           |  | Milk \$ <input type="text"/>              |                                     |                         |
|           |  | School Supplies \$ <input type="text"/>   |                                     |                         |

Screen 3 of 8

Proceed 

The following transition screen and survey screens appeared in all treatments. In the Neither treatment, Question (6) read: What do you think it costs to provide the goods described previously (they appear in no particular order):

### Transition Screen and Survey Screens, All treatments

eLab ExperimentHelp

---

#### Charity Names Screen

Projects from two charities were presented in this study: *Samaritan's Purse* and *Adventist Development and Relief Agency*. Project pictures and descriptions were taken from the charity websites (though descriptions were condensed). Confirmation of the total donation will be provided by eLab via mail. If you donated in honor of somebody special for Valentine's Day, the card displayed previously will be mailed to you by eLab.

---

#### Survey

Thank you for taking the time to complete this survey. Completion of this survey will enable the researchers to do a more complete analysis of data obtained.

**(1) Would you please explain how you made your decisions, noting any factors that contributed to your behavior:**

---

**(2) Income:**

- Under 5,000
- 5,000-9,999
- 10,000-14,999
- 15,000-24,999
- 25,000-34,999
- 35,000-49,999
- 50,000-74,999
- 75,000-99,999
- 100,000 and over

---

**(3) Please list the state where you were raised/consider your childhood home:**

---

**(4) Please list the state in which you currently live:**

---

**(5) much do you think others gave today? \$**

---

(6) If you had not been told, what would you have thought it cost to provide the goods described previously (they appear in no particular order):

- \$  can provide a child with milk for a week
  - \$  can provide a family with clean water
  - \$  can provide a child with a soccer ball
  - \$  can provide a child with school supplies
  - \$  can provide a child with hot lunches for a month
- 

(7) Have you ever heard of *Samaritan's Purse* before today?

- Yes  No
- 

(8) Have you ever given to *Samaritan's Purse* before today?

- Yes  No
- 

(9) Have you ever heard of *Adventist Development and Relief Agency* before today?

- Yes  No
- 

(10) Have you ever given to *Adventist Development and Relief Agency* before today?

- Yes  No
- 

(11) Approximately how much did you give to charities and nonprofits last year?

How much of that was to a church/temple/house of worship?

How much of that was to other faith-based charities?

How much of that was to non faith-based charities?

---

(12) Approximately how much did you give to individuals last year?

Family/Friends/Acquaintances?

Strangers?

---

(13) Which charities specifically do you donate to?

Time?

Money?

---

(14) What determines how much you give? Please elaborate.

---

(15) Does your giving depend upon ...

Percentage of income?

Yes  No

How often you are asked?

Yes  No

A fixed amount regardless of income?

Yes  No

Other? Please elaborate:

---

(16) What might induce you to give more than you currently do even if your income and bills stay the same?

---

(17) Do you donate via charitable gift catalogues? (Charitable gift catalogues contain descriptions, pictures, and prices of projects provided by a charity, and donors are able to choose items to "purchase.")

Yes  No

Please explain:

---

**(18) Would you give more to a charity or nonprofit if it provided a charitable gift catalogue?**

Yes  No

**If “yes,” would this result in higher total charitable donations or would it result in a switch from one charity to another?**

**(19) What causes changes in your giving patterns?**

**(20) How often/when do you give?**

**(21) Why do you give?**

**(22) If there is anything else you would like to add that you feel is of importance but has not been captured in the questions above, please feel free to do so here:**

**(23) What is your opinion of Fair Trade goods?**

**(24) Does the Fair Trade logo affect your purchasing decisions? Please elaborate.**

**(25) Do you think of Fair Trade purchases as charitable giving? Please explain.**

---

**(26) Do you go out of your way to buy Ethos water, Red brand clothing, or other products for which a portion of profits are donated? Please explain.**


---

**(27) Do purchases of the above-mentioned brands (or other similar brands that donate some of their profits) make you feel better than regular purchases? Please explain.**

---

**(28) Please provide your mailing address so that we can respond quickly. (Your address will not be provided to the researcher or to the charities. It will simply allow eLab to more quickly respond based on your decisions.)**

## Conclusion Screen, All treatments

eLab ExperimentHelp

### Conclusion

You are done. Thank you for your participation in the study. Your answers have been successfully received.

You chose to give \$5.00 to charity. Based on your decisions you've earned \$15.00 and have been automatically entered into the \$100 prize drawing for this study.

Projects from two charities were presented in this study: *Samaritan's Purse* and *Adventist Development and Relief Agency*. Project pictures and descriptions were adapted from the charity websites (though descriptions were condensed)

Once the data collection is completed and the lottery is drawn, we will contact you at [elabadmin@owen.vanderbilt.edu](mailto:elabadmin@owen.vanderbilt.edu) if you are a winner.

We appreciate your contribution to our research.

[Click here to leave the experiment](#)

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## CHAPTER III

### RISK AVERSION, NO INCENTIVE EFFECTS

#### 1 Introduction

Experiments have been used throughout the behavioral literature of such disciplines as economics, psychology, and sociology because of their ability to test hypotheses in controlled laboratory settings. Unfortunately, control can come at a cost – there often exists a tradeoff between reality and tractability. One such tradeoff may occur when experiments ask subjects to make decisions for small rewards. Indeed, a common criticism of experimental research stems from the possibility that subjects may behave differently when they are playing with the small amounts of money present in experiments than they would when making important decisions having large financial consequences.

Kahneman and Tversky (1979) argue for hypothetical payments to avoid the artificial nature of laboratory experiments with small incentives, their premise being that subjects will be able to accurately report how they would behave if large incentives were real. However, Holt and Laury (2002) find that subjects behave in a vastly different manner when stakes are large and hypothetical than they do when stakes are large and real, diminishing the appeal of high hypothetical stakes. They compare behavior under cases of low, high, and high hypothetical stakes and note that subjects behave in a more risk-averse manner when stakes are high than when they are low, but that high hypothetical stakes do not elicit the risk-averse behavior that high real stakes do (Holt and Laury, 2002). But paying high real stakes is costly. Is there a

method for obtaining risk-averse behavior without the expense of typical high stakes experiments?

We have information on risk attitudes for a broad range of stake sizes, and we have information on risk attitudes when the probability of payment is one (real payments) and when the probability of payment is zero (hypothetical payments), but we still need more analysis of risk attitudes when stakes are high but the probability of payment is between zero and one. Though many studies of risk behavior utilize multiple-decision lottery-choice tasks in which only one decision is paid and, thus, the probability of payment for any single decision among the group is less than one, we have much less information about risk attitudes when the probability of any payment (beyond a show-up fee) is less than one. If increasing the probability of payment from zero to one leads to an increase in risk-averse behavior when stakes are high, it is plausible that increasing the probability of payment from zero to something less than one will provide a similar result, so long as subjects focus on the stake size more than the probability of payment.

Bolle (1990) provides a similar supposition about experimental behavior in general rather than specifically with respect to risk aversion. He finds some evidence in support of the idea that subjects focus on stake size rather than the probability of payment in an ultimatum game environment. Behavior when subjects are proposing/rejecting offers splitting DM20 is similar to behavior when subjects are proposing/rejecting offers splitting DM20 with probability 0.1. Presumably at some point, however, if the probability of payment were low enough, the focus would shift to it rather than remain transfixed by stake size, as the Holt-Laury (2002) experiments would suggest. In them subjects behave very differently when the probability of payment is zero than when it is one, at least when stakes are high.

When does this shift in focus occur, and does it occur gradually or is there a tipping point? If it occurs gradually – that is, if subjects are sensitive to the expected payment – decreasing the probability of payment would require a simultaneous increase in stake size, which would not lower experiment costs. Again, at least in the ultimatum game environment, Bolle (1990) provides some useful evidence. When playing for a 10% chance of DM200, proposers behave differently than when playing for DM20. In specific, they become more “risk averse” in their offers (very few offered less than 35% of the pot) when the stake size increased even though the expected payment remained constant. Such behavior, combined with the Holt and Laury (2002) findings, implies that rather than a gradual shift of focus from stake size to probability of payment, there may be a tipping point. If so, then by lowering the probability of payment to that point, we could lower the cost of experiments while having no effect on behavior – we would achieve high stakes behavior at a low stakes cost. Does this tipping point exist and, if so, where does it occur?

In this project, we extend the Holt and Laury (2002) setup to include treatments in which the lotteries are played for large amounts of money, but only some subjects will be randomly chosen to actually have their choices carried out, though all will receive a small participation fee. We will hold constant the stakes but vary the probability of payment. If people overweight the probability of unlikely events as Prospect Theory would suggest (Kahneman and Tversky, 1979), even a small probability of a large payment may be sufficient to encourage subjects to take the tasks seriously. If the experiment shows that a small probability of high pay induces risk aversion just as 100% probability of high pay does, then this payment mechanism would provide a low-cost, justifiable alternative to high stakes payments that still brings forth risk-averse, high stakes results.

## 2 Experiment Design

In the experiment, the 20X stakes (relatively high stakes) treatment of the Holt-Laury experiment was adapted to computerized form by substituting card draws for die rolls. In the Holt-Laury setup, subjects make a series of decisions in which they choose between a relatively safe lottery (option A below) and a relatively risky lottery (option B below). The lottery outcomes remain constant but with each successive decision, the probability of the better outcome increases until the final decision is reached, in which the lotteries are degenerate. Table 1 illustrates. Though the original Holt-Laury task contained only ten rounds, we include eleven (the additional round is the first) for symmetry. A subject's degree of risk tolerance is gauged by examining the number of safe lotteries chosen before switching to the risky option in the remaining rounds. A risk-neutral subject will choose Option A for the first 5 rounds and switch to Option B in the sixth round and beyond. After subjects made all of their decisions, one decision was randomly chosen, as in Holt and Laury (2002). The decision was "played out," though not necessarily for payment, as detailed below.

Table 1: Lottery Choice Decisions

| Round/<br>Decision | Option A                               | Option B                              |
|--------------------|--|---------------------------------------|
| 1                  | 100% chance of \$32                    | 100% chance of \$2                    |
| 2                  | 10% chance of \$40; 90% chance of \$32 | 10% chance of \$77; 90% chance of \$2 |
| 3                  | 20% chance of \$40; 80% chance of \$32 | 20% chance of \$77; 80% chance of \$2 |
| 4                  | 30% chance of \$40; 70% chance of \$32 | 30% chance of \$77; 70% chance of \$2 |
| 5                  | 40% chance of \$40; 60% chance of \$32 | 40% chance of \$77; 60% chance of \$2 |
| 6                  | 50% chance of \$40; 50% chance of \$32 | 50% chance of \$77; 50% chance of \$2 |
| 7                  | 60% chance of \$40; 40% chance of \$32 | 60% chance of \$77; 40% chance of \$2 |
| 8                  | 70% chance of \$40; 30% chance of \$32 | 70% chance of \$77; 30% chance of \$2 |
| 9                  | 80% chance of \$40; 20% chance of \$32 | 80% chance of \$77; 20% chance of \$2 |
| 10                 | 90% chance of \$40; 10% chance of \$32 | 90% chance of \$77; 10% chance of \$2 |
| 11                 | 100% chance of \$40                    | 100% chance of \$77                   |

The Holt-Laury treatments vary the size of the stakes and pay subjects with a probability of either zero or one. In this paper, stake size is held constant and high, but the probability of payment is varied more continuously by including treatments with 0% (=hypothetical), 10%, 20%, 30%, and 100% (=real) probability of payment. Subjects were randomly assigned to treatments. Instructions remained as similar as possible between treatments, though the instructions in the hypothetical treatment clearly indicated that the experiment was hypothetical and would not result in payment beyond the show-up fee. Instructions in the real treatment clearly indicated that the payment was real. Instructions in the other three treatments described how a 10%, 20%, or 30% probability of payment would be carried out. All subjects who completed the study received a \$5 show-up fee in addition to any lottery earnings.

In all treatments, to determine which of the eleven decisions was randomly chosen, a deck of eleven computerized cards, one for each decision, was shuffled electronically. One card was chosen by the subject, then whichever round was on the underside of that card was played out. That is, the lottery of the option that the subject had chosen in that decision round was implemented via another deck of computerized cards. This deck contained 100 cards, corresponding to the odds for the chosen lottery. For example, if the chosen lottery paid \$5 with probability .2 and \$10 with probability .8, the deck had 20 cards with a “\$5” label and 80 cards with a “\$10” label. For those subjects in the hypothetical and real treatments, no other events occurred in the experiment. For the subjects in the 10%, 20%, or 30% treatments, an additional deck of 100 cards determined whether or not they would be paid. Subjects again shuffled an online deck, then clicked on a card. If the underside read “yes,” the subject was paid. If it read “no,” the subject was not paid (beyond the show-up fee). The number of “yes” and “no” cards corresponded to the probability of payment. After any of the above-mentioned card-shufflings,

subjects would click on a “reveal” button, showing them the undersides of all the cards, which allowed them to see that the odds were not stacked against them. Animated instructions illustrated the sequence of events, but subjects did not participate in any practice rounds or other experiments beforehand.

To summarize, subjects made 11 decisions, corresponding to the 11 rows in Table 1. Then they shuffled a deck of 11 cards to determine which decision round would be played out. They then shuffled a deck of 100 cards labeled according their chosen lottery (Option A or Option B) of the decision round just previously determined to find out their lottery winnings. Subjects in the 10%, 20%, and 30% treatments shuffled one more deck with cards labeled “yes” and “no” to find out if they would receive the lottery outcome. Screenshots of the experiment appear in the appendix.

The experiments were run on subjects drawn from an online subject pool maintained by eLab and the Owen Graduate School of Management at Vanderbilt University. Subjects are recruited over time via online postings, resulting in a participant pool of about 80,000 people. They file tax information with the university, so duplicates are not a problem, and they provide many controls upon signing up (such as age and education), reducing the need for lengthy post-experiment surveys. This pool allows for much demographic diversity among subjects. For example, subjects ranged in age from 20 to 62, in income from less than \$10,000 to over \$150,000 (though we do not have income data for all of the subjects, Table 1 specifies the number for which we do), and education from less than high school to having completed a graduate degree. 107 subjects signed on in June of 2009, and they were randomly assigned to treatments. Of those subjects, 98 completed the experiment. A summary of subject characteristics appears in Table 2 for subjects completing the experiment, subjects completing



with no major mistakes, and subjects completing with no mistakes. Mistakes will be defined presently.

Table 2: Subject Characteristics

| Treatment              | Completed the Experiment |         |        |        |        |        | Completed, No Major Mistakes |         |        |        |        |        | Completed, No Mistakes |         |        |        |        |        |
|------------------------|--------------------------|---------|--------|--------|--------|--------|------------------------------|---------|--------|--------|--------|--------|------------------------|---------|--------|--------|--------|--------|
|                        | All                      | 0%      | 10%    | 20%    | 30%    | 100%   | All                          | 0%      | 10%    | 20%    | 30%    | 100%   | All                    | 0%      | 10%    | 20%    | 30%    | 100%   |
| Subjects               | 98                       | 20      | 20     | 19     | 19     | 20     | 82                           | 17      | 16     | 18     | 14     | 17     | 58                     | 14      | 13     | 10     | 10     | 11     |
| Age                    | 40                       | 39      | 42     | 40     | 39     | 41     | 40                           | 39      | 41     | 41     | 37     | 41     | 40                     | 39      | 39     | 41     | 38     | 45     |
| Male                   | 51.02%                   | 40.00%  | 65.00% | 73.68% | 36.84% | 40.00% | 48.78%                       | 35.29%  | 62.50% | 72.22% | 28.57% | 41.18% | 50.00%                 | 35.71%  | 69.23% | 80.00% | 20.00% | 45.45% |
| Less than High School  | 2.04%                    | 0.00%   | 10.00% | 0.00%  | 0.00%  | 0.00%  | 2.44%                        | 0.00%   | 12.50% | 0.00%  | 0.00%  | 0.00%  | 3.45%                  | 0.00%   | 15.38% | 0.00%  | 0.00%  |        |
| High School            | 15.31%                   | 0.00%   | 5.00%  | 15.79% | 31.58% | 25.00% | 9.76%                        | 0.00%   | 0.00%  | 11.11% | 21.43% | 17.65% | 8.62%                  | 0.00%   | 0.00%  | 10.00% | 20.00% |        |
| Some College           | 22.45%                   | 10.00%  | 35.00% | 26.32% | 21.05% | 20.00% | 25.61%                       | 11.76%  | 37.50% | 27.78% | 28.57% | 23.53% | 25.86%                 | 14.29%  | 38.46% | 20.00% | 30.00% |        |
| College                | 33.67%                   | 65.00%  | 15.00% | 31.58% | 15.79% | 40.00% | 36.59%                       | 64.71%  | 18.75% | 33.33% | 21.43% | 41.18% | 31.03%                 | 57.14%  | 7.69%  | 40.00% | 20.00% |        |
| Some Graduate Study    | 8.16%                    | 10.00%  | 20.00% | 5.26%  | 5.26%  | 0.00%  | 8.54%                        | 11.76%  | 18.75% | 5.56%  | 7.14%  | 0.00%  | 10.34%                 | 14.29%  | 23.08% | 0.00%  | 10.00% |        |
| Graduate Degree        | 18.37%                   | 15.00%  | 15.00% | 21.05% | 26.32% | 15.00% | 17.07%                       | 11.76%  | 12.50% | 22.22% | 21.43% | 17.65% | 20.69%                 | 14.29%  | 15.38% | 30.00% | 20.00% |        |
| Asian                  | 3.06%                    | 0.00%   | 0.00%  | 10.53% | 5.26%  | 0.00%  | 2.44%                        | 0.00%   | 0.00%  | 11.11% | 0.00%  | 0.00%  | 1.72%                  | 0.00%   | 0.00%  | 10.00% | 0.00%  |        |
| Black                  | 4.08%                    | 0.00%   | 5.00%  | 0.00%  | 5.26%  | 10.00% | 3.66%                        | 0.00%   | 6.25%  | 0.00%  | 7.14%  | 5.88%  | 5.17%                  | 0.00%   | 7.69%  | 0.00%  | 10.00% |        |
| Hispanic               | 2.04%                    | 0.00%   | 0.00%  | 10.53% | 0.00%  | 0.00%  | 2.44%                        | 0.00%   | 0.00%  | 11.11% | 0.00%  | 0.00%  | 1.72%                  | 0.00%   | 0.00%  | 10.00% | 0.00%  |        |
| White                  | 88.78%                   | 100.00% | 95.00% | 73.68% | 89.47% | 85.00% | 89.02%                       | 100.00% | 93.75% | 72.22% | 92.86% | 88.24% | 89.66%                 | 100.00% | 92.31% | 80.00% | 90.00% |        |
| Other                  | 2.04%                    | 0.00%   | 0.00%  | 5.26%  | 0.00%  | 5.00%  | 2.44%                        | 0.00%   | 0.00%  | 5.56%  | 0.00%  | 5.88%  | 1.72%                  | 0.00%   | 0.00%  | 0.00%  | 9.09%  |        |
| Subjects               | 84                       | 20      | 16     | 15     | 15     | 18     | 70                           | 17      | 12     | 14     | 11     | 16     | 51                     | 14      | 11     | 8      | 8      |        |
| Income < \$10,000      | 2.38%                    | 0.00%   | 6.25%  | 6.67%  | 0.00%  | 0.00%  | 2.86%                        | 0.00%   | 8.33%  | 7.14%  | 0.00%  | 0.00%  | 3.92%                  | 0.00%   | 9.09%  | 12.50% | 0.00%  |        |
| \$10,000 to \$14,999   | 5.95%                    | 15.00%  | 0.00%  | 6.67%  | 6.67%  | 0.00%  | 7.14%                        | 17.65%  | 0.00%  | 7.14%  | 9.09%  | 0.00%  | 3.92%                  | 7.14%   | 0.00%  | 0.00%  | 12.50% |        |
| \$15,000 to \$24,999   | 10.71%                   | 5.00%   | 12.50% | 6.67%  | 6.67%  | 22.22% | 10.00%                       | 5.88%   | 16.67% | 7.14%  | 0.00%  | 18.75% | 9.80%                  | 7.14%   | 9.09%  | 0.00%  | 0.00%  |        |
| \$25,000 to \$34,999   | 10.71%                   | 15.00%  | 6.25%  | 13.33% | 6.67%  | 11.11% | 12.86%                       | 17.65%  | 8.33%  | 14.29% | 9.09%  | 12.50% | 11.76%                 | 21.43%  | 9.09%  | 12.50% | 0.00%  |        |
| \$35,000 to \$39,999   | 5.95%                    | 5.00%   | 6.25%  | 0.00%  | 6.67%  | 11.11% | 5.71%                        | 5.88%   | 0.00%  | 0.00%  | 9.09%  | 12.50% | 5.88%                  | 7.14%   | 0.00%  | 0.00%  |        |        |
| \$40,000 to \$49,999   | 13.10%                   | 10.00%  | 25.00% | 13.33% | 6.67%  | 11.11% | 14.29%                       | 11.76%  | 33.33% | 7.14%  | 9.09%  | 12.50% | 17.65%                 | 14.29%  | 36.36% | 12.50% | 10.00% |        |
| \$50,000 to \$74,999   | 23.81%                   | 20.00%  | 37.50% | 13.33% | 20.00% | 27.78% | 17.14%                       | 17.65%  | 25.00% | 14.29% | 0.00%  | 25.00% | 17.65%                 | 21.43%  | 27.27% | 12.50% | 0.00%  |        |
| \$75,000 to \$99,999   | 8.33%                    | 5.00%   | 6.25%  | 13.33% | 13.33% | 5.56%  | 8.57%                        | 0.00%   | 8.33%  | 14.29% | 18.18% | 6.25%  | 7.84%                  | 0.00%   | 9.09%  | 12.50% | 10.00% |        |
| \$100,000 to \$149,999 | 9.52%                    | 5.00%   | 0.00%  | 13.33% | 26.67% | 5.56%  | 11.43%                       | 5.88%   | 0.00%  | 14.29% | 36.36% | 6.25%  | 11.76%                 | 7.14%   | 0.00%  | 12.50% | 37.50% |        |
| \$150,000 +            | 9.52%                    | 20.00%  | 0.00%  | 13.33% | 6.67%  | 5.56%  | 10.00%                       | 17.65%  | 0.00%  | 14.29% | 9.09%  | 6.25%  | 9.80%                  | 14.29%  | 0.00%  | 25.00% | 12.50% |        |

### 3 Results

Although subjects should have – assuming money was the only element of their payoff function for this experiment – chosen Option A in the first decision, chosen Option B in the last, and switched from A to B only once somewhere in the middle, we saw a variety of “interesting” behaviors. On the whole, as Table 3 indicates, “interesting” behavior was roughly as prevalent in any given treatment as in any other and, from Table 2, we notice no great differences in characteristics between individuals who make mistakes and those who don’t. Table 3 reports the number of incompletes, the number of major mistakes, and the number of minor mistakes. Incompletes account for people who signed off while reading the instructions (7) or before making all of their decisions (2). A major mistake is defined as a choice of Option B in the first

decision and/or a choice of Option A in the last decision. A minor mistake involves a back-and-forth switch which can be fixed by changing just one decision (e.g. A, A, A, A, A, B, A, B, B, B), though which one should be changed is debatable.

Table 3: Incompletes and Mistakes

|                             | All | 0%  | 10% | 20% | 30% | 100% |
|-----------------------------|-----|-----|-----|-----|-----|------|
| Started Experiment          | 107 | 24  | 20  | 20  | 21  | 22   |
| Completes                   | 98  | 20  | 20  | 19  | 19  | 20   |
| Incompletes                 | 9   | 4   | 0   | 1   | 2   | 2    |
| Major Mistakes              | 16  | 3   | 4   | 1   | 5   | 3    |
| Minor Mistakes              | 24  | 3   | 3   | 8   | 4   | 6    |
| "Problems" as % of Starters | 46% | 42% | 35% | 50% | 52% | 50%  |

Because of the many mistakes, results are quite jumbled, with all treatments yielding similar averages, medians, and distributions of safe choices. Thus, results presented below exclude incompletes by necessity and major mistakes under the assumption that these people were not paying any attention whatsoever. A minor mistake is handled in one of three ways: (1) by assuming the subject meant to switch the first time he did so, (2) by assuming the subject meant to switch the last time he did so, (3) by assuming the subject did not know when he meant to switch (and omitting him from analysis). The corresponding terminology we will use is (1) first switch, (2) last switch, and (3) switch (all mistakes dropped). Table 4 summarizes the results under the first switch assumption, and Figure 1 illustrates graphically the distribution of safe choices by treatment in each round. Recall that a risk-neutral person would choose Option A in the first five decisions (5 safe choices) and Option B after that.

|          | All  | 0%   | 10%  | 20%  | 30%  | 100% |
|----------|------|------|------|------|------|------|
| Subjects | 82   | 17   | 16   | 18   | 14   | 17   |
| Mean     | 6.32 | 6.76 | 6.75 | 5.83 | 6.14 | 6.12 |
| Median   | 7    | 7    | 7.5  | 5    | 5    | 6    |
| Mode     | 10   | 7    | 8    | 4    | 5    | 6, 7 |

We notice no great differences among the means of safe choices by treatment, and the medians and modes would actually suggest that the higher probability of payment leads to less risk aversion, though the progression is nonlinear. As the probability of payment increases, safe choices appear to first decrease then increase, though differences are not significant. The graphical portrayal in Figure 1 displays entire distributions of safe choices, though they are relatively similar as well. Table 7 at the end of the section reports p-values from Wilcoxon-Mann-Whitney and Kolmogorov-Smirnov tests, all of which are large.

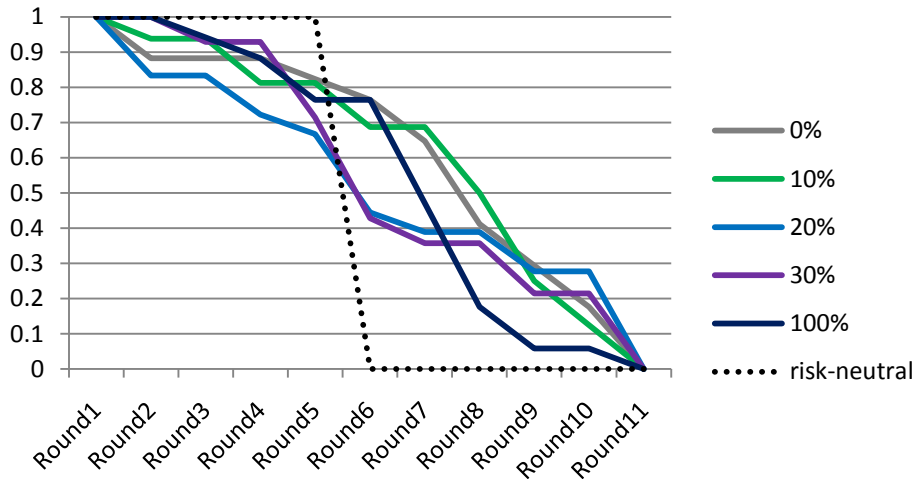


Figure 1: Safe Choices by Decision Round, First Switch

Similarly, under the last switch assumption, if anything, Table 5 indicates decreasing risk aversion with higher probabilities of payment, though no significant differences exist. Figure 2 provides a graphical display of safe choices.

Table 5: Safe Choices, Last Switch, No Major Mistakes

|          | All  | 0% | 10%   | 20%  | 30%  | 100% |
|----------|------|----|-------|------|------|------|
| Subjects | 82   | 17 | 16    | 18   | 14   | 17   |
| Mean     | 7.66 | 8  | 7.63  | 7.78 | 7.29 | 7.53 |
| Median   | 8    | 8  | 8     | 8    | 7.5  | 7    |
| Mode     | 10   | 10 | 8, 10 | 10   | 10   | 7    |

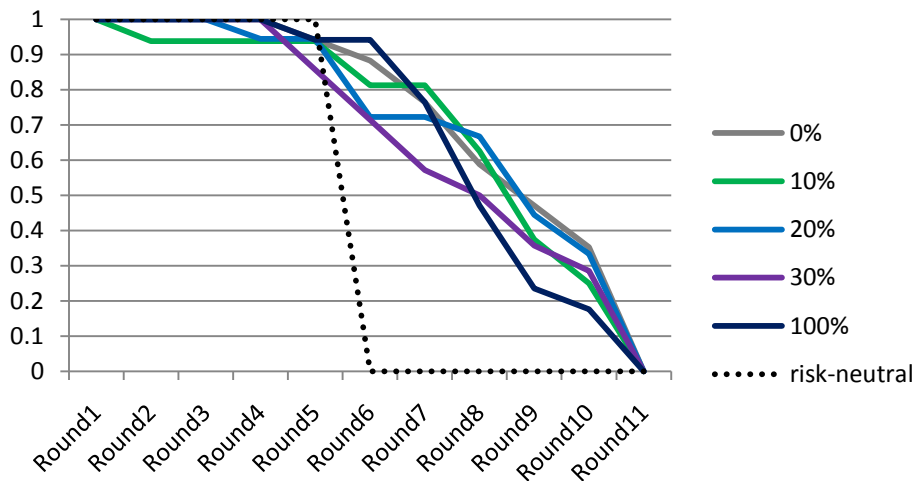


Figure 2: Safe Choices by Decision Round, Last Switch

Perhaps if we drop all mistakes entirely and only analyze the decisions of people who switch only once we will see some differences in treatments. But perhaps not. Table 6 reports summary statistics and Figure 3 displays the distributions of safe choices by treatment. Again, if anything, it appears that subjects are becoming *less* risk averse as the probability of payment (and thus the expected payment) increases. Again, no significant differences exist.

Table 6: Safe Choices, Switch - No Mistakes

|          | All  | 0%    | 10%  | 20% | 30% | 100% |
|----------|------|-------|------|-----|-----|------|
| Subjects | 58   | 14    | 13   | 10  | 10  | 11   |
| Mean     | 7.34 | 7.57  | 7.31 | 7.9 | 7   | 6.91 |
| Median   | 8    | 7.5   | 8    | 9   | 7   | 7    |
| Mode     | 10   | 7, 10 | 8    | 10  | 10  | 7    |

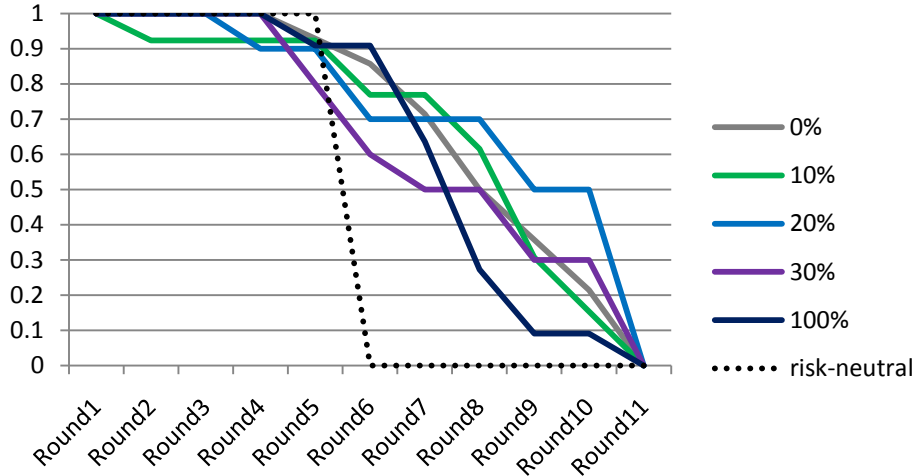


Figure 3: Safe Choices by Decision Round, No Mistakes

As mentioned previously, Table 7 reports no significant differences by treatment, regardless of what assumption we make about simple mistakes, or whether or not they are included. In one last attempt (not reported here), we included controls (age, gender, education, ethnicity, and income) and ran Ordered Probits, with and without income (as we did not have income data for all subjects). Regardless of how we defined high education, how we defined high income, or if we included high income, treatment indicators were rarely significant and the Wald statistic was pitiful in all cases but one. The 20% treatment indicator was weakly significant (p-values close to 0.10) every so often, and indicated more risk averse behavior than

that of subjects in the 100% treatment. The other treatment indicators (0%, 10%, and 30%) were usually positive as well, though insignificant.

Table 7: Distribution Tests

|            | First Switch |            |            |             | Last Switch |            |            |             | Switch     |            |            |             |     |
|------------|--------------|------------|------------|-------------|-------------|------------|------------|-------------|------------|------------|------------|-------------|-----|
|            | <i>10%</i>   | <i>20%</i> | <i>30%</i> | <i>100%</i> | <i>10%</i>  | <i>20%</i> | <i>30%</i> | <i>100%</i> | <i>10%</i> | <i>20%</i> | <i>30%</i> | <i>100%</i> |     |
| <i>0%</i>  | 0.971        | 0.404      | 0.378      | 0.248       | 0.754       | 0.852      | 0.383      | 0.409       | 1.000      | 0.491      | 0.573      | 0.343       | WMW |
|            | 1.000        | 0.234      | 0.277      | 0.694       | 1.000       | 0.922      | 0.870      | 0.694       | 1.000      | 0.643      | 0.699      | 0.662       | KS  |
| <i>10%</i> |              | 0.496      | 0.501      | 0.208       |             | 0.791      | 0.597      | 0.497       |            | 0.373      | 0.705      | 0.250       | WMW |
|            |              | 0.332      | 0.291      | 0.296       |             | 1.000      | 0.656      | 0.951       |            | 0.361      | 0.696      | 0.374       | KS  |
| <i>20%</i> |              |            | 0.802      | 0.690       |             |            | 0.547      | 0.470       |            |            | 0.408      | 0.209       | WMW |
|            |              |            | 0.807      | 0.234       |             |            | 0.925      | 0.650       |            |            | 0.972      | 0.211       | KS  |
| <i>30%</i> |              |            |            | 0.764       |             |            |            | 0.778       |            |            |            | 1.000       | WMW |
|            |              |            |            | 0.277       |             |            |            | 0.707       |            |            |            | 0.608       | KS  |

p-values reported from Wilcoxon-Mann-Whitney (WMW) and Kolmogorov-Smirnov (KS) tests.

#### 4 Discussion

Well, we did find that low probabilities of payment can still achieve high levels of risk aversion when stakes are large – good news – but we also found the same degree of risk aversion with no probability of payment, regardless of the handling of mistakes – odd news. However, our sample size is quite small. Somewhat similar to these findings, in a low stakes environment, Laury (2006) finds that risk attitudes are identical whether one pays subjects for one randomly chosen decision out of ten or for all ten decisions; however, when one of ten higher stakes (10 times the lower) decisions is randomly chosen, risk aversion is greater than in either of the low stakes treatments. These results would suggest that stake size, rather than the probability of payment, is driving behavior.

If such is always the case, however, then hypothetical high stakes should result in as much risk aversion as real high stakes. However, the Holt and Laury (2002) findings, as well as Harrison et al’s comment (Harrison et al, 2005) and their reply (Holt and Laury, 2005) would suggest that subjects do not always focus solely on stake size. When payments are hypothetical,

stake size does not appear to matter in these experiments. Additionally, Dickhaut et al (2009) found, by utilizing points instead of dollars in the experimental instructions, they could vary the degree of risk behavior such that even raising the point-stakes (rather than the dollar-stakes) increased risk aversion when payments were real, but failed to do so when payments were hypothetical. Why then, do we find the same degree of risk aversion holding constant high stakes but varying the probability of payment from zero to one?

One might be able to argue that in-person die rolls are less confusing than computerized card draws, which could potentially explain some differences in results. For example, Harbaugh, Krause, and Vesterlund, test Prospect Theory's four main predictions about risk attitudes (Kahneman and Tversky, 1979) using two different risk elicitation techniques, one relatively simple (choosing between a lottery and its expected value) and one more complicated (naming the price one would be willing to pay to play (or avoid playing) a lottery). They find that the more complicated elicitation method induces Prospect Theory's predictions but that the simpler task induces random behavior, suggesting risk neutrality (Harbaugh, Krause, and Vesterlund, 2009). In the simpler task, the expected payment is what counts.

In Holt and Laury (2002), the expected payment is nothing in the hypothetical decisions and is increasing as stake size increases for other decisions. In the experiment described here, the expected payment is nothing in the hypothetical treatment and increasing as the probability of payment increases since stake size is held constant. If both were "simple" tasks, then according to the findings of Harbaugh, Krause, and Vesterlund (2009), we should expect to see the same effects on risk aversion in both experiments as the expected payment increases (though not necessarily risk neutrality because stakes are much larger than in Harbaugh, Krause, and Vesterlund (2009), and the tasks are somewhat different). If one task is more complicated than

another, we could see differences in behavior. The fact that this experiment witnessed a large proportion of mistakes might suggest that this task was more complicated. That is, if the mental cost of optimizing is great enough, we should expect to see many mistakes because people will optimize by failing to “optimize.” Numerous authors have suggested that mistakes in experiments may not be mistakes if the expected cost of optimizing is greater than the expected benefit (for example, Smith and Walker, 1993, and Harrison, Johnson, McInnes, and Rutstrom, 2005), which could help explain the incompletes and mistakes. Perhaps the decision cost was too high for them. As Camerer and Hogarth note, absent intrinsic motivation, “in many tasks incentives do not matter ... because the task is too hard,” (1999). However, even when omitting mistakes, we see little difference between the hypothetical and real treatments (and relatively little difference if we compare our real treatment to the Holt and Laury (2002) 20X treatment).

Rather than assuming that one task was more complicated than another, we could alternatively posit that the “trainer” mentioned in Holt and Laury (2005, but also occurring in 2002) and the paid practice round in the experiments by Dickhaut et al (2009), which are presumably teaching subjects not to make mistakes, may also be confounding interpretations of findings. Perhaps it is exactly those subjects who would have made a mistake who vary their behavior when expected payments change, whereas the subjects who would not have made a mistake can provide a decent estimate of their “real” behavior even in a hypothetical setting. As Jacobson and Petrie (2009) note in a paper relating risk aversion and mistakes to real financial decisions, mistakes can be revealing. Discouraging them might simply trade one type of noise for another. However, Harrison et al’s (2005) replication did not appear to include a trainer round and, as they note, mistakes (which occurred less than 20% of the time) did not affect their conclusions.



Finally, one key difference between this experiment and the others like it is that this experiment was run in an online, rather than a brick-and-mortar, laboratory. When one has signed up to participate in an experiment and is sitting in the laboratory, the opportunity cost of taking one's time to deliberate is relatively low – subjects rarely leave experiments early. When one is sitting at one's computer, the opportunity cost of staying and deliberating is arguably higher, which may have led to the large number of mistakes. Why it would have led to the same degree of risk aversion in hypothetical and real treatments is not exactly clear. Perhaps the cost weeded out the extrinsically motivated subjects, leaving only those subjects who were intrinsically motivated to think about how they would have behaved had the task been real, yielding similar responses in all treatments, regardless of the probability of payment.

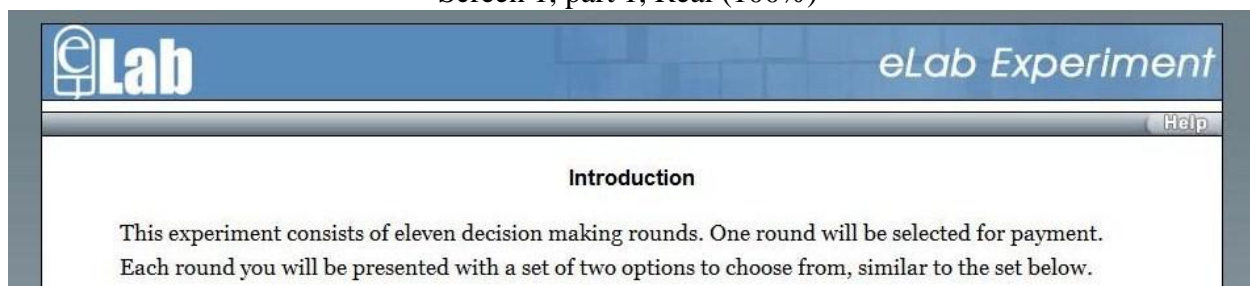
## 5 Concluding Remarks

Though the sample size was relatively small, especially after dropping all mistakes, the results found here indicate that there may be instances in which low probabilities of high stakes can elicit risk behavior consistent with that elicited by high real stakes, but additional experiments are required.

## Appendix: Experiment Screens

Unless necessary, the screens below will display those of the 20% treatment. In the other treatments, “20%” would be replaced with “10%” or “30%”; or “a 20% chance for additional payment” or “possible additional payment” would be “a hypothetical payment” (0% treatment) or “an additional payment” (in the 100% treatment).

### Screen 1, part 1, Real (100%)

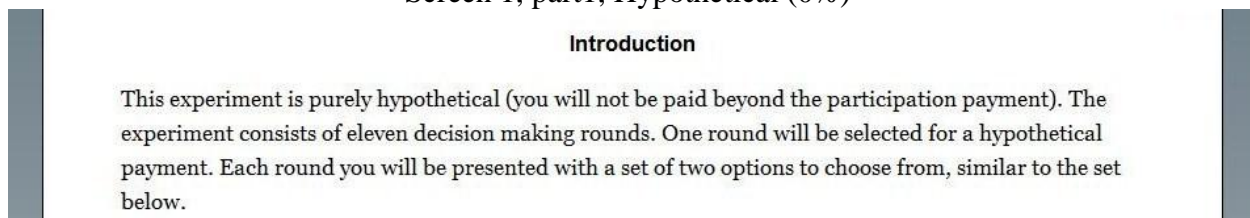


**eLab** eLab Experiment Help

**Introduction**

This experiment consists of eleven decision making rounds. One round will be selected for payment. Each round you will be presented with a set of two options to choose from, similar to the set below.

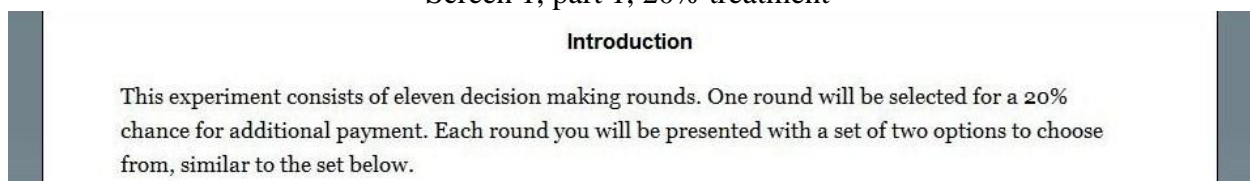
### Screen 1, part1, Hypothetical (0%)



**Introduction**

This experiment is purely hypothetical (you will not be paid beyond the participation payment). The experiment consists of eleven decision making rounds. One round will be selected for a hypothetical payment. Each round you will be presented with a set of two options to choose from, similar to the set below.

### Screen 1, part 1, 20% treatment



**Introduction**

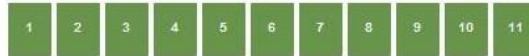
This experiment consists of eleven decision making rounds. One round will be selected for a 20% chance for additional payment. Each round you will be presented with a set of two options to choose from, similar to the set below.

Screen 1, part 2, 20% treatment (similar for other treatments)

| EXAMPLE ROUND  |    |  |
|--|----|--|
| <b>OPTION A</b><br>25% chance of \$5<br>75% chance of \$4<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>25% chance of \$10<br>75% chance of \$0.25<br><input type="button" value="SELECT"/> |

After all eleven rounds, one round will be randomly selected to be played out for a 20% chance for additional payment. You will shuffle the 11 numbers corresponding to the eleven rounds (see below), and the card you pick will determine the round that will be played out.

First, all rounds are shown



Next, you are prompted to shuffle the rounds

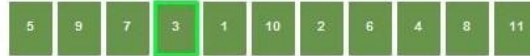


Once the rounds have been shuffled, you will be prompted to select a card

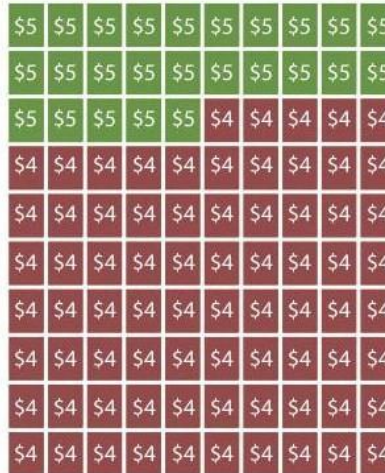


Finally, all cards are revealed

Reveal All Rounds



The round randomly selected will be played out as follows: A deck of 100 cards corresponding to your chosen option will be shuffled, and one card will be drawn, indicating your possible additional payment. For example, the deck of cards corresponding to option A appears below. 25 cards are 5's and 75 cards are 4's, giving a 25% chance of drawing a 5 and a 75% chance of drawing a 4.



Deck of Cards for Option A

If you had chosen option A, this deck would be shuffled (by pressing a “shuffle” button on the screen), then you would select one card. The number under that card would determine your possible additional payment for this survey.

You can only select one option per round, but you can select different options in different rounds if you choose.

### Screen 1, part 3, 20% treatment

The 20% chance of additional payment will be determined as follows: After the selected round has been played out, you will select a card from one more deck of 100 cards, 20 of which are labeled "yes" (you will receive the additional payment) and 80 of which are labeled "no" (you will not receive the additional payment). Thus, your chance of receiving an additional payment beyond the participation payment is 20%.

To sum up, this experiment consists of eleven rounds. In each round you will be presented with two options. After you pick an option in each round, the computer will randomly pick a round to play out. Then the computer will shuffle the deck of cards for your chosen option in that round, and you will pick one card. You will earn the amount on that card if the card drawn from the final deck displays a "yes". This will occur with a 20% chance. In any event you will earn the participation payment.

### Screen 1, part 3, Hypothetical

To sum up, this experiment consists of eleven rounds. In each round you will be presented with two options. After you pick an option in each round, the computer will randomly pick a round to play out. Then the computer will shuffle the deck of cards for your chosen option in that round, and you will pick one card. The amount on that card determines the hypothetical payment. You will not earn this hypothetical payment, but you will earn the participation payment.

### Screen 1, part 3, Real

To sum up, this experiment consists of eleven rounds. In each round you will be presented with two options. After you pick an option in each round, the computer will randomly pick a round to play out. Then the computer will shuffle the deck of cards for your chosen option in that round, and you will pick one card. You will earn the amount on that card (as well as the participation payment).

Screen 2, All treatments



Please select an option from each table below.

| ROUND 1   |    |  |
|---|----|--|
| <b>OPTION A</b><br>100% chance of \$32<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>100% chance of \$2<br><input type="button" value="SELECT"/> |

| ROUND 2  |    |   |
|--|----|---|
| <b>OPTION A</b><br>10% chance of \$40<br>90% chance of \$32<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>10% chance of \$77<br>90% chance of \$2<br><input type="button" value="SELECT"/> |

| ROUND 3  |    |   |
|--|----|---|
| <b>OPTION A</b><br>20% chance of \$40<br>80% chance of \$32<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>20% chance of \$77<br>80% chance of \$2<br><input type="button" value="SELECT"/> |

| ROUND 4  |    |   |
|--|----|---|
| <b>OPTION A</b><br>30% chance of \$40<br>70% chance of \$32<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>30% chance of \$77<br>70% chance of \$2<br><input type="button" value="SELECT"/> |

| ROUND 5  |    |   |
|--|----|---|
| <b>OPTION A</b><br>40% chance of \$40<br>60% chance of \$32<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>40% chance of \$77<br>60% chance of \$2<br><input type="button" value="SELECT"/> |

| ROUND 6  |    |   |
|--|----|---|
| <b>OPTION A</b><br>50% chance of \$40<br>50% chance of \$32<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>50% chance of \$77<br>50% chance of \$2<br><input type="button" value="SELECT"/> |

| ROUND 7  |    |   |
|--|----|---|
| <b>OPTION A</b><br>60% chance of \$40<br>40% chance of \$32<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>60% chance of \$77<br>40% chance of \$2<br><input type="button" value="SELECT"/> |



| ROUND 8  |    |   |
|--|----|---|
| <b>OPTION A</b><br>70% chance of \$40<br>30% chance of \$32<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>70% chance of \$77<br>30% chance of \$2<br><input type="button" value="SELECT"/> |

| ROUND 9  |    |   |
|--|----|---|
| <b>OPTION A</b><br>80% chance of \$40<br>20% chance of \$32<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>80% chance of \$77<br>20% chance of \$2<br><input type="button" value="SELECT"/> |

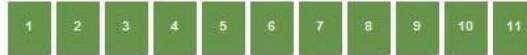
| ROUND 10   |    |   |
|--|----|---|
| <b>OPTION A</b><br>90% chance of \$40<br>10% chance of \$32<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>90% chance of \$77<br>10% chance of \$2<br><input type="button" value="SELECT"/> |

| ROUND 11  |    |   |
|---|----|---|
| <b>OPTION A</b><br>100% chance of \$40<br><input type="button" value="SELECT"/> | OR | <b>OPTION B</b><br>100% chance of \$77<br><input type="button" value="SELECT"/> |

Screen 3, All treatments

We will now select one of the eleven rounds to be played out. When you are ready, press the button to shuffle the numbers corresponding to the eleven rounds.

Shuffle Rounds



Shuffling the rounds...

Shuffle Rounds



Please select a round by clicking on it.

Shuffle Rounds



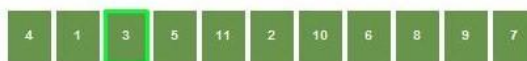
You selected round 3.

Reveal All Rounds



Please select the proceed button below to continue.

Reveal All Rounds





Screen 4, 20% treatment (similar for other treatments)

ROUND 3

**OPTION A**  
20% chance of \$40  
80% chance of \$32

Now the selected round will be played out. For your reference, your choice for the selected round is shown above. When you are ready, press the button to shuffle the cards.

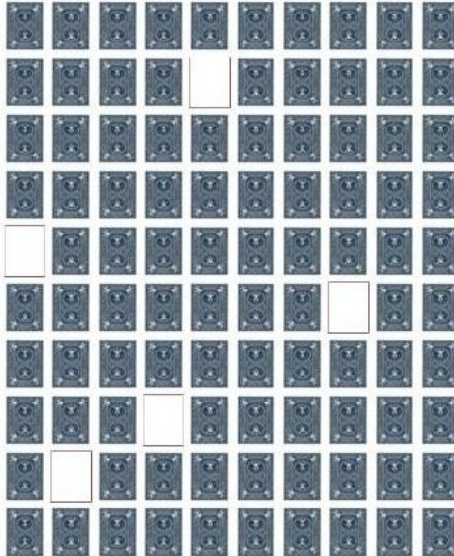
Shuffle Cards

|      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|
| \$40 | \$40 | \$40 | \$40 | \$40 | \$40 | \$40 | \$40 | \$40 | \$40 | \$40 |
| \$40 | \$40 | \$40 | \$40 | \$40 | \$40 | \$40 | \$40 | \$40 | \$40 | \$40 |
| \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 |
| \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 |
| \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 |
| \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 |
| \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 |
| \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 |
| \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 |
| \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 |
| \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 | \$32 |

ROUND 3

Shuffling the cards...

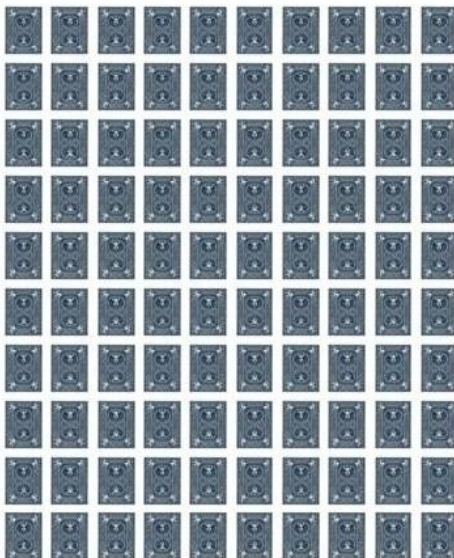
Shuffle Cards



ROUND 3

Please select a card by clicking on it.

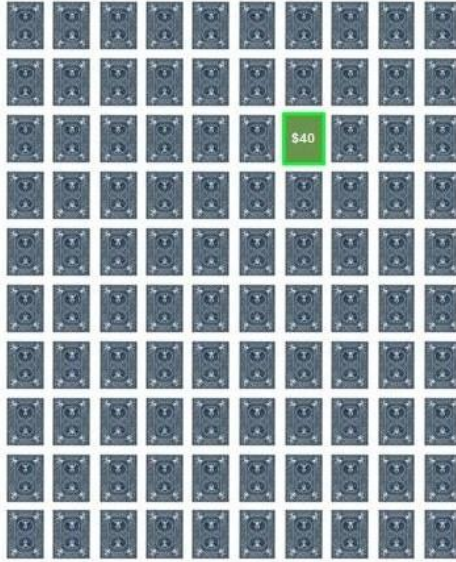
Shuffle Cards



ROUND 3

You selected \$40.

Reveal All Cards



ROUND 3

Your possible additional payment is \$40.00.

Please select the proceed button below to continue.

Reveal All Cards



ROUND 3

Your possible additional payment is \$40.00.

Screen 5 appeared in the 10%, 20%, and 30% treatments only.

Screen 5, 20% treatment (similar for 10% and 30%)

Recall that there is a 20% chance of receiving the additional payment, represented by the 20 cards labeled "yes" below.

We will now determine if you will receive this additional payment. When you are ready, press the button to shuffle the cards.

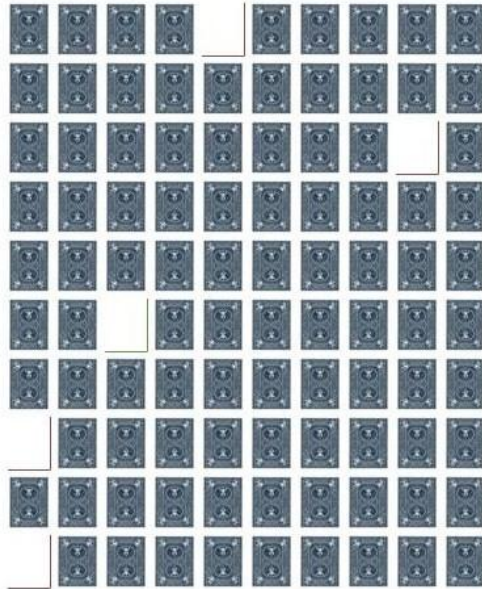
Shuffle Cards

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| No  | No  | No  | No  | No  | No  | No  | No  | No  | No  |
| No  | No  | No  | No  | No  | No  | No  | No  | No  | No  |
| No  | No  | No  | No  | No  | No  | No  | No  | No  | No  |
| No  | No  | No  | No  | No  | No  | No  | No  | No  | No  |
| No  | No  | No  | No  | No  | No  | No  | No  | No  | No  |
| No  | No  | No  | No  | No  | No  | No  | No  | No  | No  |
| No  | No  | No  | No  | No  | No  | No  | No  | No  | No  |
| No  | No  | No  | No  | No  | No  | No  | No  | No  | No  |



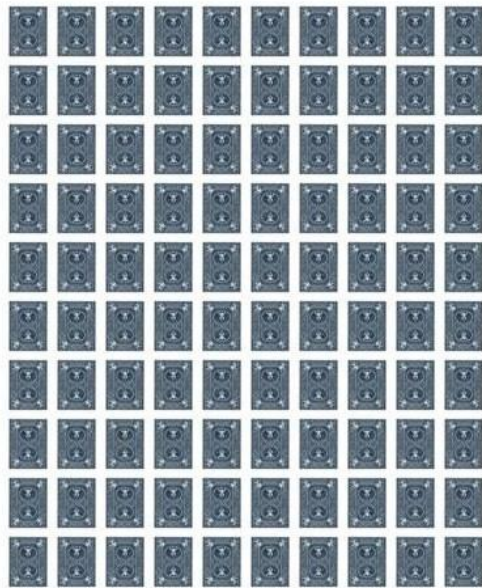
Shuffling the cards...

Shuffle Cards



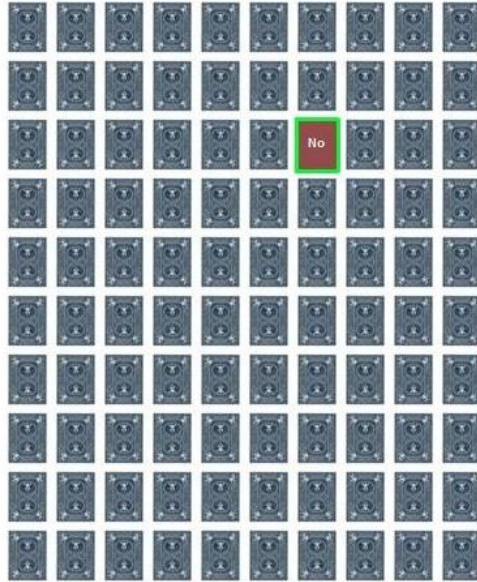
Please select a card by clicking on it.

Shuffle Cards



You selected NO.

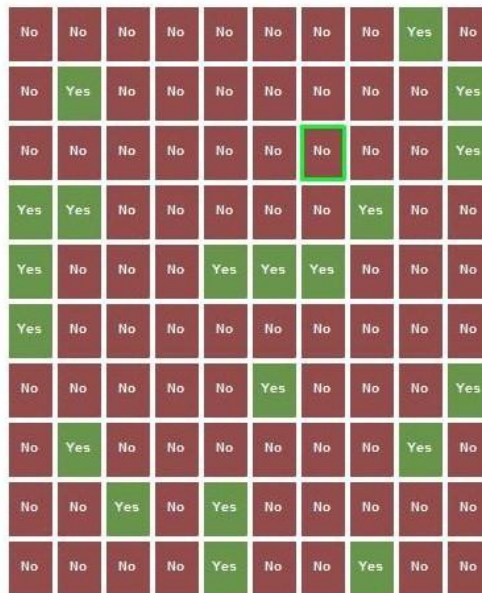
Reveal All Cards



Unfortunately, you did not earn the additional amount.

Please select the proceed button below to continue.


Reveal All Cards



Unfortunately, you did not earn the additional amount.

The following screens appeared in all treatments.

### Survey screens


eLab Experiment

[Help](#)

**The following items are statements about personal characteristics. Please use the scale provided to indicate how much each item describes you by choosing whether you agree or disagree with the statement.**

|   | Strongly<br>Disagree<br>1        | Disagree<br>2         | Neutral<br>3          | Agree<br>4            | Strongly<br>Agree<br>5 |
|---|----------------------------------|-----------------------|-----------------------|-----------------------|------------------------|
| I am the life of the party.                     | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I don't talk a lot.                             | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I feel comfortable around people.               | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I keep in the background.                       | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I start conversations.                          | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I have little to say.                           | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I talk to a lot of different people at parties. | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I don't like to draw attention to myself.       | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I don't mind being the center of attention.     | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I am quiet around strangers.                    | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I feel little concern for others.               | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I am interested in people.                      | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I insult people.                                | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |

|   | Strongly<br>Disagree<br>1 | Disagree<br>2         | Neutral<br>3          | Agree<br>4            | Strongly<br>Agree<br>5 |
|---|---------------------------|-----------------------|-----------------------|-----------------------|------------------------|
| I sympathize with others' feelings.             | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I am not interested in other people's problems. | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I have a soft heart.                            | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I am not really interested in others.           | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I take time out for others.                     | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I feel others' emotions.                        | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I make people feel at ease.                     | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I am always prepared.                           | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I leave my belongings around.                   | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I pay attention to details.                     | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I make a mess of things.                        | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |
| I get chores done right away.                   | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/>  |

|  | Strongly Disagree<br>1 | Disagree<br>2         | Neutral<br>3          | Agree<br>4            | Strongly Agree<br>5   |
|--|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I often forget to put things back in their proper place. | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I like order.  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I shirk my duties.                                       | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I follow a schedule.                                     | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am exacting in my work.                                | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I get stressed out easily.                               | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am relaxed most of the time.                           | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I worry about things.                                    | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I seldom feel blue.                                      | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am easily disturbed.                                   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I get upset easily.                                      | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I change my mood a lot.                                  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have frequent mood swings.                             | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

|   | Strongly Disagree<br>1 | Disagree<br>2         | Neutral<br>3          | Agree<br>4            | Strongly Agree<br>5   |
|---|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I get irritated easily.                         | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I often feel blue.                              | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have a rich vocabulary.                       | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have difficulty understanding abstract ideas. | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have a vivid imagination.                     | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am not interested in abstract ideas.          | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have excellent ideas.                         | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I do not have a good imagination.               | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I use difficult words.                          | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I spend time reflecting on things.              | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am full of ideas.                             | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am quick to understand things.                | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |



1. Suppose that you earned \$100,000 in lottery winnings. How much of \$100,000 would you invest in an asset to either HALVE or DOUBLE in two years time with equal probability?

2. Suppose that you are the only income earner in the family and you have a good job guaranteed to give you your current income every year for life. You are given the opportunity to take a new and equally good job with a 50-50 chance that it will double your income and a 50-50 chance that it will cut your income by a THIRD. Would you take the new job?

Answer this question only if you responded "NO" to question 2 above.

3. Suppose that the chances were 50-50 that the new job would double your income and 50-50 that it would cut it by 20 PERCENT. Would you take the new job?

Answer this question only if you responded "YES" to question 2 above.

4. Suppose that the chances were 50-50 that the new job would double your income and 50-50 that it would cut it in HALF. Would you take the new job?

Sex:

Year of Birth:

Education:

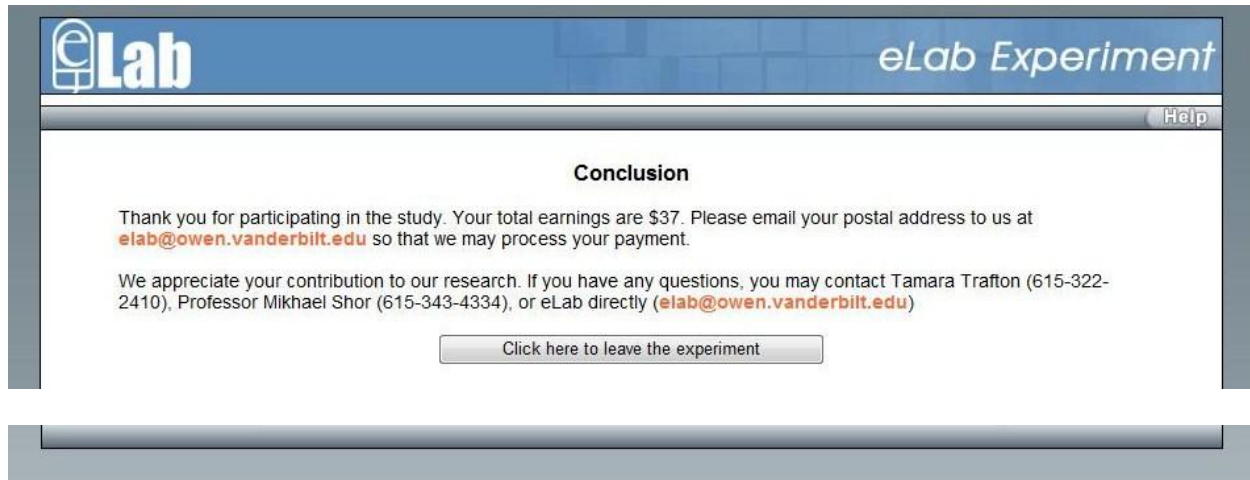
Country in Which You Currently Reside:

Ethnicity:

How much education did your mother have?

How much education did your father have?

## Conclusion Screen



The image shows a screenshot of a web browser window titled "eLab Experiment". The browser's address bar is empty. The page content is centered and includes a "Conclusion" heading, a thank-you message with a total earnings of \$37, contact information for Tamara Trafton and Professor Mikhael Shor, and a button labeled "Click here to leave the experiment".

**eLab** eLab Experiment

Help

**Conclusion**

Thank you for participating in the study. Your total earnings are \$37. Please email your postal address to us at [elab@owen.vanderbilt.edu](mailto:elab@owen.vanderbilt.edu) so that we may process your payment.

We appreciate your contribution to our research. If you have any questions, you may contact Tamara Trafton (615-322-2410), Professor Mikhael Shor (615-343-4334), or eLab directly ([elab@owen.vanderbilt.edu](mailto:elab@owen.vanderbilt.edu))

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## CONCLUSION

In recent years we have seen that nonprofit organizations increasingly offer donors new and interesting ways to contribute. Many of these new solicitation methods frame charitable donations (of money) as charitable gifts, and charitable gifts as alternatives to traditional gifts. Through charitable gift catalogues, containing pictures, descriptions, choices, and prices, donors are able to go shopping for charitable gifts for the recipients of a charity's funds, as well as for friends, family, and acquaintances (by contributing gifts in their honor, as replacements for traditional gifts). My dissertation utilized laboratory experiments to examine the causes and consequences of providing donors with these new ways to contribute. In the first chapter, I found evidence that a mental distinction exists between donating money and purchasing a charitable gift. I controlled for two salient components of a gift purchase – choice and prices – and found that their interaction yields significant effects on giving, though the sign of these effects depends upon the age of the donor. Older donors appear to prefer donations (of cash) and younger donors appear to prefer giving charitable gifts. In the second chapter, I found evidence that nonprofits are able to successfully frame a charitable gift purchase as a viable substitute for or addition to a Valentine's Day gift by allowing donors to contribute a charitable gift in honor of somebody special to them. The added effect of the Valentine frame is positive for younger donors and negative for older donors. In the third chapter, I addressed an experiment design question that was raised while conducting pilot experiments for the first chapter: Is stake size or the probability of payment more salient to experiment subjects? I found that stake size appears to be more influential, though additional experiments are needed to confirm this result.