CESifo WORKING PAPERS

7961
2019

November 2019

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CESifo

Impressum:

CESifo Working Papers
ISSN 2364-1428 (electronic version)
Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH
The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute
Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de
Editor: Clemens Fuest
www.cesifo-group.org/wp

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CESifo *Working Paper No. 7961*
Category 13: Behavioural Economics

The Bonus-Income Donation Norm

Abstract

Can social norms affect fundamental patterns of behavior such as income effects? Studies of determinants of giving to charities and other individuals yield a wide range of income-effect estimates. We conduct two experiments to first test whether the effect of income on charitable giving depends on whether the income is earned and then test whether any difference in the effects by income source can be explained by social norms. Our first experiment induces random variation in both earned income and windfall bonuses and shows that only bonuses increases charitable donations. The second experiment uses an incentivized coordination game to investigate whether social norms can explain this donation pattern. Perceptions of what most people would consider a morally appropriate donation depend on the amount of income and whether it is a windfall. The norms elicited in the second experiment match the donation patterns in the first experiment both overall and across subject demographics, pointing to social norms as a key determinant of charitable giving.

JEL-Codes: D010, D640, A130.

Keywords: charitable, donation, warm glow, social preferences, income effect, experiment.

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November 2019
We are grateful to the Birmingham-Illinois Partnership for Discovery, Engagement, and Education for research support. We thank Gary Charness, Erin Krupka, Tongzhe Li, Mark Ottoni-Wilhelm, Michael Price, Aldo Rustichini, Kimberly Scharf, Roberto Weber, and seminar participants at the U. of Illinois, Northern Illinois U., the U. of Southern California, the U. of Windsor, and conferences including the International Institute for Public Finance 2017, the Association for Research on Nonprofit Organizations and Voluntary Action 2017, Behavioral Exchange 2017, the National Tax Association 2018, the Science of Philanthropy Initiative Conference 2018, Norms and Behavioral Change 2018, and the American Economic Association 2019 for helpful comments. Yuci Chen provided excellent research assistance.

1 Introduction

Annual charitable giving is roughly equal to 2 percent of total income in the U.S. (Andreoni and Payne, 2013) and 0.5 percent of income in the UK (Almunia et al., 2018). To what extent, though, do increases in income causally increase giving, and does the effect vary with the source of income? The answers to these longstanding question can help to predict the extent to which policies and events that affect the incomes of some individuals will also have spillover effects on others. Understanding the preferences that in turn determine the effect of income on charitable giving can improve the design of fundraising mechanisms to provide more funding for public goods.

Numerous studies estimate the effect of income on giving, but results vary widely. This can be seen in Figure 1, which displays estimates of the marginal propensity to donate.[1] Income can come in many forms, and one way to classify income is by whether it is earned or unearned. While the estimates in the figure may vary due to differences in study design, the pattern suggests that unearned "windfall" income has larger effects on charitable giving than earned income. This would not be the case if income only affected giving through the budget set, but the source of income could affect preferences, either through intrinsic motivations or social influence. Past experiments using other measures of prosociality leave unclear whether we should expect the source of income to effect charitable giving, as dictator games between individuals have found relatively larger effects of windfall income (Cherry et al., 2002; Cherry and Shogren, 2008; Oxoby and Spraggon, 2008), while public goods games mostly have not (Clark, 2002; List, 2004; Cherry et al., 2005; Kroll et al., 2007).[2][3]

[1] Such estimates are possible when studies involve variation in subject income. Appendix Figure A.1 shows a similar range of estimates for the raw share of income donated.

[2] Harrison (2007) finds evidence of effects when re-analyzing the data from Clark (2002) and incorporating within-subject correlations into inference.

[3] A number of papers study how playing with "house money" affects financial decisions (e.g., Thaler and Johnson 1990; Ackert et al. 2006; Davis et al. 2010; Rosenboim and Shavit 2012 ; Corgnet et al. 2014; Cárdenas et al. 2014). These papers examine risk aversion of private payoffs,

In this paper, we directly test whether the income effect on charitable giving depends on the source of income, and we present and test an explanation for this possible dichotomy. To do so, we run a pair of experiments, the first estimates the donation effects of both earned and unearned income by varying both among a fixed set of subjects. Finding stronger income effects when the income is a windfall, we conjecture that the differential response can be explained by social norms that depend on whether the income was earned. We test and find support for this explanation in our second experiment, which conducts an incentivized elicitation of the social norms governing charitable giving.

Our first experiment measures income effects on donations to a charitable organization. Subjects in the laboratory performed tasks for piece-rate compensation, were informed of their earnings, and then without any prior notice were given an opportunity to donate to Acorns Children's Hospice, a local charity. All subjects performed a language task and a math task, and then we randomized which of these tasks they performed again. Given the differences in subjects' relative skill sets that we measured with the first two tasks, this design provided random variation in earnings, allowing us to measure the causal effect of earned income on donations. We found that earned income had little effect on donations and can reject an elasticity of 0.5 or greater. In a supplementary experiment, we randomized the piece rates instead of the tasks, and we reproduced the result that earned income has little effect on donations. In fact, the confidence interval from the supplementary experiment rules out an even smaller donation per dollar of additional earned income.

Our donation experiment also studied the effect of bonus windfall income.[4] We awarded a bonus of £1 to half of the subjects and a bonus of £3 to the other half.

whereas we study a donation to a charity that is chosen with no uncertainty.

[4]We use the terms "bonus" and "windfall" interchangeably because experiments do not separately identify whether subjects perceive such payments as a bonus reward for participation or a truly random windfall. A potential avenue for future research is to develop an experimental design that can distinguish between the two and to use this design to test whether one has a greater effect on behavior.

Subjects were informed that they had been randomly selected to receive this bonus, and they were asked if they would like to donate some of this income to the charity. In contrast to earned income, we find that unearned income has a large effect on donations, implying income elasticities greater than 1.5. This high propensity to donate unearned income holds across subject gender, nationality, and level of support for the recipient charity.

Our second experiment sheds light on the motivation behind the donation decisions. This experiment used a coordination game to elicit social norms, following Krupka and Weber (2013). Subjects read a description of the donation opportunity presented to participants in the donation experiment. Subjects in the norm experiment were then asked to indicate how morally appropriate *most people* would consider various donation amounts by a participant in the donations experiment. We provided a six-point scale, ranging from "very morally inappropriate" to "very morally appropriate," and incentivized accurate indications of the social norm by informing subjects that each of their answers that matched the modal response would give them a chance to win one of three £100 gift cards.

Results of the second experiment show that perceived social norms match both the overall pattern of behavior from the first experiment and heterogeneity across participants. While perceived appropriateness is always increasing in donation amount, the rate of increase varies significantly with the amount and type of income. For example, to be considered by most people to be at least "somewhat morally appropriate," a subject receiving a £1 bonus would need to give £0.50, whereas a subject receiving a £3 bonus would need to give at least £1, consistent with subjects donating more from £3 bonuses than from £1 bonuses even though earned-income results suggest no pure income effects. Norms for donations from earned income of £13 (the anticipated average amount that subjects would earn in the donation experiment) are close to those for donations from bonus income of £3, consistent with subjects in

the donation experiment giving a greater share of income from the bonus than from earnings. The patterns of heterogeneity also align across the two experiments, with no significant differences by gender in either experiment, but significant differences by nationality in both. Asian nationals in the norm experiment expressed perceptions of appropriateness that were relatively high for a small positive donation from £1 bonus and relatively low for larger donations from either bonus amount, and Asian nationals in the donation experiment were more likely to make a positive donation from a £1 bonus (but did not give a significantly larger amount for either bonus). Our experiments therefore provide evidence of social norms for charitable donations.

A few papers have studied connections between the nature of income and donations to a charity, the focus of our first experiment. Reinstein and Riener (2012) find that subjects donate less to charity when assigned to a 5-minute task that determines income than when they are simply assigned the income. Similarly, Carlsson et al. (2013) find that subjects in both the lab and the field in China donate a smaller amount when they are asked to complete a "lengthy" survey to obtain their payment. Tonin and Vlassopoulos (2017) randomize piece rates and then ask subjects what *percentage* of income they would like to donate, and they find no effect of earned income on the average donation *amount*.[5] Our donation experiment is the first to generate random variation across subjects in earned and unearned income, and it provides estimates of the marginal effects of each.

Our study also follows a recent literature examining the role of social norms in explaining behavior. Social norms are collectively recognized rules of behavior that define which actions are viewed as appropriate within a specific social environment (see Elster (1989) and Ostrom (2000) for definitions). Social norms have been suggested as explanations for the findings that the donations of callers to a public radio

[5]Tonin and Vlassopoulos (2017) find that increasing compensation decreases the share of subjects who donate a positive percentage of income but does not affect the percentage given by those who donate, effects which offset each other.

station respond to those of other callers (Shang and Croson, 2009), that subjects' behavior in the dictator game responds to the presence of an audience (Andreoni and Bernheim, 2009), and that households' energy conservation efforts respond to those of neighbors (Allcott, 2011).[6] Norms had not been measured until Krupka and Weber (2013) developed an incentive-compatible norm elicitation method and showed that it predicted behavior across variants of the dictator game. This norm elicitation method has since been used to study corporate hierarchy (Burks and Krupka, 2012), peer effects in gift-exchange experiments (Gächter et al., 2013), informal agreements (Krupka et al., 2017), and discrimination (Barr et al., 2018). Our study is the first to elicit perceptions of norms for charitable donations, and it contributes to this literature by describing how these perceptions vary with gender, nationality, and the circumstances of the decision maker, and it validates them by showing that they match observed charitable giving.

Finally, our paper informs two of the main lines of inquiry in the economics of charitable giving. One of these lines examines whether donors are motivated by altruism or "warm glow," i.e. whether their objectives depend on the amount received by recipients or the amount of the individual's own donation (Andreoni, 1989). Recent contributions to this literature find that volunteering provides warm glow (Brown et al., forthcoming) and that individuals are mostly altruistic when faced with an individualized cause (Ottoni-Wilhelm et al., 2017). The latter paper highlights the necessity of varying both the endowment and giving by others to identify a model allowing for both preferences, and we show that varying the endowment has differing effects depending on whether the endowment is earned. Another literature using income tax data to estimate elasticities of donations claimed for tax deductions with respect to price and to annual income, most of which is likely earned (Slemrod,

[6]Some argue that social norms are the reason behind observed effects of priming subjects with a picture of eyes on choices in the dictator game (Haley and Fessler, 2005), payments for purchases (Bateson et al., 2006), littering (Ernest-Jones et al., 2011), recycling (Ekström, 2012), and charitable donations (Krupka and Croson, 2016).

1989; Fack and Landais, 2010; Adena, 2014; Almunia et al., 2018; Meer and Priday, mimeoa,m). Income received in economics experiments is transitory, and studies that distinguish it from permanent income estimate a transitory-income elasticity of donations ranging from 0.09 to 0.58 (Randolph, 1995; Auten et al., 2002; Bakija and Heim, 2011). This range is more consistent with our estimated elasticity for earned income than for unearned income, suggesting that experimenters should have subjects earn their income if approximating magnitudes in observational data is an objective of the study. Our paper also suggests that the response to the price of giving, which is lowered by the income tax deduction, may also very well depend on the source of income.

2 Experimental Design

In this section, we outline the design we employed to assess the impact of earned and unearned income on charitable giving. All the subjects were recruited at the University of Birmingham, using the ORSEE software (Greiner, 2015) and were randomly selected from a large database of volunteers who had previously signed up to participate in economics experiments. The vast majority of participants were undergraduate students from various academic fields.

We conducted two experiments within a period of a few weeks in spring 2018. One was a laboratory experiment (the "donation experiment") in which subjects were randomly assigned to different levels of earned and unearned income, and we measured their donation responses to each. The other experiment (the "norm-elicitation experiment" or "norms experiment") elicited subjects' beliefs about social norms (following techniques proposed by Krupka and Weber (2013) and refined by Krupka et al. (2017)) for the donations made in the donation experiment. As recommended for this design, participants in the two experiments were recruited from two distinct,

randomly selected pools of potential subjects so that subjects could participate in only one of the experiments and so neither experiment could influence choices in the other.

2.1 Donation Experiment

The donation experiment was conducted in the Birmingham Experimental Economics Laboratory (BEEL), and all treatments were computerized and programmed with the Multistage software from Caltech. The full set of instructions used in the donation experiment is provided in Appendix B. We conducted 14 sessions, with a total of 217 subjects participating in the donation experiment. At the end of a session, subjects were paid in private. They received a show-up fee of £2.50, plus their earnings from tasks, plus their bonus, less their donations. On average, total income was £11.82 (£9.82 earned and £2 bonus income), and total donations from earnings and bonus combined were £1.39. Sessions lasted roughly 60 minutes.

This experiment consisted of two stages. In the first stage, subjects were asked to perform real-effort tasks, the purpose of which was to have subjects earn income during the experiment. Subjects were given an opportunity to donate earned income to a local charity. In the second stage, subjects were awarded a bonus of a randomly-assigned amount and allowed to donate bonus income to the charity. The tasks and initial solicitation follow the design of Drouvelis and Marx (2019). Whereas that paper then uses a within-subject design to explore donations effects of many treatments, we vary unearned income between subjects to obtain the strongest evidence on how donations respond to both earned and unearned income.

Subjects performed two types of tasks: math and language tasks. All subjects first completed one of each type of task, which allowed for heterogeneity in ability across tasks (Niederle and Vesterlund, 2010). For both the math and the language task, items were presented to subjects on a computer screen. Subjects would type

in an answer and click the "Submit" button, and after each submission, a new item was immediately shown. Subjects earned £0.25 for each correct response in each task. For the math task, subjects were asked to multiply two two-digit numbers. For the language task, each subject had to arrange four pairs of letters to form a word. Subjects were told that they must use all pairs of letters to form the correct word and can re-arrange the order of the pairs but not the order of the letters within each pair. Two sheets of scratch paper and a pen were provided, but no other form of assistance was available. To help with time management, subjects were continuously informed of the time remaining until the end of each task. Subjects were asked to perform three tasks. They completed the language task first and the math task second. Subjects were given two minutes and thirty seconds to perform each of these tasks.

The third and final task was structured to provide random variation in earned income. Subjects were randomly assigned to repeat either the language or math task. Task 3 was performed for five minutes, increasing the influence of the random assignment on earnings. Upon completion of this task, subjects were informed of the amount they had earned. They were then asked if they would like to donate some of these earnings to a real-world charity, Acorns Children's Hospice of Birmingham.[7][8] Donations were also kept private so as to minimize complications related to social image (Ariely et al., 2009; Filiz-Ozbay and Ozbay, 2014).[9]

[7]Acorns provides specialist care for babies, children and young people who are life-limited or life-threatened. More information about the charity can be found here: https://www.acorns.org.uk/.

[8]Subjects were also randomly assigned to receive additional information in two dimensions. In one dimension, half of subjects were informed were informed that they had been randomly selected to be paid a piece rate of £0.25 rather than £0.10. We implemented this without deception by giving each subject a 99.99% chance of assignment to £0.25, and in practice, all subjects were assigned to this piece rate. In the second dimension, subjects were informed on the donation screen (again without deception) that half of subjects in a past experiment had donated at least X, where $X \in \{\$0.25, \$1\}$ if this phrase was included. Due to a programming error, these treatments were assigned with nearly perfect negative correlation. We therefore do not examine the effects of these treatments. Controlling for these treatments does not change our results, suggesting that our findings are robust to the features of the information environment.

[9]We informed half of subjects, chosen at random, that "Your choice will not be shared with any other participants." This had no effect on either donations or the belief about whether the donation choice would be shared.

In the next stage, we induced random variation in unearned income by allocating subjects to one of two bonus conditions. Half of the subjects were told that they have received a bonus of £1 and were asked to indicate if they would like to donate some of the bonus income to the charity. The other half of subjects were asked the same question, but the bonus income was equal to £3. Motivated by the uncertainty of bonuses paid in certain professions, and wanting to avoid interactions between bonus- and earned-income effects, we did not inform subjects that there would be any bonuses until after they had made their initial donations.

After subjects had made their decisions for the bonus scenario, subjects were asked to respond to a short questionnaire. This questionnaire elicited several pieces of information, including gender and nationality. Subjects were asked to indicate by selecting one option on a 6-point scale ("Strongly disagree", "Disagree", "Somewhat disagree", "Somewhat agree", "Agree", "Strongly agree") the extent to which they agree with each of the following five statements: (1) "People should behave like others," (2) "People should help others," (3) "People who have been fortunate should help others," (4) "People should help people when there are others helping," and (5) "I approve of Acorns Children's Hospice." Appendix Table A.1 provides summary statistics from survey responses of participants in the donation experiment.

Finally, we elicited social norms and personal attitudes about the morality of charitable donations. Subjects were informed that a definition of the word "moral" appearing in the Oxford English Dictionary is "Concerned with or derived from the code of behavior that is considered right or appropriate in a particular society." They were then asked to evaluate the moral appropriateness of a person who has earned £13 from the experiment making donations falling within each of seven ranges: a) £0, b) £0.01-0.24, c) £0.25-0.49, d) £0.50-0.99, e) £1-1.49, f) £1.50-1.99, g) £2.00 or more. Subjects had to indicate a moral appropriateness score for each range by selecting one option on a 6-point scale ("Very morally inappropriate," "Morally in-

appropriate," "Somewhat morally inappropriate," "Somewhat morally appropriate," "Morally appropriate," "Very morally appropriate"). We asked subjects how appropriate "most people" would rate each donation range, thus obtaining beliefs about the social norm, and then asked each subject how "you personally" would rate appropriateness. These questions on perceived appropriateness allow for estimates of within-subject correlations between beliefs and behavior, but they were not incentivized and could have been affected by the subjects' behavior itself, motivating our second experiment focusing on cleanly identifying beliefs about the social norm.

2.2 Norm-elicitation Experiment

We conducted the norms experiment online using the software at surveycto.com. We provided incentives in the form of drawings for monetary rewards. Participation in the experiment was incentivized with a prize of £50 that was awarded to a random individual who completed the questionnaire. Appendix C contains the text of our email inviting subjects to participate in a pilot version of the norms experiment, the invitation to participate in the experiment, and the instructions of the experiment itself.

Our norm-elicitation experiment employed the coordination-game method proposed by Krupka and Weber (2013). Subjects read a description of the decision-making situation of a participant in the donation experiment who had earned £13, which turned out to be greater than but comparable to what the average subject earned in the donation experiment. As in the donation experiment, subjects were asked to indicate the moral appropriateness of the seven donation ranges listed in the previous subsection. Unlike the donation experiment, these responses were incentivized by providing three prizes of £100 to randomly selected subjects who had provided the modal response on each of three randomly selected donation amounts.[10]

[10]Subjects were given the date, time, and venue of the prize drawing and invited to attend. They

This incentivized correct guessing of what most others thought, capturing the idea of social norms as collectively recognized rules of behavior (e.g., Elster, 1989; Ostrom, 2000).

Additionally, we elicited social norms on charitable giving when income is not earned (bonus). In particular, subjects were told that the participant in the laboratory experiment had been randomly selected to earn a bonus, and we varied whether the instructions state that this was a bonus of £1 or £3. Subjects were presented with a table listing possible ranges of donations that the participant could make. For the £1 bonus situation, the ranges were: a) £0, b) £0.01-0.24, c) £0.25-0.49, d) £0.50-0.74, e) £0.75-0.99, and f) £1.00. For the £1 bonus situation, the ranges were: a) £0, b) £0.01-0.49, c) £0.50-0.99, d) £1-1.49, e) £1.50-1.99, f) £2.00-2.99 and g) £3.00. For each of these ranges, subjects were asked to indicate the moral appropriateness of a donation in the range by selecting one option on the 6-point scale explained above.

The use of an incentivized coordination game to elicit social norms was been introduced by Krupka and Weber (2013) and has been used by a number of experimental studies. In addition to asking subjects what most people would choose, as in the existing literature, we also asked subjects what they personally felt about the moral appropriateness of a donation in each range. To our knowledge, personal moral views have not been compared to elicited social norms, and the two may be distinct and correlated. As with the social norm, we elicited personal views for donations from earned income as well as those from unearned income. Because such views are personal and subjective, they could not be incentivized as a coordination game. Responses may therefore reflect not only the subjects' true views but also what they wished to convey to the experimenters about these views. This response bias should be present in both of the experiments, however, and therefore the responses of subjects in norms experiment can be used as a counterfactual for those in the donations experiment to

were also told that the winners would be contacted by email if they did not attend, so that payment was not conditional on attendance.

test whether that experiment further altered responses to the questions of personal moral attitudes.

3 Results

3.1 Donation Experiment

Figure 2 displays the cumulative distribution function for donations made from earned income. The cdf is displayed separately for those assigned to repeat the math task and those assigned to repeat the language task. A Kruskal-Wallis equality-of-populations rank test fails to reject equality of the distributions at the 10 percent level. Regardless of their third task, we see that roughly 75 percent of subjects make a donation, and a majority of subjects donate £1 or less. Mean earnings are £9.82 and mean the (unconditional) mean donation is £0.82. Many subjects appear to have rounded off their incomes; for both tasks, roughly 60 percent of subjects chose a donation amount (including zero) that left them with an integer amount of net income.

Figure 3 provides intuition for how our experimental design provides predictable, random variation in earnings. In each panel, we order subjects by the difference between the number of correct responses they provided in task 1 vs. task 2, a measure of their relative performance in the language task. Subjects to the far left performed better at math, while those to the far right performed far better in the language task. We then plot outcomes separately for subjects who were assigned to repeat the language task in task 3 and those assigned to repeat the math task. The outcome in Panel A is the number of correct responses provided in task 3, which can be multiplied by £0.25 to obtain the subject's earnings in this task. Subjects who performed noticeably better in language (math) among the first two tasks earned more when language (math) was assigned for task 3. We would expect a similar pattern for donations, the outcome in Panel B, if earnings have a strong causal effect on donations.

Panel B admits no strong pattern, however, suggesting a weak causal effect. To quantify this effect, we estimate regressions that correspond to the mean differences of the distributions in Figure 2 and then a more flexible version of the patterns in Figure 3.

Estimated effects of earnings on donations appear in Table 1. Column (1) shows that subjects earned £1.56 less on average if they were randomly assigned to repeat the math task, while column (2) shows that this assignment did not have a statistically significant effect on donations. Column (3) presents estimated effects on donations using assignment to the math task as an instrument for earnings, i.e. it rescales the estimate in column (2) by that in column (1). The effect is small and insignificant. Column (4) shows that adding controls for items completed in each of the first two tasks has little effect on this result. This analysis provides a simple comparison across treatment groups, but the exclusion restriction would fail if the experience of one of the tasks affected donations independently of the income it produced. Monotonicity also fails for this instrument because, as seen 3, some subjects earn more when assigned to math and some earn less. We next turn to our preferred instruments, which avoid these concerns.

We construct two instruments by interacting indicators for random assignment to either math or language with the number of correct responses that the subject provided when first engaged in the relevant task. Columns (5) and (6) of Table 1 show that these instruments strongly predict total earnings but not donations. In these regressions we control for uninteracted earnings in each of the first two tasks and for whether the third task is math or language. The first-stage prediction of earnings is strong, with an F statistic for the joint significance of the instruments that is close to 100. The second-stage effect on donations is not statistically significant, and this result persists in columns (7) and (8), where we have added quadratic and cubic functions of earnings in the first two tasks to the regressions. The largest point

estimate, in column (8), indicates that a subject donates less than £0.07 for every additional £1 of income earned. This estimate is fairly precise, with a 95 percent confidence interval that excludes effect sizes larger than 0.18.

To further test this finding of a small effect of earned income on donations, we conducted a supplementary experiment in which we randomized piece rates rather than tasks. Details of the experiment and estimates are provided in Appendix D. We obtained two simple instruments for earned income by assigning subjects to one treatment group that was paid more for correct responses in the math task, another treatment group that was paid a higher rate for correct responses in the language task, or a control group. Both treatments increased earnings by more than £2 (a 30 percent increase), but both resulted in slightly lower donations. Confidence intervals from this experiment exclude an effect greater than £0.05 of additional donations per £1 of additional earned income, an even smaller marginal propensity to donate than what we are able to reject with our main donation experiment.

Our main donation experiment also estimated the effects of windfall bonuses. Figure 4 displays the cumulative distribution function for donations made from each of the £1 bonus and £3 bonus. The rank test rejects equality of the distributions with statistical significance at the 1 percent level. Among subjects receiving a £1 bonus, 54 percent make a donation, compared to 66 percent of the subjects receiving a £3 bonus. This extensive-margin difference is marginally statistically significant (p-value = 0.082). The gap between the cumulative probabilities then widens, with a difference of 22 percentage points (p-value = 0.001) in the probability of giving £0.75 or less and a difference of 20 percentage points (p-value $<$ 0.001) in the probability of giving £1.00 or less. Subjects who received a bonus of £1 could not donate more £1, but this constraint does not bind for many. If the distribution for the £1 bonus was simply a censored version of the distribution for the £3 bonus, then the two groups' probabilities would be equal for values less than £1, but we can show that this is not

the case by top-coding the distribution for the £3 bonus to take values less than or equal to £1.00. When we do so, the Kruskal-Wallis test again rejects at the 1 percent level.

Estimated effects of bonus income on donations appear in Table 2. Column (1) shows the main effect: the average donation for a £3 bonus is greater than the average of £0.382 for a £1 bonus by £0.392, i.e. more than twice as large. Both the £0.382 increase in donations due to the first £1 of bonus and the increase of £0.196 donated per £1 at the margin are more than 5 times larger than our estimated effect of earned income. Elasticities are also much larger, with values of 4.1 and 3.1, respectively, when we compare total donations after the £1 bonus or £3 bonus with the average donation from earned income. In columns (2) through (4), we test for heterogeneity in the responses to bonus income along the dimensions of nationality, gender, and degree of approval of the recipient charity. We interact each of these variables with indicators for both the £1 bonus and the £3 bonus. Point estimates indicate that donations from both bonus amounts are larger among Asian nationals, females, and subjects who strongly approve of Acorns, the recipient charity. However, none of the interactions are statistically significant at the 5 percent level.

The remaining columns of Table 2 examine responses on the extensive margin. In column (5), we see that the £3 bonus increases the 54.1 percent probability of donating by a marginally significant 11.6 percentage points. The pattern of heterogeneity is similar to that for the amount of donations, and most interactions are again not significant at the 5 percent level. The exception is that Asian nationals are 25.5 percentage points (56 percent) more likely to make a donation from the £1 bonus. That this does not translate to a significant increase in the amount donated implies a higher number of small donations. This pattern would be consistent with Asian nationals perceiving a relatively high degree of social acceptability of small donations relative to large donations or no donations, a form of heterogeneity for which we will

test in the norm experiment that follows.

3.2 Norm-Elicitation Experiment

Figure 5 displays the elicited donation norms for earned income and for bonuses of either £1 or £3. For each type of income, we plot as our outcome the mean value of elicited moral appropriateness (on a scale from -1 to 1). We place points at the left-most value of each range of donations for which the norm was solicited, so that the value of the norm applies to donations with values between the x-value at the marked point and the x-value at the next marked point on the same curve.

For all types of income, the appropriateness function in the figure is strictly increasing, with larger donation amounts believed to be considered more morally appropriate than smaller amounts. The functions are fairly similar for the £3 bonus and the £13 of earned income, despite the large difference in the amount of income. The perceived appropriateness of donating nothing is similar across all income types, but the functions diverge for positive donation amounts. We can interpret the difference between the norms by considering either a vertical band at a particular donation range or a horizontal line at a particular level of the norm. A vertical band for donations between £0.50 and £1.00 would indicate that a donation in this range would be considered most appropriate if income came in the form of a £1 bonus, less appropriate if income came in the form of £13 of earnings, and least appropriate if income came in the form of a £3 bonus. A horizontal line at 0.33 would indicate that to behave in a way that most would consider "Somewhat morally appropriate," a subject receiving a £1 bonus would need to donate £0.50, whereas subjects with £13 of earnings or a £3 bonus would need to donate at least £1.

The apparent differences between the norms are statistically significant, as we show in Appendix Table A.2. The table displays results of pairwise regressions comparing the norm for bonus income with the norm for earned income. We estimate

regressions for each range of donations that appeared in both the earned-income norm elicitation and the norm elicitation for one of the two levels of bonus income. For both positive donation ranges that subjects considered for both the £1 bonus and the earned income, we find that a donation in the range is significantly *more* appropriate when income is a bonus. For all three positive donation ranges that subjects considered for both the £3 bonus and the earned income, we find that a donation in the range is significantly *less* appropriate when income is a bonus.

Comparison of the results across our two experiments supports the case that donations are more elastic with respect to bonus income than to earned income because the social norm varies with the amount of bonus income. Most importantly, while our earned income results find that there is no pure income effect on donations, increasing bonus income significantly increases both donations and the donation required to achieve a given level of perceived appropriateness in the eyes of others. As noted in the prior section, the effect of increasing bonus income on donations is not simply due to the expanded choice set, because when we top-code donations in the £3-bonus treatment to be no greater than £1, we still find that subjects in this treatment give more on average (£0.56) than those in the £1-bonus treatment (£0.38). If we similarly top-code donations from earned income at £1, we obtain an average donation that lies in between these two (£0.53). This ranking matches the ranking of social norms for most positive donation amounts, with a given level of appropriateness requiring a larger donation from earned income than from the £1 bonus and requiring the largest donation from a £3 bonus.[11] Just as the differences between norms were statistically significant, so too are the differences between the top-coded donations from either earned income or the £3 bonus significantly greater than from the £1 bonus (p=0.003 for both).

[11]If we top-code donations from earned income to be no greater than £3, we obtain an average of £0.75, which is less than the £0.96 average donation from the £3 bonus, consistent with our finding that the norm for the £3 bonus generally lies to the right of that for earned income (Figure 5).

Moreover, we find patterns of heterogeneity in the elicited social norms for bonus income that match the heterogeneity in donation behavior. We first describe variation in perceived norms by regressing the numerical appropriateness rating on subject-specific intercepts and slopes in donation amount, where the amount is again the minimum value for a range of donations. Figure 6 plots the distribution of subject-level slopes estimated in these regressions, with one panel (A) for subjects considering a £1 bonus, and one panel (B) for subjects considering a £3 bonus. The frequency of positive coefficients in both panels indicates that most, but not all, subjects believe that most people consider larger donations to be more appropriate than smaller donations. As was seen in Figure 5 for norms that had been averaged across subjects, Figure 6 shows sharper slopes for a £1 bonus than for a £3 bonus. The figure also shows that the difference is due to a shift in the distribution rather than to outliers. The slope for most subjects considering a £1 bonus is greater than the maximum slope among subjects considering a £3 bonus. The dispersion in each distribution reveals that there is not exact agreement on how appropriate most people would consider each donation.

Last, Figure 7 displays the elicited norm for each bonus amount by groups of subject nationalities. UK nationals are most numerous, and there are enough subjects from other European countries and from Asian countries to observe patterns for each group. Norms elicited from UK nationals are indistinguishable from those elicited from other European nationals. In contrast, the function is noticeably flatter among Asian nationals, who give lower scores for donating a larger percentage of the bonus income. Regression results in Appendix Table 1 confirm that appropriateness rises significantly less with donation amount for Asian subjects than for those from the UK or Europe. At the same time, the perceived appropriateness of donating between £0.01 and £0.25 from a £1-bonus is the highest among Asian subjects. This pattern is consistent with our finding in the donation experiment that Asian subjects were more

likely to make a positive donation from a £1 bonus and yet did not give significantly more in levels. Appendix Figure A.3 shows that there is little difference between perceived norms across our other demographic characteristic, gender, consistent with the lack of gender differences in our donation experiment.

4 Conclusion

Our experiments provide evidence that individuals donate based on social norms for what donation amount is morally appropriate. In the donation experiment, random variation in earned income did not significantly increase donations. In this same experiment, subjects increased their donations significantly when they received windfall bonus income, and a larger bonus more than doubled donations. These patterns held across gender, nationality, and level of support for the recipient charity. Our second experiment elicited the views of an independent set of subjects on the moral appropriateness of various donation amounts by a participant in the donation experiment. These beliefs indicate a social norm that one should donate a large share of windfall bonus income.

These findings offer interesting implications for research on generosity. In experiments, researchers may wish to have subjects earn their endowments in order to better capture the way individuals give from their earnings. In contrast, fundraisers may wish to highlight windfalls to potential donors, such savings received during retail purchases prior to a checkout solicitation. Our results also suggest that the marginal propensity to donate may be malleable. A shift in beliefs about the degree of luck involved in one's financial standing, such as a shift from American beliefs to European beliefs (Alesina et al., 2011), could have a large effect on the amount that people donate to charity.

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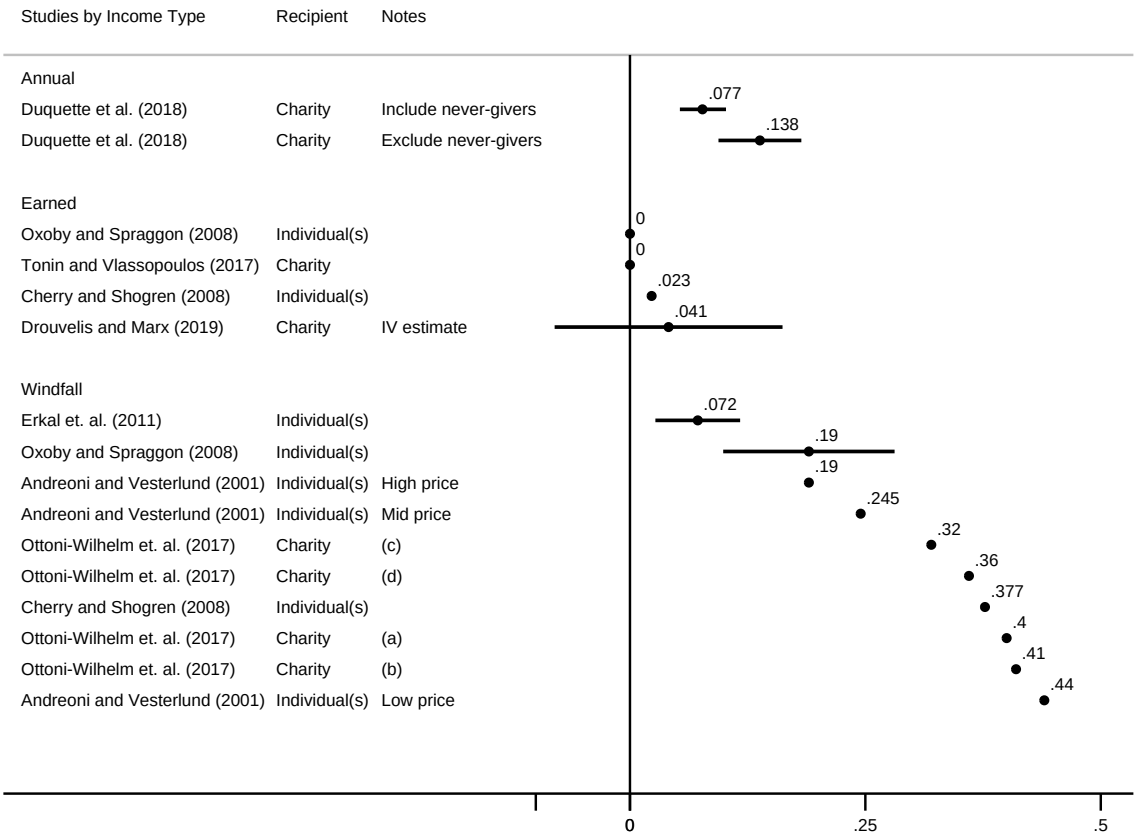
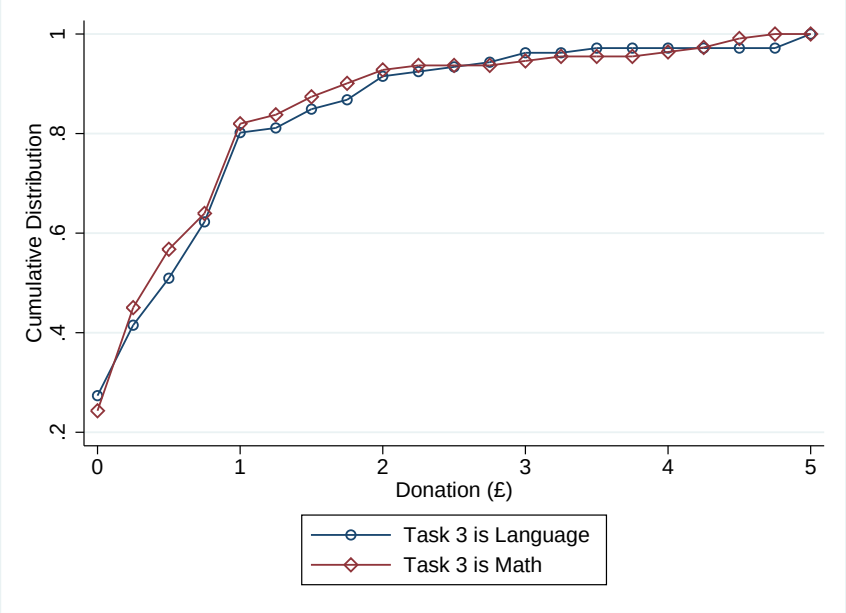
Figures and Tables

Figure 1: Extant Estimates of Income Effects on Giving



Notes: The figure summarizes estimated effects of income, per additional dollar, on giving. Where available, 95% confidence intervals are plotted with the point estimates. For example, Drouvelis and Marx (2019) and Duquette et al. (2018) provide both point estimates and standard errors, while Tonin and Vlassopoulos (2017) report only point estimates. For studies that report the amount donated for multiple income levels (Andreoni and Vesterlund, 2001; Cherry and Shogren, 2008; Oxoby and Spraggon, 2008; Erkal et al. (2011) and Tonin and Vlassopoulos, 2017), we derive the income effect as a slope. The estimates are categorized by whether subjects are giving to charities or to other individuals and according to whether there is variation annual, earned, or windfall income. For studies that provide multiple estimates, we include all of the estimates and explain the differences between these in the "Notes" column. Results provided by Ottoni-Wilhelm et al. (2017) provide four estimates: (a) Individual fixed effects estimator, low giving by others; (b) Individual fixed effects estimator, high giving by others; (c) Two-sided individual FEs censored estimator, low giving by others; (d) Two-sided individual FEs censored estimator, high giving by others.

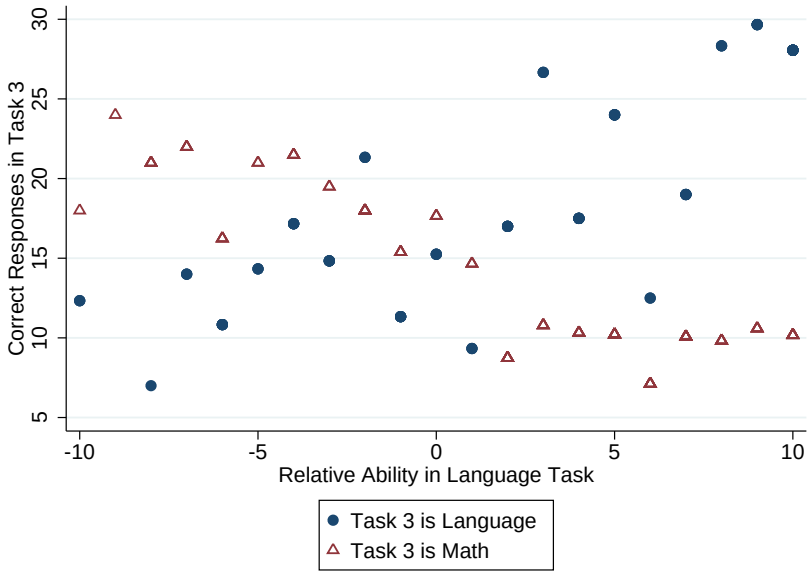
Figure 2: Cumulative Distributions of Donations from Earned Income



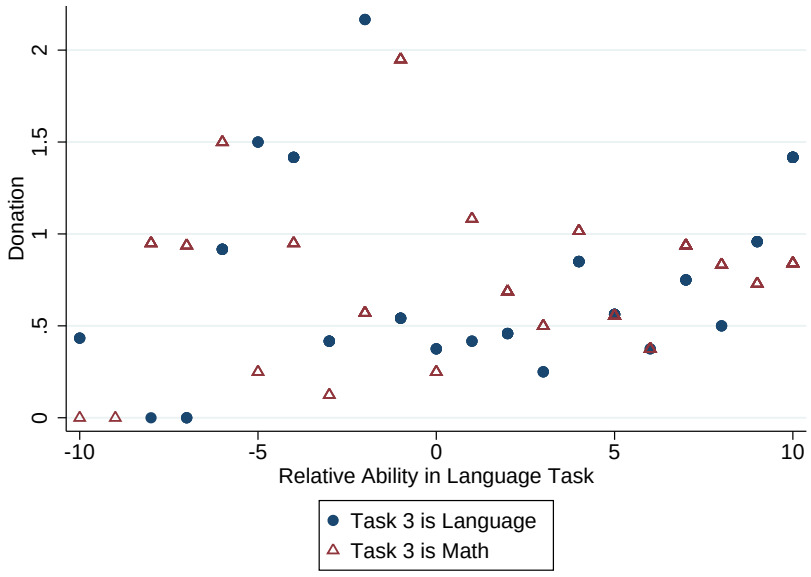
Notes: The figure shows the cumulative distribution functions of donations from bonus income. Treatment groups defined by nature of the third earnings task. Mean earnings are £9.82 and mean the (unconditional) mean donation is £0.82. N=150.

Figure 3: Earnings and Donations by Assigned Task and Relative Ability

A. Earnings

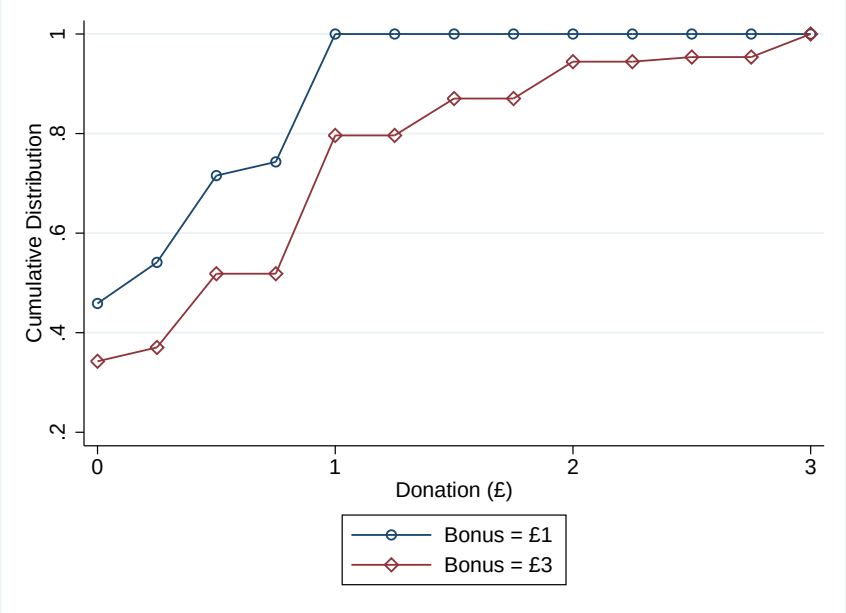


B. Donations



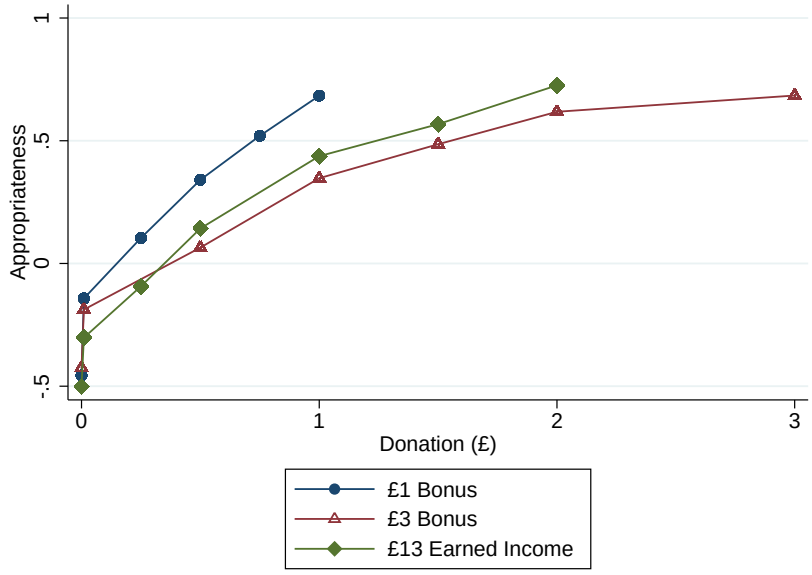
Notes: The figure shows earnings and donations by relative ability and task. In both panels, the x axis is relative earnings in the language task, which is the number of correct responses in the language task minus the number of correct responses in the math task. The outcome in Panel A is correct responses provided in task 3, which can be multiplied by 0.25 to obtain earnings. Panel A shows that subjects earn more when assigned to repeat the task in which they performed better. Panel B shows that the same pattern does not hold for donations. N=150.

Figure 4: Cumulative Distributions of Donations from Bonus Income



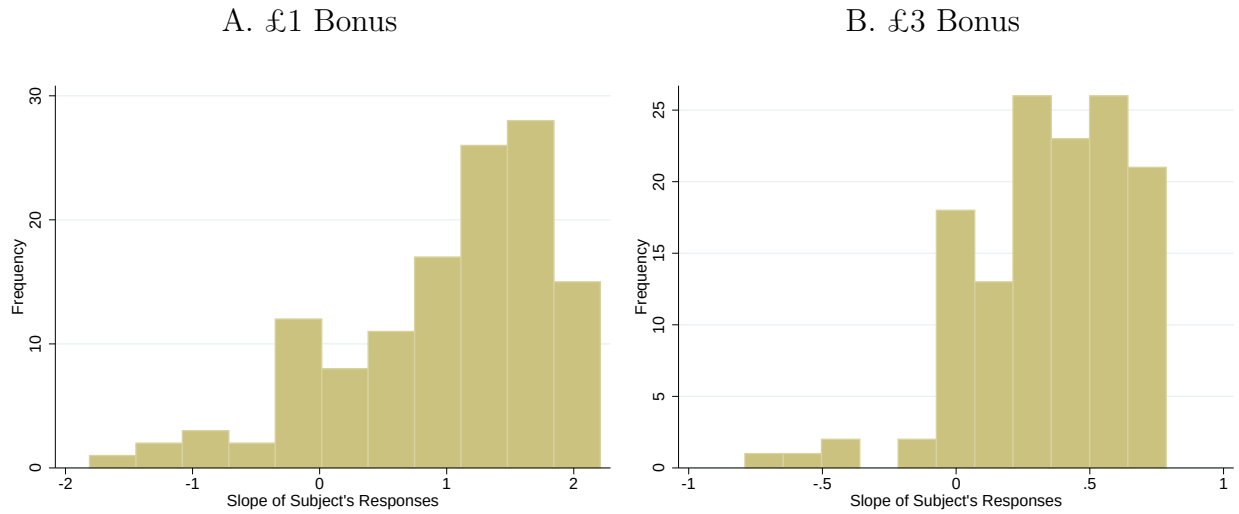
Notes: The figure shows the cumulative distribution functions of donations from bonus income. N=150.

Figure 5: Norms for Donating Bonus Income



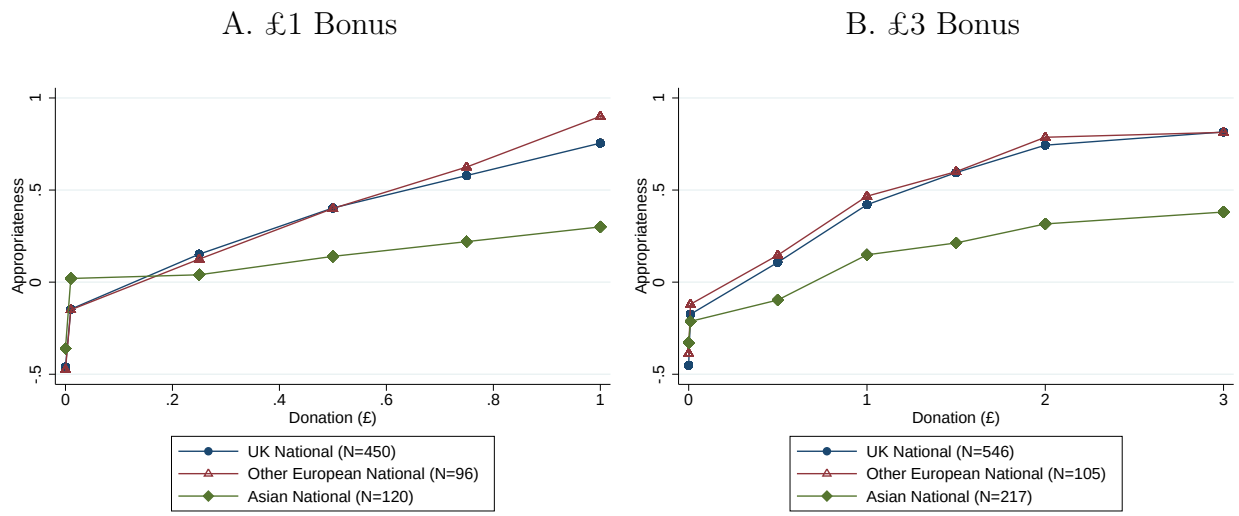
Notes: The figure shows elicited norms for donations of bonus income. Points placed at the minimum value of each range of donations. Y-axis gives mean values of numerical moral appropriateness ratings for ranges of donation amounts: "Very morally inappropriate" = -1, "Morally inappropriate" = -0.6, "Somewhat morally inappropriate" = -0.2, "Somewhat morally appropriate" = 0.2, "Morally appropriate" = 0.6, "Very morally appropriate" = 1.

Figure 6: Variation of Perceived Norms for Donating Bonus Income



Notes: The figure shows elicited norms for donations of bonus income. Numerical value of appropriateness rating regressed on smallest value in range of donation amounts. Figures plot distributions of slope coefficients in regressions with a slope and intercept for each subject.

Figure 7: International Norms for Donating Bonus Income



Notes: The figure shows elicited norms for donations of bonus income. Points placed at the minimum value of each range of donations. Y-axis gives mean values of numerical moral appropriateness ratings for ranges of donation amounts: "Very morally inappropriate" = -1, "Morally inappropriate" = -0.6, "Somewhat morally inappropriate" = -0.2, "Somewhat morally appropriate" = 0.2, "Morally appropriate" = 0.6, "Very morally appropriate" = 1.

Table 1: Donations of Earned Income

	(1) Earnings	(2) Gift	(3) Gift (IV)	(4) Gift (IV)	(5) Earnings	(6) Gift (IV)	(7) Gift (IV)	(8) Gift (IV)
Earnings			0.032	0.032		0.038	0.055	0.067
			(0.089)	(0.084)		(0.078)	(0.061)	(0.058)
Task 3 is Math	-1.559***	-0.049			-0.739	0.010	0.056	0.065
	(0.410)	(0.140)			(0.501)	(0.175)	(0.168)	(0.165)
Task 3 is Math * # Correct in Task 2					0.367***			
					(0.052)			
Task 3 is Lang * # Correct in Task 1					0.350***			
					(0.039)			
N	217	217	217	217	217	217	217	217
Adj. R-Squared	0.059	-0.004	0.022	0.026	0.809	0.022	0.090	0.086
1st stage F stat.			14.4	44.8		97.4	95.3	98.5
Controls:								
# Correct in Tasks 1,2				Y	Y	Y	Y	Y
# Correct in Tasks 1,2 Squared							Y	Y
# Correct in Tasks 1,2 Cubed								Y

Notes: Regressions with outcome of earnings or donations from earnings, as labeled by column. Mean earnings are £9.82 and mean the (unconditional) mean donation is £0.82. In columns (3), (6), and (9), the first control in the preceding column is used as an instrument for earnings. "Earnings in the Relevant Task" are earnings in either Task 1 or Task 2, depending on which is randomly assigned to be repeated in Task 3. Across specifications, earnings do not significantly increase donations. Robust standard errors.

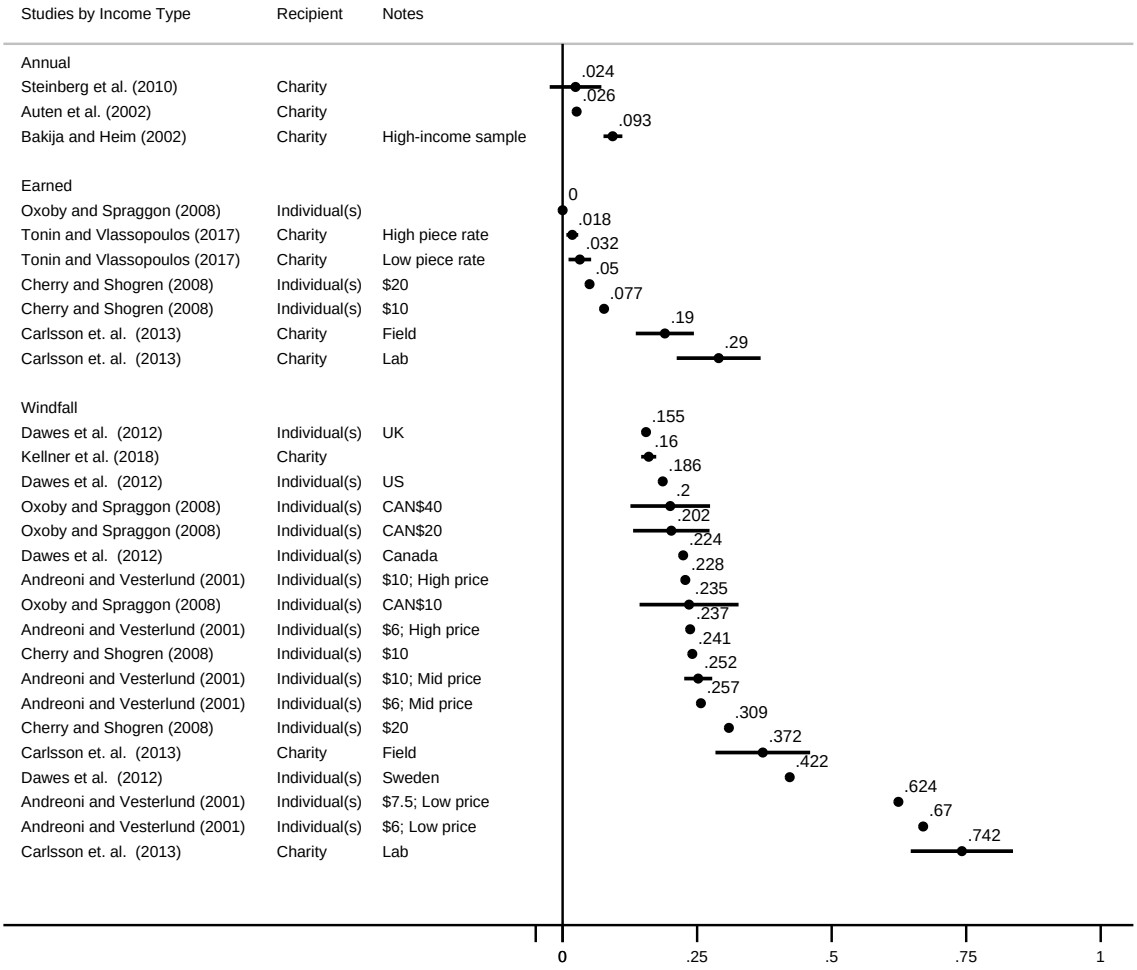
Table 2: Donations of Bonus Income

	(1)	(2)	(3)	(4)	(5)	(6)
	Amount	Amount	Amount	Any	Any	Any
(Bonus=£3)	0.392***	0.354***	0.427***	0.116*	0.170**	0.136
	(0.088)	(0.109)	(0.110)	(0.066)	(0.085)	(0.083)
Asian * (Bonus=£1)		0.130			0.255***	
		(0.084)			(0.097)	
Asian * (Bonus=£3)		0.189			0.067	
		(0.160)			(0.092)	
Male * (Bonus=£1)			-0.045			-0.031
			(0.081)			(0.098)
Male * (Bonus=£3)			-0.154			-0.096
			(0.164)			(0.099)
Constant	0.382***	0.340***	0.400***	0.541***	0.459***	0.554***
	(0.040)	(0.049)	(0.053)	(0.048)	(0.058)	(0.062)
N	217	217	217	217	217	217
Adj. R-Squared	0.081	0.087	0.079	0.009	0.032	0.005

Notes: Regressions with outcome of donations from bonus income. "Approves of Charity" is numerical value of response, from "Strongly Disagree" (-1) to "Strongly Agree" (+1), to the statement "I approve of Acorns Children's Hospice." "Asian" is an indicator for subjects listing Asian nationalities. Robust standard errors.

Appendix A: Additional Figures and Tables

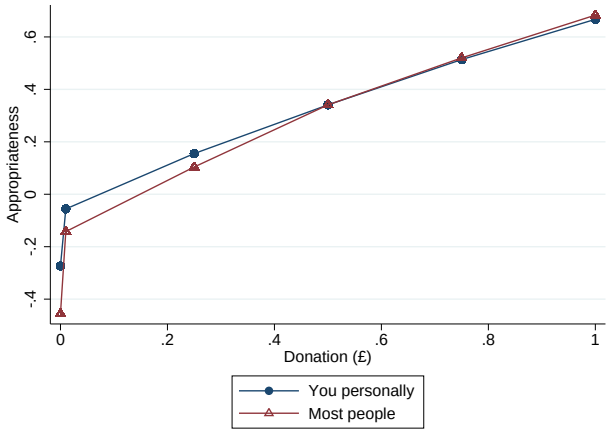
Figure A.1: Extant Estimates of the Share of Income Given Away



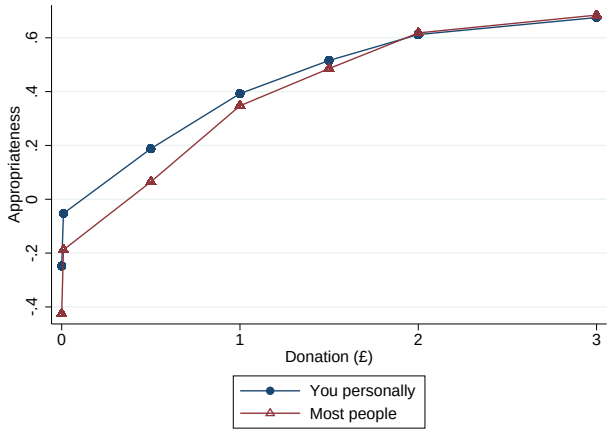
Notes: This figure summarizes the share of income donated across studies. Where available, 95% confidence intervals are plotted with the point estimate (Oxoby and Spraggon, 2008). When only standard deviations are reported, we derive standard errors from the standard deviations: Andreoni and Vesterlund (2001) (estimate for $10 endowment and mid-level price of giving), Carlsson et al. (2013), Tonin and Vlassopoulos (2017), and Kellner et al. (2019). For Steinberg et al. (2010) and Bakija and Heim (2011), we use the Delta Method to calculate the standard error for the share. When neither standard deviations nor standard errors is reported, we suppress the confidence interval: Auten et al. (2002), Cherry and Shogren (2008), and Dawes et al. (2012). The estimates are categorized by type of income and type of recipient of giving. For studies that provide multiple estimates, we include all of the estimates and explain the differences between these in the "Notes" column.

Figure A.2: Social Norms vs. Personal Attitudes

A. £1 Bonus



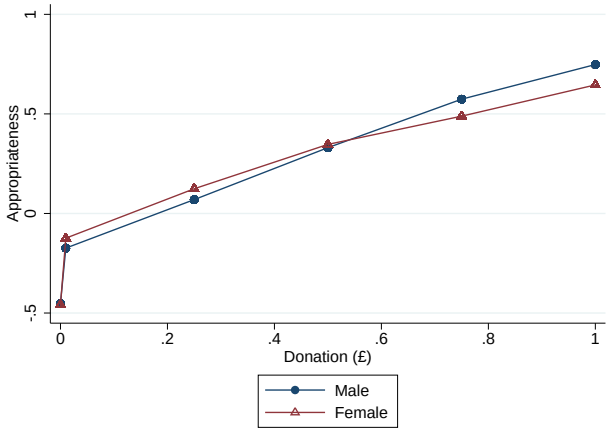
B. £3 Bonus



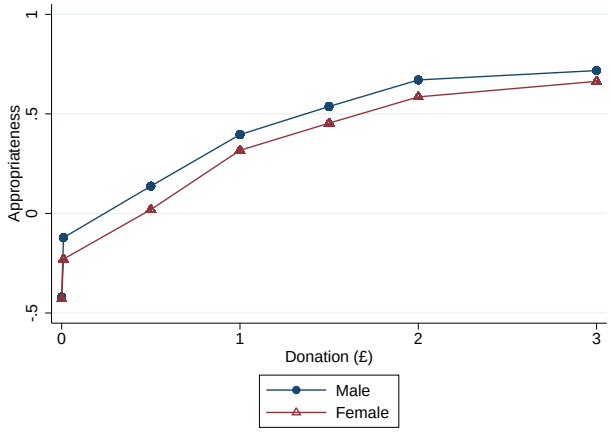
Notes: The figure shows elicited norms for donations of bonus income. Points placed at the minimum value of each range of donations. Y-axis gives mean values of numerical moral appropriateness ratings for ranges of donation amounts: "Very morally inappropriate" = -1, "Morally inappropriate" = -0.6, "Somewhat morally inappropriate" = -0.2, "Somewhat morally appropriate" = 0.2, "Morally appropriate" = 0.6, "Very morally appropriate" = 1.

Figure A.3: Gender-Specific Perceptions of Norms for Donating Bonus Income

A. £1 Bonus



B. £3 Bonus



Notes: The figure shows elicited norms for donations of bonus income. Points placed at the minimum value of each range of donations. Y-axis gives mean values of numerical moral appropriateness ratings for ranges of donation amounts: "Very morally inappropriate" = -1, "Morally inappropriate" = -0.6, "Somewhat morally inappropriate" = -0.2, "Somewhat morally appropriate" = 0.2, "Morally appropriate" = 0.6, "Very morally appropriate" = 1.

Table A.1: Summary Statistics from Donation Experiment

	Mean	Std. Dev.
Enjoyed experience (1 to 9)	6.84	2.0
Feel happy today (1 to 9)	6.70	2.0
Felt pressured to give (1 to 9)	4.95	2.6
Felt obligated to give (1 to 9)	4.84	2.6
Discretionary spending per week	50.35	67.9
People should behave like others (-1 to 1)	-0.23	0.5
People should help others. (-1 to 1)	0.65	0.4
People who have been fortunate should help others. (-1 to 1)	0.58	0.4
People should help people when there are others helping. (-1 to 1)	0.25	0.5
I approve of Acorns Children's Hospice. (-1 to 1)	0.49	0.4
Female	0.63	0.5
UK national	0.41	0.5
Asian national	0.37	0.5

Notes: N=150.

Table A.2: Perceived Appropriateness by Donation and Type of Income

	(1)	(2)	(3)	(4)	(5)	(6)
	Amount	Amount	Amount	Any	Any	Any
Donation Amt * (Bonus=£3)	-0.653***	-0.717***	-0.602***	-7.601	-2.644	-13.418**
	(0.077)	(0.078)	(0.105)	(5.039)	(5.199)	(6.808)
Donation Amt	1.005***	1.105***	0.954***	31.360***	30.095***	33.418***
	(0.073)	(0.073)	(0.101)	(3.679)	(3.899)	(4.908)
Asian * Donation Amt * (Bonus=£1)		-0.627***			7.905	
		(0.224)			(11.148)	
Asian * Donation Amt * (Bonus=£3)		-0.154***			-15.838	
		(0.055)			(9.833)	
Male * Donation Amt * (Bonus=£1)			0.137			-5.592
			(0.140)			(7.277)
Male * Donation Amt * (Bonus=£3)			-0.002			9.804
			(0.052)			(6.669)
N	1,681	1,681	1,681	516	516	516
Adj. R-Squared	0.471	0.491	0.472	0.319	0.328	0.323

Notes: Regressions with outcome of numerical moral appropriateness ratings: "Very morally inappropriate" = -1, "Morally inappropriate" = -0.6, "Somewhat morally inappropriate" = -0.2, "Somewhat morally appropriate" = 0.2, "Morally appropriate" = 0.6, "Very morally appropriate" = 1. Estimate coefficients on "Bonus Income" indicators for each of the £1 and £3 bonuses give the difference between the mean rating for donating an amount from this bonus vs. from earned income. Column headings list the donation amount or range considered, and "Pooled" includes all ranges that were listed for both earned income and the respective bonus. Sample restricted to subjects asked about the £1 (£3) bonus in columns 1-4 (5-9).

Table A.2 presents regression results showing how perceived appropriateness of a donation depends on whether income was earned or unearned. In each column, we

consider a range of donation amounts that were evaluated after income was earned and also after one type of bonus was received. We restrict the sample to subjects who considered that amount of bonus. The coefficient on an indicator for bonus income therefore gives the average difference between these subjects' perceived appropriateness of making such a donation out of bonus income compared to earned income. For the bonus of £1 (columns 1-4), perceived appropriateness of each donation is greater when income is unearned, as seen in Figure 5. The difference is only statistically significant for positive donation amounts, however. For the £3 bonus (columns 5-9), the appropriateness of giving zero is again greater when income is unearned, and the difference here is marginally statistically significant. The sign of the difference changes for positive donation amounts, with perceived appropriateness significantly lower when an amount is donated from bonus income. Thus, a subject would have to donate a larger amount from the £3 bonus than from the £13 of earned income to reach the same degree of perceived appropriateness. The elicited norms for donating from earned income lie below those for the £1 bonus and above those for the £3 bonus, suggesting that the perceived obligation to donate from £13 of earned income would be similar to that for £2 of bonus income.

Table A.3: Norms for Donating Bonus Income

	(1)	(2)	(3)
Donation Amt * (Bonus=£3)	-0.653***	-0.717***	-0.602***
	(0.077)	(0.078)	(0.105)
Donation Amt	1.005***	1.105***	0.954***
	(0.073)	(0.073)	(0.101)
Asian * Donation Amt * (Bonus=£1)		-0.627***	
		(0.224)	
Asian * Donation Amt * (Bonus=£3)		-0.154***	
		(0.055)	
Male * Donation Amt * (Bonus=£1)			0.137
			(0.140)
Male * Donation Amt * (Bonus=£3)			-0.002
			(0.052)
N	1,681	1,681	1,681
Adj. R-Squared	0.471	0.491	0.472

Notes: Subject-fixed-effect regressions with outcome of numerical moral appropriateness ratings for ranges of donation amounts: "Very morally inappropriate" = -1, "Morally inappropriate" = -0.6, "Somewhat morally inappropriate" = -0.2, "Somewhat morally appropriate" = 0.2, "Morally appropriate" = 0.6, "Very morally appropriate" = 1. "Donation Amt" is the minimum value of a range of donation amounts. "Supports Charity" is numerical value of response, from "Strongly Disagree" (-1) to "Strongly Agree" (+1), to the statement "I approve of Acorns Children's Hospice." "Asian" is an indicator for subjects listing Asian nationalities. Standard errors clustered by subject.

All regressions in Table 2 include subject fixed effects and examine the slope of subjects' appropriateness ratings as a function of donation amount. The regression in column (1) includes the donation amount and its interaction with an indicator for a bonus of £3. Results confirm that appropriateness is significantly increasing in the donation amount, and by a significantly lower rate for the £3 bonus than for the £1 bonus. The remaining regressions reveal how these beliefs vary across subject demographic types. The regression displayed in column (2) includes interactions with an indicator for Asian nationals, whose perceptions of appropriateness do not increase with donation amount by as much as those of other subjects. This regression shows that the differences in slopes seen in Figure 7 obtain statistical significance at the 0.01 level. Column (3) shows that there is not a significant difference between the norms perceived by male subjects and female subjects.

Appendix B: Donation Experiment Instructions

Welcome! You are about to take part in an experiment. This experiment is run by the "Birmingham Experimental Economics Laboratory" and has been financed by various research foundations. Just for showing up you have already earned £2.50. You can earn additional money depending on the decisions made by you and other participants. It is therefore very important that you read these instructions with care.

It is important that you remain silent and do not look at other people's work. If you have any questions, or need assistance of any kind, please raise your hand and an experimenter will come to you. You may use the provided scrap paper but no phones, calculators, or other devices. If you use a device, talk, laugh, exclaim out loud, etc., you will be asked to leave and you will not be paid. We expect and appreciate your following of these rules.

We will first jointly go over the instructions. After we have read the instructions, you will have time to ask clarifying questions. Please do not touch the computer or its mouse until you are instructed to do so. Thank you.

This experiment consists of three different timed tasks. You will be paid a fixed amount of money for each correct answer you provide in each task. The total amount of money you will earn from this experiment will be £2.50 for showing up plus the sum of your earnings from each task of the experiment.

After Task 3 you will be told how many correct responses you gave in each of the tasks. After this you will collect your earnings.

Following these instructions you will find the instructions for Task 1 of the experiment. You will receive new instructions for the other tasks once everyone in the room has completed Task 1.

Task 1

Task 1 consists of arranging pairs of letters to form words like the following examples:

TR, EA, TS, RE = RETREATS. CU, FF, LI, NK = CUFFLINK.

You must use all the letters. You can change the order of the pairs but you cannot change the order of the two letters within each pair. You will have 2.5 minutes to provide answers.

You will be paid for each correct answer provided during the 2.5 minute time limit.

another problem will appear. You can choose not to answer a question by pressing the OK button. The answer will then be recorded as being incorrect and you will be moved to the next problem. To help with time management, there will be a clock counting down the seconds for the 2.5 minute duration.

Task 2

Task 2 consists of solving 2-number multiplication problems like the following example:

10 x 97 = 970. 20 x 30 = 600.

You will have 2.5 minutes to provide answers.

You will be paid for each correct answer provided during the 2.5 minute time limit.

To answer a problem, you will simply type the numbers on the keyboard, then press OK and another problem will appear. You can choose not to answer a question by pressing the OK button. The answer will then be recorded as being incorrect and you will be moved to the next problem. To help with time management, there will be a clock counting down the seconds for the 2.5 minute duration.

Task 3

Subjects receive instructions only for the task they have been randomly assigned to perform on their screens.

Experimenter's announcement: You will now have an additional 5 minutes to perform one of the tasks. The rules and payment rate will be the same as when you performed the task before.

At the end of Task 3, subjects will get the following instructions:

Experimenter's announcement: You can now see the number of correct answers you gave in each of the tasks. Please give me a moment to print the results.

You will now be given an opportunity to donate some of your income from the experiment to a charity, and last, you will be asked to complete a survey.

Written onscreen: Thank you, you have completed the tasks. Your total earnings from today's experiment (including your £2.50 show-up fee) sum to £[***Autofill***].

Appendix C: Norm-Elicitation Experiment Instructions

Text of pilot invitation email

Email subject line: BEEL Survey Experiment

Dear #fname# #lname#,

You registered with BEEL to participate in experiments. We are planning to conduct a web based experiment, in which you need to answer a questionnaire. If you would like to take part, please click on the link below to participate in this experiment. It will likely take less than 10 minutes to complete the questionnaire. You can participate any time you would like until this Friday, April 27, at 5pm. You cannot use a phone, but you can use a computer or tablet.

https://beel2018.surveycto.com/collect/dm_experiment?caseid=

As long as you answer all the questions, you will be eligible to take part in two draws, one for a £50 prize and one for a £100 prize. The £50 prize will be awarded to a randomly selected participant who completed the questionnaire. The £100 prize will be awarded based on the responses to the questionnaire, as will be described in the instructions. After surveys are completed we will inform you of the time and location of the random draw for the prizes. Note that you can win the prize even if you are not able to attend the public draw (in which case we will contact you by email if you are a winner). However, if you can attend, you are very welcome.

This experiment is named DM Experiment. Please include "DM Experiment" in the subject field of any email you send us regarding this survey experiment.

Best regards,

The BEEL team.

Text of experiment invitation email

Email subject line: BEEL Survey Experiment

Dear #fname# #lname#,

Our first web-based experiment was a success. We have collected the email addresses of everyone who completed the questionnaire and will draw prizes on Friday, June 15.

Here is another short questionnaire that we invite you to complete.

https://beel2018.surveycto.com/collect/web_survey_2018?caseid=

a £50 prize and two for £100 prizes. The £50 prize will be awarded to a randomly selected participant who completes this questionnaire. The £100 prizes will be awarded based solely on the responses to this questionnaire, as will be described in the instructions.

You can participate any time you would like until Friday, June 1, at 5pm. You cannot use a phone, but you can use a computer or tablet. Note that you can win the prizes even if you are not able to attend the public draw (in which case we will contact you by email if you are a winner). However, if you can attend, you are very welcome.

This experiment is named Web Survey 2018. Please include "Survey Experiment 2018" in the subject field of any email you send us regarding this survey experiment.

Best regards,

The BEEL team.

Text for the survey

Thanks for deciding to participate. This is a web based experiment and you will need to answer all questions in the form and then click on the Submit button at the end. Please read the instructions carefully as you can earn additional money depending on the answers you provide to each of the questions.

Your responses will be completely confidential. Your answers will be of immense value for our scientific investigation. If you are unclear about the instructions, you can email BEEL using subject "Survey Experiment 2018." Thank you in advance for your participation.

#separate screen#

On the following screens, you will read descriptions of situations. In each situation, a person must make a decision. You will be given a description of the decision faced. This description will include several possible choices available to the person.

After you read the description of the decision, you will be asked to evaluate, for each of the possible choices available to the person, whether that choice is "morally appropriate" or "morally inappropriate." One definition of "moral" appearing in the Oxford English Dictionary is "Concerned with or derived from the code of behaviour that is considered right or acceptable in a particular society." In each scenario, you will be asked both how morally appropriate *you personally* feel each choice is and how morally appropriate *most people* would feel each choice is.

#separate screen#

Your eligibility for the £100 prizes will depend on your answers to the questions of how morally appropriate *most people* would consider a choice. At the end of the experiment, we will randomly select of the choices from these questions. For each choice selected, we will determine which response was selected by the most people who completed the questionnaire. **If you give the same response as that most frequently given by other people, then you will be entered into the draw for £100.** For instance, if one of the randomly-selected choices is one for which the most common answer was "somewhat morally inappropriate," then you will be entered into one of the draws for £100 if you answered "somewhat morally inappropriate."

#separate screen#

Here is the first scenario. A participant in a laboratory experiment completes 3 tasks. In each task, the participant earns a certain amount for each item completed correctly. The participant then sees the following…

_____

Thank you, you have completed the tasks.

Your earnings from today's experiment (including your £2.50 show-up fee) sum to £13.00.

#separate screen#

The participant then sees the text below and is able to type in a donation amount.

Would you like to donate some of your earnings to Acorn's Children's Hospice of Birmingham?

In last year's sessions, 50% of participants gave £0.25 or more.

If you'd like to make a donation, please enter the amount (between £0 and £13.00) in the box provided.

#separate screen#

Please select how *you personally* feel about each of these choices the participant could make.

Donation	Very morally inappropriate	Morally inappropriate	Somewhat morally inappropriate	Somewhat morally appropriate	Morally appropriate	Very morally appropriate
£0	○	○	○	○	○	○
£0.01-.24	○	○	○	○	○	○
£0.25-.49	○	○	○	○	○	○
£0.50-.99	○	○	○	○	○	○
£1.00-1.49	○	○	○	○	○	○
£1.50-1.99	○	○	○	○	○	○
£2 or more	○	○	○	○	○	○

#separate screen#

Please select how *most people* feel about each of these choices the participant could make.

Donation	Very morally inappropriate	Morally inappropriate	Somewhat morally inappropriate	Somewhat morally appropriate	Morally appropriate	Very morally appropriate
£0	○	○	○	○	○	○
£0.01-.24	○	○	○	○	○	○
£0.25-.49	○	○	○	○	○	○
£0.50-.99	○	○	○	○	○	○
£1.00-1.49	○	○	○	○	○	○
£1.50-1.99	○	○	○	○	○	○
£2 or more	○	○	○	○	○	○

#separate screen#

- Between 0% and 100%, what percentage of participants in the laboratory experiment do you think will donate part of their earnings from the tasks? ___%
- Among participants who donate part of their earnings from the tasks, what do you think will be the average donation amount? £_____

#separate screen#

After making the donation choice, the participant in the experiment then sees the following.

Congratulations, you have been randomly selected to receive a bonus of £3.

Would you like to donate some of your bonus to Acorn's Children's Hospice of Birmingham?

If you'd like to donate some of your bonus, please enter the amount (between £0 and £3.00) in the box provided.

#separate screen#

Please select how *you personally* feel about each of these choices the participant could make.

Donation	Very morally inappropriate	Morally inappropriate	Somewhat morally inappropriate	Somewhat morally appropriate	Morally appropriate	Very morally appropriate
£0	○	○	○	○	○	○
£0.01-.49	○	○	○	○	○	○
£0.50-.99	○	○	○	○	○	○
£1.00-1.49	○	○	○	○	○	○
£1.50-1.99	○	○	○	○	○	○
£2-2.99	○	○	○	○	○	○
£3.00	○	○	○	○	○	○

#separate screen#

Please select how *most people* feel about each of these choices the participant could make.

Donation	Very morally inappropriate	Morally inappropriate	Somewhat morally inappropriate	Somewhat morally appropriate	Morally appropriate	Very morally appropriate
£0	○	○	○	○	○	○
£0.01-.49	○	○	○	○	○	○
£0.50-.99	○	○	○	○	○	○
£1.00-1.49	○	○	○	○	○	○
£1.50-1.99	○	○	○	○	○	○
£2-2.99	○	○	○	○	○	○
£3.00	○	○	○	○	○	○

#separate screen#

To what extent do you agree with the following:

Statement	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
People should behave like others.	○	○	○	○	○	○
People should help others.	○	○	○	○	○	○
People who have been fortunate should help others.	○	○	○	○	○	○
People should help people when there are others helping.	○	○	○	○	○	○
I approve of Acorns Children's Hospice.	○	○	○	○	○	○

#separate screen#

To complete the questionnaire, please respond to each of the questions below.

1. What is your gender? _____

2. What is your nationality? _____

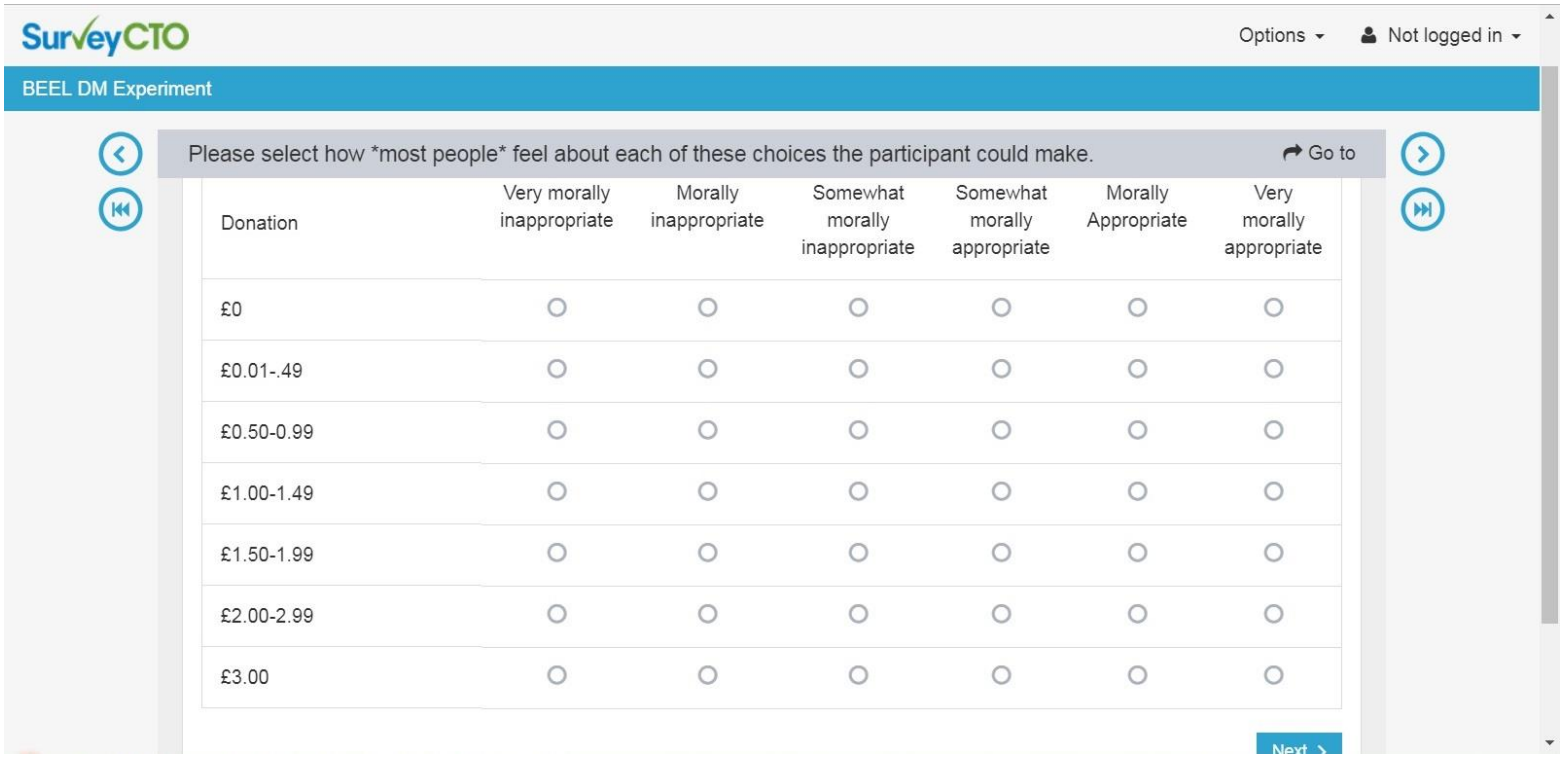
3. In a typical week, what amount (£) do you have available for discretionary spending (i.e. not including necessary things like food, tuition fees, and accommodation)? _____

#separate screen#

If you would like to be considered for the prizes, please enter your *University of Birmingham* email address below. Make sure that you type in your email address correctly, as we will use this one to contact you.

Your UoB email address: _____

Figure C.1: Screen Shot of Choices in Norm-Elicitation Experiment



Appendix D: Supplementary Experiment Showing Minimal Effects of Earned Income on Donations

We conducted a supplementary experiment to obtain additional estimates of the effect of earned income on donations. This experiment differed from our main donation experiment in two ways that could potentially explain our finding that earned income has little effect. First, we conducted the experiment in a different laboratory than our other experiments. Second, we randomized piece rates rather than tasks. Despite these changes, we reproduced the results of our main experiment.

The supplementary experiment was carried out November 6-8, 2019, in the Centre for Experimental Economics at the University of York. To raise funds for a comparable local charity in this alternative location, our solicitation screen asked "Would you like to donate some of your earnings to the University of York Students' Union (YUSU), which raises funds for charitable causes?" The YUSU logo was shown on the screen, just as the Acorns logo was shown on the solicitation screen in our main donation experiment. Both the math and word tasks were exactly as in our main donation experiment described in the text. Subjects performed these tasks in randomized order and received five minutes to perform each task. A control group was paid a piece rate of £0.20 for each correct response in each task. One treatment group was paid a piece rate of £0.40 for correct responses in the math task, and the other treatment group was paid a piece rate of £0.40 for correct responses in the language task. In this way, we are able to estimate effects with two different sources of random variation, one of which induces the most variation for subjects with stronger math skills, and one of which induces the most variation for subjects with stronger English language skills. We also randomly assigned some subjects to an information treatment informing them on the donation screen that the average donation in the first session of the experiment was £1.74, and we will show that controlling for this information treatment has no

effect on the results. Subjects earned an average of £7.88 (including show-up fee): the respective average earnings of the 59/44/40 subjects in the control/high-word/high-math arms were £6.62/£9.20/£8.29.

Results of the experiment appear in Table D.1. In columns (1) through (4), the regressors are dummy variables indicating a high piece rate in either the first task or the second. Column (1) shows that an increased piece rate increased earnings by more than £2, while column (2) shows that this had a negative and insignificant effect on donations. Columns (3) and (4) use the assignment indicators as instruments for earnings and show that it has no significant effect on donations, whether or not we control for the order of tasks and the information treatment. In columns (5) through (8) we show results of corresponding regressions using indicators for assignment to a high piece rate in the word or math task (rather than the first or second task). The results are quite similar and a bit more precise because the average subject provided more correct responses in the word task than the math task, and therefore increasing the piece rate for the word task had a larger effect on earnings. As can be seen from the standard errors of the IV estimates, the confidence intervals exclude an effect greater than £0.05 of additional donations per £1 of additional earned income, an even smaller marginal propensity to donate than what we are able to reject with our main donation experiment.

Table D.1: Non-Effect of Earned Income on Donations in Supplementary Experiment

	(1) Earnings	(2) Donation	(3) Donation	(4) Donation	(5) Earnings	(6) Donation	(7) Donation	(8) Donation
High rate in first task	2.12	-0.26						
	(0.50)***	(0.16)						
High rate in second task	2.18	-0.15						
	(0.48)***	(0.20)						
Earnings			-0.10	-0.11			-0.09	-0.10
			(0.08)	(0.08)			(0.07)	(0.07)
High rate in word task					2.58	-0.23		
					(0.51)***	(0.17)		
High rate in math task					1.67	-0.19		
					(0.46)***	(0.20)		
Constant	6.62	0.58	1.21	0.87	6.62	0.58	1.18	0.86
	(0.23)***	(0.15)***	(0.67)*	(0.53)	(0.23)***	(0.15)***	(0.59)*	(0.50)*
Observations	143	143	143	143	143	143	143	143
Controls				✓				✓

Notes: Regressors, other than Earnings, are dummy variables for randomly assigned treatments. OLS regressions in columns (1), (2), (5), and (6). Second stage of IV regressions in columns (3), (4), (7), and (8). Instruments in IV regressions are the regressors including in preceding columns. Standard errors robust to heteroskedasticity.