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What Sort of People Vote Expressively?

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Abstract

Using a survey and an experiment, we identify the personal characteristics associated with the difference between an individual's giving to charity and her vote in a referendum on charitable giving. Under certain circumstances, high levels of self-reported trust and happiness, and participation in social group activities, are associated with expressive voting for high levels of charitable giving. However, the sequencing of the experiments is of crucial importance. The 'warm glow' of expressive voting can influence subsequent individual decisions, and the 'cold shower' of individual selfishness can influence subsequent collective decisions.

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Individuals sometimes fail to do what they might, on reflection, believe to be best. The philosophical discussion of such behavior dates back to Plato's *Protagoras* and Aristotle's *Nicomachean Ethics*, and includes authors such as Rorty (1980). Aristotle ascribes the failure (*akrasia*) either to impetuosity (*propeteia*) or to weakness (*astheneia*). In terms of rational choice theory, *propeteia* can be represented as the propensity to act without taking into account all available information, that is, as a deviation from Rational Expectations. The concept of *astheneia* requires a more substantial modification of standard rational choice theory. With *astheneia*, the function that maps states of the world onto utility levels is an incomplete characterization of an individual's preferences. People can have meta-preferences over different utility functions; it is possible, for example, that they would prefer to have a taste for virtuous behavior, but some type of constraint prevents them from acquiring such a taste.

Tullock (1971), Brennan and Lomasky (1993), and Brennan and Hamlin (2000) discuss the relevance of *astheneia* to public choice theory. If there is only a very small probability that an individual's vote will be decisive in a referendum on whether to make a virtuously sacrificial collective decision, then the expected cost of voting virtuously is very small. It will take only a small psychic benefit from the action of voting in such a way to persuade the representative voter to make the virtuous choice. Thus, a democratic society can make virtuous collective decisions even if no one individual is capable of making a similarly virtuous decision in her private life. Tullock (1971) frames this idea in two conjectures. (i) One will be more likely to vote for a \$100 *per capita* tax to finance a charitable cause than to donate \$100 to the charity. (ii) As the size of the electorate increases and the probability of one's vote being decisive falls, the more likely it is that one will vote for the tax. Such a phenomenon is termed *expressive voting*, since the individual derives some utility from expressing a taste that she does not have.

Tullock's conjectures have prompted a number of economic experiments, discussed in the next section. These experiments have produced substantial heterogeneity in the behavior of individual subjects. The main purpose of this paper is to reveal some of the reasons for this heterogeneity, using an experiment that is described below.

EXISTING EXPERIMENTAL EVIDENCE ON EXPRESSIVE VOTING

Previous research on expressive voting has employed a variety of experimental designs. The majority of papers present results from experiments in which the choices made affect the distribution of resources among participants, rather than the size of a transfer to an outside group. Nevertheless, some of these papers use an experimental design that compares individual decisions with collective ones, which is relevant to Tullock's first conjecture. One paper directly concerned with altruism is Eichenberger and Oberholzer-Gee (1998). In this study, participants play a Gangster Game, in which Player A is endowed with some money and Player B chooses how much to expropriate. The participants also play a Democracy Game, in which Player B is replaced by a group who vote on how much to expropriate from Player A. The mean percentage expropriated in the Gangster Game is 76%, compared to 52% in the Democracy Game. The difference is statistically significant, which can be interpreted as evidence for an expressive voting effect. Cason and Mui (1997) report similar results using a Dictator Game. Here, Player A chooses how much of the endowment to give to Player B, and her choice is compared to that of a group who vote on how much to give. The group is significantly more generous than the individual. Kroll *et al.* (2001) compare results in a standard repeated Prisoners' Dilemma Game to those in a game in which the two players are replaced by groups who vote on whether to play the co-operative strategy. In 30% of cases in the group experiment, one of the two groups plays co-operatively, and in 12% of cases both groups do. The corresponding percentages in the

standard Prisoners' Dilemma Game, using the same participants, are 20% and 4% respectively; these differences are again significant. This can be interpreted as more evidence for expressive voting, although the characteristic expressed here might be trust rather than altruism or fairness.

Other experiments are relevant to Tullock's second conjecture, examining whether the propensity of a favorably endowed participant to vote expressively for an equitable reallocation among all participants depends on the perceived probability of being a pivotal voter. In some experiments, participants are asked about their perceived probability (Tyran and Sausgruber, 2006). In others, the probability is varied in different treatments, either by changing the size of the group or by changing the proportion of votes required to deliver an equitable outcome (Tyran, 2004; Bischoff and Eghot, 2008; Feddersen *et al.*, 2009). Interpretation of these results is complicated by the fact that the perceived probability of being a pivotal voter depends on subjective expectations about the distribution of all other votes. Overall, the evidence is mixed, with more clear support for expressive voting effects when participants are given a wide range of choices about how equitable to be. In all of the studies, there is a substantial degree of heterogeneity in different participants' responses, but we know little about the personal characteristics driving this heterogeneity. Kamineca and Egon (2010) report further complications. In their experiments, raising the probability of being pivotal does not increase the correlation of a participant's choice about resource redistribution with her place in the *ex ante* distribution. When the probability rises, there is no significant increase in the correlation between being relatively poor and voting for more redistribution. This result is difficult to square with any simple expressive voting theory.

A smaller number of experimental studies explore 'warm glow' effects from donations to non-participants, either in the form of charitable giving (for example, Carter and Guerrette, 1992)

or in the form of carbon offsets (for example, Bråten, 2010). Each paper is based on a different experimental design. In the Carter and Guerrette experiments, participants declare whether they want to keep money for themselves or donate it to a charity. With a certain probability known to the participant (which varies across treatments, and is sometimes equal to one), this declaration will determine whether the money is donated; otherwise, the outcome is determined by the flip of a coin. This experimental design preserves the rationale for expressive choice in Tullock's two conjectures while abstracting from the externality in someone voting over the fate of a collective endowment, rather than just her own endowment. The design also leaves no doubt about the probability that one's choice will determine the outcome.¹ Carter and Guerrette find that the probability of a charitable decision is decreasing in the probability that this decision will matter for the outcome, but the effect is of marginal statistical significance. Fischer (1996) produces a correlation with a higher level of statistical significance using a voting experiment in which the size of the electorate varies.

Finally, the experiments of Crumpler and Grossman (2008), Bråten (2010) and Null (2010) test for warm glow effects by taxing participants' donations. With no warm glow effect, and convex preferences across the participant's own consumption and charitable donations, a higher tax rate should reduce the amount donated, the size of the effect depending on the

¹ One potential problem with this design is that it restricts the range of ways in which an altruistic expressive choice can deliver utility. Firstly, one's utility from an expressive choice might depend on the expressive choices of other voters. For example, it might depend on one's choice relative to the median voter, indicating whether one is more or less selfish than average. Secondly, it is known that the neurological activity associated with an altruistic choice depends on whether the game is played with other human participants. Only when other human beings are involved, and not just a computer or the toss of a coin, is there stimulation of the striatum in the mid-brain (Rilling *et al.*, 2002, 2004; see also the discussion in Fehr and Schmidt, 2005).

parameters of the utility function. As the tax rate reaches 100%, donations should fall to zero. Here, there is substantial evidence for warm glow effects, with a large proportion of those donating anything at all when the tax rate is 0% still donating something when the rate reaches 100%. However, there is a great deal of heterogeneity across participants in untaxed decisions, and in responses to tax schedules of different kinds.

Taken together, the existing experimental studies suggest that there is some kind of expressive voting effect, although the mechanisms at work may involve subtleties that do not appear in the original Tullock conjectures. One common feature of the studies is that there is a great deal of variation in the way that different participants behave. However, there is little evidence on the sources of this variation. In order to address this gap in the literature, we have conducted a set of experiments designed to measure the effect of two different sources of variation: (i) differences in individual participants' personal characteristics, and (ii) differences in the context in which individual and collective decisions are made.

THE EXPERIMENTAL DESIGN

Our experiments are designed to test two hypotheses about the variation in the size of the expressive voting effect across individuals.

H1. The size of the effect depends on individual personal characteristics. Firstly, regular participation in elections might reflect a taste for expressive voting, if the perceived probability of being a pivotal voter in these elections is very small. Secondly, certain characteristics might be associated with a preference for generosity: membership of informal social groups (reflecting

a taste for the achievement of communal goals), and higher levels of trust and happiness.² If this is at least partly an expressive preference that does not appear in the utility function revealed by private decisions, then happy, trusting social group members will manifest a larger expressive voting effect.

H2. The size of the effect depends on recent decisions made by the individual. Expressive voting depends on the creation of a warm glow. A recent selfish choice might dampen the warm glow effect, and diminish the propensity to vote expressively. Recent past decisions could affect current behavior.

The experiments were carried out using student participants at a New Zealand university in the middle of 2010. Students were recruited through advertisements at a number of second year lectures. Some of the students were enrolled for an economics or business degree; others were enrolled for a biological or health science degree. The material used to recruit students is included in the Appendix.

The experiments were conducted on a single evening. On arrival at the building, participants were randomly allocated to one of two groups, and sent to one of two different lecture Theaters, 36 participants in Theater A and 36 in Theater B. The experiments in the two Theaters were conducted simultaneously, and in each theater experimental instructions were read out by one of two of the authors (both white, male native English speakers in their forties). In each lecture Theater, participants completed a short survey, and then took part in two different experiments. The order of the experiments differed between the two Theaters, so there is both a between-group and a within-group element to the experimental design. On entering the lecture

² Several experimental papers (for example, Etang *et al.*, 2010) find that high levels of self-reported happiness and self-reported trust are associated with larger transfers in the Dictator Game.

Theater, each participant was given an ID number to be written both on the survey form and the two forms used in the experiments.

The survey contained questions about the participants' gender and degree choice. There was also a question eliciting self-reported levels of trust, with participants indicating on a 1-10 scale the extent to which they agreed with the statement that 'generally speaking, most people can be trusted'. Another question elicited self-reported levels of happiness, the choices being 'very happy' 'quite happy', 'not very unhappy' and 'not at all happy'. Answers to other questions indicated whether the participant had voted in the most recent student union election, whether she regularly took part in organized religious activities, and whether she was a member of a club, indicating the nature of the club.

After completing the survey, participants in Theater A were each given an envelope containing \$20 in different denominations of notes and coins. They were asked to complete a form indicating what proportion of this individual endowment (in multiples of 5%) they wished to donate to Save the Children, an international development charity whose work was briefly explained. They were told that they could keep the remainder. They put the completed form into another envelope, and then went one at a time behind a screen to put the money they chose to donate into this envelope. Finally, they posted the envelope into a box.³

Next, the participants were told that they had collectively been given \$720 ($36 \times \20), and were given a voting form on which they indicated what proportion they wished the group to donate to Save the Children (in multiples of 5%). The outcome was to be determined by the median voter, and this concept was explained. (A small test of participants' understanding of the concept was included at the bottom of the form; all participants completed the test correctly.)

³ One participant put in an amount of money inconsistent with the choice indicated on the form. Data for this participant were discarded, so for Theater A there are only 35 observations.

The participants were told that the remaining money would be divided equally between them. Copies of the voting form and individual decision form are included in the Appendix; they were designed so as to appear as similar as possible. Participants posted the voting forms into a box; the votes were then counted, the outcome was declared, and the appropriate amount of money was distributed to the participants.

In Theater B, the order of the choices was reversed: the voting took place first, and then the individual choice. The outcome of the vote was declared only after the individual choice had been made. Comparison between the first choice in Theater A and the first choice in Theater B therefore provides a between-groups measure of the size of the expressive voting effect. This effect may depend on the participants' personal characteristics (hypothesis H1).

	Theater A	Theater B
Choice 1	<i>private donation</i>	<i>vote</i>
Choice 2	<i>vote</i>	<i>private donation</i>

Comparison between the first and second choices in each Theater might be interpreted as within-group measures of the size of the expressive voting effect; however, interpretation of these comparisons is complicated by the possibility of a 'donor fatigue' effect. The marginal utility from charitable giving may decline more quickly than the marginal utility from personal consumption, and the level of generosity in the first decision may exceed the level of generosity in the second, regardless of whether it is an individual or collective choice.

Of more relevance expressive voting is the comparison between the second choice in Theater A and the second choice in Theater B. It is possible that the difference between the average vote in Theater A (the second decision) and the average private donation in Theater B

(the second decision) is equal to the difference between the average vote in Theater B (the first decision) and the average private donation in Theater A (the first decision), even if donor fatigue makes overall generosity in the second decisions lower. In this case, the expressive voting effect is invariant to the order in which the experiments are conducted. However, it may also happen that the expressive voting effect apparent in the first decisions exceeds the effect in the second decisions. In Theater B, the warm glow from having voted expressively may lead to more generosity in the second, private decision, because a selfish private decision would extinguish the glow. Similarly, in Theater A, the ‘cold shower’ from having recently made a selfish private choice may prevent any warm glow from being kindled, and so reduce the expressive voting effect (hypothesis H2).

RESULTS

Descriptive Statistics

Figures 1-2 depict the distributions of participants’ choices, and Table 1 reports the corresponding mean sample values, along with mean values of the participants’ personal characteristics. The first row of the table reports the mean proportion of the \$20 donated in each theater in the private decision; the second row reports the corresponding figures for the vote. Subsequent rows of the table report summary statistics for explanatory variables measuring individual characteristics that may be correlated with the propensity to vote expressively.⁴ These variables, all of which are binary, have been constructed from the survey data. The table shows

⁴ Excluded from the table are data on gender and degree choice. These variables turn out to have no significant impact on experimental behavior, and we have no strong priors about the sign of the correlation of the variables with a taste for expressive voting.

the proportion of participants for whom each of the variables is equal to one. The variables are as follows.

- $voter_i = 1$ if participant i voted in the last student union election, otherwise $voter_i = 0$. Thousands of students voted in the student union election; the probability of any one voter being decisive was close to zero. Being a voter in the student union election may therefore be associated with a taste for expressive voting.

- $sporty_i = 1$ if participant i is a member of a sports club, otherwise $sporty_i = 0$.

- $clubby_i = 1$ if participant i either is a member of some non-sports club, or regularly takes part in organized religious activities, otherwise $clubby_i = 0$.⁵ Given the large number of participants who are members of a sports club, we are able to test whether the expressive voting effect associated with membership of such a club (being *sporty*) differs from that associated with membership of some other social group (being *clubby*). However, we have an insufficiently large sample to create separate binary variables for membership of different types of non-sports club, or to distinguish between religious and secular groups.

- $lowtrust_i = 1$ if participant i 's response to the trust question < 6 , otherwise $lowtrust_i = 0$.

- $happy_i = 1$ if participant i indicates that she is 'very happy', otherwise $happy_i = 0$.

[Table 1 and Figures 1-2 about here]

Table 1 shows that mean personal characteristics in the two theaters are similar, as one would expect with a random assignment of participants. Comparison of the means in the first two rows

⁵ The observation for one finance student citing membership of an 'investment club' is coded zero.

indicates a small expressive voting effect (31% > 27%), and a large donor fatigue effect (27% > 15%; 31% > 22%).⁶ Using the non-parametric Wilcoxon and Mann-Whitney tests, only the donor fatigue effects are significant at the 5% level. Parametric tests of statistical significance can also be computed, if we allow for censoring of the data at zero and 100%. Therefore, in Table 2, we report parameter values μ and σ in the following model of the participant's decision ($y_i \in [\textit{private donation}_i, \textit{vote}_i]$):

$$y_i^* = \mu + \varepsilon_i, \quad \varepsilon_i \sim N(0, \sigma^2) \tag{1}$$

$$y_i = y_i^* \mid 0 \leq y_i^* \leq \textit{max} \tag{2}$$

$$y_i = 0 \mid y_i^* < 0 \tag{3}$$

$$y_i = \textit{max} \mid y_i^* > \textit{max} \tag{4}$$

This is a Tobit model in which the only parameters are the mean and variance of the latent variable y_i^* . In the first version of the model, we set $\textit{max} = 1$ and use the raw data in Figures 1-2. This model may be somewhat unrealistic, because there are so few observations of $0.5 < y_i < 1$. We therefore fit a second model in which all observations of $y_i > 0.5$ are set to 0.5, and $\textit{max} = 0.5$. Table 2 shows that the two versions of the model produce similar results. Values of μ and σ are estimated by Maximum Likelihood.

The values of μ for the first decisions in Table 2 are over 20%. The values of μ for the

⁶ The average proportion participants are willing to give in the first choice – close to 30% in both Theaters – is towards the bottom of the range of generosity observed in the literature on charitable giving (Eckel and Grossman, 1996, 2003; Davis *et al.*, 2005). Our participants are somewhat less generous than the average in previous experiments.

second decisions are very small, both for Theater A and for Theater B, indicating substantial donor fatigue. This is true of both the $max = 1$ model and the $max = 0.5$ model. In the second decision, the mean participant would prefer to give less than 5% of the endowment. The size and significance levels of the donor fatigue effects are indicated in the third row of the table, which shows the absolute difference between the values of μ in the first and second decisions, along with the corresponding t-ratios computed using the Delta Method. For $max = 1$, the differences are significant at the 10% level; for $max = 0.5$, the differences are significant at the 5% level. The value of μ for the vote in Theater B is larger than the value for the private donation in Theater A ($29\% > 21\%$, with $max = 1$), indicating an expressive voting effect; however, this difference is not statistically significant. In order to explore the expressive voting effect more thoroughly, we need to estimate the impact of participants' personal characteristics on their decisions.

[Table 2 about here]

Statistical Analysis

For each of the four decisions (the private donation and the vote in Theater A and in Theater B), Table 3 reports parameter estimates and t-ratios for the following model of the latent variable y_i^* :

$$y_i^* = \mu + \beta_1 \cdot voter_i + \beta_2 \cdot sporty_i + \beta_3 \cdot clubby_i + \beta_4 \cdot lowtrust_i + \beta_5 \cdot happy_i + \varepsilon_i, \quad (5)$$

$$\varepsilon_i \sim N(0, \sigma^2)$$

The rest of the model is given by equations (2-4). We report two versions of the model, one with $max = 1$ and one with $max = 0.5$.

First of all, consider the β coefficient estimates for the first decision (the vote) in Theater B. There are significant positive coefficients on *clubby* and *happy*, and a significant negative coefficient on *lowtrust*; this is true for both $max = 1$ and $max = 0.5$. These signs are consistent

with our priors: happy, trusting club members express more of a taste for generosity. Other β coefficients are insignificantly different from zero. Now consider the β coefficient estimates for the first decision (the private donation) in Theater A. Here, none of the β coefficients is significantly different from zero. Happy, trusting club members are *not* relatively generous in their private donations. This means that the size of the expressive voting effect depends on personal characteristics, evidence for hypothesis H1.

[Table 3 about here]

In Table 4, we illustrate this point by reporting the mean difference between the Theater B vote and the Theater A private donation for different types of participant, as implied by the coefficients in Table 3. In all cases in Table 4, we assume that $voter = sporty = lowtrust = 0$. The four cases reported are [$clubby = 0; happy = 0$], [$clubby = 1; happy = 0$], [$clubby = 0; happy = 1$] and [$clubby = 1; happy = 1$]. The t-ratios on the differences are computed by the Delta Method. It can be seen that for $clubby = 0$ there is no significant difference, that is, no expressive voting effect. However, for $clubby = 1$ there is a large and statistically significant effect. The estimates of the difference are smaller for $max = 0.5$ than for $max = 1$, and smaller for $happy = 0$ than for $happy = 1$. Nevertheless, the smallest estimate is 0.45, implying that the desired vote exceeds the desired private donation by 45% of the endowment.

The results imply that those who are not members of a non-sports club or religious group have no significant taste for expressive voting, and are not significantly more generous in the vote than in the private donation. Those who are members of a non-sports club or religious group vote expressively for a large charitable donation, but are no more altruistic than anyone else when faced with a private choice. At the margin, self-reported happiness and trust increase the size of the expressive voting effect.

Returning to Table 3, consider the β coefficient estimates for the second decision (the private donation) in Theater B. Again, there is a positive and significant coefficient on *clubby* and a negative and significant coefficient on *lowtrust*.⁷ (The coefficient on *happy* is positive but insignificantly different from zero.) Other β coefficients are insignificantly different from zero. Now consider the β coefficient estimates for the second decision (the vote) in Theater A. Here, none of the β coefficients is significantly different from zero. Broadly speaking, the patterns we observe for the first decisions are also present in the second decisions. This has implications for both the size of the donor fatigue effect and the way in which the ordering of the experiments affects behavior, as illustrated in Tables 5-6.

In Table 5, we report the mean difference between the Theater B vote and the Theater B private donation for different types of participant, as implied by the coefficients in Table 3. (In all cases in Table 5, we assume that *voter* = *sporty* = *lowtrust* = 0. The four cases are the same as those in Table 4.) The difference is significantly greater than zero for *clubby* = *happy* = 0. Assuming that the not-*clubby*, not-*happy* group has no taste for expressive voting, as indicated by the Table 4 results, the difference can be attributed entirely to donor fatigue. For *clubby* = 0 and *happy* = 1, the difference is of a similar magnitude, but less precisely estimated when *max* = 1. For the cases in which *clubby* = 1, the difference is insignificantly different from zero, and the point estimate is actually *less* than zero when *max* = 1. In other words, non-sports club membership removes donor fatigue. In contrast, none of the β coefficients is significantly different from zero in any Theater A regression, and the donor fatigue effect for all participants in Theater A is adequately quantified in Table 2. This suggests that the effect of non-sports club

⁷ When we set *max* = 0.5, the inclusion of the *lowtrust* variable creates a singularity in the log-likelihood function, so this variable is excluded from the model.

membership on donor fatigue depends on the ordering of the experiments: only when the vote is taken first does membership prevent fatigue.

These results are reinforced in Table 6, in which we report the mean difference between the Theater B private donation (the second decision) and the Theater A vote (the second decision) for different types of participant, as implied by the coefficients in Table 3. As we would expect by now, there is no significant difference for *clubby* = 0. However, there is a significant difference for *clubby* = 1. (In fact, for *max* = 1, the estimated difference is greater than the straightforward expressive voting effect in Table 4.) For those who are members of a non-sports club, the warm glow hanging over from the first decision in Theater B and the cold shower hanging over from the first decision in Theater A combine to preserve (and, if anything, magnify) the difference between the theaters in the second decision. The private decisions of some subjects can be influenced by first treating them with a collective decision. Equally, the collective decisions of these subjects can be influenced by treating them with a private decision, evidence for hypothesis H2.

[Tables 4-6 about here]

CONCLUSION

The combination of a survey and expressive voting experiment reveals some of the characteristics associated with a taste for expressive voting. Expressive voters are happy and trusting, and take part in organized group activities (so long as no sport is involved). If such people are first presented with a collective choice, they will vote for a more altruistic outcome than will their peers. However, if they are first presented with a private decision, they are no more altruistic than their peers. Group membership, trust and happiness are associated with the desire to be altruistic, but also with *astheneia*. Typically, those who are not so happy or trusting,

and whose only group activity involves sport, have no desire to be altruistic: they are consistently selfish in both private and collective decisions. Moreover, for expressive voters, the psychological state induced by a private or collective decision appears to persist for some time. Having first voted expressively, they will subsequently make more altruistic private decisions; having first made a selfish private decision, they will subsequently vote less altruistically.

These effects have important implications for public choice theory. For some people, participation in collective decision-making processes will influence – and be influenced by – choices in the private sphere. Therefore, revealed preferences are not completely exogenous, and can be influenced by formal political institutions. The people for whom this is true are in a minority, but it is possible that their defining characteristics, such as club membership, represent treatment effects rather than selection effects, at least to some extent. If this is so, then informal institutions can also influence revealed preferences. Distinguishing treatment and selection effects in expressive voting is an area for further study.

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Table 1: Summary Statistics

	<i>Theater A:</i> <i>private donation first (N = 35)</i>	<i>Theater B:</i> <i>vote first (N = 36)</i>
mean private donation	0.27	0.22
mean vote	0.15	0.31
proportion <i>voter</i> = 1	0.29	0.22
proportion <i>sporty</i> = 1	0.46	0.44
proportion <i>clubby</i> = 1	0.17	0.19
proportion <i>lowtrust</i> = 1	0.20	0.17
proportion <i>happy</i> = 1	0.40	0.31

Table 2: Truncation-Adjusted Means and Standard Deviations

		<i>Theater A:</i>		<i>Theater B:</i>		
		<i>private donation first (N = 35)</i>		<i>vote first (N = 36)</i>		
		μ	σ	μ	σ	
<i>max = 1</i>	private donation	estimate	0.21	0.45	0.03	0.64
		<i>t-ratio</i>	2.67	5.97	0.25	4.89
	vote	estimate	0.01	0.45	0.29	0.41
		<i>t-ratio</i>	0.15	5.40	4.08	6.66
	absolute difference	estimate	0.20		0.26	
		<i>t-ratio</i>	1.70		1.80	
	<hr/>					
	<i>max = 0.5</i>		<i>Theater A:</i>		<i>Theater B:</i>	
			<i>private donation first (N = 35)</i>		<i>vote first (N = 36)</i>	
			μ	σ	μ	σ
private donation	estimate	0.20	0.33	0.05	0.41	
	<i>t-ratio</i>	3.35	5.15	0.62	4.40	
vote	estimate	0.03	0.28	0.26	0.32	
	<i>t-ratio</i>	0.64	5.09	4.64	5.52	
absolute difference	estimate	0.17		0.21		
	<i>t-ratio</i>	2.05		2.16		

Table 3: Determinants of the Four Decisions

	<i>Theater A:</i> <i>private donation first (N = 35)</i>				<i>Theater B:</i> <i>vote first (N = 36)</i>			
	(i) private donation		(ii) vote		(iii) private donation		(iv) vote	
<i>max = 1</i>	coeff.	<i>t-ratio</i>	coeff.	<i>t-ratio</i>	coeff.	<i>t-ratio</i>	coeff.	<i>t-ratio</i>
μ	0.33	1.85	0.16	0.93	-0.00	-0.02	0.25	2.84
<i>voter</i>	-0.24	-1.28	-0.07	-0.42	-0.12	-0.79	-0.14	-1.01
<i>sporty</i>	-0.15	-0.85	-0.29	-1.63	-0.05	-0.39	-0.12	-1.19
<i>clubby</i>	0.01	0.03	-0.06	-0.28	1.25	5.49	0.75	4.84
<i>lowtrust</i>	-0.05	-0.25	-0.35	-1.42	-0.89	-3.17	-0.40	-2.58
<i>happy</i>	0.05	0.27	0.18	1.05	0.17	1.39	0.19	1.79
σ	0.44	5.98	0.41	5.41	0.28	5.04	0.28	6.75
<hr/>								
	<i>Theater A:</i> <i>private donation first (N = 35)</i>				<i>Theater B:</i> <i>vote first (N = 36)</i>			
	(i) private donation		(ii) vote		(iii) private donation		(iv) vote	
<i>max = 0.5</i>	coeff.	<i>t-ratio</i>	coeff.	<i>t-ratio</i>	coeff.	<i>t-ratio</i>	coeff.	<i>t-ratio</i>
μ	0.25	1.95	0.13	1.19	-0.09	-0.82	0.21	2.76
<i>voter</i>	-0.16	-1.19	-0.04	-0.34	0.10	0.66	-0.12	-0.93
<i>sporty</i>	-0.09	-0.72	-0.17	-1.59	0.00	0.01	-0.08	-0.87
<i>clubby</i>	0.04	0.26	-0.04	-0.28	0.59	3.32	0.54	3.33
<i>lowtrust</i>	-0.07	-0.45	-0.21	-1.45			-0.36	-2.50
<i>happy</i>	0.09	0.65	0.10	0.99	0.13	1.03	0.26	2.61
σ	0.32	5.17	0.25	5.11	0.30	4.49	0.24	5.66

Table 4: Expressive Voting Effects for Different Personal Characteristics

In all cases, the effects are for voter = sporty = lowtrust = 0. The effects are computed using the coefficients in columns (i) and (iv) of Table 3.

	<i>max = 1</i>		<i>max = 0.5</i>	
	<i>effect</i>	<i>t-ratio</i>	<i>effect</i>	<i>t-ratio</i>
<i>clubby = 0; happy = 0</i>	-0.09	-0.43	-0.05	-0.30
<i>clubby = 1; happy = 0</i>	0.66	2.44	0.45	1.94
<i>clubby = 0; happy = 1</i>	0.06	0.20	0.13	0.84
<i>clubby = 1; happy = 1</i>	0.80	2.60	0.63	2.32

Table 5: Theater B Donor Fatigue for Different Personal Characteristics

In all cases, the effects are for voter = sporty = lowtrust = 0. The effects are computed using the coefficients in columns (iii) and (iv) of Table 3.

	<i>max = 1</i>		<i>max = 0.5</i>	
	<i>effect</i>	<i>t-ratio</i>	<i>effect</i>	<i>t-ratio</i>
<i>clubby = 0; happy = 0</i>	0.25	1.86	0.30	2.25
<i>clubby = 1; happy = 0</i>	-0.25	-0.92	0.25	1.11
<i>clubby = 0; happy = 1</i>	0.27	1.48	0.43	2.44
<i>clubby = 1; happy = 1</i>	-0.23	-0.73	0.39	1.35

Table 6: ‘Hangover’ Effects for Different Personal Characteristics

In all cases, the effects are for voter = sporty = lowtrust = 0. The effects are computed using the coefficients in columns (ii) and (iii) of Table 3.

	<i>max = 1</i>		<i>max = 0.5</i>	
	<i>effect</i>	<i>t-ratio</i>	<i>effect</i>	<i>t-ratio</i>
<i>clubby = 0; happy = 0</i>	-0.16	-0.81	-0.21	-1.42
<i>clubby = 1; happy = 0</i>	1.15	3.87	0.41	2.09
<i>clubby = 0; happy = 1</i>	-0.17	-0.85	-0.19	-1.12
<i>clubby = 1; happy = 1</i>	1.14	3.40	0.44	1.84

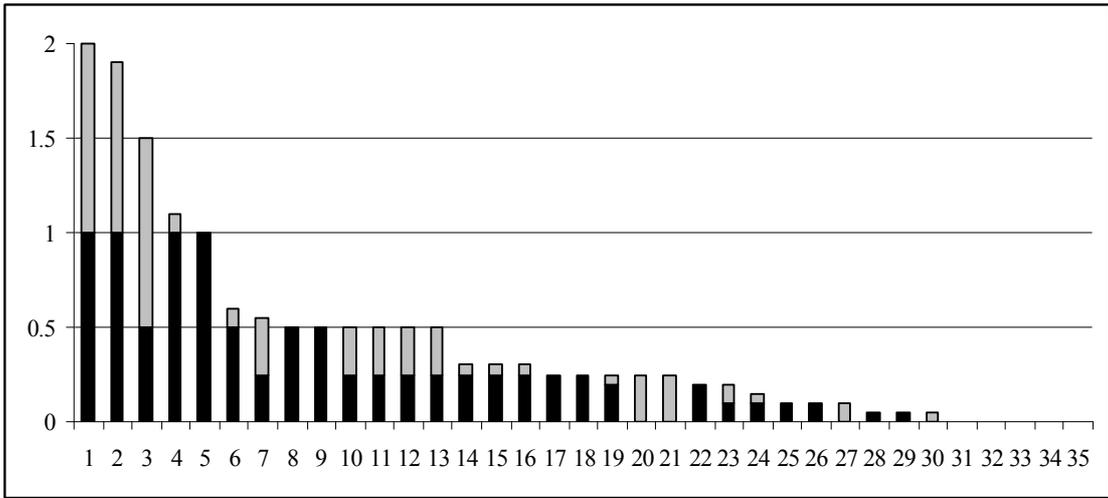


Figure 1: Distribution of Decisions (Theater A: Private Donation First)

■ private donation ■ vote

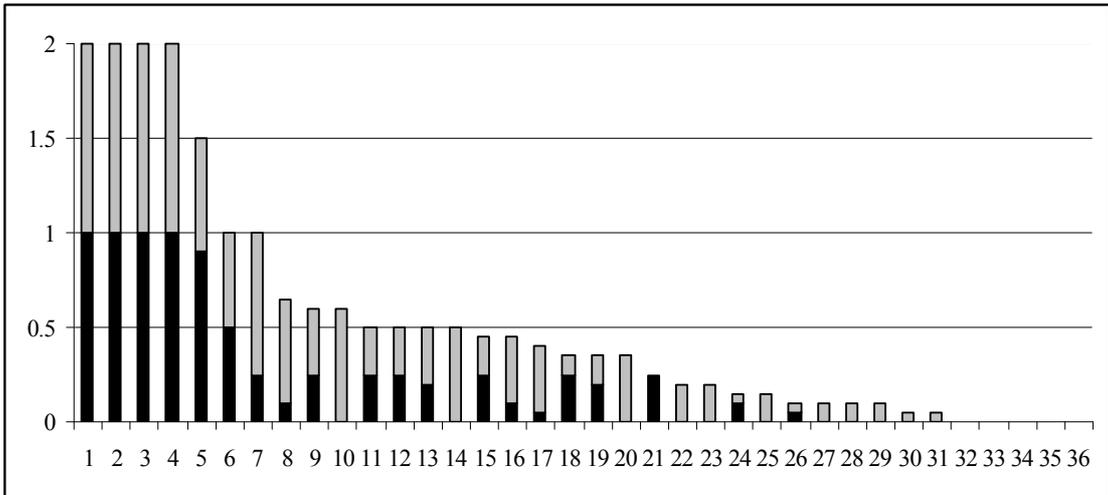


Figure 2: Distribution of Decisions (Theater B: Vote First)

■ private donation ■ vote

Appendix: the Recruitment E-mail, Survey Questionnaire and Other Forms

This appendix includes the following documents.

(i) *The original e-mail used to recruit students.* This e-mail was sent to two groups of students, those attending certain lectures either in Health Sciences or in Commerce. The version included here has been anonymized.

(ii) *The survey questionnaire.* This questionnaire is the source of the information about personal characteristics used in the paper. The responses about gender and degree subject were not used in the econometric analysis; see footnote 3. The final question (number 8) elicited information about previous participation in courses taught by the authors, to check for experimenter effects. The inclusion of dummy variable for participation in these courses did not produce any statistically significant coefficients; in other words, there is no evidence of any experimenter effect.

(iii) *The forms used for the private donation and for the vote.* These forms were used in both treatments (Theater A and Theater B), but in a different order, as discussed in the paper.

Recruitment E-mail

Hi everyone,

Are you interested in earning up to \$40 for taking part in an experiment on economic decision making? If so, then read on.

Three researchers in the Department of Economics [*names given*] are looking for participants to take about 90 minutes to participate in an experiment on economic decision making. The experiment will be held on the evening of Wednesday September 29 in the Commerce Building at the University. You will need to be available from 7 till 8:30 pm. In addition to taking part in the experiment, you will be asked to complete a short questionnaire asking questions about yourself (such as your gender, intended major subject etc). Your responses to the questionnaire, and the decisions you make in the economic experiment, will be completely anonymous. No one, including the researchers, will ever know which individuals gave which answers, nor who made what decisions in the experiment.

We are looking to recruit participants, between the ages of 18-20 years, who are studying first year Health Sciences [Commerce] at the University of [*name given*]. In addition, participants must have lived in New Zealand for at least ten years.

If you would like to take part, please email [*name and e-mail address given*] as soon as possible, but no later than September 22. We are looking for 100 participants, and if more people than that volunteer, preference will be given to the first 100 people to e-mail [*name given*]. [*Name given*] will let you know by return e-mail which room to go to in the Commerce Building to take part.

Transfer Form

Experiment ID Number (this is **NOT** your University ID number): _____

Please tick one of the boxes below to indicate what percentage of your individual \$20 payment (if any) you have decided to donate to *Save the Children*. Any money you do not donate is yours to keep. The amount you get to keep depends only on your decision as to how much you donate; it does not depend on the decisions made by anyone else in the room.

0%	5%	10%	15%
20%	25%	30%	35%
40%	45%	50%	55%
60%	65%	70%	75%
80%	85%	90%	95%
100%			

Please fill in the gaps below:

The percentage I have indicated above means I have chosen to give \$ _____ of my \$20 payment to *Save the Children* and to keep \$ _____ for myself.

Voting Form

Experiment ID Number (this is **NOT** your University ID number): _____

Please indicate, by placing a tick in the appropriate box below, your vote for what proportion of the total pool of money available should be donated to *Save the Children*. All money not donated to *Save the Children* will be divided equally among the people in the room who vote.

Note that you are taking part in a group decision and the vote of the median voter is binding. Hence the percentage actually given to *Save the Children* may differ to what you have chosen.

0%	5%	10%	15%
20%	25%	30%	35%
40%	45%	50%	55%
60%	65%	70%	75%
80%	85%	90%	95%
100%			

To check your understanding of what is meant by “the median” please circle the median value for the following numbers:

3 6 7 1 2