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Context and Voluntary Contributions: An Experimental Analysis of Communication, Voting, and Status Quo Bias*

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CONTEXT AND VOLUNTARY CONTRIBUTIONS:

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COMMUNICATION, VOTING, AND STATUS QUO BIAS*

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ABSTRACT

This research examines the effect of three factors—cheap talk, voting, and the status quo of the donation—on the voluntary contribution mechanism (VCM). Using undergraduate business students, results show that contributions as a percent of income in the last of ten rounds range from 18% for the case of no cheap talk, no voting, and a status quo of not giving to 94% in the case where all three contexts are combined. These results demonstrate the surprising result that context can make the simple VCM produce sustained efficiencies similar to incentive compatible public-good mechanisms.

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1. INTRODUCTION

The voluntary contributions mechanism (VCM) is one of the most thoroughly explored mechanisms in the experimental literature (for early work, see Marwell and Ames, 1978, 1980, 1981; Kim and Walker, 1984; Isaac et al., 1984; Isaac et al. 1985; Andreoni, 1988). The anomalous high initial level of contributions obtained in linear public-good experiments that have a low marginal per capita rate of return (MPCR) has spawned a large number of experiments exploring factors that might either explain or affect these contributions.

A number of studies have examined whether confusion or other regarding behavior, such as altruism or "warm glow," explains positive contributions (Andreoni, 1995; Palfrey and Prisbrey, 1996, 1997; Andreoni and Miller, 2002; Ferraro et al., 2003), the effect of subject types with different levels of presumed altruism or cooperativeness (Marwell and Ames, 1981; Frank et al., 1993; Cadsby and Maynes, 1998), communication among subjects before contributing (Isaac and Walker, 1988), group size (Isaac et al., 1994), and prior experience with a different or the same group (Andreoni, 1988, Croson,1996, Andreoni and Croson, 2005). More recent work has focused on explaining the rate of decay in contributions using the concept of reciprocity wherein kindness is repaid with kindness and spite with spite (Bolton and Ockenfels, 2000; Fehr and Gächter, 2000a, 2000b; Masclet et al., 2003; Ferraro and Vossler, 2004). If these factors are viewed from the perspective of psychology or behavioral economics, many fall into the broad category of context in that they *should* not affect the Nash equilibrium, which is that subjects contribute nothing to the group fund for an MPCR less than one in a linear public-good game. In spite of the large body of literature, relatively little systematic work has been done to explore the effect on contributions of either (a) voting on whether or not to pursue funding a particular public good or (b) the status quo of the contribution itself.

Voting often precedes use of the VCM in real-world settings. For example, groups often vote on whether to pursue a new project that is to be funded by the VCM. Further, this vote usually occurs after extensive discussion (communication or "cheap talk"). Alm et al. (1999) show that tax compliance for funding a public good increases (or decreases) if subjects discuss and then vote for (or against) penalties relative to control treatments that lack cheap talk and voting. These authors suggest that cheap talk and voting in this situation combine either to create a social norm of tax compliance or, if a negative vote occurs, to destroy such a social norm. Given recent work on reciprocity that suggests that decays in contributions in the VCM might be due to punishment for failure to maintain the social norm of contributing, voting might serve to reinforce this norm. To our knowledge, the effect of voting on contributions in the VCM has not been explored.

Similarly, some voluntary public good programs are structured to allow people to either opt in (a status quo of not giving) or opt out (a status quo of giving). In the latter case, very high contribution rates for public goods have been documented in two cases—organ donation (Johnson and Goldstein, 2003) and generic advertising (Messer et al., 2004).

The research described here further explores contextual factors that may impact a social norm of contributing and reciprocity. Special attention is paid to interaction effects in an effort to identify combinations of factors that could lead to more efficient application of the VCM in real-world settings. The notion underlying the research is that behavioral economics can possibly guide the use of context as a tool in mechanism design. The experiments described hereafter examine the effect of three factors—cheap talk, voting, and status quo—on voluntary contributions in a full factorial design with eight cells. This is the most efficient approach to reveal interaction effects given that there are only three factors with two levels. The experiment

was conducted using 280 subjects recruited from undergraduate business courses. The results show that contributions as a percent of income in the last of ten rounds range from 18% (Treatment 1) for the case of no cheap talk, no voting, and status quo of not giving to 94% (Treatment 8) in the case with cheap talk, voting, and a status quo of giving. This last case demonstrates the surprising result that the VCM can be framed in a way that produces very high efficiencies.

2. EXPERIMENT DESIGN

All experiments were conducted at the Laboratory for Experimental Economics and Decision Research at Cornell University. The experiments were designed to test the effects on subject donations for three factors: cheap talk, voting, and the status quo of the donation. To account for all of the possible interactions, eight treatments were employed.

	Cheap Talk	**Vote**	**Status Quo**
Treatment 1	No	No	Not Giving
Treatment 2	No	No	Giving
Treatment 3	Yes	No	Not Giving
Treatment 4	Yes	No	Giving
Treatment 5	No	Yes	Not Giving
Treatment 6	No	Yes	Giving
Treatment 7	Yes	Yes	Not Giving
Treatment 8	Yes	Yes	Giving

Five sessions, each involving seven subjects, were conducted for each treatment. Each session lasted ten rounds, though the subjects were not aware of the number of rounds in advance. Subjects earned an average of $13 for the half-hour experiment.

Subjects received written instructions and the administrator provided a verbal description of the experiment using a Microsoft PowerPoint presentation to ensure consistency (see Appendix A). The subjects were informed that whatever money they had in their “private

accounts" at the end of the round was theirs to keep and whatever money they donated to the "group account" would be multiplied by 1.5 and distributed evenly among all seven members of the group. Therefore, the MPCR in the experiments was 0.21. The instructions included a table illustrating how the "group account payoff" would be calculated based on the amount donated to the group account. Subjects were randomly assigned to computers equipped with privacy shields and a Microsoft Excel spreadsheet programmed with Visual Basic for Applications. All data were stored in a Microsoft Access database. Subjects submitted their confidential donations and then received notification of their group-account payoffs and the amount that the group had contributed to the group account.

To test the effect of cheap talk, subjects in half of the treatments were informed only about which seven subjects were in the group and no discussion was permitted. Subjects in the other half of the treatments were allowed to have a free and open discussion within the group for as long as five minutes. Binding deals and threats were not permitted. The groups convened in adjacent classrooms to prevent communication between groups.

To test the effect of voting, subjects in half of the treatments voted on the rules for their groups. If a majority of the subjects in a group selected "group account" rules, then the group participated in the VCM. If a majority of the subjects in a group selected "private lottery" rules, then in each round each subject individually decided whether to purchase a private lottery ticket for one dollar. The payoff of the lottery ticket depended on the result of a toss of a fair coin with "heads" resulting in a payoff of two dollars and "tails" resulting in no payoff. If a subject did not purchase a lottery ticket, he/she retained the dollar. After all the votes had been submitted, the results were announced and the rules favored by the majority were used.

To test the effect of status-quo bias, subjects in half of the treatments started each round with an initial balance of one dollar and had to decide how much, if any, they wanted to *contribute* to the group account (status quo of not giving). Any money not contributed to the group account would be put into the subject's private account. Subjects in the other half of the treatments started each round having made an "initial donation" of one dollar to the group account and had to decide how much, if any, they wanted to have *refunded* to their private accounts (status quo of giving).

3. RESULTS

The results of the experiment are summarized in Table 1 and Figure 1. Initial contributions as a fraction of income in the first round range from a low of 44.6% for Treatment 5 to a high of 97.1% in Treatments 7 and 8. Final contributions in round ten range from a low of 11.2% in Treatment 3 to a high of 94.3% in Treatment 8. All treatments show a statistically significant decrease in contributions between rounds one and ten ($P = 0.012$ or better using a test of proportions) except Treatment 8, which shows a nonsignificant, negligible decline in contributions ($P = 0.564$). Clearly, context can have a dramatic impact on both initial contributions and the rate of decay from one round to the next. Figure 1 shows round-by-round average contributions for each treatment. The panels contrast the status quo of not giving with the status quo of giving. Panel A shows results without either cheap talk or voting, Panel B adds cheap talk, Panel C adds voting, and Panel D adds both cheap talk and voting.

First consider Treatment 1 (no cheap talk, no voting, and status quo of not giving) in Panel A. Treatment 1 illustrates the typical pattern of past VCM experiments where contributions start at about 50% and decay to 17.8% by the tenth round. These results are very similar to

results from other studies that used business or economics students (for example, see Isaac and Walker (1988) and Andreoni (1988)).

Changing the donation status quo to giving has a substantial impact on contribution patterns in early rounds, as is apparent by comparing Treatment 1 with Treatment 2 in Panel A (no cheap talk, no voting) and Treatment 5 with Treatment 6 in Panel C (no cheap talk, voting). However, note that the initial contributions shown in Panels B and D (treatments with cheap talk) are so high that the effect of status quo is limited by the contribution ceiling of 100%. Thus, to explore the statistical impact of contextual factors such as status-quo bias in a regression model that allows for interaction terms, a two-limit Tobit regression must be employed. Also, since subjects interact during cheap talk, through the voting process, and over multiple rounds, one must use as the dependent variables either the sessions' average contributions for a specific round or the difference between rounds. Alternatively, a mixed model can be employed. Since the coefficients of a model predicting average contributions are easier to interpret, and since fewer data are censored, we used two-limit Tobit regressions to explain average contributions by session (ranging from 0 to 1) for round one, round ten, and the change in contributions between rounds one and ten. These regressions are presented in Table 2.[1] Explanatory variables include a constant, dummy variables for the three context factors for main effects and multiplication of the dummy variables for interaction effects. These context factors are defined as cheap talk (0 = no, 1 = yes), voting (0 = no, 1 = yes), the status quo of the donation (0 = not giving, 1 = giving), cheap talk times vote, cheap talk times status quo, and vote times status quo.

As shown in Table 2, the main effect of a status quo of giving when the upper limit has not been reached is to add about 25% to the initial contribution rate in round one and the effect is significant at better than the 1% level. Thus, the change in the status quo from Treatment 1 to

[1] A mixed two-limit Tobit regression predicting individual contributions provides very similar results.

Treatment 2 results in average round-one contributions jumping from 47% to 69%. Similarly, round-one contributions in Treatments 5 and 6 result in an increase in contributions from 44.6% to 70.0% as the status quo changes. In contrast, as shown in Table 2, the main effect of status quo is not significant in explaining either round-ten donations or the change in donations between rounds one and ten. Thus, while the main effect of changing the status quo is important for initial contribution levels, its effects are not sustained.

The impact of adding voting alone (see Panel C) does not appear to alter the results from those shown in Panel A. Table 2 supports this observation. The main effect of voting is statistically insignificant in explaining round-one contributions, round-ten contributions, and changes in contributions.

Our results, like those of previous VCM experiments involving cheap talk (Isaac and Walker, 1988), show that adding cheap talk (see Panel B) has a large impact on initial contributions as first-round contributions for both Treatment 3 (cheap talk, no vote, and status quo of not giving) and Treatment 4 (cheap talk, no vote, and status quo of giving) are higher than in any of the four treatments previously discussed. In the first round, average contributions jump to almost 90% in Treatment 3 but then decay quickly and become indistinguishable from Treatments 1, 2, 5, and 6 by the fifth round. These results support the notion that cheap talk has a positive impact on contributions only in early rounds and does not by itself mitigate decay as contributions rapidly approach the Nash equilibrium of zero contributions. A different pattern emerges when the status quo is giving. While the long-term contribution pattern still appears to approach the Nash equilibrium, Treatment 4's erosion in contributions is not as severe. While Treatment 4's initial contributions are similar to those in Treatment 3 (95.0%), by the fourth round, the contributions remain higher than in any of the treatments so far described (Treatments

1, 2, 3, 5, and 6). By the tenth round, average contributions, 57.4%, are still higher than in the initial rounds for Treatments 1 and 5. Hence, the interaction of cheap talk and changing the status quo to giving appears to dampen but not fully mitigate the increase in free-riding over time. These observations are confirmed by the information shown in Table 2, where the direct effect of cheap talk is significant both in raising round-one contributions and in increasing the rate of decay in contributions from round one to round ten (both coefficients are significant at better than the 1% level). This increase in the rate of decay from cheap talk appears to be mitigated by a significant interaction effect with the status quo that both increases round-ten contributions (5% level) and decreases the rate of decay by reducing the change in contributions from round one to round ten (1% level).

While adding voting alone has no impact on the baseline VCM, voting does have an impact on contributions when coupled with cheap talk. Consider first the results of Treatment 7 (cheap talk, voting, and status quo of not giving). Under this treatment, contributions in the final round are more than 76%. The interaction of voting with cheap talk has a positive impact on tenth-round contributions that is higher than all other treatments except Treatment 8. The interaction effect of voting and cheap talk is significant at the 1% level both in increasing final contributions and in reducing the rate of decay, as shown in Table 2. Therefore, the synergy of voting and cheap talk in Treatment 7 further dampens the erosion of contributions over time.

While there are noted differences in all seven treatments of the experiment compared so far, all share significant erosion in contributions from round one to round ten. Statistically, these patterns are confirmed by the change in average contribution from the first to the tenth round for each of the eight treatments, as shown in Table 1. However, when a status quo of giving is coupled with voting and cheap talk (Treatment 8), contributions start out very high and do not

erode over time. In Treatment 8, contributions start out at 97.1% and fluctuate between 97.1% and 94.3% throughout the ten rounds. This last case demonstrates that the VMC can achieve very high efficiencies when it is framed to include cheap talk, voting, and a status quo of giving. To our knowledge, this lack of erosion in contributions in the VCM has never been shown previously with multiple-round experiments with undergraduate business students. Table 2 confirms that cheap talk and voting interact not only to increase contributions in the tenth round but also to reduce decay as measured by the change in contributions where both effects are significant at better than the 1% level.

Status-quo bias as a result of the reference point in prospect theory is well known (Kahneman and Tversky, 1979; Samuelson and Zeckhauser, 1988) and a variety of laboratory experiments have demonstrated that decision-makers are reluctant to leave the status quo even in the face of substantial incentives (see, for example, Knetsch and Sinden, 1984; Coursey et al., 1987; Kahneman et al., 1990, 1991). In these experiments, in spite of the temptation to free-ride, if a reference point (also termed status quo or social norm) of contributing can be established, subjects are apparently reluctant to leave that status quo. Note that, when subjects remain at a status quo of giving, positive reciprocity—the tendency to treat kindness with kindness—is self-reinforcing. Apparently, cheap talk, voting, and a status quo of giving combine to allow positive reciprocity to maintain a social norm of giving in Treatment 8.

A number of additional field studies have demonstrated status-quo bias outside of the laboratory for private goods such as insurance (Johnson et al., 1993), pension savings (Madrian and Shea, 2001), and internet privacy (Johnson et al., 2002). As noted in the introduction, two recent studies support status-quo bias for public-goods programs in field settings, organ donation (Johnson and Goldstein, 2003), and generic advertising (Messer et al., 2004). Johnson and

Goldstein show that countries in which organ donation has a status quo of consent but with the option to opt out have consent rates ranging from 85.9% to 99.98%, while consent rates in countries that have a status quo of no consent range from 4.3% to 27.5%. Messer et al. show that firms in the egg industry supported the "Incredible Edible Egg" marketing program when it involved a system that allowed refunds of contributions that were automatically collected at the point of sale. This program initially had a contribution rate of 90.7% that fell over eleven years to 49.0%. The structure of the program most closely matches Treatment 3 in this study but the real-world case was a nonlinear public-good game. Messer et al.'s experiments approximate this nonlinearity and obtain results in the laboratory that are nearly identical to those observed in the field.

Given that there are real-world examples where a status quo of giving for public goods is feasible, how does Treatment 8, which also includes cheap talk and voting, compare in efficiency to other public-good mechanisms? Examination of Figure 2, which shows round-by-round efficiencies for all eight treatments, suggests that context can be utilized with the simple VCM to achieve efficiencies comparable to or better than those obtained for public goods using more complex mechanisms. Note that, since the group fund in this research is multiplied by a factor of 1.5, if all subjects contribute nothing, the efficiency of the theoretical Nash equilibrium is 66.7% since the subjects still retain their initial endowments of one dollar.[2] If all group members contribute their entire endowments, the efficiency is 100% as everyone receives $1.50 from the group fund. For instance, the efficiency of Treatment 1, which has no added context, begins at

[2] In Treatment 5, one of the groups voted four to three in favor of the private lottery rules for the sessions. Therefore, this group was included in Figure 2 where the expected earnings for each of the seven subjects are one dollar per round and thus the efficiency is 66.7%. Since the vote is a type of Bernoulli trial where there are two outcomes—success (the group account) or failure (the private lottery)—the probability of a majority vote in favor of the group account was estimated using a negative binomial distribution and a maximum likelihood estimation (Casella and Berger, 1990). The intuitive result is that the estimated probability of a majority vote for the group account is five out of six.

82.3% and declines to 72.6% in the final round, which is typical for economics and business students facing a low MPCR. In contrast, Treatment 8, which incorporates cheap talk, voting, and the status quo of giving, has an initial efficiency of 99.0% and a final efficiency of 98.1%, showing no significant decline in efficiency in successive rounds in spite of a Nash equilibrium of zero contributions with a theoretical efficiency of 66.7%.

For comparison, the Groves-Ledyard mechanism (Groves and Ledyard, 1977) shows efficiencies in different treatments ranging from a low of 84.5% to a high of 98.9% where improved efficiencies are obtained for higher levels of the "punishment" parameter (Chen and Plott, 1996). Thus, Treatment 8 compares well with the Groves-Ledyard mechanism, which is quite complex and difficult to implement in real-world settings. However, the Groves-Ledyard mechanism determines optimal quantities for an interior solution, something that is not tested here where the optimum is a corner solution.

The one round Provision Point Mechanism examined in Rondeau et al. (forthcoming) is shown to be between 86.2% and 100% efficient when taking into account the possibility that contributions can fail to reach the threshold. based on the benefit-cost ratio varied in the study, In the results reported here for round one, all treatments with a status quo of giving (2, 4, 6, and 8) and Treatments 3 and 7, which include cheap talk, exceed 86% efficiency. Only Treatment 1 (without context) and Treatment 5 (with voting alone) fall below this level in the first round.

Modifications of the VCM that punish or reward contributions depending on whether contributions fall below or exceed the average contribution (Falkinger et al., 2000) should theoretically achieve very high efficiencies. The experiments reported here with a group size of seven (to allow a majority vote) and an MPCR of 0.21 closely match the Falkinger et al. design for their case with eight subjects and an MPCR of 0.20. Average efficiency in the Falkinger et al.

study, based on contributions of about 90% of the endowment across ten rounds, was on the order of 96%, slightly below those obtained in Treatment 8 of this research with full context. It is remarkable that context alone can produce efficiencies comparable to those of incentive-compatible mechanisms.

Finally, the efficiencies observed in this research, which involved business majors, are superior to those obtained with highly altruistic subjects such as nurses as used by Cadsby and Maynes (1998). Similarly, free-riding occurred much less often in many of these treatments than it did in studies involving students in prisoner dilemma games who were not majoring in business or economics but were also from Cornell (Frank et al., 1993).

4. CONCLUSION

In summary, it appears that context can increase contributions and eliminate or nearly eliminate the decay that characterizes the VCM in realistic settings over time. The explanation for this result is shown in the analysis of how the three factors examined affect contributions. Cheap talk alone increases initial contributions but also increases the rate of decay. Voting alone has no effect on either the initial contribution or the rate of decay. A status quo of giving alone increases initial contributions but contributions still decay. In terms of interaction effects, cheap talk interacts with voting to reduce the rate of decay. Cheap talk also interacts with a status quo of giving to reduce the rate of decay further. Thus, elimination of decay in Treatment 8 is primarily due to the interaction effects of cheap talk with both voting and a status quo of giving.

Treatment 8 raises some interesting possibilities as well as problems for funding public goods. To allow a status quo of giving, an institution must be in a position to make automatic withdrawals from individual private accounts or to tax transactions where, of course, the money collected can be returned upon request. Generic advertising programs in agriculture were

facilitated by federal legislation passed in 1937 by which marketing orders authorize local governments or industry associations to regulate and even tax products. Another example can be found in green-choice programs for electric power where public service commissions have encouraged utilities to allow people to sign up voluntarily for higher “green rates” using either a type of VCM or a provision-point mechanism (Rose, et al. 2002) to fund renewable energy sources. Alternatively, using the approach suggested in this research, power companies could conduct public hearings and conduct a vote among customers to determine whether a majority of customers desire to have automatic billing for green power. Refunds could be made by request, thereby allowing those who either do not support the notion of green power or who wish to free-ride to withdraw. Another approach that has become popular with charitable organizations is use of automatic credit card payments. Thus, if an individual can be convinced to sign up initially, a status quo of giving is created that requires action to stop contributions. Again, experimental tests of such a mechanism are appropriate, and it should be noted that this approach may be very promising since first-round contributions in Treatment 7 (cheap talk, voting, and a status quo of not giving) are the same as Treatment 8 (the same parameters except with a status quo of giving). Thus, people showing sufficient cooperation in round one would likely sign up for automatic giving, which may allow contributions to be sustained by status-quo bias.

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Figure 1. Donations by Treatment Type

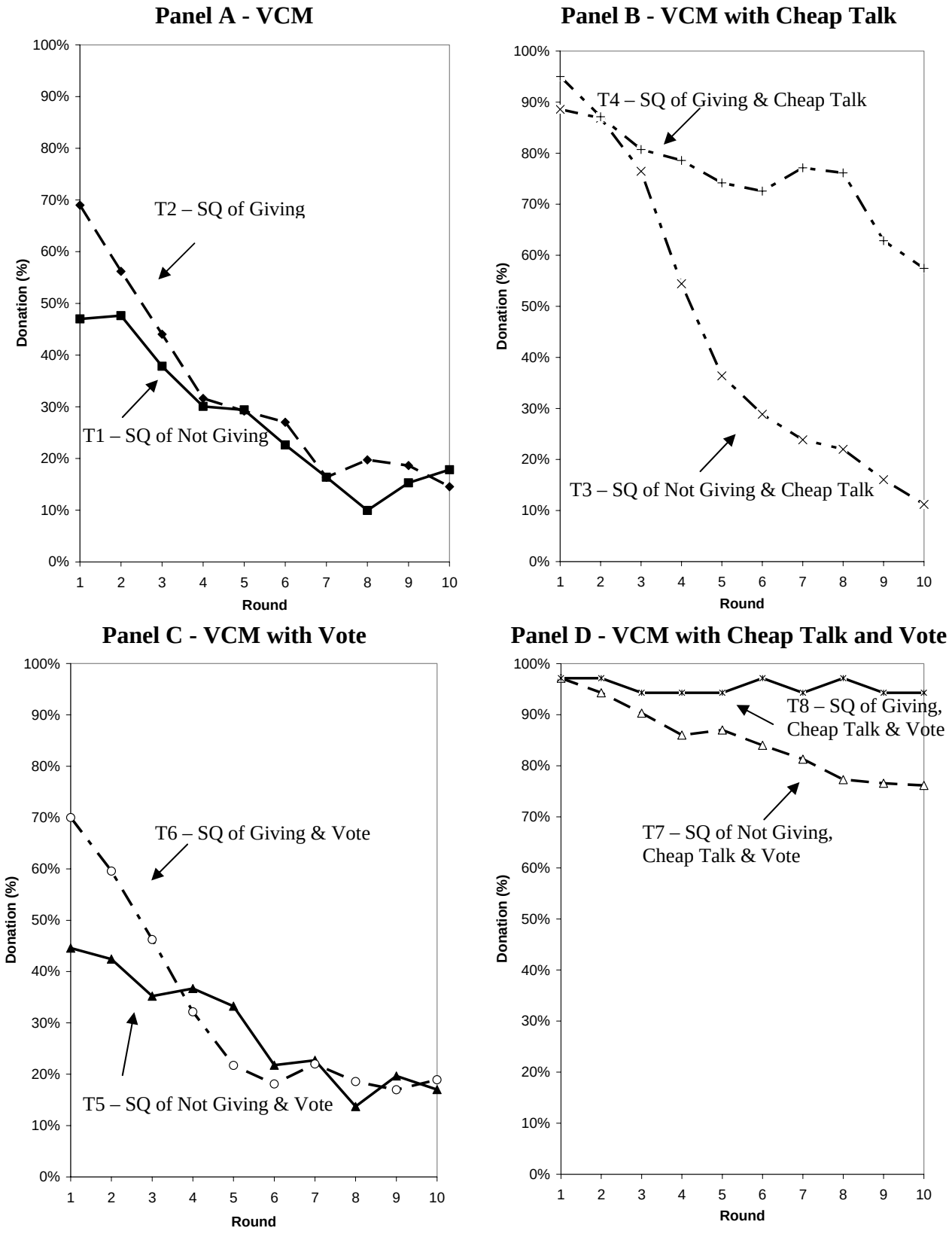

Figure 2: Round-by-round efficiencies.

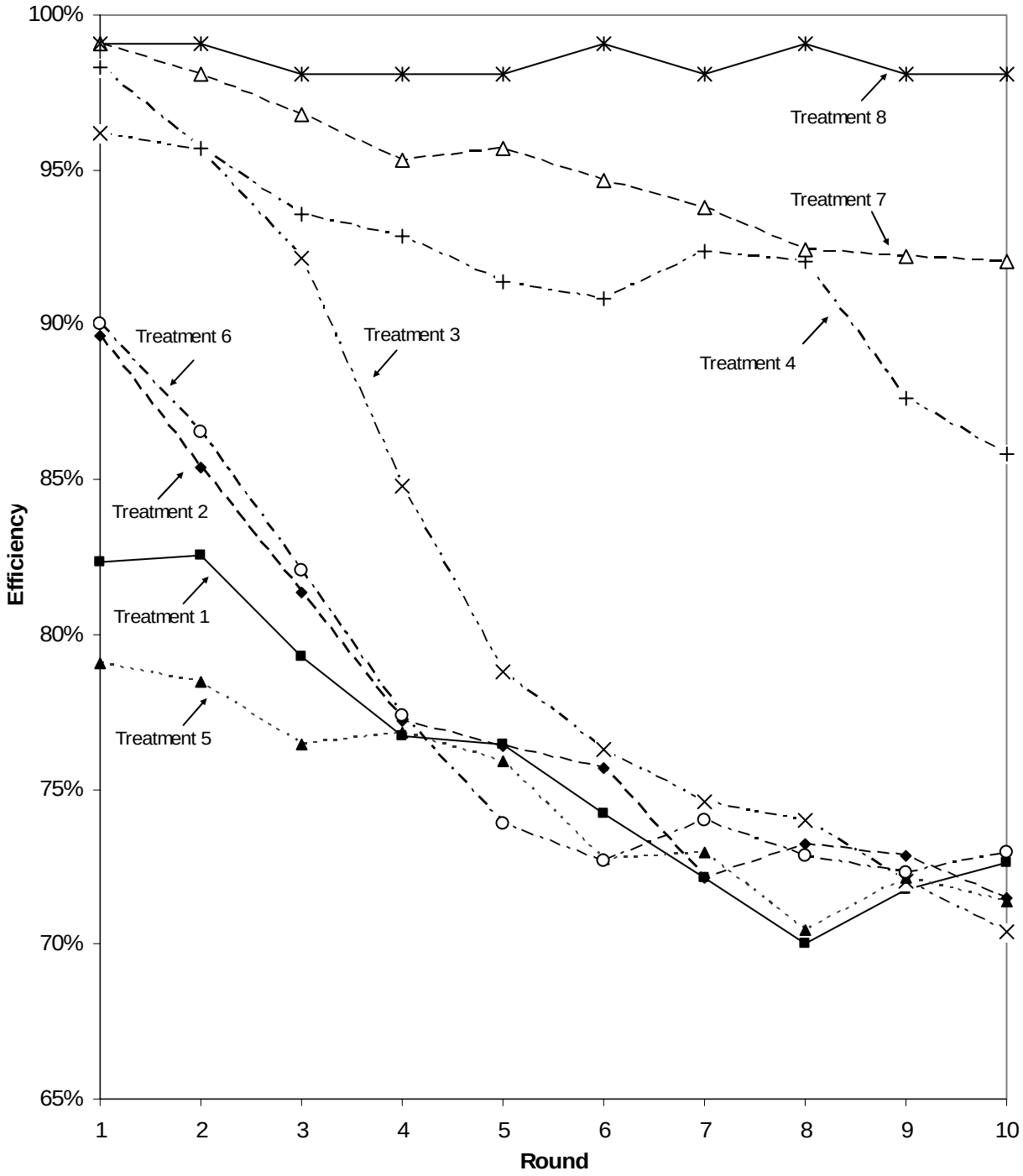

Table 1. Difference in Contribution Proportion (Test of Proportions)

	1st[t] Round Donation	10th[h] Round Donation	Difference	T-Stat	P-Value
Treatment 1	0.470	0.178	-0.292	2.61	0.009
Treatment 2	0.690	0.145	-0.545	4.62	0.000
Treatment 3	0.886	0.112	-0.774	6.48	0.000
Treatment 4	0.950	0.574	-0.376	3.69	0.000
Treatment 5	0.446	0.170	-0.276	2.50	0.012
Treatment 6	0.700	0.189	-0.511	4.30	0.000
Treatment 7	0.971	0.761	-0.210	2.58	0.010
Treatment 8	0.971	0.943	-0.028	0.58	0.564

Notes: N = 35 for each treatment.

Table 2. Regression Results for Average Contribution by Session

Variable	1st Round Contributions	10th Round Contributions	Change in Contributions from 1st to 10th Round
INTERCEPT	0.4545**	0.1564	–0.3192**
	(0.0579)	(0.1223)	(0.0938)
CT	0.4635**	–0.0625	–0.4269**
	(0.7807)	(0.0164)	(0.1228)
VOTE	0.0067	0.0355	0.0711
	(0.7719)	(0.1620)	(0.1228)
SQ	0.2509**	0.0109	–0.1978
	(0.0771)	(0.1620)	(0.1228)
CT × *VOTE*	0.1402	0.6798**	0.4376**
	(0.0966)	(0.1974)	(0.1419)
CT × *SQ*	–0.1691	0.4538*	0.5267**
	(0.0954)	(0.1960)	(0.1419)
VOTE × *SQ*	–0.0277	–0.0355	–0.0924
	(0.0943)	(0.1974)	(0.1419)
Log Likelihood	9.52	–14.74	1.41
Left-censored	0	3	1
Uncensored	28	29	39
Right-censored	12	8	0

Notes: N = 40 for each analysis. Standard errors are in parentheses.
*Significant at the 5% level or less. **Significant at the 1% level or less.

Appendix A

Experiment Instructions – Version 1

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

In today's experiment, you will participate in a number of rounds. The number of rounds has been determined prior to the start of the experiment. Throughout the experiment, you will be in a group of seven participants. Initially, you and everyone else in your group will be given an **Initial Balance** of $1.00 for each round. You, and everyone else in your group, will need to decide whether to make a **contribution** to the **Group Account** from this $1.00. Any contribution that you make will be taken from your Initial Balance and placed into the Group Account**;** the remaining money will be placed into your **Private Account**.

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

To make a contribution from your initial balance, enter the amount of the contribution, if any, into the spreadsheet, hit "Enter" and then click the "Submit" button. After every subject has submitted their contribution, if any, the administrator will calculate the Group Account Payoff. You will then be instructed to click the "Update" button. Your earnings will be calculated automatically. You will then proceed to the next round and follow the same procedures.

It is important that you clearly understand these instructions.

Please raise your hand if you have any questions.

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

Experiment Instructions – Version 8

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

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

1) ***Private Lottery*****.** Initially, you and everyone else in you group will be given a lottery ticket in each round. At the start of each round, you will need to decide whether you would like to keep the lottery ticket or sell it. If you decide to sell the lottery ticket, you will be paid $1.00. If you keep the lottery ticket, a coin toss will determine the payoff for this lottery ticket. If the coin toss is **heads**, the payoff is $2.00. If the coin toss is **tails**, the payoff is $0.00. The coin will be provided and flipped by a volunteer subject; therefore the odds for either a heads or a tails are equal.

2) ***Group Account.*** Initially, you and everyone else in your group will have made an **Initial Donation** of $1.00 to the Group Account for each round. Therefore, initially $7.00 has been donated to the Group Account ($1 x 7 subjects). You, and everyone else in your group, will need to decide whether to request a **refund** of this $1.00 donation. Any refund that you request will be taken from the Group Account and placed in your **Private Account.**

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

To request a refund of your initial donation, enter the amount of the refund request, if any, into the spreadsheet, hit "Enter" and then click the "Submit" button. After every subject has submitted their refund request, if any, the administrator will calculate the Group Account Payoff. You will then be instructed to click the "Update" button. Your earnings will be calculated automatically. You will then proceed to the next round and follow the same procedures.

It is important that you clearly understand these instructions.

Please raise your hand if you have any questions.

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