

THE EFFECTS OF GIVE AND TAKE FRAMING IN A DICTATOR GAME

Honors Thesis

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6/6/03

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I. INTRODUCTION

This paper examines how behavior in social dilemmas changes with framing. We look at two types of dictator games. A dictator game is a simple two-person game where the proposer makes a decision about how to allocate an amount of money between himself and another person. The other person has no decision in the game. The choice sets in the dictator game in our study are identical across treatments, yet they are presented in two different framing conditions. In the giving treatment, the proposer is told that he/she has been awarded an amount of tokens and asked to make decisions of how many to keep for himself/herself and how many to give to the other person. In the taking treatment, the proposer is told that the other person has been awarded an amount of tokens and then asked to make decisions of how many to take for himself/herself and how many to leave to the other person.

The motivation for this experiment comes from the fact that, outside of the lab, social dilemmas occur in both giving and taking frames. For example, charitable giving is an example of a situation framed as giving. Tax evasion, on the other hand is a situation framed as taking. Assuming a person gives 3% to charity and that the government uses tax dollars to fight the hunger problem, there are really no hunger fighting incentive differences between giving 3% of your income to charity and cheating on your income taxes by 3%. Yet, we see significant differences. We hope to examine if the psychological effects of different frames affect decision-making.

Despite the fact that many dilemmas involve this taking frame, the vast majority of economic experiments have involved the giving frame. Indeed, standard

economic theory predicts that behavior in the two frames should be identical; however there is considerable evidence that in many situations, framing does affect decision-making. By addressing the questions of whether behavior in social dilemmas is also sensitive to the taking frame, we will be able to determine whether economists can expect that the results from the large amount of existing work on behavior involving giving can be expected to transfer to situations involving taking.

Most existing research in this area has been in relation to public goods versus private goods in the collective action dilemma. While the research we examined for this essay will be detailed in the literature review portion, it is important to introduce the psychological foundation of this study. The psychological fascination resulting from a collective action dilemma is the conflict between the pursuit of one's individual gain and the pursuit of welfare for other people, defined as altruism. The fundamental psychological fascination of the framing effect in terms of negative framing versus positive framing is to see whether or not there is mental change in decision making when results of those decisions are positive versus negative. In our study, we want to examine if this mental change will exist when a subject is giving money to another person versus when a subject is taking money from a person. Incentives are the same between the positive giving and the negative taking.

Economists have long believed that people will optimize given their preferences and constraints. A change in the frame is not a change in preferences or constraints, and therefore economic theory says it should not affect behavior. The effect of framing, therefore, is a problem for economists. When an identical decision is presented within

differing frames, neither preferences nor constraints change, yet we as economists see differing decision outcomes.

In his paper, *Warm-Glow Versus Cold Prickle: The Effects of Positive and Negative Framing on Cooperation in Experiments*, James Andreoni examines the effects of framing on cooperation. He finds a rather substantial effect of positive and negative framing. A positively framed decision creates positive externalities for other people, while a negatively framed decision creates negative externalities for other people. Even though the incentives of the experiment are identical in the two conditions, framing the choice as a positive externality substantially increases cooperation over framing the decision as a negative externality. Andreoni refers to the positive externalities created by giving as the *warm glow*, while referring to the negative externalities of taking as the *cold prickle*.

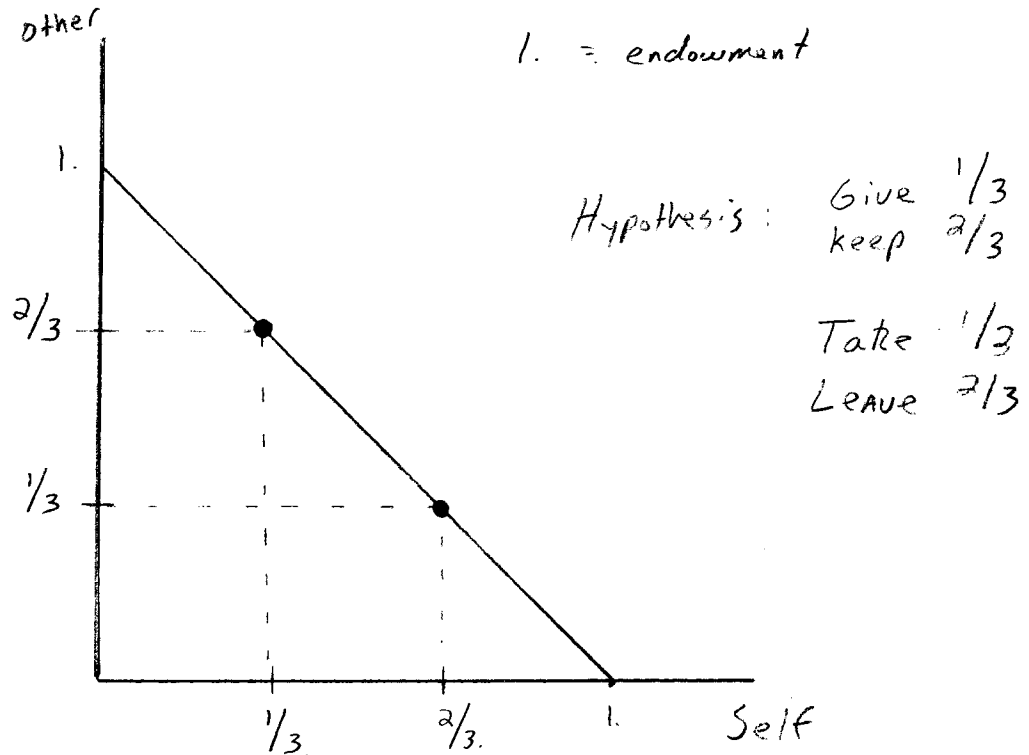
The aim of the present study is to explore in greater concentration the effects of positive and negative framing. We hope to accomplish this by simplifying Andreoni's previous work by introducing the subjects' decisions in a simple dictator game where they have the simple task of allocating a small number of tokens between themselves and one other person. We found the investment decisions in Andreoni's experiment to be complex, which led us to consider the possibility that Andreoni's results may have been a result of utter confusion. This was additional motivation to simplify our experiment in hopes of getting the truer effects of positive and negative framing. We also have a minor interest in a special case of the endowment effect. In our dictator game, we either endowed the subject with tokens or we endowed the person the subject was paired with tokens and the subject was faced with decisions to give or take. We wanted to examine

the increased value of the endowment to the subject when the endowment became part of the subject's award versus the other person's award. The experimental design will be detailed in a latter portion of this paper, however this is a good time to touch on the two frames we used. In the positive frame, the subject was endowed with the tokens and had the decision of how many to keep and how many to give to the other person. In the negative frame, the other person was endowed with the tokens and the subject had the decision of how many to take or leave for the other person. In both conditions, the subject possessed all of the control, while the other person had no control or decision. Also, incentives were identical in both decisions. In addition to the simple dictator game, we introduced a set of budgets in hopes of determining income and pricing effects within the two frames.

Before conducting the experiment, we had reason to believe that generosity would be greater in the negative frame due to the psychological aspect of it being more difficult to take from somebody than to give to them. Thus, in relation to Andreoni and his research, we hypothesized that *not* inflicting the cold prickle would have a stronger effect than delivering the warm glow of giving. We found out through a post-experimental questionnaire that some of the students were dealing with this psychology during the experiment. When asked if they made different decisions based on the two experiments (frames), one student stated, "I felt worse taking money than giving it." Another stated that, "I took less from the other person because I don't want to steal money from anyone." Another student discussed how he felt greed was a factor in deciding how much to take while not in how much to give. However, many other students did not support these statements. They recognized and stated no difference in the two framing

conditions. **Figure 1** below is a diagram of our hypothesis. We hypothesized that subjects would give about 1/3 of their endowment while keeping 2/3 and take about 1/3 of the other person's endowment, leaving 2/3. Thus, making them more generous in the taking treatment.

Fig 1



II. FRAMING EFFECT RELATED LITERATURE

In terms of framing effects, the majority of previous literature deals with the effect of decision framing on cooperation in social dilemmas. Meaning, this research looks at the positive giving or not giving sort of frame. The free-rider hypothesis served as the starting point for research on individuals' behavior in social dilemmas. This hypothesis suggests that rational, self-interested individuals will not act to achieve their common or group in interests. The free-rider hypothesis indicates that due to the fact that free riding is a dominant strategy, it will be chosen by people who are attempting to

maximize their self-interest. The free-rider hypothesis predicts that groups of rational, profit maximizing, independent decision makers will not voluntarily cooperate to provide a public good. In general, results from research has indicated that subjects often do not behave in accordance with the free-rider hypothesis. Thus suggesting that people receive utility from the well being of others.

IIa. Psychological and Sociological Perspective

From the perspective of social psychology, we chose two papers to examine that directly referred to giving and taking frames. In their paper: *Choice Behavior in Social Dilemmas: Effects of Social Identity, Group Size, and Decision Framing*, Brewer and Kramer examine the two basic forms of social dilemmas: the *public goods problem* (in which the individual must decide whether to contribute to a common resource) and the *commons dilemma* (in which the individual must decide whether to take from a common resource). The two choices are equivalent in terms of constraints, but they involve different decision frames, thus meaning they are not psychologically equivalent. Brewer and Kramer found that overall, subjects kept more of the common resource for themselves under the public goods version of the task than under the commons dilemma frame. According to Brewer and Kramer, people will refrain from taking a lot in order to avoid risking the long-term viability of the public good. In accordance with their predictions, Brewer and Kramer's findings showed that people were more cooperative when the dilemma was framed in terms of taking than when it was framed in terms of giving. While the environment was different due to the public goods experiment as

opposed to our dictator game, Brewer and Kramer's findings draw an interesting parallel to our hypothesis of subjects being more generous in the taking frame.

Brewer and Kramer also theorize regarding the level of social group identity that exists. The topic of social identity will later become relevant in our study. Research demonstrates and Kramer and Brewer support the idea that self-interest may not always be defined at the individual level. In an analysis of why individuals might be willing to forfeit individual gain in favor of collective interests, Brewer and Kramer argue that the salience of collective or common identity may result in greater weight put on joint or collective gains over individual gain.

Another paper examining the effects of decision framing in a social dilemma, written by University of Maryland Sociology professor John Fleishman, examines choice alternatives (frames) with respect to gains or losses. In Fleishman's experiment, the two decision frames were presented in terms of giving to a public good or taking from a public good. In addition to frames, he introduced and manipulated the concept of "other's behavior" and reported that subjects conformed to others' behavior when they could take from a collective good, but they diffused responsibility and acted contrary to other's behavior when they could give to a public good. His results differed from Brewer and Kramer in the fact that he reported no significant differences between giving and taking conditions. The reasons for the differences are unclear. One possible explanation could be the use of real monetary payments. History provides evidence that when payoffs are real, there is not as much of a framing effect. Thus when the payoffs are not in terms of real money, as in the experiment by Brewer and Kramer, we see larger framing effects. Further study on the differences between monetary and non-monetary

experimentation is perhaps required. Overall, Fleishman's findings supported the general hypothesis that giving is psychologically different than taking even when structure is identical. His results further imply that models of choice behavior should expand to include framing effects as well as other departures from strict rationality.

II. b. Economic Perspective

The literature that was the driving force behind our discussion here was James Andreoni's *Warm-Glow versus Cold-Prickle: The Effects of Positive and Negative Framing on Cooperation in Experiments*. While differing in that it dealt with public goods while ours was conducted with a dictator game, our experiments were very similar in that they explored behavioral differences between doing something good such as giving and doing something bad such as taking, while the incentives and outcomes are identical. Andreoni was interested in the lack of free riding in public goods experiments when free riding is clearly the Nash equilibrium. Before going further in this study, I'd like to briefly discuss preferences. Andreoni implicitly argues that free riding is only the Nash equilibrium if the subject has purely selfish preferences. The real world provides us with evidence that people don't have purely selfish preferences, therefore changing where the Nash equilibrium resides.

Andreoni examined the effects of positive and negative framing on cooperation by posing the same decisions in positive and negative frames. In the positive-frame condition, the subject has a choice of contributing to a public good, which will have a positive benefit to the other subjects. In the negative-frame condition, the subjects'

choice is framed as purchasing a private good that, since the opportunity cost is the purchase of the public good, makes the other subjects worse off. Andreoni found a rather substantial effect of positive and negative framing. While the incentives were identical in the two conditions, framing the choice as a positive externality substantially increases cooperation over framing the decision as a negative externality.

We examined a second Andreoni paper titled, *Which is the Fair Sex? Gender Differences in Altruism* in hopes of learning how a dictator game and a set of budget constraints affect behavior within two different frames. In addition to our framing effect examination, we wanted to look at behavioral differences when altruism was expensive and when altruism was cheap. We also are going to take a look at significance of gender, which is purpose of Andreoni's experiment. In his experiment, Andreoni found that depending on the price of giving, either sex could be found to be more altruistic. When the price of giving is low, men appear more altruistic, and when the price is high, women are more generous. Therefore, men are more likely to have perfectly selfish preferences or perfectly selfless preferences, whereas women care more about equalizing payoffs. This leads to demand curves for altruism that cross and those for men are more price-elastic. Our study will enable us to look at how these gender differences are affected by the two framing conditions. We are also interested to see if the income and pricing effects that Andreoni found will be replicated in our study.

Andreoni sums up the Fair Sex paper by stating that when observable characteristics of individuals have predictable effects on behavior, it presents important opportunities for economists to learn about behavior, as well as important warning signs about how to collect and analyze data. His study gives more evidence to the proposition

that gender differences in economic experiments may be a factor to look at more carefully.

In the last piece of literature examined, we took a look at the endowment effect. In their paper, *Experimental Tests of the Endowment Effect and the Coase Theorem*, the authors, Kahneman, Knetsch, and Thaler are interested in the hypothesis that many discrepancies between willingness to accept and willingness to pay, far from being a mistake, reflect a genuine effect of reference positions on preferences. The increased value of a good to an individual when the good becomes part of the individual's endowment is known as the "endowment effect". This effect is a manifestation of "loss aversion", the generalization that losses are weighted substantially more than objectively commensurate gains in the process of trade. The authors of this paper conducted several experiments that demonstrate that this "endowment effect" persists even in market settings with opportunities to learn.

III. OUR EXPERIMENTAL DESIGN

The Experiment was conducted at South Eugene High School in Eugene, Oregon. The subjects were male and female high school students. The experiment consisted of four sessions with two rounds in each session. Two sessions consisted of geometry students while two sessions consisted of pre-calculus students. The two sessions of geometry classes consisted of 65 subjects, and the two sessions of pre-calculus classes consisted of 38 subjects, for a total of 103 subjects.

The experiment employed a modification of the dictator game. The game consisted of two conditions (frames) and eleven “budget” constraints. In each condition, the subject was secretly paired with one other person. In the first condition, a subject was endowed with a fixed amount of tokens and faced with the decision of how many to “keep” for himself/herself and how many to “give” to the other person over a series of different “budgets” of payoffs; with different relative prices. In the second condition, the other person was endowed with a fixed number of tokens and the subject was faced with the decision of how many tokens to “take” from the other person and how many tokens to “leave” to the other person over a series of different “budgets” of payoffs; with different relative prices. This then allows us to look at individual demand curves, and hence discuss variation both within and across subjects.

Each session of the experiment was conducted in the subjects’ regular math classroom. The subjects were each given a packet containing protocol, choice sets, and a claim check number. The subjects used the claim number to collect their “earnings envelope” at the end of the experiment. The procedures guaranteed that neither the subjects nor the experimenter could link anyone to their choices.

The subjects in the geometry classes started with the giving condition in round one followed by the taking condition in round two. The subjects in the pre-calculus classes started with the taking condition in round one followed by the giving condition in round two.

All of the subjects were told that for each choice set, they would be paired with another person. They were told that the pairing was random and secret and they would not find out who they were paired with, nor would the person they were paired with be

told who they were, even after the experiment is over. The subjects who started with the giving condition were told that they would be awarded some tokens. They were then told the person they were paired with would not be awarded any tokens. They were then told that they could either keep tokens for themselves, or give tokens to the other person. Lastly, the subjects were told that before each decision, they would be told how many tokens they have been awarded and how much cash their tokens were worth to them and the other person. The subjects who started with the taking condition were told that the person they were paired with was awarded some tokens. They were then told that they were not awarded any tokens. They were then told that they could either take tokens for themselves, or leave tokens for the other person. Lastly, the subjects were told that before each decision, they would be told how many tokens the other person has been awarded and how much cash their tokens were worth to them and the other person. All subjects were given eleven allocation choices sheets and asked to make one allocation decision on each sheet. They were allowed 15-20 seconds to make their decisions on each choice sheet and then allowed to go back through all eleven choice sheets again to see if they wanted to change their minds.

All subjects were given the same choice sets, although there were four different orders. They were told that the sheet actually used to determine payoffs would be determined by randomly drawing a card from 1-11. They were told that their teacher would be drawing the card. Once the card was drawn they were told to turn their packet to that sheet and put it face down on their desk. We then collected their packets and shuffled them five times. We matched every two packets, putting the appropriate amount of cash in the two people's payment envelopes, as indicated by choice set that the

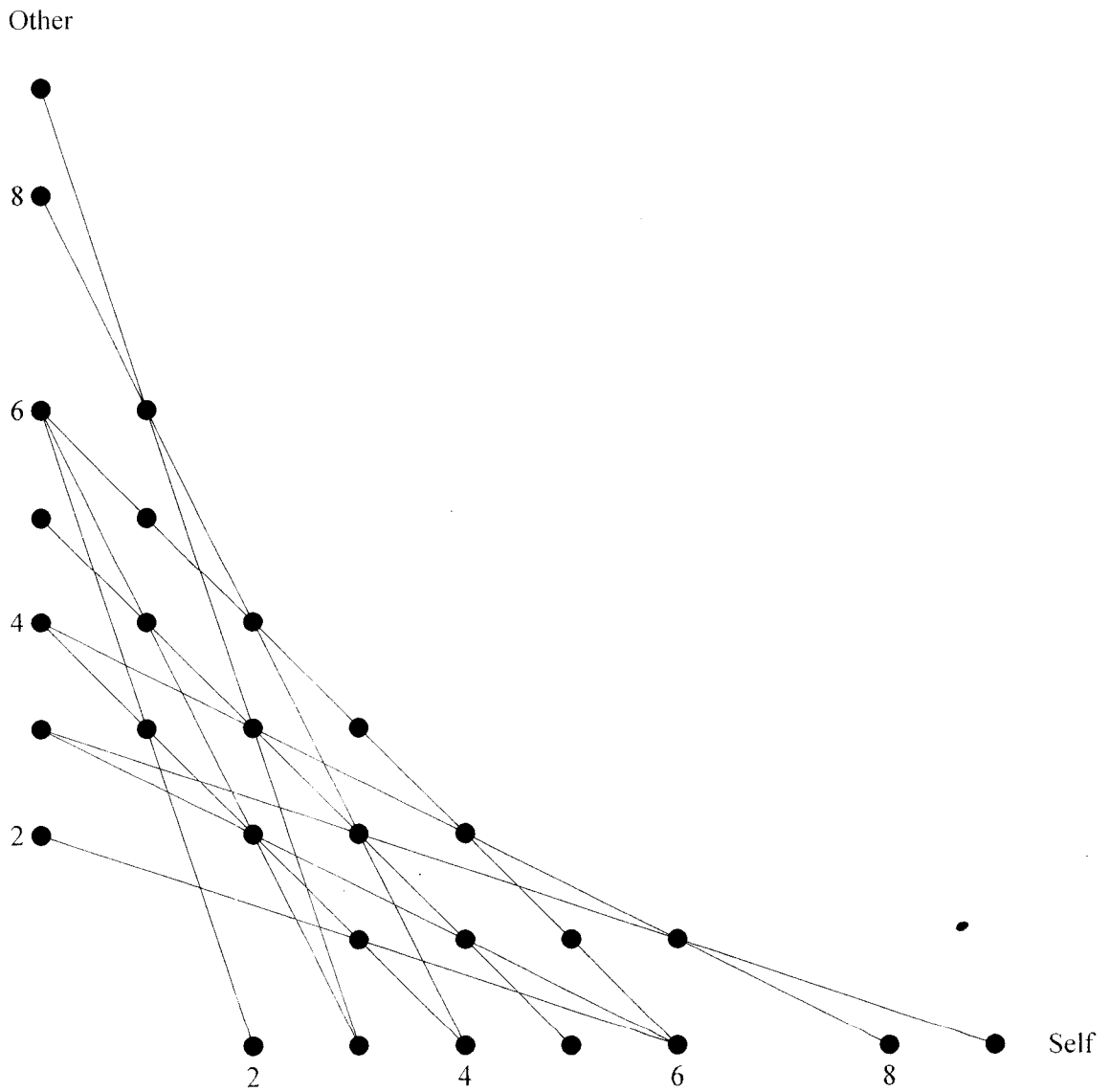
even numbered people made. All eleven choice sheets for both the taking and giving conditions can be seen in the appendix. The table in **figure 2** below illustrates the allocation choices.

Fig 2

choice set	income	price of transfers
1	1.00	0.33
2	1.50	0.33
3	1.50	0.50
4	2.00	0.50
5	2.00	1.00
6	2.50	1.00
7	3.00	1.00
8	3.00	2.00
9	3.00	3.00
10	4.00	2.00
11	4.50	3.00

In the above table, income refers to the dollar amount of the endowment for the subject. For example, in budget constraint 1 (which can be seen in the appendix) tokens are worth \$.50 to the subject and the endowment is two tokens for an income of \$1.00. Price of transferring refers to the price of giving or leaving tokens. In budget constraint 1, tokens are worth \$1.50 to the other person and \$.50 to the subject, so the price of giving or leaving is approximately \$0.33. **Figure 3** on the following page shows the graphical representation of the eleven budget constraints.

Fig 3



IV. RESULTS

We will report results in parts. We first looked at Nash Equilibrium behavior. Andreoni discussed how the prediction for free riding (or taking and keeping all in our dictator game) is particularly sharp due to the assumptions that people have selfish preferences. Therefore our study should yield the selfish preference Nash equilibrium of subjects being selfish. Our subjects should have not shared tokens and therefore dollar values with others. Our experiment yielded some interesting, quite contrary results. The table below in **figure 4** shows that with the choice to share between 0 and 22 tokens, only 1 subject in the giving condition behaved according to the Nash equilibrium of selfish preferences and 2 subjects in the taking condition did so out of 206 frames. The majority of the subjects chose to share between 8 and 13 tokens, which shows a great deal of care for the welfare of others.

Fig 4

frame	dother	give	take	Total
0	1	1	2	3
.5	0	1	1	1
1	1	0	0	1
2	1	0	0	1
2.5	2	1	1	3
3	4	1	1	5
3.5	1	2	2	3
4	1	1	1	2
4.5	0	1	1	1
5	2	2	2	4
5.5	0	2	2	2
6	3	5	5	8
6.5	2	1	1	3
7	2	1	1	3
7.5	5	2	2	7
8	5	5	5	10
8.5	5	0	0	5
9	6	5	5	11
9.5	3	5	5	8
10	7	4	4	11
10.5	8	5	5	13
11	1	5	5	6
11.5	2	6	6	8
12	8	9	9	17
12.5	6	8	8	14
13	5	6	6	11
13.5	4	3	3	7
14	2	3	3	5
14.5	1	3	3	4
15	5	3	3	8
15.5	0	2	2	2
16	1	2	2	3
17	1	0	0	1
17.5	2	4	4	6
18	1	0	0	1
18.5	1	0	0	1
19.5	3	1	1	4
22	1	2	2	3
Total	103	103	103	206

When comparing decisions across frames to determine generosity and determining the true framing effects of our experiment we compared first round decisions across all frames. The significant figures to observe in the below table (**figure 5**) are the second row numbers in each condition that compare average dollars given to the other person with average dollars taken from the other person. Results show not much of a framing effect on average. Take choice set 1 for example: subjects starting with the give condition gave an average of \$1.07 and subjects starting with the take condition took an average of \$1.02.

Fig 5

Frame	subject per											Total
	1	2	3	4	5	6	7	8	9	10	11	
Give	74	74	84	84	84	84	84	84	84	84	84	414
	1.07	1.14	0.88	1.41	0.94	0.92	1.18	-0.49	0.24	0.68	0.47	0.97
	0.07	0.14	-0.14	0.14	-1.01	-1.34	-1.82	-0.51	-0.74	-3.32	-4.03	-1.57
Take	65	65	65	65	65	65	65	65	65	65	65	715
	1.02	1.16	0.67	1.46	0.76	0.38	1.13	0.67	0.34	0.82	0.61	0.93
	0.02	0.03	-0.45	0.15	-1.24	-1.60	-1.87	-1.33	-1.60	-3.18	-3.89	-1.61

Due to us not having much difference in clean effects of what frame subjects started with, we can now looking at all decisions across frames, regardless of what frame they started with. We see below in the total line of **figure 6** that subjects gave an average of \$0.94 in the giving frame and took an average of \$0.97 in the taking frame.

Fig 6

Frame	subject per											Total
	1	2	3	4	5	6	7	8	9	10	11	
Give	103	103	103	103	103	103	103	103	103	103	103	1,133
	1.04	1.44	1.57	1.1	0.73	0.86	1.07	0.60	0.34	0.71	0.50	0.94
	1.04	0.17	0.41	1.4	0.34	0.35	0.36	0.20	0.11	0.18	0.11	0.30
Take	103	103	103	103	103	103	103	103	103	103	103	1,133
	1.18	1.10	1.19	1.18	0.73	0.39	1.20	1.65	1.74	0.80	0.56	0.97
	1.18	1.11	0.70	1.74	0.35	0.39	0.40	0.03	1.11	0.28	0.12	0.51

In terms of a *within subjects* comparison, we can look at token distribution changes when changing frames from give to take over the 1133 possible choices (103 subjects * 11 constraints). We notice that in the table below in **figure 7**, there is no change in 679 choices (no framing effect). 201 choices leave one more token, while 139 choices take one more token. The fact that there was no framing effect in over half of the choices is significant in relation to our other statistics showing not much of a framing effect.

Fig 7

choice set	1	2	3	4	5	6	7	8	9	10	11	Total
1				1		1						3
2		1		1	1		1			1	1	9
3	3	4	4	3	7	10	4	6	7	2	3	40
-1	11	17	17	11	19	11	10	13	10	14	10	139
0	67	67	71	61	69	54	53	60	71	53	63	679
1	19	19	9	16	15	26	26	13	14	27	21	201
2	4	5	1	1	6	6	9	8	1	6	5	51
3				1	1	1	4	1				9
4												0

Next, we can examine significance of gender by comparing all decisions across genders.

Looking at the second line (**figure 8**) totals in the two conditions, we notice that average total dollars given is exactly the same between the two genders at \$.96 showing no gender significance in generosity.

Fig 8

choice set	1	2	3	4	5	6	7	8	9	10	11	Total
1	106	106	106	106	106	106	106	106	106	106	106	1,166
2	0.82	0.84	0.77	0.73	0.84	1.00	1.23	0.68	0.41	0.93	0.71	<u>0.96</u>
3	0.90	0.93	0.71	0.73	0.41	0.40	0.41	0.03	0.14	0.03	0.16	0.47
4	1.00	1.01	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1,100
5	0.87	0.88	0.78	0.80	0.61	0.81	1.04	0.56	0.26	0.56	0.34	<u>0.96</u>
6	0.70	0.73	0.56	0.58	0.31	0.34	0.35	0.19	0.09	0.14	0.08	0.53

Two other interesting statistics to look in relation to gender are the price and income effect. Looking at the regression below in **figure 9**, we find that the income effect is statistically significant with males giving approximately \$0.14 less for every additional dollar they are endowed, yet we find no significance in the price effect. These results differ from the results Andreoni discovered in his *Fair Sex* paper. He found that when the price is low, men are more generous and when the price is high, women are more generous. However, when looking across budget sets in figure 7 (price of giving gets more expensive as you move from choice sets 1-11) we find that in budget set 1, when

price of giving is cheap, males gave \$1.37 compared to females who gave \$.092. In budget constraint 11, when giving is expensive, males gave \$.34 compared to females who gave \$0.71. These figures support Andreoni's findings that when the price is low, men are more generous and when the price is high, women are more generous. The reasons for the differences are unclear. Gender differences is an area for further study.

Fig 9

dproo	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
dy	-.1098905	.0287264	-4.11	0.000	-.1622733 -.0575077
po	-.156008	.0287045	-5.43	0.000	-.2122677 -.0997482
male	.423776	.0678734	6.24	0.000	.2907466 .5568055
mpo	-.008064	.0411987	-0.20	0.845	-.088812 .0726839
mdy	-.1381164	.0383596	-3.60	0.000	-.2132999 -.062933
_cons	.9611381	.0472896	20.32	0.000	.8684522 1.053824

Taking a look at the regressions below in figures 10 and 11, we can determine income and price effects. Remembering that dy is income and po is price of transferring, looking at **figure 10**, we notice significance in both a price and (negative) income effect. As endowment is increased by \$1.00, money proportion given or left to the other person decreases by \$.17 and as price of giving or leaving increases by \$1.00, money proportion left or given decreases by approximately \$.16. Looking at the regression in **figure 11**, we see that transfers are about \$.06 smaller in the take treatment, yet the number is not significant.

Fig 10

dproo	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
dy	-.1769373	.0193952	-9.12	0.000	-.2149513 -.1389233
po	-.1599225	.0208307	-7.68	0.000	-.20075 -.1190951
_cons	1.166855	.034267	34.05	0.000	1.099693 1.234017

Fig 11

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
dproo						
dy	-.1769373	.0193952	-9.12	0.000	-.2149513	-.1389233
po	-.1599225	.0208307	-7.68	0.000	-.20075	-.1190951
taketreatd	-.0619045	.0350301	-1.77	0.077	-.1305623	.0067534
_cons	1.205921	.0407427	29.60	0.000	1.126066	1.285775

V. CONCLUSION

Our results indicate that there is no framing effect on behavior. While we hypothesized that generosity would be larger in the taking frame, we observed no significant differences in money generosity toward other people across frames. This result is conflicting with previous literature, leading to more interest in further experimentation which looks at variables affecting framing. Due to the fact that we see a framing effect in many social situations outside of the laboratory, our results offer interesting discussion. Research on social identity in the past has demonstrated that self-interest may not always be defined at the individual level. In a previous analysis by Brewer, he examined why individuals might be willing to forfeit individual gain in favor of collective interests. He argued that a common social identity might result in greater weight being given to joint or collective gains over individual gains alone. In our study, I feel that the concept of common social identity was a strong factor in the elimination of framing effects. I feel most students viewed the frames as offering the same incentive and they were more interested in jointly getting as much money for themselves and for others out of our institution. They had the common identity of a high school student and we just researchers from a foreign group giving away money.

Also, the fact that our payoffs were real and there was not a significant framing effect is very important to consider in further experimentation. Fleisher's experiment

also involved real payoffs and he found no framing effect. Brewer and Kramer, who did not use real payoffs, discovered a significant framing effect. This leads one to believe that when real money is used, subjects possibly think more about monetary outcomes than they do about the framing condition and therefore the outcomes across the two frames will not differ.

While much more work needs to be done to test if there is asymmetry between giving and taking and the sensitivity to framing, there are enough situations in society to make such studies necessary. Determining what factors create or eliminate sensitivity to frames could certainly improve society.

VI. APPENDIX

Included in the appendix is the protocol used in the giving frame and the eleven budget constraints. Everything was exactly the same in the taking frame with exception to the other person being awarded the tokens instead of the subject. In terms of the constraints, during the taking treatment, the subject's choice was to take or leave as opposed to keep or give in the giving treatment.

Claim Check # _____

G

Welcome:

Today we are conducting an experiment about decision-making. Your decisions are for real money, so pay careful attention to these instructions. The money comes from a research foundation. They want to know what kinds of decisions you make. How much you earn will depend on the decisions that you and the other participants make.

Secrecy:

All of your decisions will be secret and we will never reveal them to anyone. We will ask you to mark your decisions on paper forms. If you are caught looking at another person's forms, or showing your form to another person, we cannot use your decisions in our study and so we will take your packet away from you and you will not get paid.

Payment:

The first page of this packet has a claim check number on it. Each participant has a different number. Please tear off this first page now and keep it. You will present this number to an assistant at the end of the experiment to get your payment envelope. You do not need to keep your number secret – no one will be able to figure out your decisions even if they know your number.

After this point in the experiment, we will not be able to answer any questions – if you don't understand something, you will just have to reread the instructions and do the best you can. But are there any questions about the procedure up to now?

The Experiment:

This experiment will involve a series of choices about tokens. At the end of the experiment, we will trade cash for the tokens. The cash will be in a sealed envelope so that no one in the class can see how much you received.

For each choice you will be paired with another person. You and the other person will be paired randomly and secretly. You will not be told who you are paired with, and they will not be told who they are paired with, even after the experiment is over.

You will be awarded some tokens. The person you are paired with will not be awarded any tokens.

You can either keep your tokens for yourself, or you can give tokens to the other person.

Before each decision you will be told how many tokens you have been awarded, and how much cash your tokens are worth to you and to the other person.

Earning Money:

You will be asked to make a series of choices. Each choice will be with a different number of tokens. The tokens will be worth different amounts of money. You will make your choice by putting an "X" in the box next to your decision.

There are 11 different choice sheets like these. After everyone has made a decision on each of the choice sheets, your earnings will be determined as follows:

We will pick a random number from 1 to 11, by having your teacher draw a card from this deck of 11 cards. The Ace will stand for 1 and the Jack will stand for 11. The card will determine which choice sheet counts.

We will have you turn your packet to that choice sheet, and put it face down on your desk. We will collect all the stapled packets and put them in a stack. We will shuffle the stack at least 5 times, so that the packets are in random order.

The person whose packet is on the top of the stack will be matched with the next person in the stack. We will put the appropriate amount of cash in these two people's payment envelopes, as indicated by the choice that the first person has made. The second person's choice will not be used.

Then we will match the third person with the fourth person in the stack. We will put the appropriate amount of cash in these two people's payment envelopes, as indicated by choice that the third person has made. The fourth person's choice will not be used.

We will proceed through the stack until we are done. People whose order in the stack happens to be even will be making the choices about how many tokens and how much money people get. People whose order is odd will get whatever the other person decides.

Note that you don't know which of your 11 decisions will count, if any. That will be determined purely by chance. So the best thing for you to do is to treat every choice sheet as if it will count, and make the choice on that sheet that you most prefer.

We will tell you when to turn the page and begin filling out the choice sheets.

When everyone is finished, we will collect your packets and give you further instructions.

(1)

You have been given 2 tokens. Each token (represented like this ●) is worth \$0.50 to you and \$1.50 to the other person. Please choose one combination from below. Place an "X" in the box representing your decision.

What will you keep?

What will you give?

Tokens to keep

Dollars to keep

Tokens to give

Dollars to give

Choose one box
below

● ●	\$1.00		\$0.00	
●	\$.50	●	\$1.50	
	\$0.00	● ●	\$3.00	

(2)

You have been given 3 tokens. Each token (represented like this ●) is worth \$0.50 to you and \$1.50 to the other person. Please choose one combination from below. Place an "X" in the box representing your decision.

What will you keep?

What will you give?

Tokens to keep Dollars to keep Tokens to give Dollars to give Choose one box below

● ● ●	\$1.50		\$0.00	
● ●	\$1.00	●	\$1.50	
●	\$0.50	● ●	\$3.00	
	\$0.00	● ● ●	\$4.50	

(3)

You have been given 3 tokens. Each token (represented like this ●) is worth \$0.50 to you and \$1.00 to the other person. Please choose one combination from below. Place an "X" in the box representing your decision.

What will you keep?

What will you give?

Tokens to keep Dollars to keep Tokens to give Dollars to give Choose one box below

● ● ●	\$1.50		\$0.00	
● ●	\$1.00	●	\$1.00	
●	\$0.50	● ●	\$2.00	
	\$0.00	● ● ●	\$3.00	

(4)

You have been given 4 tokens. Each token (represented like this ●) is worth \$0.50 to you and \$1.00 to the other person. Please choose one combination from below. Place an "X" in the box representing your decision.

What will you keep?

What will you give?

Tokens to keep Dollars to keep Tokens to give Dollars to give Choose one box below

● ● ● ●	\$2.00		\$0.00	
● ● ●	\$1.50	●	\$1.00	
● ●	\$1.00	● ●	\$2.00	
●	\$0.50	● ● ●	\$3.00	
	\$0.00	● ● ● ●	\$4.00	

(5)

You have been given 4 tokens. Each token (represented like this ●) is worth \$0.50 to you and \$0.50 to the other person. Please choose one combination from below. Place an "X" in the box representing your decision.

What will you keep?

What will you give?

Tokens to keep

Dollars to keep

Tokens to give

Dollars to give

Choose one box
below

● ● ● ●	\$2.00		\$0.00	
● ● ●	\$1.50	●	\$0.50	
● ●	\$1.00	● ●	\$1.00	
●	\$0.50	● ● ●	\$1.50	
	\$0.00	● ● ● ●	\$2.00	

(6)

You have been given 5 tokens. Each token (represented like this ●) is worth \$0.50 to you and \$0.50 to the other person. Please choose one combination from below. Place an "X" in the box representing your decision.

What will you keep?

What will you give?

Tokens to keep Dollars to keep Tokens to give Dollars to give Choose one box below

● ● ● ● ●	\$2.50		\$0.00	
● ● ● ●	\$2.00	●	\$0.50	
● ● ●	\$1.50	● ●	\$1.00	
● ●	\$1.00	● ● ●	\$1.50	
●	\$0.50	● ● ● ●	\$2.00	
	\$0.00	● ● ● ● ●	\$2.50	

(7)

You have been given 6 tokens. Each token (represented like this ●) is worth \$0.50 to you and \$0.50 to the other person. Please choose one combination from below. Place an "X" in the box representing your decision.

What will you keep?

What will you give?

Tokens to keep	Dollars to keep	Tokens to give	Dollars to give	Choose one box below
● ● ● ● ● ●	\$3.00		\$0.00	
● ● ● ● ●	\$2.50	●	\$0.50	
● ● ● ●	\$2.00	● ●	\$1.00	
● ● ●	\$1.50	● ● ●	\$1.50	
● ●	\$1.00	● ● ● ●	\$2.00	
●	\$0.50	● ● ● ● ●	\$2.50	
	\$0.00	● ● ● ● ● ●	\$3.00	

(8)

You have been given 3 tokens. Each token (represented like this ●) is worth \$1.00 to you and \$0.50 to the other person. Please choose one combination from below. Place an "X" in the box representing your decision.

What will you keep?

What will you give?

Tokens to keep	Dollars to keep	Tokens to give	Dollars to give	Choose one box below
● ● ●	\$3.00		\$0.00	
● ●	\$2.00	●	\$0.50	
●	\$1.00	● ●	\$1.00	
	\$0.00	● ● ●	\$1.50	

(10)

You have been given 4 tokens. Each token (represented like this ●) is worth \$1.00 to you and \$0.50 to the other person. Please choose one combination from below. Place an "X" in the box representing your decision.

What will you keep?

What will you give?

Tokens to keep Dollars to keep Tokens to give Dollars to give Choose one box below

● ● ● ●	\$4.00		\$0.00	
● ● ●	\$3.00	●	\$0.50	
● ●	\$2.00	● ●	\$1.00	
●	\$1.00	● ● ●	\$1.50	
	\$0.00	● ● ● ●	\$2.00	

(9)

You have been given 2 tokens. Each token (represented like this ●) is worth \$1.50 to you and \$0.50 to the other person. Please choose one combination from below. Place an "X" in the box representing your decision.

What will you keep?

What will you give?

Tokens to keep

Dollars to keep

Tokens to give

Dollars to give

Choose one box
below

● ●	\$3.00		\$0.00	
●	\$1.50	●	\$0.50	
	\$0.00	● ●	\$1.00	

(11)

You have been given 3 tokens. Each token (represented like this ●) is worth \$1.50 to you and \$0.50 to the other person. Please choose one combination from below. Place an "X" in the box representing your decision.

What will you keep?

What will you give?

Tokens to keep Dollars to keep Tokens to give Dollars to give Choose one box below

● ● ●	\$4.50		\$0.00	
● ●	\$3.00	●	\$0.50	
●	\$1.50	● ●	\$1.00	
	\$1.00	● ● ●	\$1.50	

References

- Andreoni, J.(2001) "Which is the fair sex? Gender differences in altruism." Quarterly Journal of Economics 116: 293-312
- Andreoni, J.(1995) "Warm-glow versus cold-prickle: the effects of positive and negative framing on cooperation in experiments." Quarterly Journal of Economics, 1-20
- Brewer, M.B. and R.M. Kramer (1986) "Choice behavior in social dilemmas: effects of social identity, group size, and decision framing." J. of Personality and Social Psychology 50: 543-549.
- Fleishman, J.A.(1988) "The effects of decision framing and others' behavior on cooperation in a social dilemma." J. of Conflict Resolution 32 : 162-180.
- Harbaugh, W.T., K. Krause, and T. Berry (2001) "GARP for kids: On the development of rational choice behavior." American Economic Review 91(5): 1539-1545.
- Kahneman, D., J.L. Knetsch and R.H. Thaler (1990) "Experimental tests of the endowment effect and the Coase Theorem." The Journal of Political Economy 98: 1325-1348.
- Park, E.(2000) "Warm-glow versus cold-prickle: a further experimental study of framing effects on free-riding." J. of Economic Behavior and Organization 43 : 405-421.
- Rutte, RG., A.M. Wilke and DM Messick. (1987) "The effects of framing social dilemmas as give some or take some games". British Journal of Social Psychology 26 103-108.