



Self-Image Concerns and Dictator Game Giving

An Experimental Analysis

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Abstract

This thesis explores how self-image concerns affect decisions involving generosity. More specifically, whether increasing the moral ‘wiggle room’ for subjects in the dictator game to act selfishly, has a significant impact on their choices. The purpose of this thesis is to provide new empirical evidence on how concerns of self-image influence an individual’s behaviour in social interactions. An experiment is conducted with 161 subjects. The experiment involves three treatment groups, one as a control, and the others to test whether increased ‘wiggle room’ allows subjects to overcome self-image concerns and act more selfishly in the dictator game. The main findings show that increasing moral ‘wiggle room’ in the dictator game has no significant impact on subjects sharing behaviour. The results show little supporting evidence of self-image concerns amongst subjects playing the dictator game.

Key words: Dictator game, self-image, beliefs, decisions under ambiguity

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1 Introduction

Various economic experiments indicate that individuals act in ways that are not only self-interested, but rather, that subjects have regard for others' welfare. Such behaviour is most prevalent in the dictator game, where one player is tasked to divide an endowment between himself and a passive recipient. Standard economic models predict the dictator to behave under *homo economicus* - rational and self-interested subjects who pursue their actions optimally - but evidence shows that we behave far differently (Engel, 2011).

Different motives of altruistic behaviour have been studied in the literature. Subjects may feel pressured into giving positive amounts, despite preferring more selfish choices, because of the fear that their actions will be perceived by others as greedy or selfish. For example, Hoffman, McCabe, and Smith (1996), suggested that fairness stems from an individual's fear that he/she will be judged by others. This means that our beliefs of what others will think of us plays a big role in our decision making process. Therefore, acts of fairness may be caused by our own self-interest, to create the illusion of not appearing selfish, rather than a pure altruistic motivation.

Furthermore, dictators may exploit ambiguous situations in order to justify unfair outcomes. The fact that some people may feel compelled to exploit different situations is an interesting topic in psychology (Dana, Weber, and Xi Kuang, 2007). Dana et al., (2007) conduct a binary version of the dictator game in which various treatments expand the moral 'wiggle room' exposed to the dictator. The authors find that subjects act less generous as more moral 'wiggle room' is present. The results indicate that subjects behave fairly partially because of their intrinsic dislike for appearing unfair (Dana et al., 2007).

This thesis explores how one's concerns over self-image affect decisions involving generosity. The purpose of this thesis is to provide new empirical evidence on how concern for our self-image influences an individual's behaviour in social interactions. Furthermore, this thesis will also explore whether individuals lie to appear selfless. Previous literature provides a strong foundation for why individuals tend to share a piece of the pie and act contrary to classic

economic predictions. This thesis aims to close part of the research gap and provide quantitative research with observable data on how dictators regard for self-image influence sharing behaviour in the dictator game. The research question is defined as follows:

How does an individual's concern for self-image influence their actions in the dictator game?

The paper is organized as follows: Section 2 presents an elaborate literature review on the topic. Section 3 explains the experimental design and data collections process, while Section 4 states the results and analysis of the experiment. The paper is concluded in Section 5.

2 Literature Review

In a dictator game, the first player, ‘dictator’, has the task of splitting an endowment with another passive player, ‘recipient’. Standard economic theory predicts that people act according to self-interest (maximizing own utility) (Engel, 2011). As a result, maximizing utility would suggest that dictators will not share any piece of the endowment to their counterparts (Engel, 2011, and Fehr and Schmidt, 1999). Nonetheless, evidence suggests the opposite, and finds that people have the tendency to share positive amounts of money, typically 20%, with their counterparts (Camerer, 2003).

One theory within economics that tries to explain such generosity is by assuming that it reflects a preference for equitable outcomes or social welfare. Such preferences may be a form of *altruism*, which can be described as acts of selflessness and concern for the well-being of others. Batson (1991) defines altruism as a motivational state in which subject’s ultimate goal is to increase the welfare of others around them. Camerer and Fehr (2004) argued that altruism is when a dictator takes costly actions to increase the payoffs of others. Under such definitions, multiple papers have contended that altruism is the underlying motive for giving (Bekkers, 2007 and Eckel & Grossman, 1996). However, such models use a dictators’ final distribution of wealth in order to explain preferences (Dana et al., 2007), and thus, these findings may leave out some additional factors that contribute to motives for giving in the dictator game. For example, strong motives for giving in the dictator game could be from the positive feeling it gives subjects, or the pleasure in the act of giving itself.

Other research argues that, when a person’s utility function increases from another person’s happiness, this is a form of impure altruism, or, the *warm glow effect*. The warm glow effect is defined by Andreoni (1989) who states that instead of being concerned only for the welfare of others (altruism), warm glow givers receive pleasure from the actual act of giving. Crumpler and Grossman (2008) conducted an experiment on warm glow giving. In their experiment, subjects took part in a double-anonymous modified dictator game paired with charities of their own choosing. Their experiment was designed in such a way that there was no motivation for altruistic giving. This was because donations made to the recipient charities were unaffected by

the level of giving from the participants (Crumpler & Grossman, 2008). Results indicated that subjects donated 20% of their endowments (on average), and showed that the warm glow effect motivated a substantial portion of giving (Crumpler & Grossman, 2008). Furthermore, the work of Konow (2000), tested the warm glow hypothesis by comparing giving in a dictator game with the recipient receiving a \$0 endowment (standard treatment) and a dictator game with the recipient receiving a \$4 endowment (subsidy treatment). The dictator should give less in the subsidy treatment than in the standard treatment if giving is motivated by altruism (the subsidy crowds out the dictator's giving). However, Konow (2000) found evidence of impure altruism or warm glow effect because of incomplete crowding out.

While researchers have tried to disentangle the altruistic versus impure altruistic motivations of dictators, other literature has explored how social preferences are influenced by our concerns of self-image. Self-image can be described as the way we think of our own abilities, personality and appearance. Koch and Normann (2008) conducted an experiment to test whether sharing behaviour in the dictator game was solely our regard for others or whether it was our regard by others. The experiment consisted of two treatments. The control group was a standard dictator game. The second treatment had a completely anonymous design, and the dictator in the experiment knew that the receiver was unaware the game was being played. The experimenters physically mailed the given money to random UK residents to ensure this anonymity. The authors hypothesized that giving amounts larger than 0 stemmed from societal norms and that larger shares of money should be allocated to the receivers in the control group than in the anonymous treatment because fair behaviour may be the result of external pressures. Their results gave little evidence for differences in both treatments, and contributes to the theory that dictators who give positive amounts are motivated by internal forces (Koch & Normann, 2008). Ploner and Regner (2013) researched further the effect of self-image on dictator game giving. The authors conducted an experiment in which dictators can cheat to receive a higher endowment when playing the dictator game. In this case, Ploner and Regner (2013) changed the moral self-image of subjects. Their research found that subjects who cheated and played with the larger endowment also gave away higher shares of money to their partners than subjects who did not cheat. Such findings indicate that, when subjects cheat, they feel the need to give away more to cleanse their conscience and feel better about themselves (Ploner and Regner, 2013). Hence,

the moral cleansing that cheating subjects partake in, is strong evidence for concerns of self-image.

Furthermore, the need to maintain a positive social image was explored in the work of Dana, Cain and Dawes (2006). In their research, the authors tested whether participants favor an 'opt-out' strategy when given the choice in the dictator game. The results suggested a favor for 'opt out' as one third of participants chose a strategy of receiving 9 dollars rather than taking part in the 10-dollar dictator game. Despite this, when subjects were then given the choice to 'opt out' or play a private dictator game, all players chose to partake in the private game. This research argued that participants preferred the dictator game when receivers were unaware of their actions, but as soon as their actions were made visible, many subjects opted for an exit strategy. This implies that subjects were concerned of what others perceived of their actions, and preferred to act self-interestedly only when remaining anonymous.

Many results of the dictator game have indicated that subjects share their outcomes with unknown, anonymous others (Forsythe et al., 1994). Murnighan, Oesch and Pillutla (1999) explored the motivation behind dictator's choices and described how dictators can be typed as either rational (taking maximum), equal (splitting outcomes equally), or reluctant dictators (giving more than 0 but less than half). The authors tested the *self-impression management model* which predicts that individuals act to view themselves in a positive light even when they are the only observers of their own behaviour because it is important for people to view themselves favorably (Murnighan, Oesch & Pillutla, 1999). Thus, if dictators made decisions anonymously, their own sense of identity became strong motivations for the choices they made. The researchers designed an experiment involving 4 versions of the dictator game. These games consisted of a standard, unrestricted dictator game; two double-alternative games; and a multiple-alternative game. The double-alternative games gave dictators a choice between either (\$9.75:\$0.25 or \$5:\$5) and (\$9.25:\$0.75 or \$5:\$5). Finally, the multiple-alternative game consisted of 11 alternatives ranging from \$9.75 to an equal split of \$5. According to self-impression management theory, dictator's choices should not be influenced by the different treatments. Murnighan, Oesch and Pillutla (1999) found that reluctant dictators tried to establish positive images of themselves, while, selfish dictators were not influenced in this way. The

selfish dictators were economically rational, reluctants avoided greedy choices, and equals chose fair options most often (Murnighan, Oesch & Pillutla, 1999). Their findings confirm the self-impression management theory because under the normal dictator game, dictators could only attribute credit or blame to themselves, however, when restrictions were introduced to the dictator game, the credit and blame placed on the dictator was softened and as a result, greedy choices were more prevalent (Murnighan, Oesch & Pillutla, 1999). According to Ploner and Regner (2013), who researched the effect of self-image on dictator game giving, we should see evidence of self-image concerns in the dictator game. In contrast to the experimental design of Ploner and Regner (2013), this thesis may find an opposite effect. If the moral ‘wiggle room’ is enhanced in the dictator game, subjects may find much more freedom to act selfishly while being able to preserve their sense of self-image. Thus, it is expected that subjects will share less of the endowment

Results from a wide range of dictator game experiments indicate that individuals may feel that giving is a necessity, although they would rather choose an outcome that would maximize their own payoffs. Dana et al., (2007) explored whether generosity in experiments is truly evidence of a concern for desirable social outcomes, or if it can be explained by subject’s desire to avoid appearing selfish, both to themselves, and to others. The authors conducted a binary dictator game experiment, in which the moral “wiggle room’ was adjusted by increasing uncertainty in the game. Dana et al., (2007) found significantly less generous behaviour in manipulations with ‘wiggle room’ than those without (completely transparent choices). Thus, dictators in this experiment created an illusion of selflessness despite their selflessness stemming from own self-interest. According to Dana et al. (2007), this implied that people who gave in the dictator game might actually have preferred self-regarding outcomes if they were given an excuse not to have to give.

2.2 Hypotheses

Based on the research described above, it is clear that the motives behind giving in the dictator game are very complex. Some research argued that giving was motivated by altruism or a preference for fairness (Bekkers, 2007 and Eckel & Grossman, 1996), while others argued that

selflessness was actually a form of impure altruism (Crumpler & Grossman, 2008 and Stahl & Haruvy, 2006). In addition, concerns over self-image were strong motives for giving in the dictator game as seen in the work of Murnighan, Oesch and Pillutla (1999). A dictator may even exploit situations of uncertainty about what caused unfair outcomes (Dana et al., 2007). The dynamics of dictator game giving are imperative to further understanding human behaviour. Individuals may feel the need to give more in the dictator game from situational pressures, but may also change their generosity as soon as the context changes and they are able to behave selfishly without social repercussions. Thus, people may seem to care about others in standard dictator game experiments, but slight context changes may result in very different outcomes.

This paper explores such ideas by testing whether there is a difference in sharing behaviour of the dictator when given additional information on the recipients' choice to take a fixed amount, or to participate in the classic dictator game. In the standard dictator game (baseline treatment) dictators are given an endowment to split with another player (passive). This paper will test a manipulation of the dictator game that gives the dictator more information on the recipients' possible choices and hence may create more 'wiggle room' for the dictator to act self-interestedly without damaging self-image. An additional manipulation will be conducted to test dictators sharing behaviour when their actions have no real impact on final payments. This manipulation can allow for new insights into whether dictators lie to appear more selfless. Both treatments give new insights into self-image concerns and its influence on sharing behaviour. Based on previous research, the hypotheses are as follows:

H₁: Dictators give less when recipients could have chosen not to play the dictator game.

H₂: Dictators give more when their choices have no consequence on final payments relative to the baseline treatment.

Hypotheses 1 is supported through the work of Murnighan et al., (1999). The researchers designed a dictator game in which subject's choices became more restricted. The results indicated that dictators convinced themselves that they chose larger amounts because choices were limited, and hence, increased their own perceptions of what was deemed fair. If generosity

in the baseline treatments is an individual's desire for a specific outcome, then we should see the same giving behaviour in the various treatment groups. However, some dictators may act more selfishly, and convince themselves that the recipient had the choice to get a fixed outcome but chose to play the game and therefore feel less guilty of their choices. This hypothesis can also be supported by Dana et al., (2007). In their paper, the authors eliminated transparency in the dictator's choices and noticed an increase in more selfish behaviour. While this paper does not eliminate transparency, it does enhance the dictators 'wiggle room' to behave selfishly, and thus, claim that the recipient could have made a better choice, in order to preserve their self-image. According to Ploner and Regner (2013), who researched the effect of self-image on dictator game giving, we should expect to find evidence of self-image concerns in this thesis. Although the experimental design is the opposite of Ploner and Regner (2013), their findings suggest that increasing moral 'wiggle room' in the dictator game will allow subjects to behave selfishly while preserving their sense of self-image.

Hypothesis 2 is supported by the idea that once a dictator's choices have no consequences to himself or to others, then a majority of subjects will claim that they would have given an equitable outcome to enhance a positive self-image for themselves and onto those around them (i.e. experimenter). If the overall distribution of offers is higher in this treatment than the baseline treatment, then we can conclude that subjects may be lying. In other words, when their choices impact themselves directly (baseline treatment), subjects act more self-interested as compared to the treatment when choices have no impact on the final distribution of payments.

3 Methodology

To explore the research question in more detail and draw conclusions, data will be collected through three different treatments of a modified dictator game. The various treatments in this experiment will explore dictators' regards for others and concerns over self-image when they receive information on recipients' possible choices in the dictator game.

3.1 General procedure

In this experiment, Qualtrics is used to implement the dictator game in an online survey. Subjects are university students from Erasmus University in the Netherlands. Subjects are gathered by voluntarily participating in the Qualtrics survey. Subjects are obtained by posting the survey on various university Facebook pages and also asking for volunteers on the university campus. Each subject is randomly assigned to a treatment group once they begin the online survey. In the end of each treatment, participants are asked to answer a few questions to obtain additional insights on the demographics of the sample (i.e. male/female, age, and level of study).

3.2 Baseline Treatment

The baseline treatment is conducted using a standard dictator game, which will act as the control group in this experiment. On the first page of the survey, subjects are presented the instructions of the experiment. Instructions were designed with the framework of Forsythe, Horowitz, Savin and Sefton (1994) in mind (see Appendix A). On the instructions page of the survey, participants are assigned to the position of dictator. Then, subjects are asked to imagine they are given the task to divide €10 of money between themselves and another player as they wish, in which X is allocated to their partner and $€10-X$ is allocated to themselves. The dictator can offer respondents any portion of the total and recipients are powerless.

3.3 Treatment A

Treatment A in this experiment uses the same procedure as the baseline treatment. However, subjects are asked to imagine that their partner has the choice between choosing a fixed amount of €2, thus giving the dictator €8, or participating in the standard dictator game (X : €10- X). This treatment explores how dictators respond to more information about their partners. The treatment explores whether subjects give more, as a response, because of self-image concerns. Subjects

may be concerned over their self-image if they feel that the dictator trusts them and partakes in the gamble of the dictator game instead of taking the fixed €2. In contrast, subjects may give less than in the baseline treatment because of increased ‘wobble room’. This increase in ‘wobble room’ gives the subject the ability to argue that their partner had the choice to take €2, and therefore, gives the subject an excuse to act more selfishly while maintaining a sense of fairness. This treatment also explores a dictator’s choice in the face of ambiguity, as the dictator is unaware of the choice that their partner will make (instructions, Appendix B).

3.4 Treatment B

In the final treatment of the dictator game, dictators are asked to imagine that their partner has a choice between receiving €2, and thus allocate €8 to the subject, or to play the standard dictator game, much like the instructions in treatment A. However, the subject is asked to state what they would have given if the recipient chose the fixed amount of €2 (option 1), and also what they would have given if the recipient chose to play the standard dictator game (option 2). Deception is avoided in this treatment by clearly specifying that the subject should imagine if this were the real scenario. In this treatment one can test how subjects respond when asked to provide answers under two very different scenarios (option 1 and option 2) (see Appendix C). In the first scenario (option 1), findings will be able to test whether subjects lie. Under option 1, subjects are asked to state an amount they would have given had the recipient chosen not to take the €2. Thus, if the average share given in option 1 is larger than the baseline treatment, then we know that subjects lie to appear more selfless. Subjects are expected to give more because their responses in option 1 have no consequence on final payments. In option 2, it can be tested how respondents react to information that their partner trusted them to play the game. Subjects may give more in this scenario than in the baseline, or perhaps they will give less because of increased ‘wobble room’, similar to treatment A.

Table 1 provides a summary of the various experimental conditions in this paper and the potential effects caused by the provided information in each condition.

Table 1–Experimental Conditions

Conditions	Provided Information	Effects caused by provided information
Baseline	No information	None
Treatment A	Dictator’s receive information on recipients’ choices, but unaware of choice they make	Self-image concerns, wiggle room. Ambiguity
Treatment B: Option 1	Dictator receives information on recipients’ choice of €2, and asked what they would have given if partner played game.	Potential lying effects
Treatment B: Option 2	Partners trust dictator to play the game	Self-image concerns, wiggle room

3.5 Statistical methods used

A Shapiro-Wilk test will be conducted to analyze whether the distribution of offers made in each treatment are normally distributed. Additionally, non-parametric tests will be conducted. Although non-parametric tests are typically less powerful, they will be used in this experiment as they require far less assumptions. A Mann-Whitney U test will be performed to test hypothesis 1 of this thesis. The Mann-Whitney U test is used to compare two independent samples when data is at the interval scale. In this case, it will test if the average share given by subjects in treatment A is equal to the average share given by subjects in the baseline treatment. More specifically, whether the predictions made in hypothesis 1, that subjects give less when recipients could have chosen not to play the game, are statistically significant. The Mann-Whitney U test will also be used to test the second hypothesis, whether subjects give more in the treatment when their choices no longer contribute to final payments (treatment B: option 1) relative to the baseline treatment. If these results are statistically significant, it will give evidence of lying amongst subjects in treatment B (option 1). Furthermore, an OLS regression analysis is performed to analyze whether various demographic variables (age, education, and gender) have a significant impact on offers made in the dictator game. The regression analysis also allows a comparison to be made on offers made across various treatments.

3.6 Methodology shortcomings

Shortcomings may have arisen in this experiment. One such shortcoming is the potential *experimenter demand effects* of this experiment. Experimenter demand effects refer to the relationship between the subject and the experimenter (Zizzo, 2010). Zizzo (2010) discusses how subjects are aware that an experiment is being conducted and that the experimenters aim to obtain and collect data. By knowing that the experimenter is collecting data, subjects may answer questions differently than they normally would. Subjects base their answers on the instructions provided, and thus, framing effects could also be present in this experiment. This paper designs instructions that are very clear and try to remain as salient as possible. However, as a majority of university students studying business have been presented the dictator game once in their school careers, there is a chance that this creates experimenter demand effects because the students may realize the experimenter's objectives. Such effects were minimized by using instructions that use words like give and keep together to avoid subjects feeling the need to give.

An additional shortcoming in this experiment is the resource limitations. Real money was not used in this experiment because of financial constraints. This could create incentive issues for subjects answering the survey questions truthfully. However, all treatments do not use real payments so such effects should be the same across all treatments. Furthermore, a survey was sent out to obtain data from participants, but conducting the same experiment in a laboratory setting could give different results.

4 Results and Analysis

In this chapter, the results and analysis are presented along with the statistical significance. This section will start with describing the results that aid in drawing conclusions for the first hypothesis, and then will continue with a description of the second hypothesis outcomes. This chapter is concluded with a discussion.

4.1 Hypothesis 1

H₁: Dictators give less when recipients could have chosen not to play the dictator game.

Figure 1 presents the mean offers by the dictator in the baseline treatment and treatment A. Figure 2 presents the histogram of the same variable in both treatments.

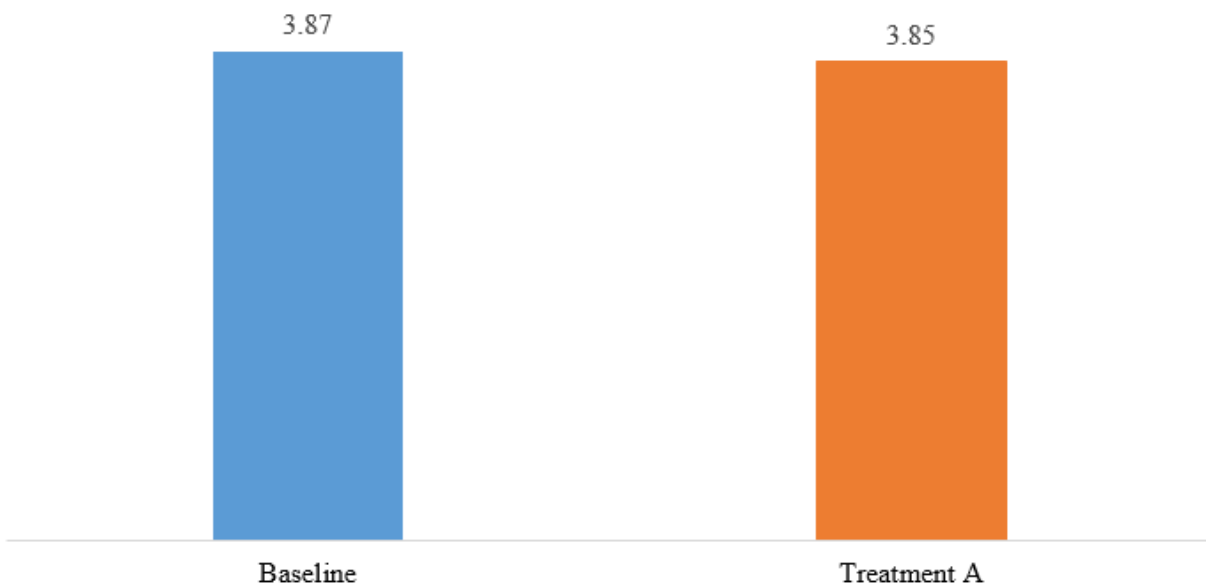


Figure 1: Average offer made in Baseline and Treatment A

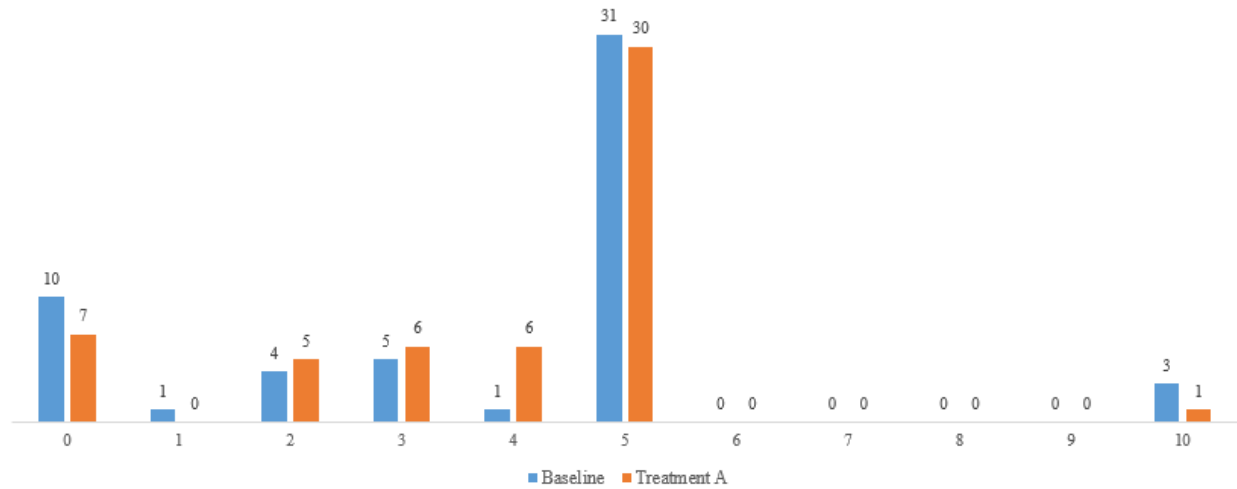


Figure 2: Distribution of offers (Baseline and Treatment A)

A Shapiro-Wilk test for normality is first conducted for both treatments. The results of the Shapiro-Wilk test give p -values equal to 0.05 for the baseline treatment and 0.00 for treatment A. Therefore, the H_0 can be rejected that the treatment samples come from a normally distributed population.

In order to analyze hypothesis 1, the one-sided Mann Whitney U test is used to look at treatment A in relation to the baseline treatment. The Mann Whitney U test is conducted with treatment groups: (a) baseline treatment ($n = 55$); (b) treatment A ($n = 55$). The results show that the distribution of offers are not significantly different ($p = 0.406$). We can therefore say that the offers made in the baseline treatment are not significantly larger in comparison to offers made in treatment A. Therefore, we did not find evidence supporting hypothesis 1.

4.2 Hypothesis 2

H_2 : Dictators give more when their choices have no consequence on final payments relative to the baseline treatment.

In 4.1, we found that offers made in the baseline treatment and treatment A were not significantly different from each other. We found this by analyzing the distribution of offers made in each treatment. In order to test hypothesis 2, treatment B will be split into offers made under two scenarios. In other words, we will explore more specifically the offers made by dictators when told that partners chose option 1 (keep fixed amount of €2), and offers made when dictators were told that partners chose option 2 (receive X from dictator) (see Appendix C for more detailed instructions). By analyzing offers made under these two different circumstances, we are able to test if dictators give more when their choices have no impact on their final payoffs relative to the baseline treatment. More specifically, the scenario involving option 1 is of particular interest for testing hypothesis 2.

Below is a graphical overview of the offers made in the dictator game under various treatments. Figure 3 presents the mean offers by the dictator in the baseline treatment and treatment B: Option 1 and Option 2. Figure 4 presents the histogram of the same variable in the baseline treatment, and treatment B: Option 1 and Option 2.

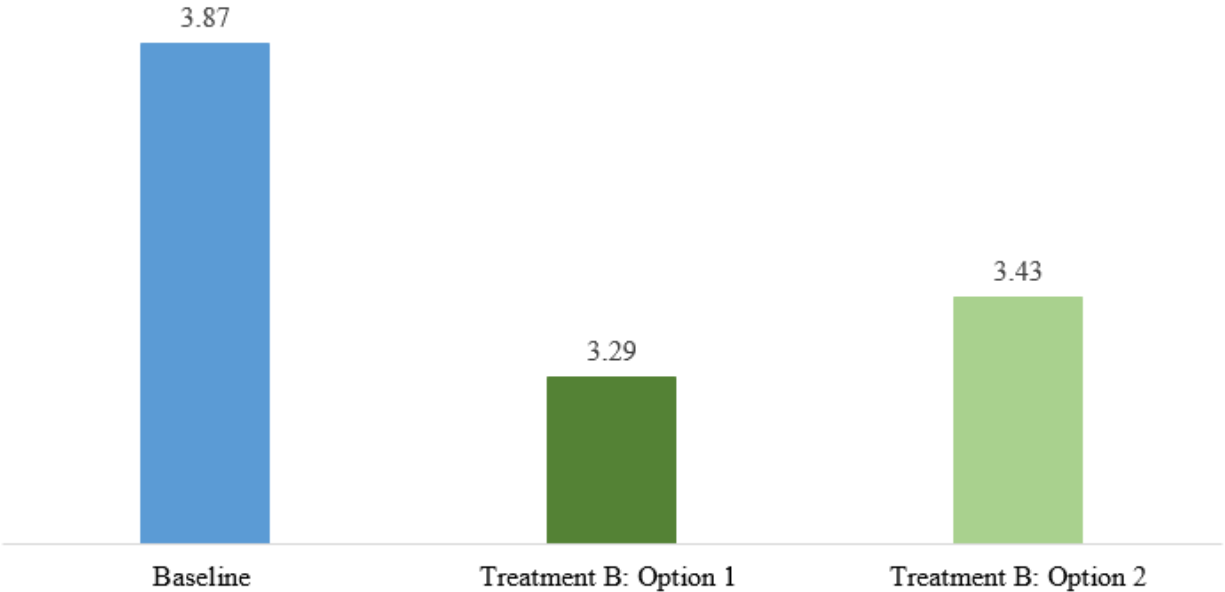


Figure 3: Average offers made (Baseline, Treatment B: Option 1 and Option 2)

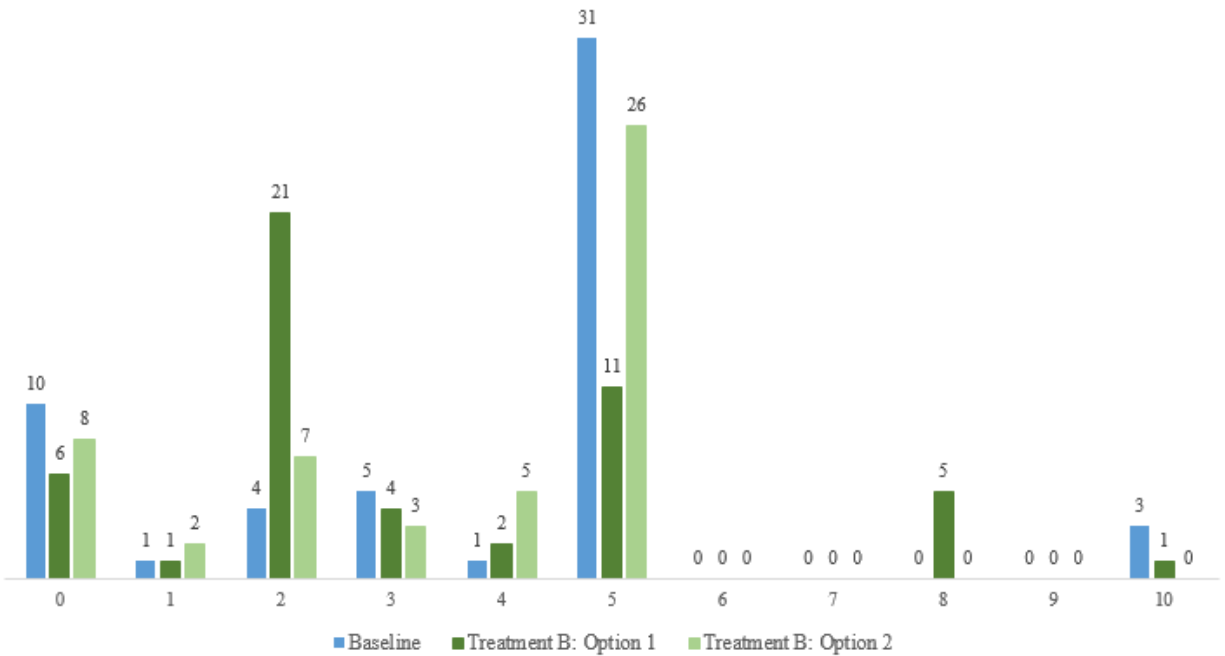


Figure 4: Distribution of offers (Baseline, Treatment B: Option 1 and Option 2)

A Shapiro-Wilk test for normality is first conducted for both treatments. The results of the Shapiro-Wilk test give p -values equal to 0.01 for treatment B (option 1) and 0.01 for treatment B (option 2). Therefore, the H_0 can be rejected that the treatment samples come from a normally distributed population.

To test if the distribution of offers is different in treatment B when dictators receive information that their partner chose option 1 (partner takes €2), compared to the baseline treatment, we again use the one sided Mann Whitney U test. The Mann Whitney U test is conducted with treatment groups: (a) baseline treatment ($n = 55$); (b) treatment B (option 1) ($n = 51$). The results of the test show that the offers made in treatment B (option 1) are not significantly more than offers made in the baseline treatment ($p = 0.958$). However, offers made in the baseline treatment are significantly higher than offers made in treatment B (option 1) at the 5% level of significance ($p = 0.042$). Thus, we can reject the null hypothesis that offers in the baseline treatment are equal to offers made in treatment B (option 1). Although there is a significant difference in offers made between the baseline treatment and treatment B when choices have no impact on final payoffs, the offers in treatment B (option 1) are in fact lower than the baseline treatment.

These results are the opposite to the prediction made in hypothesis 2. A more detailed description of why these results may have occurred are described in section 4.4.

To test if the distribution of offers is different in treatment B when dictators receive information that their partner chose option 2 (play the game), compared to the baseline treatment, a one-sided Mann Whitney U test is used. The test is conducted with the following treatment groups: (a) baseline treatment (n = 55); (b) treatment B (option 2) (n = 51). The results of the test show that the offers made in the baseline treatment are not significantly different than offers made in treatment B (option 2) at the 5% level of significance ($p = 0.3115$).

4.3 Additional Findings

In this experiment, subjects had various levels of education. One subject had a primary school education, this is most likely an error of the subject filling out the survey, as all subjects were university students. Thus, this observation is eliminated from the regression analysis described further in this chapter because it lacks significance. Most subjects had a secondary school degree (28.30%), bachelor degree (49.69%), or master degree (21.38%). Furthermore, there is nearly an even distribution between males and females in this experiment. There are 158 observations for gender (some did not specify in survey), in which, 48.10% are male and 51.90% are female.

Table 2–Levels of Education

<u>Education</u>	<u>Freq.</u>	<u>Percent</u>	<u>Cum.</u>
Primary	1	0.63	0.63
Secondary	45	28.30	29.82
Bachelor	79	49.69	79.51
Master	34	21.38	100.00
Total	159	100.00	

Table 3–Subjects Gender

<u>Gender</u>	<u>Freq.</u>	<u>Percent</u>	<u>Cum.</u>
Male	76	48.10	48.10
Female	82	51.90	100.00
Total	158	100.00	

A regression analysis is conducted (see Table 4) in which various treatments can be compared. A regression is run with 'offer' as the dependent variable, as this paper explores how dictator's sharing behaviour is influenced by certain factors. Independent variables in this regression analysis include female, age, education, treatment and a constant. Female is a dummy variable, in which 1 indicates the subject is female, and 0 otherwise. Age is a continuous variable and subject's age in this experiment range from 18 years of age to 29 years of age (Appendix D). Education is a categorical variable that has been broken up into separate dummy variables of secondary, bachelor, and master, to indicate a subject's highest level of education. Treatment is a categorical variable in this experiment, and the treatments included in this regression analysis are treatment A, treatment B (option 1), treatment B (option 2), and the baseline is used as the reference group.

In table 4, dictator game offers are regressed based on gender, age, education and treatment. Comparisons are made between treatment A relative to the baseline in regression 1. Treatment B (option 1) relative to the baseline is compared in regression 2. Treatment B (option 2) relative to the baseline is analyzed in regression 3, and treatments A and B (option 1) relative to the baseline are studied in regression 4. As can be seen in the table below, education gives mixed results, and changes signs in the various regressions. Education is not significant in the various OLS regressions. Female and age have positive effects on offers made by subjects in each regression. The results are insignificant except for the constant in regression 4, at 5% significance. Results show that subjects give higher offers in Treatment A, relative to the baseline, and that subjects give less in Treatment B: Option 1 and 2 relative to the baseline treatment. However, these results are not significant. The results are described in more detail in section 4.4.

Table 4–Dictator Game offers by gender, age, education, and treatment

Variables:	(1)	(2)	(3)	(4)
Constant	2.25 (2.06)	3.07 (2.36)	1.41 (1.98)	3.25* (1.79)
Female	0.55 (0.48)	0.32 (0.49)	0.62 (0.45)	0.28 (0.40)
Age	0.07 (0.09)	0.01 (0.11)	0.09 (0.10)	0.02 (0.08)
Edu1	-0.36 (0.50)	0.38 (0.62)	-0.002 (0.56)	-0.15 (0.45)
Edu2	-0.99 (0.69)	0.08 (0.83)	-0.98 (0.80)	-0.47 (0.62)
Edu3				
Treatment A	0.17 (0.42)			0.22 (0.42)
Treatment B: Option 1		-0.34 (0.49)		-0.36 (0.49)
Treatment B: Option 2			-0.15 (0.43)	
Observations	109	102	102	157

Notes: OLS regression in columns 1-4. Robust standard errors in parentheses. In columns 1-4 the dependent variable is offer made by the subject: minimum is zero and maximum is ten. In all columns, we control for the dummy variable indicating a subject being female. Education is a categorical variable specified as edu1, edu2, and edu3. Edu1 is when a subject obtains a bachelor’s degree, edu2 is when a subject obtains a master’s degree, and edu3 is omitted due to collinearity in the model, but represents subjects obtaining at least a secondary education degree. Treatments in the regressions are analyzed with the baseline treatment as the reference group in the model.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

4.4 Discussion

There are several factors that may have had an impact on the results of this experiment. It is important to be aware of these factors when drawing conclusions and when comparing the results of this experiment with other experimental results, as some of these factors may be limitations of this thesis.

The participants in this research were a reasonably representative sample (section 3.1). Subjects consisted of university students from Erasmus University Rotterdam. The experiment was designed to remain as simple as possible, and students were asked to fill out a survey online. This ensured that subjects were able to answer each question in privacy, and in turn, may increase the validity of the results. As the experiment was conducted through an online survey, the experimenter was unaware of the offer that the subject made in the dictator game. This anonymity was ensured and carried out through each treatment in the experiment.

Based on previous findings discussed in section 2, it was expected that average offers made in treatment A would be lower than those in the baseline treatment (i.e. the control group) of this experiment. The findings indicate however that this was not the case. According to figure 1, the average offers made in treatment A were indeed lower at 3.85 compared to an average offer of 3.87 made in the baseline treatment. However, these differences were not statistically significant and thus, hypothesis 1 is not supported by the evidence. Hypothesis 1 was based on previous research by Murnighan et al, (1999), Dana et al., (2007). Although these papers differed in their experimental design, the researchers found that when restricting a subject's choices and eliminating their transparency, subjects become more selfish. In contrast, Ploner and Regnor (2013) found subjects to increase generosity when they cheated, to regain a sense of self-image. Although this paper did not change the transparency of the dictator, or allow subjects to cheat, it did increase the potential 'wiggle room' for the dictator to act selfishly. It was expected that some dictators in this experiment would take the additional information on their partner's choices as a way to convince themselves to feel less guilty of more selfish choices. The insignificance of the results may be a result of the incentive structure in this experiment. In contrast to the work of Murnighan et al., (1999) and Dana et al., (2007), this experiment does not use real money to incentivize participants. Thus, subjects in this experiment may have had a very different mindset than subjects who play the dictator game knowing that they will be financially rewarded. Therefore, it would be interesting to test if the results in treatment A would change if real money was introduced to this experimental design. However, as all treatments in this experiment used the same incentive structure (no real money), this may not explain different findings across different treatments. The insignificant difference between the baseline and

treatment A, may be a result of subjects simply feeling that the increased ‘wobble room’ was not strong enough to increase their selfishness and maintain a positive self-image.

Concerning hypothesis 2, results suggest an opposite effect than hypothesized. With support of previous research, the second hypothesis states that subjects will give higher offers in the dictator game when their choices have no impact on final payments compared to the baseline treatment. If a dictator’s choices have no consequences to himself or to others, then we would expect a majority of subjects to claim that they would have given an equitable outcome (i.e. 5/10) to enhance a positive self-image for themselves and to others. Thus, if the overall distribution of offers is higher in treatment B (option 1) than the baseline treatment, then we can conclude that subjects may be lying. However, we found the opposite. The results indicate that subjects give more in the baseline treatment than in treatment B (option 1). Treatment B (option 1) asks subjects how much they would give if they know that their partner chose the fixed amount of €2 instead of playing the game. One factor that may have influenced this result is if subjects did not understand what was being asked of them. Perhaps, when reading the instructions, subjects thought that this question was simply a test of whether they understood the directions correctly. The reason for this is when looking at figure 4, we can see that 21 subjects said they would give away €2. As this experiment was an online survey involving nearly no contact with the experimenter, it is likely that some subjects may have interpreted this question incorrectly, and would thus explain why the average offer made in this scenario of treatment B is so low. In future experiments, it would be recommended to either conduct an initial test of the survey on subjects to make sure that generally most understand what is being asked.

A comparison was made between treatment B (option 2) and the baseline to see if these treatments were significantly different. This comparison was of interest because in treatment B (option 2), the dictator knows that their partner chose to ‘trust’ them and participate in the dictator game for a payoff of X. Hence, it is expected that the dictator sends at least €2 to their partner (amount specified in option 1). According to figure 4, this is not always the case, as 19.61% of subjects give less than €2. This percentage may be explained by the argument introduced by Murnighan et al., (1999), that rational dictators simply don’t care to appear greedy. Or perhaps, because subjects know that their counterpart had the option to choose €2,

dictator's feel that this is enough 'wobble room' to act selfishly without consequences to one's own self-image.

A natural starting point for the regression analysis of this thesis, is to test the treatment effect of treatment A in comparison to the baseline. This can be seen in table 4, regression 1, and includes female, age, and education as control variables. Regression 1, explores further hypothesis 1, to test whether offers made by subjects in treatment A do indeed give smaller offers relative to the baseline treatment. Earlier in the analysis, the Mann Whitney U test concluded that there was no significant difference in offers made between subjects in treatment A and the baseline. Regression 1 shows that on average, subjects in treatment A give offers that are 0.17 euros higher than subjects in the baseline treatment, however, this result is not significant. Regression 2 explores the second hypothesis of this paper by comparing the effect of treatment B (option 1) relative to the baseline treatment. Based on previous research, it was predicted that offers made in treatment B (option 1) would be higher than offers made in the baseline treatment. According to regression 2, offers made in treatment B (option 1) are 0.34 euros less than offers made by subjects in the baseline treatment, but the results are not significant. Regression 3 explores a comparison between treatment B (option 2) and the baseline and shows that subjects make offers that are 0.15 euros less than the baseline, but the results are insignificant. Finally, regression 4 combines treatment A and treatment B (option 1) in a single regression to compare subject's offers relative to the baseline treatment. Regression 4 indicates that, on average, subjects give offers that are 0.22 euros higher in treatment A and 0.36 euros lower in treatment B (option 1) relative to the baseline. However, these results are insignificant.

It is interesting to note that a majority of subject's act as though they value implementing fair outcomes across all treatments. In the baseline treatment (56.4%); treatment A (54.5%); and treatment B (50.9%) gave away €5, or half of the endowment. This shows that despite increasing moral wiggle room, there may always be a number of participants who care about equitable outcomes. This could be the result of altruism, or rather, a warm glow giving effect.

Important considerations to make when drawing conclusions from the results is the possible experimenter demand effects, as explained in 3.6. By knowing that the experimenter is collecting data, subjects may answer questions differently than they normally would. Steps were taken to minimize potential experimenter demand effects (i.e. very neutral instructions, anonymity of subject's answers to the experimenter).

Based on the findings above, and taking into consideration the potential shortcomings of the experimental design, it can be cautiously concluded that:

- Exposure to information about your partner's choices does not have a significant impact on the offers made in the dictator game compared to the baseline treatment
- Subjects do not give more when choices do not influence final payments relative to the baseline treatment (needs to be analyzed more closely, make sure subjects understand instructions correctly)

5 Conclusion

The aim of this paper is to explore the effects of increased ‘wiggle room’ on sharing behaviour. More specifically, this research is aimed to determine whether exposure to information on another participant’s choices affects the outcome of the dictator game, and whether this effect is different when choices do not impact the dictator’s final payoff. The experiment involved one round dictator games. Data was obtained through an online survey, and a sample of 161 subjects (three treatments in total) was collected. The experiment was designed to explore whether dictators acted more selfishly in treatments that involved additional information on the potential choices or actions of their partners in the game, and whether self-image concerns could influence such choices.

The results of the experiment show that there was no significant difference in sharing behaviour between different treatment groups. Therefore, the results of this research cannot conclude that subjects indeed act more selfishly when given more ‘wiggle room’ in the dictator game. The first hypothesis of this experiment is not supported by the evidence. Further analysis of the results found significance for higher offers given in the baseline treatment compared to the treatment involving speculative choices (Treatment B: Option 1). Despite the significance of these results, it directly contradicts the prediction made for hypothesis 2. Therefore, it is suggested to test this treatment again while ensuring that subjects understand exactly what is asked of them from the instructions.

The limitations of this research include possible experimenter demand effects if subjects realized the objectives of the experimenter while filling in the survey. Such potential effects were minimized by creating neutral instructions to try and eliminate any framing effects, making sure subjects remained anonymous to the experimenter, and gathering observations from students with multiple study backgrounds from Erasmus University, The Netherlands.

The findings of this paper give insights into how individuals respond to increased information and knowledge on other player’s choices and whether such added information led to changes in subjects behaviour across various scenarios. This paper adds to existing theories within the field of behavioural economics and provides additional empirical evidence into the influence of

increased 'wiggle room' on sharing behaviour. Furthermore, this paper explores whether an increase in 'wiggle room' could aid subjects in preserving their regard over self-image. Little can be concluded in regard to subject's self-image concerns, as subjects did not become more selfish in the increased 'wiggle room' scenarios. Perhaps, the insignificant difference across treatments is a direct result of subjects' limited self-image concerns because the survey was anonymous and real payments were not made.

Suggestions for research in the future include: using real money and a laboratory setting to carry out this same experiment and see if findings change as a result. An interesting addition to this experiment, would be to create a questionnaire after the online survey, and ask subjects to indicate on a numeric scale how much their answers were influenced by concerns of self-image. This may give new insights into measuring self-image concerns in dictator game giving. Future research could also explore whether subjects sharing behaviour changes when they are able to see who their partner is in the game, rather than using a hypothetical partner as is done in this experiment. Additionally, increasing 'wiggle room' through information on recipient's choices could be rather interesting in other game settings such as the ultimatum game.

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Appendix

A. Baseline Treatment Instructions

Welcome!

Thank you for participating in this survey. It will take you at most 5 minutes.

Imagine that you are randomly paired with a partner: another participant in this survey. You receive 10, your partner received nothing.

You may decide to give any amount between 0 and 10 (including 0 and 10) to your partner.

How much would you like to send to your partner?

Amount

B. Treatment 2 Instructions

Welcome!

Thank you for participating in this survey. It will take you at most 5 minutes.

Imagine that you are randomly paired with a partner: another participant in this survey. You receive 10, your partner received nothing.

You may decide to give any amount between 0 and 10 (including 0 and 10) to your partner.

At the same time, your partner can choose from the following 2 options:

Option 1: Receive a fixed amount of 2, resulting in 8 for you.

Option 2: Receive the amount X that you send, resulting in $10-x$ for you.

When your partner makes the decision, he/she does not know how much you will send to him/her.

How much would you like to send to your partner?

Amount

C. Treatment 3 Instructions

Welcome!

Thank you for participating in this survey. It will take you at most 5 minutes.

Imagine that you are randomly paired with a partner: another participant in this survey. You receive 10, your partner received nothing.

You may decide to give any amount between 0 and 10 (including 0 and 10) to your partner.

At the same time, your partner can choose from the following 2 options:

Option 1: Receive a fixed amount of 2, resulting in 8 for you.

Option 2: Receive the amount X that you send, resulting in $10-x$ for you.

When your partner makes the decision, he/she does not know how much you will send to him/her.

If you know your partner chose option 1, how much would you send?

Amount

If you know your partner chose option 2, how much would you send?

Amount

D. Gender

Table 5—Subjects Age

<u>Variable</u>	<u>Obs</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Min</u>	<u>Max</u>
Age	159	22.503	2.619	18	29