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Do birds of a feather flock together?

-An experimental study of the effect of similarity and dissimilarity of political values on generosity

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Abstract

Altruism or generosity is common in everyday life, but frequently overlooked in traditional economic theory. Moreover, favorable treatment constitutes a poorly understood aspect of generosity. We conduct a dictator game to test for the effects of homogeneous versus heterogeneous preferences in terms of political views on generosity. The dictator game is conducted with participants from Swedish upper secondary schools. The game is modified in the sense that subjects report their political preferences and receive the corresponding information about their anonymous recipient. The results indicate greater generosity among dictators paired with recipients with similar political values compared to when coupled with a subject holding dissimilar values. We conclude that people tend to favor those who are similar to themselves, but also that the decision is impacted by factors such as political view and parental education.

Keywords: dictator game, preference similarity, political values, generosity

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1. Introduction

"For it is in giving that we receive" - Saint Francis of Assisi¹

The standard view within economic theory is that human beings act in accordance with "Homo Economicus" or "Economic man", that is, they are assumed to be strictly rational and self-interested. "Homo Economicus" bases his choice solely on his own material payoff. Empirical research however, tells a different story.

Numerous studies within experimental economics show that humans are remarkably altruistic towards other humans and deviate from the predicted self-interested behavior. In the so-called dictator game for example, theory postulates that the divider of the endowment, the dictator, will give nothing to her recipient. However, since game participants often choose not to maximize their own pay-offs, economists have increasingly begun to consider various social preferences² in order to explain human behavior (see e.g. Fehr and Fischbacher, 2002).

This thesis aims towards contributing to the understanding of human behavior within the field of altruism. We investigate how the generosity of a person is influenced by the political values of the receiver of the generosity. In particular, we study whether similarity and dissimilarity in values between the donating and receiving part influences generosity.³

To do this, we perform an economic experiment called a dictator game. In such a game, one subject, the dictator (or the allocator), is given a sum of money (an "endowment") that she is to divide between herself and another subject, the recipient. The dictator's decision is final and need not be agreed by the recipient, that is, the recipient is entirely passive. Given that the dictator is rational and purely self-regarding - as conventional economic theory suggests - and if the game is played anonymously and only once, then the dominant strategy is to transfer nothing. The aim of the study is to increase the knowledge of the impact of heterogeneous versus homogeneous preferences on human behavior. More precisely, we investigate how homogeneous preferences versus heterogeneous preferences in terms of

¹ From a prayer attributed to St. Francis of Assisi (1181-1226), however there is no record of it prior to 1912.

² Examples include reciprocity (Fehr and Fischbacher, 2002; Charness and Rabin, 2002), altruism (Andreoni, 1989; Andreoni and Miller, 2002), and inequity aversion (Loewenstein et al., 1989; Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000). This study focuses on social preferences in terms of altruism. Altruism is a form of unconditional kindness, that is, it does not emerge as a response to received altruism (Andreoni, 1989). Thus, it implies that a person positively values that material resources are allocated to another person (Fehr and Fischbacher, 2002).

 $^{^{3}}$ We refer to the situation in which the donating and receiving part have similar values as being in a homogeneous pair, while in the case that both have dissimilar values as being in heterogeneous pairs. We will use the terms preferences and values interchangeably in this thesis, since the social preferences and values in this study have the same implications.

political preferences between the dictator and recipient in a dictator game impact the amount given. In other words, is it the case that a subject tends to be more generous towards a person who shares the same political values?

The subjects in the experiment are students from upper secondary schools in Stockholm, Sweden. We find that subjects do indeed act more generously towards recipients with the same political values, compared to when the recipients has dissimilar preferences.

The idea to study favorable treatment in economic experiments is not new, but the few studies that investigate the effect of similarities between the dictator and the recipient concern differences regarding their sex, ethnicity, or religious views.⁴ To the best of our knowledge, none of the studies to date look into the phenomenon of similarity of preferences between the dictator and the recipient and its implications, and hence with this thesis we hope to fill that gap in the literature.

We hope to increase the understanding of generosity and its underlying mechanisms. Generosity in different forms is frequently expressed in our daily life, for example in benevolence. Furthermore, it has a direct link to fundraising. Fundraisers for charity can take advantage of the potential findings by designing specific strategies aimed at individuals who have special interests in their particular focus. If similarity affects behavior, then such information may also be valuable for the understanding of bargaining. The findings may also influence the view of biased favoring within the area of altruism. Favorable treatment of people with similar attitudes is a common issue both on the social and political level.

The outline of the thesis is the following. Section two presents the theoretical and empirical background within the field and section three explains the design of the experiment and methodology used. In section four we present the findings and section five discusses the results. Section six concludes.

⁴ See eg. Ben-Ner, Kong, and Putterman, 2004 and Fershtman and Gneezy, 2001.

2. Theoretical and empirical background

One aspect of human behavior concerns the tendency of humans to favor others of their own kind, i.e. those who are like us (Byrne, 1961), and hence discriminate against those with dissimilar characteristics. Human beings are formed by conceptions of belonging and can often be characterized with an unease concerning dissidents. Humans behave according to a cognitive in-group bias in which we give preferential treatment to those whom we perceive to be members of our own group (Tajfel, 1982). This is certainly not a new phenomenon. The notion "Birds of a feather flock together"⁵ ought not to be very unfamiliar. Several studies report how even arbitrary group formations affect how people treat each other and that experiment participants strongly favor members of their own experimental in-group (Tajfel et al., 1971). In addition, studies within social psychology have concluded that similarity in values and attitudes facilitates altruism, interpersonal liking, and friendship (Byrne 1961; Newcomb, 1961; Chen and Kenrick, 2002; Suedfeld, Bochner, and Wnek, 1972).

Researchers have recently taken an interest in the phenomenon of heterogeneity among individuals in economic situations. Studies have mainly focused on the consequences of heterogeneity in terms of ethnicity or income and their implications on collective action and public goods provision. Theory suggests that political polarization may reduce the support for spending on public goods (Alesina, Baqir, and Easterly, 1999) and result in lower provision of public goods in experiments (Ledyard, 1995). Moreover, management studies have shown that groups in which the members hold similar values have fewer intra-group conflicts and superior performance (Jehn, Chadwick, and Thatcher, 1997). Lindqvist and Östling (2008) study the effect of heterogeneous preferences in terms of political polarization and the size of the government on a national level. They use the standard deviation of responses to multiple-choice questions from the World Values Survey as measure of political polarization and find that politically polarized countries have smaller governments. Polarization among the population is indeed viewed as being disadvantageous in general, thus it is of interest to investigate the consequences of heterogeneous preferences. There has not been any study on the effect of heterogeneity in preferences on the degree of giving at the individual level. This is where we hope to make a contribution.

Giving on the individual level has traditionally been investigated with the use of the dictator game. In an early study of dictator games, 70 % of the participants gave something and recipients received on average 24 % of the total endowment (Forsythe et al., 1994). Similar patterns have been found in many different dictator games (see e.g. Camerer, 2003). On average, dictators give the recipient 10-30 % of the endowment and 20-60 % of the dictators give nothing (Camerer, 2003).

⁵ The Swedish equivalent of this proverb is "Lika barn leka bäst".

The dictator game was first introduced by Kahneman et al. (1986b) and Forsythe et al. (1994) in an attempt to test for other-regarding preferences. The fairness interpretation first arose in ultimatum games⁶ and the dictator game easily controls for strategic behavior (Hoffman, McCabe, and Smith, 1996) because of the removal of the possibility to reject an offer. With no element of strategic incentives or competitive pressures, dictators' generosity is interpreted as evidence of non-reciprocal altruism or benevolence (Bolton and Katok, 1995) and thus it is suitable for testing generosity.

A number of experimental studies investigate factors that affect dictator behavior. However there are few that follow the same approach as in this thesis. The studies that resemble our study the most focus on discrimination; however they focus on discrimination based on ethnicity and gender. Fershtman and Gneezy (2001) were among the first to investigate discrimination in a laboratory environment. They do this by informing the subjects about certain characteristics of the recipients and study ethnic discrimination among students within the Israeli Jewish society. The subjects play various games with recipients of distinct ethnic affiliation. Subjects with names that revealed their ethnic affiliation were chosen and dictators are thus informed about the recipients' ethnic affiliation through his or her name. The authors find discrimination in the trust game⁷ where the amounts sent to people of one ethnic origin are significantly lower than those transferred to those of another.

The only game in their study in which discrimination is not evident is in the dictator game. Although there are marginal differences between the amounts sent, on average the two groups receive similar amounts. Because the recipient in the dictator game has no strategic role, the authors conclude that differences in the amounts transferred in this game version are solely due to ethnic stereotypes,⁸ since it is based on beliefs about the recipient's attitudes and not a taste for discrimination. ⁹ There is no evidence of group bias; players in the dictator game do not behave favorably towards those of their own group. In addition, the authors reveal gender differences. The discrimination found is entirely a male phenomenon; between women there is no evidence of discrimination based on ethnic origin of the recipient.

⁶ In the ultimatum game, player 1 offers an amount to player 2. If player 2 accepts, the money is divided according to the terms of the offer; if player 2 rejects, none of the players receive anything. The sub-game perfect Nash equilibrium is for player 1 to offer the lowest dividable amount and for player 2 to accept.

⁷ The trust game is an extended version of the dictator game. The reward that the dictator can split is partially decided by an initial gift from the partner. Thus, the partner must decide how much of his initial endowment to trust with the dictator. The experiments rarely end in the sub-game perfect Nash equilibrium of "no trust".

⁸ Discrimination due to ethnic stereotypes is based on a standardized (correct or incorrect) perception of a person or group generally held by people.

⁹ This means that a person is willing to sacrifice things in order to accommodate their prejudice, i.e. the prejudice is comprised in the utility function and reflects dislike toward a certain group of people.

Fershtman and Gneezy (2001) further report from another one of their studies that was conducted in Israel in 2000¹⁰ in which they investigate the relationship between religious and secular Jews. They find that secular subjects donate less to religious recipients than they donate to secular recipients. This occurs both in the dictator game and in the trust game thus indicating a taste for discrimination.

Previous studies similar to the experiment in this thesis incorporate those that study altruism between subjects with similar characteristics. To date these seem to be rather few. The exceptions include the studies discussed above which study ethnic discrimination and also those that cover gender-pairing.¹¹ The gender-pairing approach is similar to the approach in this thesis with the difference being that we test preferences as opposed to gender.

Ben-Ner, Kong, and Putterman (2004) conduct several dictator game experiments in which they, among other things, study gender-pairing. They mention that women may feel greater solidarity with other women than with men, or, on the contrary, that women may view other women as competitors. The former could be considered an instance of in-group versus out-group behavior, as studied in many psychological experiments (Tajfel, 1981). The latter would conform to theories of evolutionary psychology. The experiment is carried out on university students and subjects receive information about their recipient's gender together with the instructions. There were no general clues about the importance of gender in the experiment and the dictators were asked to keep or divide a sum of money with an anonymous person. The most important finding is that women give less to women than to men and to people of unknown gender.

Eckel and Grossman (2001) use a similar approach to the one employed by Ben-Ner, Kong, and Putterman (2004) but perform ultimatum games to test gender-pairing. In this study too, the idea is that participants feel a sense of solidarity with a partner of expected similar behavioral traits and offer more equal splits when playing with a partner of the same sex. The participants were university students and the games were played in groups with the participants facing each other. Through the face-to-face method they conveyed information about the gender of their recipient, but the fact that they played in groups made it impossible for subjects to know exactly with whom they are playing and hence the set-up ensured anonymity. The authors found strong solidarity between women, that is, women paired with women almost never failed to reach an agreement. However, women were less generous in their offers to partners of their own sex than to male partners and partners of undetermined gender in accordance with the Ben-Ner, Kong, and Putterman study (2004). Men were much less sensitive to whether the sex of their partner was the same, opposite, or unknown.

¹⁰ This study is only available in Hebrew and since our understanding of Hebrew is limited, we are not able to explain details from the study.

¹¹ Gender-pairing refers to a situation in which subjects are paired with partners of the same sex.

Other experiments involving discrimination based on gender are conducted by Holm (2000) and Dufwenberg and Muren (2002). Holm conducts a battle of the sexes game¹² with students from Swedish and American universities. He finds that subjects' behavior changed when they were given information about the sex of their opponent. Both men and women discriminate women. Men also earned a higher expected payoff than women when their opponent was of the same sex. Dufwenberg and Muren (2002) conduct dictator games in which the participants were informed about the sex of their partner via the wording of the instructions and the authors could observe the sex of the dictators. Unlike Holm (2000) and Fershtman and Gneezy (2001), they do not report the gender through the name of the recipient, but indirectly,¹³ and they do find discrimination by gender in the dictator game unlike the other researchers. The average donations to women are higher regardless of the sex of the dictator. Furthermore, those who give nothing are significantly more often men.

Holm and Engseld (2005) perform both ultimatum games and dictator games where the participants can choose the income and the sex of the recipient. The results suggest that people strongly prefer to send proposals to females and recipients with low-income. In the dictator game both males and females are more generous towards females, but males are relatively more generous to female recipients than are females. Although each gender is somewhat more likely to choose a recipient of the same sex there was no statistically significant difference between the men and the women in this respect. While both men and women preferred a female recipient, this preference was significantly stronger among female responders.

As described above, studies within social psychology show evidence of group bias and although there is no group formation in the present experiment, subjects may still cognitively, consciously and/or subconsciously, divide all subjects into groups based on political affiliation. Accordingly, subjects may choose to be more generous toward those they perceive as in-group members and less to those they view as out-group members. Subjects may also favor other subjects that are similar to them on an individual basis. Thus, a subject may act more altruistically toward another person that has similar political values simply because they can identify with this person due to a shared value, in this case political affiliation. Economic experiments based on gender show inconclusive results about the favoring of a same-sex partner. We believe that gender-specific behavior affects the interaction between men and women and thus persons of the same sex are not always favored. This behavior however would not have any significant impact when it comes to preference similarity or dissimilarity.

¹² The battle of the sexes game is a coordination game that includes two players and two equilibria. The payoffs of the game are such that the players prefer to be in an equilibrium rather than not. However, the players do not prefer the same equilibrium.

¹³ In order to only signal sex and no other information, a code number partly consisting of some of a subject's Swedish social security numbers was used. A specific figure in this is even for females and odd for males and hence reveals gender.

Consequently, our hypothesis is as follows

A larger amount of money will be transferred in pairs where the dictator and the recipient have homogeneous political preferences compared to when they have heterogeneous political preferences.

3. Experimental design

Although the dictator game is especially sensitive to design issues (Camerer and Thaler, 1995), it was chosen as the most suitable game for the study. It has a very clear and straightforward construction with no opportunity for strategic considerations. Therefore economists view it as the most appropriate game for investigating generosity. However, generosity in dictator games depends greatly on the experimental design and participants may be influenced by other factors. Below we explain the design and background of our experiment.

While the use of experiments as a method of research has a long tradition within the natural sciences, the economics discipline went experimental relatively late. Vernon Smith is known as the father of experimental economics and he started with experiments of alternative market mechanisms in the 1950s (Ouantitative Finance, August 2003). Since then, experimental economics have steadily developed. Experimental economics has become increasingly influenced by psychological experiments; however there are important differences between them. Two essential differences regarding methodology concern deception and payment (Hertwig and Ortmann, 2001). Deception in psychological experiments is common and it is acceptable to mislead the participants, whereas deception of any kind is generally viewed as taboo within economic experiments (Friedman and Sunder, 1994). The logical basis for the avoidance of deception within economics is that it is of outmost importance that the participants are able to trust the information they receive. If they cannot, it becomes very difficult for the experimenter to interpret their behavior. Honesty ensures that subjects' behaviors are motivated by the monetary rewards and not by reactions to suspected manipulation. Deception might also endanger future experiments if participants find out that they have been deceived and tell others of it. With regards to payment, economists most often pay the subjects based on their performance in the experiment as opposed to in psychology, in which, if paid at all, the subjects often receive a flat amount irrespective of their performance. The rationale behind the performance-related pay in economic experiments lies in the need to know which incentives are created and hence what is actually tested.

3.1. Subject pool

It is common to use university level students in economic experiments of this kind, mainly because they are more homogeneous than randomly selected individuals and also because they are easily accessible. However, there is a value in using other subjects, because the use of university level students creates a potential bias (Harrison and List, 2004). We use students in upper secondary schools to avoid this bias and it also fits the purpose of this study, as it is important to find subjects with varying preferences. Since upper secondary school subjects have not traditionally been used as subjects, the use of them in this study also adds to the field of experimental research. It is well established that giving increases with the level of education. A higher level of education leads to a higher income, higher verbal ability, a larger social network, and a higher degree of trust for others (Bekkers, 2007). University students possess all these characteristics except having a high income since they have not entered the labor market. The stronger the effect of the other factors relative to the effect of income, the more the use of university students in an experiment will bias the level of generosity upward (Bekkers and Wiepking, 2007). Therefore, we believe that the use of students who attend upper secondary school better resemble the mixture of Swedish citizens and hence the results of the study may be more applicable to society in general.

Only students from upper secondary schools¹⁴ in Stockholm, Sweden, were recruited due to logistical reasons, however, the schools¹⁵ were chosen so as to reflect Sweden well in terms of the students having various socio-economic backgrounds and differences in preferences. The participants were in the ages of 17 to 19. In total 2 upper secondary schools with two classes each were used and the total number of participating students was 87. The students attend study programs within engineering,¹⁶ natural sciences,¹⁷ and social science.

3.2. Game design

In the game the subjects decide on how to allocate 100 Swedish kronor¹⁸ between themselves and an anonymous recipient. Before making the decision they receive information about the recipient's political affiliation.

The question is employed to test for preferences and asks about political affiliation¹⁹ in terms of being to the left or to the right on the political spectrum. The question was chosen so as to engage the subjects and therefore create a sufficient reaction, as well as to generate an equal split among the answers in order to be able to estimate the effect correctly. The results from the latest general election in 2006 showed that 48.2 % of the Swedish people sympathized with the right-wing parties, while the support for the left-wing parties was 46.0 % (The Swedish Riksdag, information retrieved April 14, 2008).²⁰ Hence, there is a nearly an equal spread on the topic. In addition, the question is very straightforward; it is easily defined and comprehended.

¹⁴ The equivalent level of education is gymnasium in Swedish, consisting of three years of schooling.

¹⁵ Thorildsplans Gymnasium and Värmdö Gymnasium Gullmarsplan.

¹⁶ The students have slightly different focus of studies within the engineering program; half of them specialize in architecture while the other half focus on industrial design.

¹⁷ The students within the natural science program specialize in mathematics and computer science.

¹⁸ The average USD/SEK exchange rate during April 15th and May 15th was 5.98. Thus, at the time of conducting the experiments, 100 SEK was approximately 16.72 USD.

¹⁹ A reproduction of the question is found in appendix 8.3.

²⁰ The figures are based on the seven largest parties that qualified for Parliament. The right-wing parties include the Moderate Party, the Center Party, People's Party Liberals, and the Christian Democrats. The left-wing parties

The rationale behind employing only one question to indicate values was multifold. Firstly, there are only two treatments, that is, whether the recipient is to the left or to the right. Having only two treatments enables accurate estimation of the various effects. Secondly, additional information gives rise to a lot of associations that makes it difficult to draw conclusions about the effect of a particular type of information. It also becomes increasingly difficult to estimate the effects with multiple questions as the number of combinations of dictator and recipient types increases exponentially with the number of questions. There are, however, interpretation difficulties when using only one question. That is, we can tell how the average person reacts to the information that reveals whether the recipient has the same or opposing political values, but we cannot say exactly why. In order to attempt to contribute in this respect too, and to investigate different theories behind the reasons of the effects, the experiment included a questionnaire that followed after the game. The questionnaire focused on socio-economic background and motives behind the decisions made in the game (see appendix 8.5. for a reproduction of the questionnaire).

It was important to minimize the risk that the intention of the experiment affected the behavior of the participants. If the participants knew what we sought to test or if they thought they knew, they could deliberately act according to prejudices (e.g. that right-wing people are less generous) or against them. Knowing only the political affiliation of the recipient there was the risk of this kind of behavior, but in order to get a sufficient statistical effect, the use of only this one piece of information was deemed most appropriate.

In order to maximize the number of observations, all subjects were assigned the role of dictator and made a decision, but only half of the subjects did actually play this part. That is, money was only distributed according to 50 % of the subjects' decisions. The remaining subjects acted as recipients. The subjects were only informed if they played the actual part as dictator or recipient after the experiment had taken place.

The experiment was carried out in two classes per session. This enhanced the anonymity as well as reduced possible effects that could stem from people being more inclined to give more money to people with similar preferences as themselves, because of any friends circles based on similar attitudes in the same class. The effect of similar preferences would be overstated had the experiment been conducted within one class, as the preference could signal that it was a friend of the subject. The problem still exists using different classes, thus, it was not revealed to the subjects which other class that participated in the experiment. Due to logistical difficulties in matching subjects in different schools, classes within the same school were matched. All subjects in one class were matched with

include the Social Democrats, the Left Party, and the Green Party. The categorization is based on the subsequent alliances in the Parliament among the parties. Other parties together received 5.7 % of the votes.

subjects in the anonymous other. We then drew lots about which of the classes that got assigned the role as dictator and which got assigned the role as recipient. With this design of using different classes comes the possibility of in-group or out-group behavior. This possible effect would however work in both directions, meaning that the average of all samples will be reduced, regardless if the preferences are homogeneous or not. The rivalry between classes was reduced by the classes not knowing with which class they played and assuming that the general rivalry between classes is not too high, it will be possible to make a correct estimation of the effect of homogeneous preferences, given that the average amount given is large enough.

All subjects were randomly matched with another subject in the different class who in turn was paired with a third subject in the first class. This procedure thus formed a chain of subjects in which every subject was both a dictator and a receiver to other, randomly assigned, subjects. The fact that they were not paired in specific couples removed the possibility that they adopted any kind of reciprocal behavior. Subjects did not know with which two persons they interacted and were told that it would not be revealed.

Economic experiments almost always involve non-hypothetical payments so that subjects' decisions have real consequences, and generally, rewards are monetary. We followed the same procedure and used real money in the game. There are several reasons to why economists use financial incentives. There is a widespread belief that salient payoffs (punishment or rewards) decrease performance variability and it is easy to gauge and implement as opposed to physical commodities, e.g. it is divisible. Furthermore, it is assumed that most people value money positively in the sense that they prefer more than less of it, and monetary units have the property of non-satiation (as opposed to e.g. chocolate bars). A fourth reason is that the economic theory that is tested is built around a framework of assumptions regarding maximizing utility, revenue, and profit, and defines the standards of optimal behavior (Hertwig and Ortmann, 2001; Davis and Holt, 1993). Subjects prefer to be paid in cash (Friedman and Sunder, 1994) and therefore this form of payment was also used in this study. Money was not distributed directly after the experiment, but was sent privately via mail to each subject after the experiment, to ensure anonymity and avoid discussions of the results among the subject subsequent to the experiment.

The size of the endowment in the game constitutes an important design choice and it has to be large enough to create desired incentives. Our budgetary constraint for the experiment was 100 SEK per pair. The nominal endowments used in previous research for a dictator game indicate that this is a reasonable amount (see e.g. Eckel and Grossman, 2001) and taken into account that the participants in the study are relatively young and have a limited disposable income, we regard it as a suitable endowment.

Concerning the questionnaire that followed after the experiment, the questions about gender, religious beliefs, and level of parents' education were asked for the purpose of using them as control variables. Gender per se may be an important factor as generosity may differ according to sex. Studies on this effect however report inconclusive results. Contrary to Ben-Ner, Kong, and Putterman (2004), Eckel and Grossman (1998) find that women in general are more generous than males. Bolton and Katok (1995) find no significant differences between the sexes. In public goods contribution games some report that all male groups play more cooperatively than do all female groups (Brown-Kruse and Hummels, 1993) while others (Nowell and Tinkler, 1994; Seguino, Stevens, and Lutz, 1996) find that women may be more cooperative. Andreoni and Vesterlund (2001) report that women are more generous when altruism is relatively expensive, but when it becomes cheaper, men are found to be more altruistic. In addition, men have a higher tendency to be either perfectly selfish or perfectly selfless, whereas women are more likely to prefer to share evenly with their partner. The role of religion on generosity has been studied extensively and many studies indicate positive relations between religion and giving (Bekkers and Wiepking 2007; Ben-Ner, Putterman, Kong, and Magand, 2004). Generosity has also been reported to increase with income. Not surprisingly, high-income household donate larger amounts than low-income households. Higher levels of parental education can be used as a proxy for household income. In addition, higher levels of parental education are related to higher amounts donated by children (Bekkers and Wiepking, 2007).

We further included a second question about political standpoint on a spectrum in order to confirm that subjects were consistent in their political preferences and also to test differences between weaker and stronger preferences. An additional question was included to confirm political standpoint and knowledge about politics as the answer to it clearly represent political standpoint. Moreover, we included questions concerning how the subject reacted to the information about the political values of his or her recipient in obvious relation to the aim of the thesis. Further, a possible factor is that subjects may choose to give more to a recipient with similar values as himself only because he thinks it is a friend of his. This may be expected if subjects tend to have friends based on the same political views. Therefore we asked about the political attitudes of subjects' friends. We also included questions concerning the interest of politics and how often subjects watched the news about politics. We did this to obtain an indication of how well-informed subjects were about the meaning of a certain political preference and to use it as a proxy for the subject's level of general knowledge. Some questions concerned the perception of generosity and trustworthiness of people with left-oriented and right-oriented values respectively. The rationale behind them was to reveal if these characteristics were associated with left- versus right-oriented values that could constitute reasons for increased or decreased giving. A question about the importance of future expected salary was also included with the purpose of exposing whether the subject's perceived importance of money affected the amount the subject chose to donate. Finally, we inquired about the beliefs about the spread of political values over gender in Sweden, in order to determine if a particular political standpoint was associated with a particular gender and hence whether the money allocation decision could be based on the supposed gender of the recipient instead of the recipient's political affiliation.

3.3. Procedure

The main area of concern when performing the experiment was to keep the anonymity as high as possible in order to ensure the validity of the results. Hoffman et al. (1994) and Eckel and Grossman (1996) demonstrate in which manner subject's behaviors are sensitive to whether or not the dictator believes that the experimenter can observe his or her decision.²¹ When they conduct experiments double-blind, that is, when the subjects are anonymous with respect to other subjects as well as with respect to the experimenter, the amounts donated greatly decreases. A suggested rationale is that subjects have a desire to be viewed as acting in a socially appropriate fashion. Loewenstein (1999) points out that despite monetary rewards subjects are indeed influenced by other motives than monetary maximization. These could be the wish to conform to the expectations of the experimenter, to appear to be for example a smart, good, and non-greedy person. Other studies confirm that subjects transfer less money the more anonymous and socially isolated they are (see e.g. Hoffman et al, 1996; Bohnet and Frey, 1999a; Charness and Gneezy, 2003; Johannesson and Persson, 2000),²² however, we did not have the possibility to perform the experiment double-blind.

The experiment was conducted in separate sessions during April and May 2008. We were given class time at our disposal from the teachers to perform the experiment. The average time period to conduct an experiment session was 45 minutes, and the experiments were conducted in Swedish in order to ensure that everyone understood. The teachers of the particular lectures were present. Although the inclusion of the teacher could make the subjects perceive the experiment as less anonymous, it seemed necessary in order to ensure adequate control of the subjects, enhance authority, and motivate subjects to show up.

To identify the subjects, each subject was assigned a random combination of numbers (see appendix 8.1. for a complete description) printed on small pieces of paper, wherein only a specific number was used as the identification figure. This disguised system of identification ensured anonymity, as it became very difficult for the subjects to identify themselves as well as others. This was especially important since it was plausible to assume that the subjects knew each other and would communicate

²¹ Haley and Fessler (2005) show how participants do not even have to consciously perceive that they are being observed for it to matter. The subjects make their choices on computers and when stylized eyespots are put on the computer screens, there is a positive effect on the amount given.

²² Not everyone agrees with that dictator game giving is influenced by the subject's perceived anonymity towards the experimenter. Bolton, Katok, and Zwick (1998) find no support for the anonymity hypothesis. Instead, they argue that differences in the level of giving across different dictator game studies are generated by the context of the experiments.

after the experiment. The procedure also enhanced the subjects' perception of anonymity towards us as experimenters and the teachers.

To increase the anonymity and shield the actions of the subjects from each other, the desks were separated as much as possible. To remove any identification by a certain pen type, only pencils, pens, and ball pens were permitted. An oral introduction was initially held where we presented ourselves, but only gave very limited information about the upcoming game (for a complete description see appendix 8.2.). We did not use the term "experiment" in order to avoid any associations with game playing and strategic thinking. The subjects were told that they were not allowed to share their decisions with each other and had to refrain from communicating. If they had any questions, they had to raise their hand, so that questions were kept private. This procedure was used in order to avoid public questions, answers, and comments that could influence the decisions and actions of other subjects. The subjects were told that they would get compensated for their participation according to the decisions they would make in an upcoming stage and that the rewards would be sent out to them privately by mail.

In the first step the subjects were given the question that inquired about their political affiliation (see appendix 8.3. for a complete description). At this point they did not know the purpose of the question nor did they have any information about the upcoming stages of the experiment. The answers were collected while the subjects remained quiet and seated and the subjects were randomly matched according to the procedure described in section 3.2. After the subjects had been matched they were given the instructions of the game (see appendix 8.4.). The instructions were in addition told orally to ensure that everyone understood them correctly. Since experiments are very sensitive to and can be heavily influenced by the instructions Brañas-Garza (2007),²³ the instructions were written as neutrally as possible.

The names and addresses were collected together with the written instructions. We are aware of the fact that when the students were asked to state their name and address it could reduce the perception of anonymity towards us as experimenters, but the sending of the compensation via mail was deemed necessary and of higher importance to ensure anonymity and therefore the addresses were needed. In addition, the address form made it clearer that the experiment actually included real money. Once the subjects had been matched they received an envelope with the information from the first question about their randomly assigned recipient, which follows the procedure of Ben-Ner et al (2004). The subjects marked their decision of how much money to donate on the same piece of paper that included

²³ Brañas-Garza (2007) carries out dictator games in which the instructions are accompanied with a sentence stating that the recipient relied on the decision of the dictator. This framing sentence generated helping behavior among the dictators.

the instructions and on which they had written their address. After everyone had made their decision, the envelopes were collected.

In the third and last stage of the experiment, the subjects were given the questionnaire (see appendix 8.5. for a complete reproduction). The subjects were explicitly informed that the experiment was over and that the questionnaire constituted the final step of the study, with the implication that their answers would not be revealed to anyone else. When everyone had completed the questionnaire, the whole experiment session was completed. The subjects did not have the possibility to leave separately as would have been preferred to decrease post-experiment interaction, since the lecture was over after the experiment. However, since the subjects are high school students, they would interact after the experiment anyway and there was no possibility to eliminate interaction following the session.

3.4. Statistical method

Our starting point for evaluating the data is to examine the descriptive statistics to analyze the amounts donated. Within experimental economics it is common to randomize subjects to different treatments and then test for differences in the mean between the samples. Due to the randomization, any bias is eliminated. In our experiment, there is no randomization concerning the political affiliation among the dictators, but there is concerning the political preferences of the recipient, as the pairing and hence value similarity between subjects is randomized.

To check the statistical significance of the results regarding the difference in amount sent between heterogeneous and homogeneous pairs we will first employ the parametric student's t-test²⁴ and the non-parametric Mann-Whitney U-test²⁵ in line with many other experimenters (see e.g. Fershtman and Gneezy, 2001; Ben-Ner, Kong, and Putterman, 2004). The student's t-test tests the equality of means between two independent samples and relies on the assumption of a normally distributed data sample (Gujarati, 2003) while the Mann-Whitney U-test relaxes the assumption of normality (Newbold, Carlson and Thorne, 2003) and compares the median.²⁶ We will also conduct these two tests to confirm that the two school samples are from the same population in order to pool them.

We run regressions in order to study the influence of other variables on the amount that the dictator chose to send. By employing a regression we can perform a test of how generosity varies between subject pairs and between subjects with different characteristics, since it enables us to control for other

²⁴ The test statistic for the t-test can be found in appendix 8.6.

²⁵ The Mann-Whitney U-test is also known as the Wilcoxon rank-sum test and the Wilcoxon-Mann-Whitney test. The test statistic for the Mann-Whitney U-test can be found in appendix 8.6.

²⁶ The Mann-Whitney test is a rank-sum test and ranks the data to compare the medians of the two independent samples. In the case that a tie occurs, average ranks are assigned to the tied data. As the sample size increases the Mann-Whitney statistic rapidly approaches the normal distribution, which in our case makes an approximation adequate.

factors that could influence the amount of money the dictator chooses to send. Due to the nature of our data, the assumptions underlying the ordinary least square regression (see e.g. Gujarati, 2003) can be assumed to hold and hence we run our regressions using the OLS method. The dependent variable is the amount sent in SEK and the independent variable(s) are those variables that we expect have an effect on the amount transferred. We use dummy variable regressions as is commonly used in experimental designs (Newbold, Carlson, and Thorne, 2003) and attempt to identify causes for the changes in the dependent variable. We run three regressions. The first is a direct test of our hypothesis and includes a variable representing the effect of value similarity in the pairs. Since the value similarity among pairs is random, there should be no omitted variable bias. In the second regression, we add gender, political affiliation, religiosity, parents' education, and interest in politics as control variables since they have shown to have an effect on giving or could reasonably have an effect. We test if the amount sent is affected by any of these variables and if the effect of similarity is affected when we control for these. In our second regression we will also test whether the control variables together have an impact on the amount sent. We do this by employing a partial F-test²⁷ in which we compare the second regression with a regression that excludes the control variables. Thus, we have an unrestricted regression, which in this case is regression number two, and a restricted regression that is identical to our initial regression, i.e. regression number one.

Even if a control variable does not have an effect in itself, it may be that an effect occurs when it is present in a homogeneous pair. Hence, the third regression in addition includes interaction effects of each of the control variables and the similarity variable. We perform the additional regressions in order to check if the similarity effect is exerted through the control variables. It helps us to understand the underlying mechanism of the choice of how much to transfer. Thus we test for heterogeneous groups, as we are interested in different mechanisms that are important for the effect of having similar values. We also perform a test of whether the interaction variables together have an impact on the amount sent. Again, this is done through a partial F-test in which we compare the regression with a restricted regression (regression 2) in which the interaction variables are excluded.

Throughout the thesis we use a significance level of 10 % if nothing else is stated. All reported tests are two-tailed. The variables are constructed through the answers generated from the questionnaire. Throughout the construction of the variables, we aspired to keep the number observations as well as degrees of freedom as high as possible to enable statistically significant results. In table 3.4.1. below, descriptions of how the variables were constructed are provided and a reproduction of the questionnaire can be found in appendix 8. 5.

²⁷ The test statistic for the F-test can be found in appendix 8.6.

Variable Name	Туре	Definition
Amount_Sent	Dependent	Amount in SEK that the dictator donates to the recipient.
D_Similar	Independent	Dummy variable that takes the value 1 if dictator and recipient have similar political preferences and 0 other- wise.
D_Left	Independent	Dummy variable that takes the value 1 if dictator is left- oriented and 0 otherwise.
D_Sex	Independent	Dummy variable that takes the value 1 if dictator is female and 0 otherwise.
D_Religious	Independent	Dummy variable that takes the value 1 if dictator is religious and 0 otherwise.
D_BothEdu	Independent	Dummy variable that takes the value 1 if both parents of the dictator have higher-level education and 0 otherwise. ²⁸
D_Interest	Independent	Dummy variable that takes the value 1 if dictator has a greater interest in politics and 0 otherwise. ²⁹
D_LeftSimilar	Independent	Interaction variable that takes the value 1 if dictator is left-oriented and dictator and recipient have similar political preferences and 0 otherwise.
D_SexSimilar	Independent	Interaction variable that takes the value 1 if dictator is female and dictator and recipient have similar political preferences and 0 otherwise.
D_RelSimilar	Independent	Interaction variable that takes the value 1 if dictator is religious and dictator and recipient have similar political preferences and 0 otherwise.
D_BothEduSimilar	Independent	Interaction variable that takes the value 1 if both parents of the dictator have higher-level education and dictator and recipient have similar political preferences and 0 otherwise
D_InterestSimilar	Independent	Interaction variable that takes the value 1 if dictator has a greater interest in politics and dictator and recipient have similar political preferences and 0 otherwise.

Table 3.4.1.: Definition of variables.

Lastly, in order to control that the regressions are not influences by multicollinearity, we will examine the correlation between the variables using the Pearson correlation coefficient. The coefficient easures the linear relationship between two variables.³⁰ There are no obvious signs of outliers in the sample.

²⁸ The educational level of the subjects' parents was asked by employing a multiple-choice question with three possible answers. Using these answers, a dummy variable was created, representing the case in which both parents had higher education. The benchmark category was thus when no parent had higher education or one parent had higher education.
²⁹ Subjects indicated their level of interest in polities through multiple shoiles arguing containing from different.

²⁹ Subjects indicated their level of interest in politics through multiple-choice answers containing four different levels of interest in politics. A dummy variable divided the answers into two sub-groups; one with all cases where the subject had indicated the two lower levels of interest and one group that included those cases in which the subject had indicated one of the two higher levels of interest. The dummy variable then took value 1 if the subject belonged to the group that indicated a greater interest in politics, whereas it took value 0 if the subject belonged to the other group.

³⁰ The test statistic for the Pearson correlation coefficient can be found in appendix 8.6.

4. Results

The total number of participating students was 87.³¹ However, one subject had to leave after the decision stage and could not complete the questionnaire. Subsequently, some tests are based on a sample of 86 observations.

In order to be able to pool the subject samples from the two schools, we first tested whether the two independent samples from the two different schools had been drawn from the same population. We thus tested whether the mean amount sent was different between the two subject pools using a student's t-test for independent samples. Since the p-value amounts to 0.207 we cannot reject the null hypothesis that the two samples are drawn from the same population and thus we pool the two subject samples. The p-value of 0.236 generated from the Mann-Whitney U-test also implies that we cannot reject that the two samples are drawn from the same distribution and thus confirms the results of the t-test.

The mean amount that dictators chose to send was 37.89 SEK with a standard deviation of 24.53 SEK and a median of 50 SEK. The subjects' donations varied in the range from 0 to 100 SEK. In other words there were both subjects who acted according to theory and gave nothing and others that donated all of their endowment, while the most common decision was to donate half. The frequencies of donations are depicted in a histogram in figure 4.1. It illustrates that the mode was by far 50 SEK (chosen by 52.87 % of the subjects) and that a considerable number of the subjects chose to send amounts between 0 and 50 SEK. The histogram further demonstrates that a frequent choice was to send nothing; 17 subjects, or 19.54 %, kept their entire endowment to themselves.



Figure 4.1: Amount sent

³¹ 48 subjects were students from Thorildsplans Gymnasium while 39 were from Värmdö Gymnasium Gullmarsplan.

There were 49 cases in which the dictator and recipient had homogeneous political values and 38 cases in which they had heterogeneous preferences. The average amount donated in the case of homogeneous preferences was 42.66 SEK with a standard deviation of 20.27 SEK. The minimum amount sent 0 SEK while the maximum amount donated was 100 SEK. Both the median and the mode was 50 SEK; this amount was chosen by 59.18 % of the dictators. In the case of heterogeneous values, the mean amount sent was 31.74 SEK, which is 10.92 SEK less than in the case with homogeneous values. The standard deviation was higher, 28.21 SEK, while the median was the same, 50 SEK. The mode was also the same as in the case with homogeneous values, 50 SEK, however, in this sub-sample this amount was sent only in 44.74 % of cases. The minimum and maximum amounts were 0 and 100 SEK respectively, i.e. the same as in the sub-sample with homogeneous values 0 SEK is sent by 34.21 % of the dictators, whereas 0 SEK is sent by 8.16 % of the dictators in the case of homogeneous values. The amounts sent in the two sub-samples are illustrated in figures 4.2. and 4.3. and in table 4.1.



Figure 4.2: Amount sent in homogeneous pairs

Figure 4.3: Amount sent in heterogeneous pairs

	Pairs with similar values	Pairs with dissimilar values	
Sample size	49	38	
Average amount sent in SEK	42.66	31.74	
Standard deviation in SEK	20.27	28.21	
Min/Max amount sent in SEK	C 0 / 100	0 / 100	
Median amount sent in SEK	50	50	
Mode	50	50	

Table 4.1: Amount sent by dictators in homogeneous and heterogeneous pairs

We check whether the difference in the mean amount sent between the homogeneous and heterogeneous are statistically different using the student's t-test and a Mann-Whitney test. The results from the independent student's t-test and the Mann-Whitney test indicate that the means are different (p-values of 0.039 and 0.080 respectively). Thus, the results suggest that similarity in values generates larger amounts donated.

Out of the 49 cases with homogeneous values there were 36 cases in which both dictator and recipient had left-oriented political values while there were 13 cases in which both had rightoriented values, as presented in table 4.2. 21 out of the 38 cases with heterogeneous values contained a match in which the dictator was left-oriented and the recipient was rightoriented while in 17 cases the opposite was true i.e. that the dictator had political values to the right and the recipient had political values to the

	Recipient	
	Left-oriented	Right-oriented
Dictator	N = 36	N - 01
Left-oriented	$\begin{array}{l} \mu = 47.81 \\ \sigma = 16.89 \\ Median = 50 \\ Min = 2 \\ Max = 100 \end{array}$	
Right-oriented	$\begin{split} N &= 17 \\ \mu &= 27.94 \\ \sigma &= 30.47 \\ Median &= 25 \\ Min &= 0 \\ Max &= 50 \end{split}$	$\begin{split} N &= 13 \\ \mu &= 28.42 \\ \sigma &= 22.65 \\ Median &= 39.50 \\ Min &= 0 \\ Max &= 100 \end{split}$

Table 4.2: Amount sent by treatment in SEK

left. The results indicate that left-oriented subjects are affected by the similarity of their recipient whereas there seems to be no such effect among the right-oriented subjects. For details of this see footnote 33.

4.1. Regression results

In order to check the statistical significance of the difference in amount sent between the groups with homogeneous and heterogeneous pairs, a regression is run in which the dependent variable is the amount sent and the independent variable is whether or not the dictator and the recipient had similar political values. The independent variable is thus a dummy variable and its base is that the subjects have heterogeneous preferences. The regression is as follows

$$Amount_Sent = \alpha + \beta_1 D_Similar + \varepsilon$$
⁽¹⁾

where *Amount_Sent* is the amount of money in SEK that the dictator donates, α is the benchmark category indicating dissimilar values, β_1 is the coefficient, *D_Similar* is the dummy variable that takes the value 1 if the dictator and recipient have the similar political affiliation and 0 if they have dissimilar political values, and ε is the error term. We test the null hypothesis that β_1 is equal to zero against the alternative hypothesis that it is different from 0. The results can be found in table 4.1.1. below.

Variable		Regression (1)	Regression (2)	Regression (3)
Constant	α	31.737	13.627	11.390
	t p-value	8.133 0.000	2.183 0.032	0.229
D Similar	ß	10.026**	0 60/*	13 505
D_Similar	p t	2 101	1 831	1 123
	p-value	0.039	0.071	0.265
D Left	ß	_	11.589**	13.505
	t	-	2.182	0.823
	p-value	-	0.032	0.413
D Sex	β	-	1.949	6.468
_	t	-	0.376	0.831
	p-value	-	0.708	0.409
D Religious	β	-	5.910	-1.629
_ 0	t	-	0.964	-0.131
	p-value	-	0.338	0.896
D_BothEdu	β	-	8.731**	11.550
	t	-	1.719	1.424
	p-value	-	0.046	0.159
D_Interest	β	-	10.349**	14.303*
	t	-	2.027	1.809
	p-value	-	0.046	0.075
D_LeftSimilar	β	-	-	8.147
	t	-	-	0.688
	p-value	-	-	0.494
D_SexSimilar	β	-	-	-8.838
	t	-	-	-0.824
	p-value	-	-	0.413
D_RelSimilar	β	-	-	8.242
	t	-	-	0.565
	p-value	-	-	0.573
D_BothEduSimilar	β	-	-	-7.206
	t	-	-	-0.668
	p-value	-	-	0.506
D_InterestSimilar	β	-	-	-7.033
	t	-	-	-0.665
	p-value	-	-	0.508
\mathbf{R}^2		0.049	0.208	0.233
Adjusted R ²		0.038	0.148	0.119
Observations		8/	00	00

Dependent variable: Amount_Sent, **significant at the 5 % level, *significant at the 10 % level

Table 4.1.1: Regression results

The regression results indicate that a dictator in similar pairs on average give 10.93 SEK more and we can reject the null hypothesis (p-value 0.039). In other words, the results imply that there is a

difference in the amount sent between subjects who have homogeneous values and those who have heterogeneous values.^{32, 33}

The control variables included in the second regression are the dictator's sex, political affiliation, religiosity, parental education, and interest in politics. The descriptive statistics of these are shown in table 4.1.2. below.

Characteristic	Mean amount sent SEK	Number of obs	Percent
Gender			
Females	37.71	34	39.10
Males	38.01	53	60.90
Political affiliation			
Left-oriented	43.02	57	65.52
Right-oriented	28.15	30	34.48
Religiosity			
Religious	36.43	19	22.09
Non-religious	42.39	67	77.91
Parental education			
No parent	30.93	22	25.58
One parent	35.26	27	31.40
Both parents	43.62	37	43.02
None or one parent	33.32	49	57.98
Interest in politics			
No interest	18.88	8	9.30
Some interest	34.57	34	39.54
Fair interest	45.44	34	39.54
Great interest	37.50	10	11.63
No or some interest	31.58	42	48.8
Fair or great interest	43.64	44	51.2

Table 4.1.2: Descriptive statistics of control variables

 $^{^{32}}$ A Mann-Whitney test also indicated a difference and was significant with a p-value of 0.080.

³³ We also considered that there might be differences within the homogeneous and heterogeneous pairs depending on the political views of the subjects, although it was outside the focus of the thesis. The average amount sent among the homogeneous pairs was significantly different (p-value 0.002) between left-oriented couples and right-oriented, with left-oriented couples tending to donate more. However, there was no significant difference in the amount sent between the heterogeneous couples based on their political composition. Interestingly, when we tested the effect of the four difference in the amount donated between right-oriented dictators in homogeneous pairs and right-oriented dictators in heterogeneous pairs.

The second regression thus looks as follows

$$Amount_Sent = \alpha + \beta_1 D_Similar + \beta_2 D_Left + \beta_3 D_Sex + \beta_4 D_Religious + \beta_5 D_BothEdu + \beta_6 D_Interest + \varepsilon$$
⁽²⁾

where *Amount_Sent* is the dependent variable and where the independent variables are control dummy variables, taking the value 1 if the particular characteristic is met and 0 otherwise.

The regression results show that when the dictator is paired with a recipient with similar values, on average 9.60 SEK more is transferred, which is significant (p-value 0.071). The coefficient only decreases with 1.33 SEK when we control for the other variables compared to when we do not include control variables in regression 1. Moreover, the results indicate that the effect of the dictator being left-oriented results in on average an 11.59 SEK larger amount transferred, which was significant on a 5 % level (p-value 0.032). In those cases in which the dictator's parents had higher education, the dictator chose to donate on average 8.73 SEK more (p-value 0.090). Further, if the dictator was interested in politics, on average 10.35 SEK more was transferred to the recipient (p-value 0.046). However, neither religiosity nor the gender of the dictator generated any significant results, although the coefficient of religiosity had the expected sign and a reasonable size. When testing whether the control variables together have an effect, the resulting F-value is 3.2556, which is significant. We can thus reject the hypothesis that the control variables are without effect.

Lastly, we run a regression in which we add the interaction effect of similarity and each of the control variables. Thus, we run the following regression

 $Amount_Sent = \alpha + \beta_1 D_Similar + \beta_2 D_Left + \beta_3 D_Sex + \beta_4 D_Religious + \beta_5 D_BothEdu + \beta_6 D_Interest + \beta_7 D_LeftSimilar + \beta_8 D_SexSimilar + \beta_9 D_RelSimilar + \beta_{10} D_BothEduSimilar + \beta_{11} D_InterestSimilar + \varepsilon$ (3)

where as before *Amount_Sent* is the dependent variable and the independent variables are the control variables and the interaction variables. The control variables are, as previously, dummies that take the value 1 if the particular characteristic is met and 0 otherwise. The interaction variables take the value 1 if both of the particular characteristics are met and 0 otherwise.

The regression results generated from this regression are much less clear than in the two previous regressions. The only variable that is still significant but on a lower level is the dummy that indicates whether the subject was interested in politics (p-value 0.075), in which case on average 14.30 SEK

more is transferred. The impact of being left-oriented and the effect of having two parents that had higher education also become insignificant, although they are of realistic sizes. Similar to the previous regression, the sex of the dictator and whether or not s/he was religious has no significant effect. Neither of the interaction variables is significant, and when testing whether the interaction variables together are different from zero using the partial F-test, the resulting F-value is 0.482, which is not significant. Thus we cannot reject that the interaction variables are without effect.

When examining the correlations between the variables, we find no evidence of multicollinearity. The Pearson correlation coefficient is low between all the variables; it ranges from -0.153 and 0.191. The only statistically significant correlation is between being interested in politics and having parents that have higher education (p-value 0.078, positive correlation). The remaining p-values all exceed 0.200.

4.2. Questionnaire results

Concerning the question in which the subjects were asked to motivate their division of the money, only 3.5 % of the subjects explicitly stated that their rationale for donating money was that they had a recipient that had similar values. Among those that donated half of the endowment, many subjects indicated that it was due to a principle of fairness, while among those that did not donate anything a recurring answer was that there was no reason to give the money away. When asked whether the subjects had been influenced by their recipient's political view when deciding on how to allocate the money, 22.99 % of the subjects answered that they had been affected while 77.01 % responded that they had not. Among those who had a recipient with similar values, 39.58 % replied that it did matter that their recipient had similar views, while among those that were paired with a recipient with dissimilar views 7.90 % of the subjects answered that the dissimilarity had mattered in the allocation of the money.

Regarding the strength of the subjects' political views, the average answer was 3.22 on a scale on which 1 indicated weak political views and 6 indicated strong views. The average answer to whether the state should take more responsibility for that everyone is provided for (indicated by a 6) or that people should take greater responsibility for themselves (indicated by a 1) was 3.44. All subjects were consistent in their political preferences. The subjects' mean answer of how much they read news and articles about politics was 2.30, where 1 suggested that the subjects never did so and 4 indicated that they did so every day. Regarding how often the subjects watched news on television or listened to news programs on radio, the mean answer was 3.31 from a scale in which a 1 indicated that the subject never did so while a 5 suggested that the subjects did so 6-7 days per week. On a scale from 1 to 6, where 1 is the highest, the average answer to how trustworthy left-oriented people are perceived was 2.79, while the corresponding answer regarding right-oriented people was 3.01. On a similar scale, the average answer to how generous left-oriented people are perceived, the mean answer 2.95, while the

figure for right-oriented people was 3.58. None of the subjects answered that future salary was unimportant, and on a scale from 1 to 4 where 4 is the highest, the average answer amounted to 3.13. The average answer to the question of how many percent of the Swedish women subjects thought were left-oriented was 56.52 while the corresponding the percentage regarding the men was 46.14.³⁴

The answers from the questionnaire indicate that there were no tendencies at all to base ones circle of friends on a particular political view. Therefore, we can safely say that subjects did not base their decision on whether or not they believed their recipient was a friend of theirs and hence it does not become a distorting factor. The results from the questionnaire and post-experiment discussions furthermore revealed no suspicions that the participants knew what we were testing.

³⁴ The subjects could thus have perceived the political affiliation of the recipient as a proxy for gender; however, when tested statistically, we did not find any support for such behavior.

5. Discussion

- "... The decision was easy since the recipient shares the same ideology as I do".
- A left-oriented subject who donated half the endowment to a left-oriented recipient.

Our hypothesis stated that larger amounts would be donated by dictators in homogeneous pairs than by dictators in heterogeneous pairs. The results show that this is in fact the case; dictators matched with a recipient with similar values gave on average 34.43 % more than dictators paired with someone having dissimilar values. This finding is statistically significant and also robust after adding control variables. In the regression that includes control variables, having a recipient with similar values generates a mean amount donated that is on average 70.48 % higher compared to when the dictator is paired with a recipient holding dissimilar values. We further find that when both of the subject's parents have higher education the amount sent increases significantly. This variable may imply a higher general knowledge passed on to the subject by the parents or it may constitute a proxy for higher family income. As mentioned, earlier studies show that both a higher level of general knowledge and higher family income increase amounts sent and thus our results confirm the previous research. Further, our findings demonstrate that if a subject is interested in politics he or she transfers larger amounts and it could serve as a proxy for a higher degree of knowledge of politics and/or a higher educational level in general. Regarding religiosity and gender, we find no significant effects. We are not surprised that our findings concerning gender are insignificant since previous experiments have shown inconclusive results.

Our findings are in accordance with results from previous social studies that have reported how similarities between agents facilitate altruism and liking, as well as with the economic experiments conducted by Fershtman and Gneezy (2000) that indicate a taste for discrimination. The results also correspond to earlier studies that provide evidence of discrimination, and indeed, stand in contrast to Fershtman and Gneezy (2001) who do not find evidence of discrimination in dictator games.

In our study, the mean amount sent was 37.89 SEK, which is somewhat larger than the average amounts transferred in previous studies in which nothing is revealed about the recipient. Thus, it is possible that the amounts that were transferred were higher in our study due to that the subjects received a piece of information about their recipient. 19.45 % of the subjects acted according to theory and kept the entire endowment to themselves, which corresponds to previous studies, although it is slightly on the low side. A factor that possibly influenced these results is the degree of anonymity in our experiment. Although complete anonymity was ensured, it is possible that the setting, for example that the teacher was present, contributed to a perception of less than perfect anonymity among the subjects.

When we divide the sample into two sub-samples based on political view, our findings show that it is the subjects in the left-oriented sample that tend to increase the amount donated when paired with a recipient with similar values. In contrast, we find no evidence among the subjects in the right-oriented sub-sample to alter the amount donated depending on the similarity or dissimilarity of values between themselves and their recipient. Thus, our findings indicate that an underlying mechanism that influences the generosity of subjects who receive information about the values of their subject is the subject's political view. Moreover, our experiment demonstrates that left-oriented subjects in general are more generous than right-oriented subjects, and the questionnaire results revealed that left-oriented people are also perceived as being more generous. The results thus indicate that generosity is also partly impacted purely by the ideology of the dictator. A possible explanation for the difference between the generosity observed between the sub-groups may be that left-oriented subjects give more to left-oriented recipients, since the dictator believes that the recipient would be more generous had the roles been reversed. By the same token, right-oriented subjects may tend to not increase the amount donated when paired with right-oriented recipients, since the dictator assumes that the rightoriented recipient would not act generously had the roles been reversed. In other words, the similarity in values in right-oriented pairs may be offset by the knowledge that the right-oriented recipient would be less generous had he or she been the dictator.

Very few subjects explicitly stated that their decision was based on the similarity of values between themselves and the recipient or mentioned it as a contributing factor when they were asked to justify the allocation of the money. Seemingly, this contradicts the observed behavior, however, we believe that the subjects were subconsciously affected by the values of their recipient. When the subjects were asked specifically if similarity in values mattered for the allocation of the money, almost 40 % of those who had a recipient with similar values said that it did. Thus, it seems that the subjects found it difficult to identify similarity or dissimilarity in values as a factor that influenced the division of the money in the open-ended question. Among the subjects that were paired with a recipient with dissimilar values, only around 8 % answered that the dissimilarity had influenced their choice. It thus seems that similarity in values generates a stronger reaction than dissimilarity.

An aspect that needs to be considered when interpreting results from dictator games is that the dictator game in itself suggests that the task at hand is to divide. In addition, generosity within experiments may be the result of manners and not a sign of pure altruism. Another limitation of games is that subjects may find it difficult to comprehend the fact that the game is played only once. We had the impression that the subjects had understood that the game was one-shot, however, it is very difficult to discern whether the subjects allocated the money in order to comply with socially desirable behavior, resulting in larger amounts given. In fact, we considered that the age of the subjects might cause them

to be influenced by social norms more so than the population average. If this is true, the level of the amount donated would be larger compared to if a sample with older subjects had been used, however, it would not alter the difference between the amounts sent in heterogeneous and homogeneous pairs. In other words, our main finding would remain intact.

The results of this study ought to be applicable to any aspect of generosity in which the donating part of the altruism possesses information about the receiving part. Limitations to its applicability lie in the fact that our study uses political preferences as information about the recipient, and that these preferences are based on political standpoints that are specific to Sweden. If conducted in another country, the question revealing preferences must most certainly be altered. The study was also carried out exclusively in Stockholm, the capital of Sweden. Although the chosen schools ought to be fairly representative of the Swedish population, we cannot presuppose that the students in Stockholm act in the same ways as people that live in e.g. on the country side. One should also be careful to note that this is a study on the individual level. Hence, the results ought not to be applied on aggregated levels, for example in an attempt to explain aid patterns between nations. Moreover, our study focuses on similarity and dissimilarity between people in terms of values. For further research, it would be interesting to investigate the impact of heterogeneity and homogeneity in other areas as well as investigating the effects generated from a larger sample size. Furthermore, our study uses values in terms of political preferences. It would be relevant to test if our results hold also for preferences regarding other issues. Concerning the methodology, it would be interesting to perform the experiment with the alteration that the subjects earn the wealth that they are to allocate. Researchers (e.g. Cherry, Frykblom, and Shogren, 2002) emphasize that in cases where dictators' wealth is legitimized as opposed to windfall endowments, almost all behave as predicted by sub-game perfection, i.e. give nothing away. Finally, it would be valuable to perform the same experiment but in other games, in particular bargaining games such as the ultimatum game, to see if similar results are generated.

6. Conclusion

We find support for our hypothesis and can conclude that larger amounts are transferred in pairs in which homogeneous values between the dictator and the recipient are present, compared to when there are heterogeneous values between the dictator and recipient. In other words, our results indicate that people tend to act more generously towards those that are more similar to themselves, but also that the degree of the generosity is affected by factors such as parental education and political view. Our study adds to the literature on the effect of similarities between the dictator and the receiver and constitutes a first contribution to studies of preference similarity within experimental economics. Our findings confirm previous research that demonstrates how people do not act according to "Homo Economicus". Other social preferences most certainly play a role in explaining human behavior and seemingly one such preference is altruism or generosity. In turn, a mechanism that can help explain altruism or generosity seems to be preference similarity among the giver and the receiver. This finding ought to have valuable implications for the understanding of discrimination and economic behavior.

7. References

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The Swedish National Election Study 2002 http://www.ssd.gu.se/index.php?p=displayStudy&id=446

 $The Swedish Riksdag \ http://www.riksdagen.se/templates/R_PageFull___11180.aspx$

The World Value Survey, OECD WVS 2005 Questionnaire A-Ballot

http://margaux.grandvinum.se/SebTest/wvs/articles/folder_published/survey_2005

8. Appendix

8.1. Example of identification tag

The identification figures had the following structure: 1,76 7,86 4,69 2,63 5,07 8,12

The figures are completely random except for the two decimals in the second figure from the right. This particular combination thus constitutes observation number 07.

All envelopes and papers that a particular subject used had his or her identification number attached to it.

8. 2. Introductory instructions³⁵

"Hi and welcome everyone. Our names are Frida and Marianne and we come from the Stockholm School of Economics. We are currently writing our master's thesis and we need your help. We are going to do an exercise with you today and depending on the decisions you make, you will be compensated with real money. You will gradually receive instructions and it is of utmost importance that you do not talk during this whole session or show anyone what you write. If you have any questions, please raise your hand and we will answer individually. The exercise requires total anonymity.

First you will get to answer a question, then we have an economic exercise, and lastly a questionnaire. When we are finished we will go through what we have done and explain the purpose of our study and the economic theory behind it.

³⁵ The introduction was held orally.

8. 3. Question regarding political affiliation as distributed to subjects³⁶

"Please answer the following question. Please only use a pencil or ball pen.

Politics is often divided into a right-left scale. Among the parliamentary parties in Sweden the Social Democrats, the Left Party, and the Green Party are viewed as belonging to the left, while the Moderate Party, People's Party Liberals, the Christian Democrats, and the Centre Party are labeled as right-wing parties. Where on this scale would you place yourself?

____ Left Right"

8. 4. Instructions regarding decision as distributed to the subjects³⁷ "Address for payment

Please write down your name and address. We will send any money to you via mail and therefore need your address. Your name and address will not be used in any other purpose and you are completely anonymous in the following stages.

Name and address

Instruction

You have randomly been matched with another person in another class. You are to divide 100 Swedish kronor between yourself and this person. This person has no possibility to affect your decision. You can give anything between 0 and 100 kronor and you can choose to keep the whole amount. Hence, you get to keep the 100 kronor minus what you choose to give to your partner. Everything is conducted anonymously; it will not be revealed which people have been matched.

You have also randomly been matched with an additional person in another class who has the task of dividing 100 kronor between himself/herself and you (this is not the same person as above). After this session is completed it will randomly be chosen which classroom that gets assigned the role of sender

³⁶ The original question was in Swedish. We recite it here translated into English; however, the Swedish version is available from the authors upon request.

³⁷ The original instructions for the decision were given Swedish. We recite the instructions here translated into English; however, the Swedish version is available from the authors upon request.

and which will be assigned the role as recipients. The probability that you will allocate the real money is 50 % and the probability that you will be a passive recipient of somebody else's allocation is 50 %.

In your envelope you find information about your recipient. Please read this through before you make your decision. Write down your decision and then put all papers in the envelope on your desk. Wait quietly for everyone to finish. The envelopes will be collected and you will receive the money that has been allocated to you via mail.

This stage will not be repeated. Everyone has gotten the same instructions.

It is not allowed to talk during the exercise, please raise your hand if you have any questions!

Decision

I choose to give _____ kronor to my partner, and keep _____ kronor to myself. (Please remember that the sum should be equal to 100 kronor.)"

8. 5. Questionnaire given to subjects³⁸

"Questionnaire

Please answer the following questions. It is of utmost importance that you answer all questions, or the study will not be feasible. If you are uncertain about any question, please answer to the best of your ability. Remember that your answers are completely anonymous, both with respect to your classmates and to us. This questionnaire constitutes the last stage and the questions will not be given to anyone else. When you have answered all questions, put the paper in the envelope on your desk and wait quietly until everyone has finished. Everyone has gotten the same questions and the same instructions. Thank you for your participation!

1. Motivate your allocation of the money.

2. What is your gender?

____ Male

_____ Female

³⁸The original questionnaire was given Swedish. We recite the questions here translated into English; however, the Swedish version is available from the authors upon request.

3. Are you religious? Religious implies that you belong to a religion and consider yourself a believer.

_____ Yes _____ No

4. Do your parents have university level education?

- _____ Yes, both of them
- _____Yes, one of them

____ No

5. Politics is often divided into a right-left scale. Among the parliamentary parties in Sweden the Social Democrats, the Left Party, and the Green Party are viewed as belonging to the left, while the Moderate Party, People's Party Liberals, the Christian Democrats, and the Centre Party are labeled as right-wing parties. Where on this scale would you place yourself? 1 implies that you are fully to the left, 6 implies that you consider yourself fully to the right. If you affiliate yourself somewhere in between please choose the number that best corresponds to your views. Please circle the figure that best describes your political views.

Left					Right
1	2	3	4	5	6

6. Was your decision (your allocation of the money) affected by your recipient's political views?

_____ Yes

For those of you who had a recipient with *similar* political values as yourself: 7a. Did it matter that you and your recipient had similar political views?

- _____Yes
- ____ No

Why/Why not?

For those of you who had a recipient with opposite political valeus as yourself:

7b. Did it matter that you and your recipient had opposing political views?

_____Yes

_____ No

Why/Why not?

8.³⁹ How would you describe your opinions on the following? 1 implies that you fully agree with the statement to the left, 6 implies that you fully agree with the statement to the right. If you're opinions lie somewhere in between, choose the number that describes them best. Please circle the number that best describes your opinion.

People should take more responsibility to provide for themselves				The government should take more responsibility to ensure that everyone is provided for	
1	2	3	4	5	6

9. Do you socialize with both left-oriented and right-oriented people?

_____Yes

____ No

Why/Why not?

10.⁴⁰ In general, how interested in politics are you?

- _____ Very interested
- _____ Fairly interested
- _____ Not very interested
- _____ Not at all interested

³⁹ The question is taken from the World Value Survey 2005. "People should take more responsibility to provide for themselves" is considered a right-oriented statement while "The government should take more responsibility to ensure that everyone is provided for" is considered left-oriented.

⁴⁰These questions are taken from The Swedish National Election Study 2002.

11a.⁴¹ How often do you read news and articles about politics in the newspapers?

- _____ Reads what there is in the newspaper of news and articles about politics every day
- _____ Often reads news and articles about politics
- _____ Occasionally reads news and articles about politics
- _____ Never reads news and articles about politics

11b.⁴² Concerning news programs on radio and television: How often do you watch/listen to them?

- _____ 6-7 days a week
- _____ 3-5 days a week
- _____ 1-2 days a week

_____ More seldom

_____ Never

12a. Where on the following scales would you place *left-oriented* people? 1 implies that you fully agree with the statement to the left, 6 implies that you fully agree with the statement to the right. If your opinion lies somewhere in between, choose the number that best describes our opinion. Please circle the number that best describes your opinion.

Trustworthy			Untrustworthy			
1	2	3	4	5	6	
Generous					Not at all gen	erous
1	2	3	4	5	6	

^{41, 42} These questions are taken from The Swedish National Election Study 2002.

12b. Where on the following scales would you place *right-oriented* people? 1 implies that you fully agree with the statement to the left, 6 implies that you fully agree with the statement to the right. If your opinion lies somewhere in between, choose the number that best describes our opinion. Please circle the number that best describes your opinion.

Trustworthy				Untrustworthy		
1	2	3	4	5	6	
Generous					Not at all generous	
1	2	3	4	5	6	

13. How important do you consider your salary when you are about to choose future profession?

- _____ Very important
- _____ Fairly important
- _____ Not very important
- _____ Not at all important

14. How many percent of the women in Sweden do you believe are left-oriented and rightoriented respectively?

I believe that ______% of the women are left-oriented and that ______% are right-oriented.

15. How many percent of the men in Sweden do you believe are left-oriented and right-oriented respectively?

I believe that _____% of the men are left-oriented and that _____% are right-oriented.

Thank you for your participation!"

8. 6. Test specifications

Test statistic for student's t-test

$$t = \frac{\overline{X}_1 - \overline{X}_2}{s_{\overline{X}_1 - \overline{X}_2}} \text{ where } s_{\overline{X}_1 - \overline{X}_2} = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}} \left(\frac{1}{n_1} + \frac{1}{n_2}\right)$$

where n denotes number of observations, n - 1 is the number of degrees of freedom and s^2 denotes the unbiased estimator of the variance of the two samples.

The equation assumes that the variance of the two samples is equal whereas the following assumes that it is unequal.

$$t = \frac{\overline{X}_1 - \overline{X}_2}{s_{\overline{X}_1 - \overline{X}_2}} \text{ where } s_{\overline{X}_1 - \overline{X}_2} = \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}$$

where n is the number of observations and s^2 is the unbiased estimator of the variance for the two samples. The number of degrees of freedom is given by

$$df = \frac{(s_1^2 / n_1 + s_2^2 / n_2)^2}{(s_1^2 / n_1) / (n_1 - 1) + (s_2^2 / n_2) / (n_2 - 1)}$$

Test statistic for Mann-Whitney test

$$Z = \frac{U - \mu_U}{\sigma_U}$$
 where the Mann-Whitney U statistic is $U = n_1 n_2 + \frac{n_1 (n_1 + 1)}{2} - R_1$

where R_1 denote the sum of ranks of the observations from the first population, $\mu_U = \frac{n_1 n_2}{2}$ is the mean for the combined populations and σ_U is the standard deviation of the two combined populations.

Test statistic for the partial F-test

$$F = \frac{SSE(R) - SSE(UR)}{m} \bigg/ \frac{SSE(R)}{(n-k)}$$

where SSE(R) is the sum of squares of error in the restricted regression model, SSE(UR) is the sum of squares of error in the unrestricted model, m is the number of linear restrictions, n is the number of observations, and k is the number of parameters in the unrestricted model.

The Pearson correlation statistic

$$r = \frac{\sum_{i=1}^{n} \left(\frac{X_i - \overline{X}}{s_x} \right) \left(\frac{Y_i - \overline{Y}}{s_y} \right)}{n - 1}$$

where the ratios in the brackets are the standard scores, \overline{X} and \overline{Y} are the sample means, and s_x and s_y are the sample standard deviations.