Does voting affect moral decisions and equality preferences?

An experimental study

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ABSTRACT

Previous studies have shown that people in groups and in markets can change their moral and social preferences (Charness & Sutter, 2012; Falk & Szech, 2013). Voting on decisions share some features with group decision-making and markets, yet little is investigated whether voting alters individuals’ preferences. In this exploratory study, we aim to investigate how voting affects decision-making concerning moral and equality preferences. We perform a laboratory experiment with 178 subjects based on five games, one game related to moral behavior, and four dictator games related to equality preferences. The games are performed in both a Voting Condition (VC) and in an Individual Condition (IC), together with a set of control questions. We do not find differences in moral decisions between voting by majority rule, and deciding individually. This result demonstrates that deciding in a voting context does not induce a loss of responsibility for the moral issue. We observe that voting leads to increased equality preferences in one of four dictator games. In particular, our results indicate that voters suffer more from envy compared to people who decide individually. Further, we find an indication that people are more inclined to vote for a moral decision if they expect to be pivotal, which is the opposite prediction of low cost theory. In conclusion, voting can alter individuals’ preferences depending on the type of issue and how the outcome affects the voter. Our novel findings motivate for further research in this area, which can have important policy implications for voting on several levels in society.
PREFACE

We want to thank our supervisors Gustav Tinghög for guidance and great enthusiasm in our work, and Kinga Posadzy for the help, encouragement, and inspiration for new ideas. We also want to thank our opponents Elsa Söderholm and Filippa Ström for valuable comments and constructive critique. Lastly, we want to thank the JEDI-lab, which has been an important resource when conducting the experiment.

Linköping, May 31st, 2016

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1. INTRODUCTION

Voting is a common institution used to determine rules for large collectives of individuals. One consideration in the design of any organization or society is whether to involve its members in collective decision-making. Political science has found evidence that democracies promote development and cooperation, induce peace and improve the societies we live in (Thompson & Tucker, 1997; Acemoglu et al., 2008; Heap et al., 2015; Hauser et al., 2014). From a utilitarian perspective, we can assume that decisions made through voting are made to improve the wellbeing for most people, which improves social welfare (Krishna & Morgan, 2015).

In Europe today, the engagement in democracies is decreasing in terms of party membership, and the support for populist parties is growing (Meier & Van Biezen, 2001). Despite this, a recent report demonstrates that people are in fact concerned about the political processes, and have the desire to participate in the decision-making processes (Chwalisz, 2015). Today’s society is changing; globalization is increasing, as well as the technological evolution, which presents new challenges for societies. It also opens possibilities for new democratic innovations. These trends raise the need to understand individuals’ decision-making when voting, in order to sustain and develop well-functioning democracies.

Decision-making is embedded in different social settings and depends on the context. Voting outcomes may therefore differ depending on group affiliation, social norms, the degree of anonymity, and communication before voting (Charness & Sutter, 2012; Elbittar et al., 2011). A phenomenon that is found when people are in a group setting is called “diffusion of responsibility” and originates from social psychology. The theory implies that individuals feel less responsible for the outcome in a group setting, and therefore are less likely to take action in a cause (Forsyth et al., 2002; Wallach & Kogan, 1964). Recent economic experiments show that a market setting can decrease moral values. It takes two people to complete a trade, therefore both buyer and seller lose sense of responsibility and feelings of guilt for their decisions (Falk & Szech, 2013; Kirchler et al., 2015). Voting decisions have similarities with group decisions and market decisions, since no one is solely responsible for the outcome. This makes it relevant to examine if diffusion of responsibility affects moral behavior in a democratic context.

Another policy relevant issue is the trade-off between equality and efficiency. Raising
inequalities within and between countries has been stated to be one of the main challenges of our time. A recent study shows that the future policy making elite exhibit preferences for efficiency to a larger extent, and exhibit less fair-minded preferences, compared to the rest of the American population (Fisman et al., 2015). Thomas Piketty (2014) received attention when emphasizing the outlook of global inequalities. He suggests a global wealth tax in order to redistribute the concentration of wealth. Even if the global tax has failed to gain ground so far, how redistribution policy should be designed is an ongoing debate on a national level. In individual decision-making, the trade-off between equality and efficiency often operates together with other types of social preferences (Charness & Rabin, 2002). There are several studies that investigate how social preferences are affected in group decision-making (Charness & Sutter, 2012), and only a handful that focus on social preferences when people vote (Hauser et al., 2014; Elbittar et al., 2011). None of the previous studies mentioned above investigate equality preferences in combination with majority rule.

Additionally, this study uses low cost theory to explain voters’ behavior. When casting a vote, the probability of affecting the outcome in a large-scale referendum is usually quite low. Low cost theory suggests that when a voter has a low probability of affecting the outcome, an expressive voter will vote to express some value, ideology or identity (Hamlin & Jennings, 2011). In large referendums, a large proportion of expressive voters could lead to a disproportionate reflection of moral preferences (Feddersen et al., 2009). Therefore, it is of importance to control if individuals vote in accordance with low cost theory.

The Aim of the Study

The aim of this study is to investigate how voting affects decision-making. In particular, we explore how voting affects moral behavior and equality preferences.

Research Questions

- How does voting affect moral behavior?
- How does voting affect equality preferences?
- Can low-cost theory of expressive voters explain voters’ behavior?

Delimitation and Implementations

To be able to answer our research questions, an economic experiment was conducted
during April 2016, with 178 subjects at Linköping University in Sweden. A laboratory experiment that seeks to mimic a democratic institution was conducted with a between–subject design. A majority rule voting system was implemented in one condition and an individual decision-making condition was used as the control group. Two different decision-making issues were tested in the voting condition and in the individual condition; a moral decision and decisions for equality, together with a set of control questions.

2. THEORY AND PREVIOUS RESEARCH

2.1 Moral Decision-Making

Certain actions such as charitable giving are not entirely easy to explain with the assumption that people are self-interested (Frey & Meier, 2004). Behavioral economists have become interested in people’s decision-making processes and the role of morals in their decisions. Bandura (1999) describes the mechanisms of how people live in accordance with their moral standards as moral agency; when moral knowledge and reasoning is coordinated with moral action. Morality is also rooted in social obligations, meaning that development of the moral self is a social-practice. Ordinarily, people do not engage in harmful behavior until they morally justify their actions by redefining their actions as acceptable according to the situation. This makes it possible to perceive one’s self as moral, while still engaging in harmful or immoral behavior. Moral behavior can also change through socialization and group pressure (Bandura, 1999). Falk and Szech (2013) however describe that: “Although the content of morality is culturally determined and time and space contingent, there exists a basic consensus that harming others in an unjustified and intentional way is considered as immoral.” Disengagement of moral control can occur through displacement of responsibility when an authority gives instructions of immoral actions, and through a lost sense of personal accountability, through diffusion of responsibility (Bandura, 1999). There are several dimensions of morality and several ways of defining moral behavior. In this study we focus on one aspect, which is having concern for the suffering and well-being of others (Haidt, 2008).

Wallach and Kogan (1964) developed the social psychological theory “diffusion of responsibility”, explaining the phenomenon where individuals feel less responsible for the outcome of decisions, because they are made in a group. Diffusion of responsibility has also been found to cause weakened morality through division of labor and in mar-
kets (Bandura, 1999; Kirchler et al., 2015; Falk & Szech, 2013). It is observed that individuals behave immoral when decisions are a group product, while otherwise behaving considerate towards others. When everyone is responsible as a group, no one feels individually responsible for an immoral decision. Bandura (1999) shows that punitive sanctions occur more frequently under group responsibility than when individuals are solely accountable for their actions.

Among economists, Falk and Szech (2013) have been leading experimental research on morals in market situations. They investigate whether a market context lowers moral values when deciding on the outcome for an uninvolved third party. In their experiment they test whether individuals in a market, with one buyer and one seller, act according to their moral standards, compared to making decisions individually. In the experiment subjects have to decide if they are willing to accept an amount of money with the outcome of killing a mouse or if they renounce the monetary reward in order to spare the life of mouse. In the auction market, a seller receives a mouse and a buyer receives 20 euro. Buyer and seller bargain over the price of the mouse, if they reach an agreement on the price, they accept to kill the mouse and earn the money. Falk and Szech (2013) find that a larger fraction of participants in the market setting are willing to kill the mouse for a monetary reward compared to the individual setting where subjects makes the decision on their own. Therefore, market interactions alter moral behavior. Falk and Szech (2013) stress three important features of the market that contributes to a shift in moral behavior. The first is diffusion of responsibility, due to the fact that, in a market there are several participants that can share the responsibility and the guilt from the killing the mouse. The second feature of markets is revealed norms. When subjects see others trading they might justify for themselves that trading is acceptable. The third explanation is diverted attention from the moral consequence. In a market, people focus on other aspects such as negotiation, competition and bargaining.

Kirchler et al. (2015) also study moral decisions regarding a third uninvolved party in a market. They investigate how different institutional interventions affect moral decisions. In a laboratory experiment participants choose between accepting a monetary reward for themselves or to donate a potentially larger sum to UNICEF for measles vaccines. In the first treatment subjects make decisions individually, they do not cooperate with others and therefore account for their own decisions. Subjects decide from a list of 22 choices, they can either choose a payment to themselves ranging from 0.40 euro to 21.40 euro or they can choose a donation of 10.70 euro to UNICEF. Choosing to take the money results in no donation to UNICEF. The second treatment is a market
where six buyers and four sellers bargain over the amount of money to keep for themselves and the amount to donate to UNICEF for the measles vaccines. The regime mimics a multilateral market similar to financial markets of commodities. Furthermore, Kirchler et al. (2015) include an intervention which reveals anonymity, this intervention leads to increased moral behavior in the individual regime, however not in the market regime. According to Kirchler et al. (2015) the reason for differences between regimes when anonymity is removed can be explained by diffusion of responsibility. Subjects in the market regime share the responsibility of the outcome since they bargain and trade. Each trading partner can justify their own immoral behavior by arguing that without the other party’s agreement there would not have been a transaction, instead there would have been a donation. This way of arguing is not possible when decisions are made individually because subjects are solely responsible for their choices. When anonymity is removed they become individually identifiable which could lead them to avoid immoral actions.

2.2 Preferences for Equality

The neoclassical economic assumption of purely self-interested agents has been criticized since empirical evidences show that people exhibit altruistic and other-regarding preferences (Fehr & Schmidt, 2005). In order to understand other-regarding preferences, economists have proposed different models, which account for how non-selfish motives can describe individual decisions. Social preferences often interact in a complex way, and it is difficult to isolate their respective effect on an empirical level. Below, we describe how Fehr & Schmidt (1999) and Charness & Rabin (2002) model inequality preferences.

Fehr & Schmidt (1999) present a utility function that can rationalize positive and negative actions towards other players in economic games. The utility function captures aversion for advantageous and disadvantageous inequality, separately. Disadvantageous inequality means that disutility is higher for the player when the opponent is better off. When the opponent is worse off, and the player experiences less disutility from the inequality, this is called advantageous inequality. Using these preferences of inequality in their utility function, Fehr & Schmidt (1999) are able to explain behaviors that are contradictory in other models. For example, in dictator games people tend to act generously and in trust games people tend to act kindly. In the ultimatum game there is evidence that people reject low offers to themselves so that they can punish the other player. Additionally, in public good games people can voluntarily contribute to
the public and at the same time want to punish free riders (Fehr & Schmidt, 2005). Applying this assumption to a taxation context would suggest that individuals in the middle class would have preferences to tax the upper class to redistribute resources to the poor. Fehr & Schmidt (2005) also assume that people are heterogeneous by using distribution for fair and selfish individuals, consistent with experimental evidence from the ultimatum game. The model can thereby predict why very unequal outcomes are obtained in some situations and in other situations outcomes are very egalitarian. For example, a small fraction of inequality averse players in a public good game with punishment can make the threat of punishment credible and thereby induce selfish players to contribute to the public good (Fehr & Schmidt, 2005). Another important aspect of inequality aversion, which is often examined in experiments on efficiency and equity, are maximin preferences. Maximin preferences are the desire to maximize the minimal payoff for the person least well-off in a group (Charness & Rabin, 2002). Some people also exhibit preferences of maximizing the total pay-off for the group, regardless of the distribution between groups or individuals. These individuals do not act purely according to self-interest, altruistic preferences or egalitarian outcomes but instead exhibit preferences for efficiency.

The social preferences model proposed by Charness and Rabin (2002) is presented below. The function describes player A’s preferences in a two-person game, where $\pi_A$ and $\pi_B$ represent the payoff of player A and B:

$$U_A(\pi_A, \pi_B) = (1 - \rho r - \sigma s) \pi_A + (\rho r + \sigma s) \pi_B$$

where $r = 1$ if $\pi_A > \pi_B$, and $r = 0$ otherwise, $s = 1$ if $\pi_B > \pi_A$, and $s = 0$ otherwise. The parameters $\rho$ and $\sigma$ depend on the outcome and describe a range of different social preferences:

1. **Competitive preferences** when $(\sigma \leq \rho \leq 0)$. The individual always prefers their own payoff to be high relative to player B’s payoff.
2. **Equality preferences** when $(\sigma < 0 < \rho < 1)$. The individual prefers to minimize differences between their own payoff and player B’s payoff.

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1 In this study we use our own definitions for different social preferences. Charness and Rabin (2002) use the concept difference aversion preferences, we call these equality preferences. We use the term efficiency preferences which in other studies are called social welfare preferences, or surplus maximization (Charness and Rabin 2002; Fehr and Schmidt 2005).
3. **Efficiency preferences** when \((0 < \sigma \leq \rho \leq 1)\). The individual’s utility increases when their own payoff and the other player’s payoff increases. When the individual faces disadvantageous inequality, the player is more in favor of their own payoff.

4. **Selfish preferences when** \((\sigma = \rho = 0)\). In this case the individual’s utility only depends on \(\pi_A\).

Numerous experiments on the trade-off between equality and efficiency have previously been conducted using a two-player dictator game. Most commonly results show that subjects are willing to give up some of their own payoff in order to increase the total surplus for players. This result is found even if the outcome of decisions generates inequality that is not favorable for themselves. This type of dictator game can be modified with different exchange ratios to investigate where subjects have their trade-off between equality and efficiency. For example, when the exchange ratio is 1:3 between dictator and receiver, the majority of dictators allocate resources so that they end up with less money than the receiver. This result is consistent with altruistic and efficiency preferences (Fehr & Schmidt, 2005). Charness & Rabin (2002) use a dictator game where the allocator has to choose between an equal allocation, where both players receive 4 USD, and an efficient allocation, where the dictator receives 4 USD and the receiver obtains 7.50 USD. They find that 31 percent have equality preferences and 69 percent have efficiency preferences. When it is costly to increase efficiency they find that 51 percent exhibit equality preferences.

In this study we use four different dictator games from Pelligra & Stanca (2013). They use a binary-choice dictator game with a representative sample of adults in Italy to examine the explanatory effect of equality preferences, efficiency preferences and competitive preferences. The games are designed in four variations where the cost of distribution and efficiency varies. In this study, we choose to call them Guilt Game, Envy Game, Costly Altruism Game and Inequality Aversion Game. The games investigate equality preferences when the dictator’s own pay-off is unaffected, when it is beneficial for themselves, and when it is costly to choose the equal distribution. Overall they find that equality preferences are more important than efficiency preferences. Even if most literature concludes that efficiency plays an important role for social preferences; the efficiency motive may have been exaggerated. Economic experiments are often performed on business and economics students who differ systematically from the general population in terms of age, education and socioeconomic background. Most importantly economic students tend to favor efficiency over equality. Students from other disciplines and people with non-academic background tend to exhibit stronger preferences.
for equality. Pelligra & Stanca (2013) use a representative sample of adults. Compared to the rest of their sample, they find that young individuals (under the age of 26) are less concerned with inequality.

Voting is not as simple as individual decision-making, nor is it like a group decision, where communication and cooperation is possible. However, belonging to a group and sharing the outcome for a group can have similar features as decision-making through voting. Therefore, some important aspects from collective decision-making can contribute to a broader perspective. Charness & Sutter (2012) conclude that groups may decrease welfare because of stronger self-interested preferences. Groups tend to generally act more in line with standard game theoretic predictions compared to individuals. Previous studies on social preferences and voting have used different voting systems and have found varying results. Elbittar et al. (2011) use an ultimatum game and different voting systems as treatments. They limit the interaction between group members, by letting the group only unite by sharing the outcome of bargaining. Elbittar et al., (2011) find that group decisions made by majority rule do not deviate from individual behavior. Neither proposer nor responder make decisions differently when groups decide by majority rule compared to individually. A different implication arises from a study on how overexploitation of resources can be prevented by Hauser et al. (2014). Using a new experimental design, intergenerational good games, and implementing median vote, they find that subjects extract less from the common recourse pool when median vote is used and implemented for all group members compared to when people decide individually.

2.3 Low Cost Theory

Low Cost Theory suggests that expressive voters are the type of voters that include moral and ideological preferences in their decision-making process. Most of the time voters are non-pivotal, meaning that their individual votes do not change the outcome of an election. When an expressive voter expects a low cost of voting i.e. when they expect their vote to be non-pivotal, they will be willing to vote morally or pro-socially (Hamlin & Jennings, 2011). If instead expressive voters expect a high probability of affecting the outcome, they will vote according to their self-interest. Expectations of others behavior and the probability of being pivotal is key for understanding the behavior of expressive voters. At the base, the classical model of voting assumes that people vote instrumentally, only to affect the outcome of the referendum. Instrumental voters are not affected by expected behavior of others, nor by the probability of being pivotal.
Tyran (2004; Tyran & Sausgruber, 2006). In many referendums there is a conflict between moral preferences and material self-interest, or between equality preferences and self-interest. Examples are environmental policy and redistributive matters such as social security and minimum wages (Tyran, 2004). Since voting is done anonymously and no one knows what the outcome is, expectations of the outcome are crucial in order to understand expressive voting behavior. If we assume that expectations positively affect the benefits of expressive voting, people may experience a higher reward from voting morally because others do it too (Tyran, 2004). Adapting behavior according to social influence is commonly known as conformity in social psychology. In voting research, this behavior is called “the bandwagon effect” (Bartel, 1985).

Tyran (2004) uses a proposal to vote for a donation in an experiment to investigate if low cost theory can explain voter’s behavior. In order to vary the degree of being pivotal he varies the approval rate for a decision between 1, 25, 50, 75 and 99 percent. He also uses two different decision-making mechanisms. In the first treatment, all voters donate their endowment. In the second treatment, only voters who approved for a donation will donate their endowment. The study finds that low cost theory fails to explain voters’ behavior regarding the vote for a donation. The study does however find evidence of the bandwagon effect; when people expect many others to vote for a donation, they also tend to vote for a donation, indicating that expectations matter for voting behavior. Also, they show that not all voters have expressive preferences. Their results show that 40 percent are expressive voters and 60 percent are instrumental voters. Other studies have showed that low cost theory does matter. Fisher (1996) and Feddersen et al. (2009) find experimental evidence that collective choices in elections systematically differ from individual preferences. In both studies they find evidence that moral consideration increases when the probability of being pivotal is decreased.

Fairness concerns could potentially have large effects on voting outcomes according to Tyran & Sausgruber (2006), especially for a population with voters that are materially unaffected by redistribution. They design their experiment with a population where 40 percent of voters belong to an upper class (rich), 40 percent belong to a middle class and 20 percent belong to a lower class (poor). A proposal to redistribute money from the rich to the poor and leave the middle class unaffected will be accepted if more than half of the middle-class voters are slightly inequality averse. Tyran & Sausgruber (2006) speculate that people may vote against their material self-interest because they expect their votes to be irrelevant to the outcome as they are non-pivotal voters, as low-cost theory predicts. In the end of the experiment, they ask participants about expecta-
tions of their effect on the outcome and include a monetary compensation if participants are correct about their expectations. They find that non-pivotal voters do not approve the redistribution more than pivotal voters do and low cost-theory is rejected.

3. METHOD

3.1 Study Setting and Recruitment

In April 2016, 178 subjects completed the experiment at JEDI-lab\(^2\), at Linköping University in Sweden. A total of 22 sessions with two conditions in each session were completed during three consecutive days. Both conditions were realized in each session to exclude effects from exogenous factors in a given session (Moffatt, 2016). A pilot of the experiment was done three days before the experiment to ensure that instructions were clear. The experiment was programmed in Qualtrics, an online survey software, which also randomized subjects into conditions. Participants were recruited from an undergraduate subject pool at Linköping University by using an online recruitment system for economic experiments (ORSEE)\(^3\) and via direct recruitment at Linköping University. The subject pool received information that an economic study was going to be performed and that they had the possibility to receive monetary compensation. Directly recruited subjects were randomly selected and received the same information as the subject pool. Divider walls were set up in-between computers in the computer lab, which received between 1-16 participants per session. Three sessions only had one participant because late subjects were offered to do the experiment on their own directly after the original session. All participants received information that subjects would complete the experiment at different times during three days. Participants were seated individually in front of a computer and received an ID-number. The ID-number served to ensure anonymity and to match results with the subject’s payment. Two days after the experiment was completed, participants received their payment.

3.2 Experimental Design

The experimental design was a between-group design with two conditions; a Voting Condition (VC), and an Individual Condition (IC). The study aimed to attain a sample size of approximately 200 subjects to be able to do statistical inference (Guala, 2009).

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\(^2\) JEDI-lab is a research project that conducts experiments in behavioral and neuroeconomics at Linköping University in Sweden. For more information, visit www.jedilab.weebly.com

There were 98 subjects in VC, which were divided into two groups, since two players, or two groups of players were required in the dictator games. There were 49 subjects in each group, an uneven number, so that decisions could be implemented by majority rule. There were 80 subjects in IC, an even number, so that each IC subject could be paired with an opponent in the dictator games. The experiment consisted of three blocks; 1) moral decision-making, 2) equality preferences, and 3) low cost theory and control questions.

**Manipulation: Voting Condition (VC) and Individual Condition (IC)**

The experimental manipulation in this study was decision-making through voting. In the beginning of each session subjects were randomized into two conditions: VC and IC. In VC, subjects voted on decisions and in IC, subjects made decisions individually. Majority rule was used to determine the outcome in VC, i.e. the alternative that most subjects voted for was implemented for all participants of the group. Subjects in IC were instructed to decide on one alternative in each question. Subjects in VC were instructed to vote for one alternative in each question. In addition, subjects in VC received the following instructions before they began to answer questions.

"You are part of a group of 49 persons in total. The participants in your group will conduct the study at different times. No one in your group will know who the other participants are; not during, nor after the experiment. You, and the other group participants will vote on a number of issues and decide on the alternative that you consider is the best. The outcome will be decided by majority rule; the alternative most people vote for will be implemented for you and the other participants in your group."

**Experimental Procedure**

In BLOCK 1, moral decision-making was measured. Subjects made decisions in two one-shot games. The first game involved a decision between a donation to UNICEF for the measles vaccine and taking money. Subjects chose between donating 63 SEK to UNICEF, which represented 20 doses of measles vaccine, or taking 63 SEK for themselves. The amount 63 SEK was chosen based on the budget of the experiment and the amount of doses vaccine in a package. We used the same definition of moral behavior as Kirchler et al., (2015), a donation to a charitable cause, because it represents a positive externality for an uninvolved third party. The donation is possibly a lifesaving decision that can save 10 people’s lives (two doses of measles vaccine are required for full protection). It should remain clear that the definition is a proxy for moral behavior, since we are not able to say that people who decide not to donate will not act morally in
other aspects. Kirchler et al., (2015) measured morality using decisions between a donation to UNICEF and taking money through a repeated choice list. The choice list finds the switching point where people start to take money for themselves instead of donating (Kirchler et al., 2015). This study does not intend to capture the switching point, but rather if there is an effect from voting on one moral decision. Therefore, the game was designed as a binary one-shot game. Additionally, a one-shot game is simple to understand and it excludes mixed strategies which can appear in repeated games (Guala, 2009).

The second game was a choice between a thermos for coffee, and to take 30 SEK. The amount 30 SEK was based on the willingness-to-pay of the thermos, stated by students⁴. The thermos was a neutral consumption good in comparison to the donation. The same statistical tests were realized for the consumption good, as for the donation, to investigate whether findings were specific only to a moral good. If there was a differences in the moral good and not in the consumption good, this would ensure robust result from the moral decision. That is, that diffusion of responsibility may occur in moral issues but not in morally neutral issues.

Payment from block 1 was determined as follows. If the majority of subjects in a group (two groups of 49 persons in VC) voted for the donation to UNICEF, a donation of 63 SEK was made on the behalf of all participants in the group. Consequently, subjects in the group did not receive any money. If the majority of subjects voted to take the money, each subject in the group received 63 SEK, and thus there was no donation to UNICEF. Payment in IC was straight forward, if a subject chose the donation, 63 SEK was donated to UNICEF. If a subject chose to take the money, they received 63 SEK. The same payment method was used for the consumption good.

In BLOCK 2, preferences for equality were measured. Subjects faced four dictator games with two different allocation options, respectively. The games were called Guilt Game, Envy Game, Costly Altruism Game and Inequality Aversion Game and originated from Pelligra & Stanca (2013)⁵. The choice to use these games was based on three criteria: the possibility to implement voting in the game, the possibility to maximize group size in VC, and a simple design for subjects to understand. The dictator games were advantageous since they were designed in four variations, where social prefer-

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⁴ One week prior to the experiment 12 students were asked their willingness-to-pay for the thermos. The mean result was 30 SEK.
⁵ Pelligra and Stanca (2013) call them T1, T2, T3 and T4. Guilt Game is T1, Envy Game is T2, Costly Altruism Game is T3 and Inequality Aversion Game is T4.
ences interact in different combinations in each game. Hence, we were able to investigate if voting lead to different outcomes depending on the combination of social preferences, with focus on equality. Subjects in VC voted for an allocation of money to their group, and to another group in each game. Everyone in IC decided on payoffs for themselves and their opponent. Participants in both conditions made decisions as if they were the dictator/dictating group. An alternative way to design the games would have been to use passive receivers, as Pelligra & Stanca (2013) did. We designed the dictator games such that everyone made decisions as if they were the dictator, to be able to collect data from the receivers’ preferences as well.

The four dictator games measuring equality preferences are presented below. Player 1 is the dictator and determines the allocation for both players. Alternative A is always the equal allocation; player 1 receives 40 SEK and player 2 receives 40 SEK. Alternative B represents different allocations in each game. In all four games alternative A would be preferred if player 1 is equality minded.

The Guilt Game and the Envy Game keep pay-offs for player 1 constant and therefore exclude selfish motives. The Guilt Game tests for advantageous inequality, where the equal alternative increases efficiency and decreases inequality. Both an efficiency-minded person and an equality minded person would prefer alternative A. The motive to choose option B would be for competitive preferences. The Envy Game tests for disadvantageous inequality. Subjects have to make a trade-off between equality and efficiency, where alternative B represents the efficient alternative. This makes it possible to distinguish between equality and efficiency preferences when giving is not costly for player 1.

The Guilt Game:
Alternative A: player 1 receives 40 SEK and player 2 receives 40 SEK
Alternative B: player 1 receives 40 SEK and player 2 receives 30 SEK

The Envy Game:
Alternative A: player 1 receives 40 SEK and player 2 receives 40 SEK
Alternative B: player 1 receives 40 SEK and player 2 receives 50 SEK

The Costly Altruism Game and the Inequality Aversion Game both test for disadvantageous inequality. The Costly Altruism Game examines equality preferences versus efficiency preferences when giving is costly for player 1 in alternative B. In order to in-
crease efficiency, player 1 needs to sacrifice some of their own pay-off. The Inequality Aversion Game examines decisions when giving to player 2 increases the pay-off for player 1. Alternative B increases disadvantageous inequality for player 1 but also increases efficiency.

The Costly Altruism Game:
Alternative A: player 1 receives 40 SEK and player 2 receives 40 SEK
Alternative B: player 1 receives 35 SEK and player 2 receives 50 SEK

The Inequality Aversion Game:
Alternative A: player 1 receives 40 SEK and player 2 receives 40 SEK
Alternative B: player 1 receives 45 SEK and player 2 receives 50 SEK

To determine payment from block 2, one group in VC was randomly selected as the dictating group. Thereafter, one of the four dictator games was randomly selected according to the random payment method. In IC, all subjects were randomly paired with another subject. Thereafter, one of the subjects in each pair was randomly selected as dictator. One of the four dictator games from each pair of IC subjects was randomly selected according to the random payment method. Pelligra & Stanca (2013) used a two-stage version of the random payment method. They randomly selected one of the dictators and subsequently one of eight dictator games, in order to determine payment. Even if Pelligra & Stanca (2013) used higher monetary incentives, our payment method gave high incentives for subjects to make decisions according to their preferences since half of the subjects were randomized as dictators for payment.

In BLOCK 3, we tested if low cost theory could explain voters’ behavior for the moral decision, and for equality preferences, by using two measurements; pivotal and expectations. We used results from the donation to UNICEF and from the Envy Game as dependent variables. The Envy Game was chosen among the four dictator games, because it presents the most prominent measure for the trade-off between equality and efficiency. Another reason was to keep the experiment from having many questions and being time consuming. To calculate the variable pivotal; how much an individual affects the outcome of a vote, we used expectations of being pivotal as a proxy. Previous studies had mainly varied the weight of the decisiveness in order to vary the degree of being pivotal. We used expectations of being pivotal, because an expressive voter’s decision depends on their expectations of being pivotal, since voting is done simultaneously (Tyran, 2004). Pivotal for the moral decision and pivotal for the envy game was meas-
ured using the following two questions separately:

*To what extent do you think your vote is decisive for the actual outcome in the vote concerning a donation to UNICEF?*

*To what extent do you think your vote is decisive for the actual outcome in the vote for option A: to allocate 40 SEK to your group and 40 SEK to the other group, or option B: to allocate 40 SEK to your group and 50 SEK to the other group?*

In addition, to examine subjects’ expectations of the outcome in the referendum, they were asked what they expected the majority would decide in the moral decision, in the consumption decision, and in the Envy Game.

### 3.3 Data

In this section we explain the variables and statistical methods used in this study. A complete listing of variables and their explanations are presented in table 1. The dependent variables moral decision, Guilt Game, Envy Game, Costly Altruism Game and Inequality Aversion Game had binary outcomes. We created an additional dependent variable, that measured equality preferences from all four dictator games called the equality rate. The equality rate, ranging from 0 to 1, calculated the mean value from the four dictator games. The manipulation of the study, voting, was an independent variable. To test low cost theory in the third research question we used two control variables of *pivotal*. Pivotal measured subjects’ expectations of affecting the outcome of the vote for a donation to UNICEF (pivotal moral) and in the Envy Game (pivotal equality), separately. Pivotal was measured on a scale from 1 (not at all), to 6 (completely). Expectations were two binary control variables and measured what subjects expected the majority to vote in the moral decision and in the Envy Game.

Additional control variables in this study were gender, age, worldview scale, worldview binary and education. Worldview scale was a proxy to measure subjects’ ideology in terms of how involved the government should be in society and ranged from 6 to 24. The worldview scale was calculated by pooling responses from six questions, based on the Cultural Cognition Worldview Scale (Kahan, 2012). The more individualistic views a person had, the higher the score. The worldview scale was also transformed into a

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6 The six worldview questions are found in Appendix 2 C, Part 3.
dummy variable, worldview binary; a score between 15 and 24 was coded as 1 = individualist, and a score between 6 to 14 was coded as 0=communitarian. Education was the subjects study field.

Table 1. Variable explanations

<table>
<thead>
<tr>
<th>Variable</th>
<th>Type</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moral Decision</td>
<td>Dependent variable</td>
<td>1 = Donation to UNICEF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = Take money</td>
</tr>
<tr>
<td>Guilt Game</td>
<td>Dependent variable</td>
<td>1 = Equal allocation (40, 40)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = Unequal allocation (40, 30)</td>
</tr>
<tr>
<td>Envy Game</td>
<td>Dependent variable</td>
<td>1 = Equal allocation (40, 40)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = Unequal allocation (40, 50)</td>
</tr>
<tr>
<td>Costly Altruism Game</td>
<td>Dependent variable</td>
<td>1 = Equal allocation (40, 40)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = Unequal allocation (40, 50)</td>
</tr>
<tr>
<td>Inequality Aversion Game</td>
<td>Dependent variable</td>
<td>1 = Equal allocation (40, 40)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = Unequal allocation (45, 50)</td>
</tr>
<tr>
<td>Equality Rate</td>
<td>Dependent variable</td>
<td>Scale: 0-1 (pooled equality)</td>
</tr>
<tr>
<td>Voting</td>
<td>Independent variable</td>
<td>1= Voting condition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = Individual condition</td>
</tr>
<tr>
<td>Pivotal Moral</td>
<td>Control variable</td>
<td>Scale: 1-6 (expectations of affecting the outcome in the donation to UNICEF )</td>
</tr>
<tr>
<td>Pivotal Equality</td>
<td>Control variable</td>
<td>Scale: 1-6 (expectations of affecting the outcome in the Envy Game)</td>
</tr>
<tr>
<td>Expectations Moral</td>
<td>Control variable</td>
<td>1 = Expect others to donate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = Expect others to take money</td>
</tr>
<tr>
<td>Expectations Equality</td>
<td>Control variable</td>
<td>1 = Expect others to choose the equal allocation in the Envy Game</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = Expect others to choose the unequal allocation in Envy Game</td>
</tr>
<tr>
<td>Gender</td>
<td>Control variable</td>
<td>1 = Female</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = Male</td>
</tr>
<tr>
<td>Age</td>
<td>Control variable</td>
<td>Continuous</td>
</tr>
<tr>
<td>Worldview Scale (WS)</td>
<td>Control variable</td>
<td>Continuous (6-24)</td>
</tr>
<tr>
<td>Worldview Binary</td>
<td>Control variable</td>
<td>1 = Individualist (15-24 on WS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 = Communitarian (6-14 on WS)</td>
</tr>
<tr>
<td>Education</td>
<td>Control variable</td>
<td>Categorical</td>
</tr>
</tbody>
</table>

For the statistical tests we mainly used parametric tests, which assume that the sample follows a probability distribution. In experimental economics the underlying probability distribution of variables is not crucial for the statistical tests. What matters most for reliable results is the randomization process. Therefore, we did not give much importance to the underlying probability distribution of variables in each test (Moffatt, 2016). All statistical tests were performed with the software package for statistical analysis, SPSS. Descriptive statistics were used to present the distribution of variables between conditions VC and IC to get an overview of the data. To test if there were statistical differences in VC compared to IC, we used a chi-square test, which tests the null hypothesis that variables are independent of each other (Gujarati & Porter, 2009). This
was done for the moral decision and for equality preferences in the dictator games. To test how voting affected the moral decision and equality preferences, we used a logistic regression model. Since the moral decision, the Guilt Game, the Envy Game, the Costly Altruism Game and the Inequality Aversion Game had binary outcomes, a logistic regression or a probit regression could be used to model the dependent variables. The logistic regression model predicts probabilities of an outcome in terms of odds ratio, simply put, the probability of an outcome to occur given the probability that it does not occur. For example, the probability of making a donation to UNICEF, given the probability of choosing to take the money. This interpretation was simple and suitable for our analysis compared to the probit model (Gujarati & Porter, 2009).

We also measured the effect of voting on the equality rate. Voting was tested as an independent variable in an Ordinary Least Square (OLS) regression on the equality rate. Control variables in the OLS and the logistic regressions were gender, age and worldview scale. In addition, we tested if equality preferences in the voting condition were affected by worldviews, by using the variable worldview binary in a t-test. The t-test measures if mean results in each condition categorized by worldviews differ from each other. To measure the effect of being pivotal in the moral decision, we conducted a logistic regression model with control variables gender, age, worldview scale, and pivotal moral. The same was done for the Envy Game with control variables and pivotal equality. This was done on data with VC subjects since pivotal was not measured in IC. Pivotal was also tested in a logistic regression for the consumption good, as a comparison to the moral good. To measure the effect of expectations, a logistic regression model was done on the moral decision, with control variables gender, age, worldview scale and expectations moral. The same was done for the Envy Game with expectations for the outcome in Envy Game. Also, a chi square test was used to test if there was a significant difference between expectations of the moral decision and expectations of the Envy Game based on conditions VC and IC.

3.4 Hypotheses

In order to investigate our first research question, we use the theory diffusion of responsibility. We hypothesize that voting leads to a relatively lower proportion of individuals that choose the donation to UNICEF compared to deciding individually. The second research question is rather explorative. Some research in political science finds that democracy and equal distribution of resources has a positive relationship (Acemoglu et al., 2008; Heap et al., 2015), however some studies find no difference
between voting and individual decision-making (Elbittar et al., 2011). We explore in which direction voting affects equality preferences since no previous research has specifically investigated equality preferences when people vote. In the third research questions we hypothesize that voters, who expect to be non-pivotal, vote for the donation in the moral decision according to low cost theory of expressive voters. Previous research has not stated how equality preferences are affected by expressive voters, therefore we test if expectations of being non-pivotal has an effect on equality preferences.

3.5 Ethics
The majority of participants were recruited online from the JEDI-lab subject pool. They voluntarily signed up for participation in the described experiment. The rest of the participants were directly recruited and received identical information to the subject pool. Participants were not informed that the aim of the study was to investigate how voting affected decisions compared to individual decision-making, which reduces transparency. However, giving participants information about the purpose of the experiment would have created additional bias. All participants were informed that participation was voluntary and anonymous. They were also informed that they could end the session at any given time. Participants received payment according to their decisions in the experiment, and according to randomization. Instructions about how the payment was calculated was given before each block in the experiment.

3.6 Internal and External Validity
In order to increase the internal validity, we limited the difference between groups to only the treatment and aimed to keep all other aspects identical. In an experiment setting, it is difficult to control for all external factors. Nevertheless, to ensure validity, subjects were not allowed to communicate with each other. Subjects did not know the identity of the other players or group members, therefore, they could not form decision rules for their voting behavior with other subjects. Monetary incentives were used to capture true preferences of subjects to increase validity of results. When there are no monetary incentives, people tend to exaggerate their stated preferences to show off an improved social image (Holt & Laury, 2002).

External validity refers to the extent to which the results from the method can be generalized. In this study we used students because it was less costly and because they were accessible. There is well-known critique against using students in laboratory experiments because it is a homogenous group of people with preferences that do not repre-
sent the entire population. Therefore, external validity is decreased since results cannot be generalized to the entire population (Roth & Kagel, 1995). We only aimed to investigate if people change their behavior when they vote, we did not aim to estimate the total effect for a general population. Therefore, results from this experiment can give an indication of how people respond to the manipulation.

Low cost theory originates from the fact that voters often are non-pivotal in large elections (Feddersen, 2009). It is difficult to mimic the degree of how voters are non-pivotal in large referendums on a regional or a national level in a laboratory setting. There is thus a limited link between laboratory setting and the real world. However, we aimed to capture different degrees of expectations of being pivotal that may vary across referendums, independent of the voting group. The experiment outcome can thus give us an indication of how people behave in the real world.

3.7 Study Limitations

Due to occurrences with technical problems this study has two limitations. The first was the decision to change the randomization function after the first day. Originally, we selected strict randomization into two conditions in the online survey software, Qualtrics. This resulted in 55 subjects randomized to VC and 24 subjects to IC the first day. The second day we changed the randomization function to randomly and evenly distributed to obtain an even distribution across conditions. After the third and last day of the experiment, 98 subjects were in VC and 80 subjects in IC, a difference of 18 subjects. The uneven distribution in conditions the first day should not affect preferences. A chi-square test confirmed that there was no significant difference in results between day one compared to day two and three combined.

The second limitation is that the order of the dictator games in block 2 were randomized in IC but not in VC, due to a technical problem in Qualtrics. This resulted in VC subjects answering to questions in block 2, in the following order; Guilt Game, Envy Game, Costly Altruism Game and Inequality Aversion Game. An anchoring effect could have occurred for subjects in VC, thus contributing to a larger fraction choosing the equal allocation in VC. The anchoring effect in these games could imply that since almost 90 percent of the subjects chose the equal alternative in the Guilt Game, the sub-

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sequent decision is more likely to be the same, i.e. the equal allocation. In IC, 11 subjects had the same order of the first two questions (i.e. Guilt Game and Envy Game) as subjects in VC. Out of those subjects, 36 percent chose the equal allocation. Overall, 37.5 percent chose the equal allocation in IC. Even though this result was based on a small sample, it gives an indication that the results in Envy Game most likely were not driven by an anchoring effect.

When testing for low cost theory we used the following formulation: "To what extent do you think your vote is decisive for the actual outcome in the vote...?". Subjects answered on a scale from 1 “Not at all”, to 6 “Completely”. This question could be interpreted in two ways. Either subjects interpreted the question by considering the outcome of the referendum. If subjects expected the outcome to be equal between the decisions, they answered that their vote was decisive. This was the interpretation intended. On the other hand, subjects may not have considered the expectations of what other's voted. Instead, they could have interpreted the question by considering their vote to be worth 1/49. In that case, they believed that their vote would never be decisive. If this was an established interpretation among subjects, they would have responded to all three questions about decisiveness of their vote, with the same answer; “Not at all”. This was the case for 30 of 98 subjects. Nevertheless, subjects may have answered this way for other reasons. When we excluded these subjects from the regression we obtained the same results; a positive significant difference in the moral decision and an insignificant odds ratio in the Envy Game.

Three sessions were conducted with only one participant. Apart from being the only participant, the sessions were identical to other sessions. Since they received information that the experiment would have many participants during three days, there is no reason why completing the experiment alone should affect decisions. We decided to include these participants in the experiment since we wanted reach the objective of recruiting approximately 200 subjects. Because less than 200 subjects originally signed up for the experiment, direct recruitment was necessary. Directly recruited subjects may differ in terms of how they react to monetary incentives. Subjects in the subject pool knew that they would receive payment, and some might have been driven by monetary incentives. Subjects that were directly recruited might have been less driven by monetary incentives and more so by social pressure or kindness. Since directly recruited subjects were randomly selected and randomly included in sessions, it is not considered to have affected the reliability of results.
4. RESULTS

In total, 178 subjects participated in the experiment conducted at the JEDI-lab at Linköping University during a three-day period in April 2016. All subjects who participated in the experiment completed all questions. Forty-five percent of subjects were randomly selected to the individual condition and 55 percent of subjects were randomly selected to the voting condition. The distribution between men and women was, 55 percent men in the individual condition and 54.1 percent men in the voting condition. The majority of subjects were between 20-25 years of age and the mean age was 23.3 years. The major study areas among subjects were Engineering (46.1 percent), Business Administration and Economics (18 percent) and other study fields (16.3 percent).

Table 2. Descriptive statistics

<table>
<thead>
<tr>
<th>Distribution of respondents</th>
<th>IC</th>
<th>VC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>45 %</td>
<td>45.9 %</td>
</tr>
<tr>
<td>Men</td>
<td>55 %</td>
<td>54.1 %</td>
</tr>
<tr>
<td>Age (mean)</td>
<td>22.68</td>
<td>23.83</td>
</tr>
<tr>
<td>Respondents (N)</td>
<td>80</td>
<td>98</td>
</tr>
</tbody>
</table>

4.1 How does voting affect moral behavior?

To answer our first research question we present the results from the moral decision. Figure 1. shows the proportion of subjects that choose the donation to UNICEF for the measles vaccine (the moral decision) over taking money for themselves.

Figure 1. Percentage of subjects that choose the donation to UNICEF in the moral decision

Note: The value presented above the bracket represents the p-value from the chi-square test.

In the voting condition (VC) 69.4 percent choose the donation and in the individual condition (IC), 70 percent choose the donation. Thus, responses are practically identical across conditions. We do not find differences between conditions in the consump-
tion good either.⁸ A chi-square test confirms that there is no statistical significant difference between decisions for the donation in IC and VC. To further explore how voting affects the moral decision, a logistic regression analysis was conducted. The regression, presented in table 3, controls for age, gender, and the worldview scale. The effects of each variable on the choice for the donation are presented as odds ratios.

Table 3. Logistic regression for the moral decision

<table>
<thead>
<tr>
<th>Moral Decision</th>
<th>Odds ratio</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition</td>
<td>VC</td>
<td>1.011</td>
</tr>
<tr>
<td></td>
<td>IC</td>
<td>Ref</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>2.654</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Ref</td>
</tr>
<tr>
<td>Age</td>
<td>0.952</td>
<td>0.295</td>
</tr>
<tr>
<td>Worldview Scale</td>
<td>0.961</td>
<td>0.464</td>
</tr>
<tr>
<td>Respondents (N)</td>
<td>178</td>
<td></td>
</tr>
</tbody>
</table>

Voting is not significant in the logistic regression and therefore does not have an effect on the moral decision. Gender is significant and has an effect on the donation to UNICEF. There are 2.65 greater odds that women choose the donation compared to men, which is significant on a one percent level. Age, and the level of individualistic values (worldview scale) are not statistically significant.

4.2. How does voting affect equality preferences?

To answer the second research question, results from four dictator games measuring equality preferences are presented. Figure 2 presents the percentage of subjects that chose the equal allocation, that is alternative A, in the Guilt Game, the Envy Game, the Costly Altruism Game and the Inequality Aversion Game. In all four games, alternative A is the equal allocation and always implies that player 1 receives 40 SEK and player 2 receives 40 SEK. Alternative B is always the unequal alternative and differs between the games.

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⁸ Results from the consumption decision are presented in Appendix 1.A.
Figure 2. Percentage of subjects that choose the equal alternative in the Guilt Game, the Envy Game, the Costly Altruism Game and the Inequality Aversion Game

Note: The value presented above the brackets represent the p-value from the chi-square tests.

In the Guilt Game and Envy Game, giving to the other player is costless. In the Guilt Game, subjects make a decision between alternative A, the equal and efficient alternative, and alternative B, the unequal and inefficient alternative. Alternative B implies that player 1 receives 40 SEK and player 2 receives 30 SEK. In VC, 88.8 percent choose alternative A. In IC, 87.5 percent choose alternative A. A chi-square test shows that there is no statistically significant difference between decisions in VC and IC. In the Envy Game the relative importance of equality and efficiency is measured. Subjects make a decision between an equal distribution, alternative A, and an efficient alternative. Alternative B implies that player 1 receives 40 SEK and player 2 receives 50 SEK. The results show that 57.1 percent choose alternative A in VC and 37.5 percent choose alternative A in IC. A chi-square test shows that the different results in VC and IC from the Envy Game are statistically significant at a one percent significance level.

In the Costly Altruism Game, subjects make a decision between an equal distribution and an efficient alternative, where giving to the other player is costly. In this game alternative B implies that player 1 receives 35 SEK and player 2 receives 50 SEK. The results show that 90.8 percent choose the equal allocation in VC and 87.5 percent choose the equal allocation in IC. A chi-square test shows that there is no statistical significant difference between VC and IC in the Costly Altruism Game. In the Inequality Aversion
Game, subjects make a decision between the equal alternative A and alternative B, which is efficient and unequal. In alternative B, player 1 receives 45 SEK and player 2 receives 50 SEK. The game measures the relative importance of equality and efficiency when not giving is costly. The result shows that 35.7 percent choose the equal and inefficient decision in VC and 31.3 percent choose the equal and inefficient alternative in IC. Results from the chi-square test show no statistical significant difference between VC and IC.

To further explore the robustness of the chi-square tests, a logistic regression model was conducted for each of the four dictator games that measure equality preferences, controlling for gender, age and worldviews. Table 4 shows the result from this analysis, where the effects of voting and the effects of control variables on the equal alternative are presented as odds ratios.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Guilt Game</th>
<th>Envy Game</th>
<th>Costly Altruism Game</th>
<th>Inequality Aversion Game</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC</td>
<td>Odds ratio</td>
<td>1.016</td>
<td>2.494</td>
<td>1.467</td>
</tr>
<tr>
<td>IC</td>
<td>P-value</td>
<td>0.973</td>
<td>0.005</td>
<td>0.447</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>1.631</td>
<td>3.015</td>
<td>3.605</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>Ref</td>
<td>Ref</td>
<td>Ref</td>
</tr>
<tr>
<td>Age</td>
<td>1.159</td>
<td>0.206</td>
<td>0.976</td>
<td>0.972</td>
</tr>
<tr>
<td>Worldview</td>
<td>Scale</td>
<td>0.870</td>
<td>1.096</td>
<td>1.036</td>
</tr>
<tr>
<td>Respondents (N)</td>
<td>178</td>
<td>178</td>
<td>178</td>
<td>178</td>
</tr>
</tbody>
</table>

In the Guilt Game voting is not significant for choosing the equal alternative. The control variables age and gender are not significant. However, being individualistic has a negative effect on equality preferences in the Guilt Game. When individualistic views increase by one unit, odds of choosing the equal distribution decreases by 0.870 at the 10 percent significance level. In the Envy Game, the voting condition and gender are significant for equality preferences at the one percent significance level. Being in the voting condition increases odds of having equality preferences by 2.494 compared to being in the individual condition. Women have 3.015 higher odds of having equality preferences compared to men in the Envy Game. Also, an increase by one unit towards individualistic views, on the worldview scale increases the odds of having equality preferences by 1.096, which is significant at the 10 percent significance level. In the Costly Altruism Game voting is not significant for choosing the equal alternative. Gender is significant at the one percent level; women have 3.605 higher odds of having equality
preferences in the Costly Altruism Game compared to men. Age and worldviews are not significant. In the Inequality Aversion Game voting is not significant. Gender is significant at the five percent level for choosing the equal distribution, women have 3.847 higher odds of having equality preferences in the Inequality Aversion Game compared to men. Age and worldviews are not significant in the Inequality Aversion Game.

To investigate the preferences for equality further, data from the four dictator games were pooled to get a mean value of equality. Table 5 presents an OLS regression on the pooled equality rate, with voting as the independent variable, and gender, age and worldview scale as control variables.

Table 5. OLS regression on the equality rate

<table>
<thead>
<tr>
<th>Equality Rate</th>
<th>Estimates</th>
<th>Std. Error</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.414</td>
<td>0.164</td>
<td>0.012</td>
</tr>
<tr>
<td>VC</td>
<td>0.069</td>
<td>0.038</td>
<td>0.070</td>
</tr>
<tr>
<td>Gender</td>
<td>0.175</td>
<td>0.038</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Age</td>
<td>0.002</td>
<td>0.006</td>
<td>0.734</td>
</tr>
<tr>
<td>Worldview Scale</td>
<td>0.005</td>
<td>0.006</td>
<td>0.438</td>
</tr>
<tr>
<td>Respondents (N)</td>
<td>178</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The estimate of voting is 0.069 and significant at the 10 percent level, indicating that voting increases equality preferences compared to individual decisions. Gender is positive and significant at the one percent level, indicating that women have equality preferences that are 0.175 higher on the equality rate compared to men. Control variables age and worldviews are not statistically significant for equality preferences on the pooled equality rate.

In order to test how the two different conditions (VC and IC) responded on the equality rate, based on predispositions of an individualistic or a communitarian worldview, a t-test was performed.

Table 6. Mean values of the equality rate presented by condition and worldviews (t-test)

<table>
<thead>
<tr>
<th>Worldview Binary</th>
<th>Individualist</th>
<th>Communitarian</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC</td>
<td>0.644</td>
<td>0.544</td>
<td>0.844</td>
</tr>
<tr>
<td>VC</td>
<td>0.654</td>
<td>0.715</td>
<td>0.005</td>
</tr>
<tr>
<td>Respondents (N)</td>
<td>80</td>
<td>98</td>
<td></td>
</tr>
</tbody>
</table>
Results from the t-test in table 6 show that subjects who are predisposed towards a communitarian worldview obtain a higher mean on the pooled equality rate in VC compared to IC.\textsuperscript{9} The different mean rates of equality preferences among communitarians in VC and IC is statistically significant at the five percent level. Subjects with predisposed communitarians views, present stronger equality preferences when they vote for decisions compared to when they make decisions individually. Subjects who are more inclined to have individualist views, score nearly identically when they vote and when they decide individually. This is confirmed with no statistical difference in the equality rate in VC and IC among subjects with individualistic values.

4.3 How do expectations of being pivotal affect voting behavior?

In Table 7, two logistic regressions are presented for the moral decision and the Envy Game including the control variables gender, age, worldviews and pivotal. In the first regression, the moral decision is the dependent variable and in the second regression, the Envy Game is the dependent variable.

| Table 7. Logistic regression for the moral decision and the Envy Game, including pivotal |
|---------------------------------|----------|----------|----------|----------|
|                                  | Moral Decision | Envy Game |          |          |
|                                  | Odds ratio    | P-value   | Odds ratio | P-value |
| Gender                          | 1.538        | 0.362     | 3.235      | 0.008    |
| Age                            | 0.957        | 0.388     | 0.981      | 0.701    |
| Worldview Scale                | 0.956        | 0.546     | 1.073      | 0.334    |
| Pivotal Moral                  | 1.485        | 0.076     | -          | -        |
| Pivotal Equality               | -            | -         | 0.806      | 0.271    |
| Respondents (N)                | 98           | 98        | 98         | 98       |

The regression for the moral decision shows that expectations of being pivotal increases the odds of choosing a donation to UNICEF by 1.485, which is valid at the 10 percent significance level. This result is the opposite compared to predictions according to low cost theory, which predicts that pivotal voters are more willing to vote according to their self-interest. The regression for Envy Game tests whether low cost theory can predict if non-pivotal voters choose the equal alternative in the Envy Game. The result shows that expectations of being pivotal is not statistically significant for choosing the equal alternative. In addition, we controlled if expectations of what the majority would vote for, or decide for, has an effect on actual decisions in the moral decision and the

\textsuperscript{9} We also performed a sensitivity analysis, by creating an alternative dummy with values 1 = individualist (6-15) and 0 = communitarian (16-24), i.e. implying higher criteria for the individualist coding. The results on the t-test of mean equality rate showed significant results.
Envy Game. Expectations that others choose the donation to UNICEF is significant for choosing the donation. Expectations that others choose the equal allocation in the Envy Game is significant for choosing equality in the Envy Game. Also, a chi-square test shows that there is no statistically significant difference in expectations across conditions in the moral good question and in the Envy game.¹⁰

5. DISCUSSION

5.1 Main Findings

The aim of this study was to investigate how voting affects decision-making. In the first research question we investigate how voting affects moral behavior. We do not find any difference between voting for a donation to UNICEF compared to deciding individually. Based on our method of measuring moral behavior it is not possible to confirm altered moral behavior when people vote. Hence, we do not find proof that being in a voting context induces diffusion of responsibility. Neither do we find proof for increased moral behavior when voting.

We suggest two possible explanations why we do not find altered moral behavior when voting. Firstly, it could be due to the lack of compromises and bargaining in the voting context used in this study. The nature of our binary one-shot game provides an “all or nothing” decision, which does not allow subjects to change their preferences slightly, even if they are willing to do so. Experimental work on markets, often involve a decision on a continuous scale rather than a one-shot decision (Kirchler et al., 2015; Falk & Szech, 2013). Secondly, in our voting condition the outcome is decided as a collective and implemented for all, even though decisions are made individually and anonymously. In group decision-making and in markets, people are focused on reaching an agreement. Hence, attention is drawn away from the individuals’ own preferences. This argument is also brought forward by Falk & Szech (2013), who argue that people in markets focus more on competition, negotiation and bargaining, which makes people less focused on the moral consequences of their action.

Our second research question was how voting affects equality preferences. Overall, our results show that people choose equality to a larger extent when voting, compared to deciding individually. Voting could potentially bring forth equality preferences because

¹⁰ To review results from the logistic regression on expectations in the moral decision and the Envy Game, and the chi-square test on expectations across conditions see Appendix 1A and 1B.
some people are affected by the voting treatment. This interpretation is supported by the fact that subjects who are predisposed towards a communitarian worldview, have higher equality rates when they vote compared to when they decide individually. Subjects who are more predisposed towards an individualistic worldview, are not affected by the voting treatment.

In the Guilt Game, a large majority of subjects choose equality, and there is no difference in equality preferences between deciding individually and collectively through voting. In the Envy Game, voting affects equality preferences positively, compared to individual decision-making. Subjects who vote prefer equal allocations, rather than an alternative that allocates higher pay-off to the other group. This implies that voters suffer from disadvantageous inequality, which is in line with the utility function of inequality aversion by Fehr & Schmidt (1999). Individuals on the other side, are less concerned about disadvantageous inequality. Hence, democratic decision-making induces more envious behavior than individual decision-making. Our results show that voting does not have an effect on equality preferences in the Costly Altruism Game, nor in the Inequality Aversion Game. Comparing these two games, we find that many subjects prefer equality when it is beneficial for themselves, and a minority prefer equality when it is costly to choose the equal distribution. Hence, the selfish alternative is always preferred among both voters and individuals. If selfish motives are sufficiently strong in the Costly Altruism Game and the Inequality Aversion Game, it could crowd out equality preferences, that otherwise might differ between voters and individuals. Our interpretations from these results remain speculative.

The third research question investigates if low cost theory can explain voters’ behavior. We reject low cost theory of expressive voters for both the moral decision and for equality preferences in the Envy Game. In the moral decision, the results show an effect in the opposite direction of what low cost theory predicts. When voters feel that they can affect the outcome they tend to vote for a donation to UNICEF to a larger extent. Our results are significant at the 10 percent level, which gives an indication of voting behavior, considering the sample size of the data. Previously, non-pivotal voters have been found more likely to approve a donation to charity than pivotal voters (Fischer, 1996; Feddersen et al., 2009). Other studies have not been able to explain voting behavior with low cost theory (Tyran, 2004). We speculate that when subjects have preferences for a moral cause, and they expect to affect the outcome, they may realize that an altruistic and moral majority can override a selfish minority. Thus, contributing with a vote for the donation can lead to a large donation from all 49 participants. Regarding equali-
ty preferences in the Envy Game, low cost theory fails to explain voters’ behavior, because of insignificant results. Thus, the assumption of instrumental voting could be more successful in explaining voting behavior in equality decisions. The lack of significant results for equality preferences is similar to what Tyran & Sausgruber (2006) find.

5.2 Policy Implications

Based on the result from this study, voting is more successful as an institution at reflecting individuals aggregated preferences in moral decisions, compared to recent evidence observed in markets (Falk and Szech, 2013; Kirchler et al. 2015). Voting on equality issues however, may induce more equal decisions. Results from this study suggest that individuals could change their preferences in some issues on redistribution policy, depending how inequality affects them, in relation to others. It is important for policy-makers to understand the mechanisms behind voting decisions, especially when forming new bills, laws and policy changes that affect some sort of redistribution. The increase in wealth inequality, social inequality and income inequality between and within countries have been identified as current and challenging issues of our time and are a central part of today’s policy debate (Pikkety, 2014). This makes it particularly interesting that our results show that people prefer equality when voting. Policy makers are crucial in the role of designing and implementing different institutions. In a recent study by Fisman et al., (2015), they find evidence that the future policymaking elite in America exhibit preferences for efficiency to a larger extent compared to the rest of the American population. Our results in combination with the study from Fisman et al., (2015) raise an important question. If policy makers are more efficiency focused and the pure act of voting could make people more equality focused, is it possible to implement redistribution policies that reflect the true preferences of the population?

We find that when subjects expect that their vote is going to be decisive, they are more inclined to vote for a moral decision. This gives indications that when people feel involved in the democratic system, people could be more willing to vote for a moral decision. This has implications in the context of today’s debate regarding lower engagement in the political system in terms of party membership, and people feeling that they do not have a voice in the policy processes (Chwalisz, 2015). It suggests that there is great potential in democratic innovations through new institutions, increasing civic engagement. Our findings suggest that people are willing to sacrifice for the greater good, they just need the proper institutions and incentives to make these decisions. We also anticipate that this could potentially be carried over to other societal issues, which involve
sacrifice of one's own resources to improve the welfare of others. For example, preservation of natural resources for future generations. Policy makers have to move away from the narrow assumption of “homo-economicus” when designing institutions. Instead of asking ourselves how we can induce improved moral behavior when people act purely out of self-interest, we should ask ourselves how we can advantageously use exiting incentives and institutions in order to make people contribute to the greater good?

In summary, these implications are possible to generalize to voting situations with similar features presented in this study. In other voting environments, when voting is not anonymous, or other social aspects are present, such as peer pressure, or strategy, the voting procedure may affect decision-making in other ways. Also, we show that for this given population voting may affect individuals in the above-mentioned way. In order to establish the potential of these findings, further research needs to investigate if this behavior is applicable in other populations with other socioeconomic backgrounds, ages and education.

5.3 Conclusion

We find that people do not alter moral behavior when they vote. Thus, people do not perceive diffusion of responsibility when they vote. We also find results indicating that people prefer equality to a larger extent when they vote. In particular, voters become more envious compared to individuals. We find that expecting to be pivotal induces people to express an increased moral behavior, while it has no effect on equality preferences. Results in this explorative study regarding decision-making through voting, are not entirely conclusive, since voting affects equality preferences, and not the moral decision. Our findings indicate that in order to understand the complexity behind voting decisions regarding morality and equality, further research is needed.
REFERENCES


APPENDIX

Appendix 1: Supplementary Results

A. Results from the consumption decision

Figure 8. Percentage of subjects that choose the thermos in the consumption decision

<table>
<thead>
<tr>
<th>Consumption Decision</th>
<th>Odds ratio</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC</td>
<td>0.781</td>
<td>0.440</td>
</tr>
<tr>
<td>IC</td>
<td>Ref</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Odds ratio</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>1.071</td>
<td>0.830</td>
</tr>
<tr>
<td>Male</td>
<td>Ref</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Odds ratio</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.840</td>
<td>0.021</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Worldview Scale</th>
<th>Odds ratio</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.012</td>
<td>0.822</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Respondents (N)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>178</td>
<td></td>
</tr>
</tbody>
</table>

Table 9. Logistic regression for the consumption decision including pivotal

<table>
<thead>
<tr>
<th>Consumption Decision</th>
<th>Odds ratio</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>1.207</td>
<td>0.679</td>
</tr>
<tr>
<td>Age</td>
<td>0.886</td>
<td>0.139</td>
</tr>
<tr>
<td>Worldview Scale</td>
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</tr>
<tr>
<td>Pivotal</td>
<td>1.248</td>
<td>0.230</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Respondents (N)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>98</td>
<td></td>
</tr>
</tbody>
</table>
B. Results from expectations moral and expectations equality

Table 11. Expectations of the moral decision and expectations of the Envy Game

<table>
<thead>
<tr>
<th></th>
<th>Expect others to donate</th>
<th>Expect other to choose equality</th>
</tr>
</thead>
<tbody>
<tr>
<td>VC</td>
<td>71.4%</td>
<td>60.2%</td>
</tr>
<tr>
<td>IC</td>
<td>75.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>P-value (Chi-square)</td>
<td>0.593</td>
<td>0.173</td>
</tr>
</tbody>
</table>

Table 12. Logistic regression for the moral decision and the Envy Game including expectations

<table>
<thead>
<tr>
<th></th>
<th>Moral Decision</th>
<th>Envy Game</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odds ratio</td>
<td>P-value</td>
</tr>
<tr>
<td>Condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VC</td>
<td>1.074</td>
<td>0.877</td>
</tr>
<tr>
<td>IC</td>
<td>Ref</td>
<td>Ref</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
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<tr>
<td>Female</td>
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</tr>
<tr>
<td>Male</td>
<td>Ref</td>
<td>Ref</td>
</tr>
<tr>
<td>Age</td>
<td>1.037</td>
<td>0.510</td>
</tr>
<tr>
<td>Worldview Scale</td>
<td>0.950</td>
<td>0.483</td>
</tr>
<tr>
<td>Expectations Moral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donate</td>
<td>33.65</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Take money</td>
<td>Ref</td>
<td></td>
</tr>
<tr>
<td>Expectations Equality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expect equality</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Expect efficiency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respondents (N)</td>
<td>178</td>
<td>178</td>
</tr>
</tbody>
</table>
Appendix 2: Invitation and Instructions

A. E-mail invitation to participants

Dear # first name # # surname #,

We are looking for Swedish-speaking students to participate in a study on decision-making. The experiment is performed in the computer lab Surtsey in the A-building on Campus Valla and takes about 15 minutes to complete. Compensation varies depending on the study's outcome.
Click on the link below if you are interested in participating:
# Link#

Sincerely,
JEDI Lab

B. Instructions before the experiment (presented orally)

Welcome and thank you for taking the time to participate in this study. My name is Kajsa, and this is Lisa, we are experiment leaders for this study. The study is voluntary and will take approximately 15 minutes to complete. On Friday the 8th of April you are able to collect your monetary compensation for the study, in this room. Details for this can be found on the paper note that is located in front of your computer, it is important that you save the paper note, since you need the ID number in order to receive payment.

Please note, do not talk to anyone about the questions in this study, since we will conduct this study during three days. Other people will answer the same questions as you.

If you have any questions or if there are any questions that you do not understand, just raise your hand and we will help you.
Please start when you are ready.
C: Questions in the experiment

THE VOTING CONDITION

Welcome!
Fill in your ID number from the paper note located beside your computer. This is important for us to be able to give you the right amount of money based on your answers to the questions. It is important that you save the paper note with your ID number. It is the receipt that you have to present to get your compensation.

During the study, you are not allowed to talk to other participants and the use of cell phones is not permitted. According to economic research practice, all instructions and statements in this study are true. All your answers are anonymous, neither experiment leaders or other participants will know what choices you have made. After clicking on your answers and proceeding in the questionnaire, you will not be able to go back and change your decisions. Information about how you receive your compensation is on the note with your ID number.

The study contains three blocks. Before each part, you will receive instructions which are important to read. It is important that you understand how each part works before you begin a new part. If you have any questions, raise your hand and ask the experiment leaders. When you have responded to all questions and have completed the study, please remain seated. The experiment leaders will let you know when you can leave the room.

You are part of a group of 49 persons in total. The participants in your group will conduct the study at different times. No one in your group will know who the other participants are; not during, nor after the experiment. You, and the other group participants will vote on a number of issues and decide on the alternative that you consider is the best. The outcome will be decided by majority rule; the alternative most people vote for will be implemented for you and the other participants in your group.

PART 1
In this part you will vote on two issues, on which you can vote for option A or option B in each issue. Remember, the option most participants in your group votes for will be implemented for you and the participants of your group.

Information Measles Vaccine
Measles is a highly infectious and deadly disease. Each day hundreds of children become victims of this disease. The survivors often suffer consequences for their entire lives, such as blindness or brain damage. This occurs even though it is easy to protect children.

Measles is extremely infectious and spreads especially fast when many people live close together, as in refugee camps. Especially for weakened children, the disease often results in death or leads to lasting physical or mental damage. Measles is one of the main causes of blindness among children and often becomes critical when no medical help is available. This occurs even though measles vaccination offers quick, reliable, and inexpensive protection. UNICEF conducts major vaccination campaigns, especially after natural disasters and in other emergency situations, to prevent the spreading of the disease. Giving measles vaccines not only protects the vaccinated children, it also reduces the risk of contamination for those who come in contact with them.

![Photo: UNICEF](image)

Question 1
You can either vote for option A (you and the other participants in the group receive 63 SEK each) or option B (63 SEK for each participant in the group is donated to UNICEF for the measles vaccine). A donation of 63 SEK corresponds to 20 doses of measles vaccine. This means that if the majority votes for option A, you and the rest of the group receive a sum of money but vaccines will not be sent to children in need. If the majority votes for option B, vaccines will be sent to children in need, however, no one in the group receives money.

Do you vote for option A or option B?
Option A: You and the other participants in your group receive 63 SEK per person
Option B: 63 SEK per person is donated to UNICEF for the measles vaccines
Question 2
You can either vote for option A (you and the other participants in the group receive 30 SEK each) or option B (you and the other participants in the group receive a thermos mug). The thermos is shown in the image below. This means that if the majority votes for option A, you and the rest of the participants in your group receive a sum of money but no one receives a thermos mug. If the majority votes for option B, you and the rest of your group receive a thermos mug each, however, no one in the group receives money.

Do you vote for option A or option B?
• Option A: You and the other participants in your group receive 30 SEK per person
• Option B: You and the other participants in your group receive a thermos mug each

PART 2
In this part of the study, your group (49 people) will randomly be paired with another group of 49 persons. No one will know who belongs to which group; not during nor after the study. You will receive four questions involving options with different distribution of money to your group and to the other group. The members of the other group will answer the same questions as you. One of the four questions from either your group or the other group will randomly be selected to determine actual payment.

Example: Do you vote for option A or option B?
• Option A: Your group receives 20 SEK per person and the other group receives 20 SEK per person
• Option B: Your group receives 30 SEK per person, and the other group receives 25 SEK per person

If the majority of your group would vote for option A, you and the participants in your group would receive 20 SEK per person. Participants in the other group would receive
20 SEK per person. If the majority of your group would vote for option B, you and the other participants in your group would receive 30 SEK per person. Participants in the other group would receive 25 SEK per person.

Do you vote for option A or option B?
• Option A: Your group receives 40 SEK per person, and the other group receives 40 SEK per person
• Option B: Your group receives 40 SEK per person and the other group receives 30 SEK per person

Do you vote for option A or option B?
• Option A: Your group receives 40 SEK per person, and the other group receives 40 SEK per person
• Option B: Your group receives 40 SEK per person and the other group receives 50 SEK per person

Do you vote for option A or option B?
• Option A: Your group receives 40 SEK per person, and the other group receives 40 SEK per person
• Option B: Your group receives 35 SEK per person and the other group receives 50 SEK per person

Do you vote for option A or option B?
• Option A: Your group receives 40 SEK per person, and the other group receives 40 SEK per person
• Option B: Your group receives 45 SEK per person and the other group receives 50 SEK per person

PART 3
In the third and last part you will answer questions that only concern you.

Choose a number that represents how well each statement applies to you. Work quickly and click on the first option you agree with. Enter one option for each question.

People in our society tend to have different views of the extent to which individuals should be allowed to make decisions for themselves. To what extent do you agree with or disagree with, each statement below?
1. The government interferes far too much in our everyday lives.
1 = strongly disagree
2 = partially disagree
3 = partially agree
4 = completely agree

2. Sometimes government needs to make laws that keep people from hurting themselves.
1 = strongly disagree
2 = partially disagree
3 = partially agree
4 = completely agree

3. It's not the government's business to try to protect people from themselves.
1 = strongly disagree
2 = partially disagree
3 = partially agree
4 = completely agree

4. The government should stop telling people how to live their lives.
1 = strongly disagree
2 = partially disagree
3 = partially agree
4 = completely agree

5. The government should do more to advance society's goals, even if that means limiting the freedom and choices of individuals.
1 = strongly disagree
2 = partially disagree
3 = partially agree
4 = completely agree

6. Government should put limits on the choices individuals can make so they don't get in the way of what's good for society.
1 = strongly disagree
2 = partially disagree
3 = partially agree
What do you think the majority in your group votes in the question concerning a donation for measles vaccine to UNICEF?

- I believe the majority votes to take 63 SEK for themselves
- I believe the majority votes for the donation of 63 SEK to UNICEF for the measles vaccine

What do you think the majority in your group votes concerning the choice between a thermos mug and a sum of money?

- I believe the majority votes for the thermos mug
- I believe the majority votes to receive 30 SEK

What do you think the majority in your group votes in the following options concerning the distribution of money between your group and the other group?

- I believe the majority votes to receive 40 SEK (per person) in their group and give the other group 40 SEK (per person)
- I believe the majority votes to receive 40 SEK (per person) in their group and give the other group 50 SEK (per person)

To what extent do you think your vote is decisive for the actual outcome in the vote concerning a donation to UNICEF?

1. Not at all
2.
3.
4.
5.
6. Completely

To what extent do you think your vote is decisive for the actual outcome in the vote concerning a thermos mug or a sum of money?

1. Not at all
2.
3.
4.
5.
6. Completely

To what extent do you think your vote is decisive for the actual outcome in the vote for option A: to allocate 40 SEK to your group and 40 SEK to the other group, or option B: to allocate 40 SEK to your group and 50 SEK to the other group?
1. Not at all
2.
3.
4.
5.
6. Completely

Gender:
• Female
• Male

What year were you born?

What is your study field?

Business Law
Engineer
Business Administration and Economics
Physiotherapy
Teaching
Medicine
Cognition Science
Political Science
Human Resources
Nursing
Psychology
Computer Science
Statistics
Independent courses
Not a student
Other
THE INDIVIDUAL CONDITION

Welcome!
Fill in your ID number from the paper note located beside your computer. This is important for us to be able to give you the right amount of money based on your answers to the questions. It is important that you save the paper note with your ID number. It is the receipt that you have to present to get your compensation.

During the study, you are not allowed to talk to other participants and the use of cell phones is not permitted. According to economic research practice, all instructions and statements in this study are true. All your answers are anonymous, neither experiment leaders or other participants will know what choices you have made. After clicking your on answers and proceeding in the questionnaire, you will not be able to go back and change your decisions. Information about how you receive your compensation is on the note with your ID number.

The study contains three blocks. Before each part, you will receive instructions which are important to read. It is important that you understand how each part works before you begin a new part. If you have any questions, raise your hand and ask the experiment leaders. When you have responded to all questions and have completed the study, please remain seated. The experiment leaders will let you know when you can leave the room.

PART 1
In this part, you will respond to two questions where you can choose option A or option B in each question. The option you choose in both questions will be implemented for you.

Information Measles Vaccine

**Measles is a highly infectious and deadly disease. Each day hundreds of children become victims of this disease. The survivors often suffer consequences for their entire lives, such as blindness or brain damage. This occurs even though it is easy to protect children.**

Measles is extremely infectious and spreads especially fast when many people live close together, as in refugee camps. Especially for weakened children, the disease often results in death or leads to lasting physical or mental damage. Measles is one of the main
causes of blindness among children and often becomes critical when no medical help is available. This occurs even though measles vaccination offers quick, reliable, and inexpensive protection. UNICEF conducts major vaccination campaigns, especially after natural disasters and in other emergency situations, to prevent the spreading of the disease. Giving measles vaccines not only protects the vaccinated children, it also reduces the risk of contamination for those who come in contact with them.

Photo: UNICEF

Question 1
You can choose either option A (you receive 63 SEK) or option B (63 SEK is donated to UNICEF for the measles vaccine). A donation of 63 SEK corresponds to 20 doses of measles vaccine. This means that if you choose option A, you receive a sum of money but the vaccine will not be sent to children in need. If you choose option B, the vaccine will be sent to children in need, however, you do not receive any money.

Do you choose option A or option B?
Option A: You receive 63 SEK
Option B: 63 SEK is donated to UNICEF for the measles vaccine

Question 2
You can choose either option A (you receive 30 SEK) or option B (you receive a thermos mug). The thermos mug is shown in the image below. This means that if you choose option A, you receive a sum of money but you do not receive a thermos mug. If you choose option B, you receive a thermos mug, however, you do not receive money.
Do you choose option A or option B?
Option A: You receive 30 SEK
Option B: You receive a thermos mug

PART 2
In this part of the study you will randomly be paired with another participant. No one will know who the other person is; not during nor after the study. You will receive four questions involving options with different distribution of money to you and to the other participant. The other participant will answer the same questions as you. One of the four decisions from either you or the other participant will randomly be selected to determine your payment.

Example: Do you choose option A or option B?
Option A: You receive 20 SEK and the other participant receives 20 SEK
Option B: You receive 30 SEK and the other participant receives 25 SEK

If you choose option A you would receive 20 SEK and the other participant would receive 20 SEK. If you choose option B you would receive 30 SEK and the other participant would receive 25 SEK.

Do you choose option A or option B?
Option A: You receive 40 SEK and the other participant receives 40 SEK
Option B: You receive 40 SEK and the other participant receives 30 SEK

Do you choose option A or option B?
Option A: You receive 40 SEK and the other participant receives 40 SEK
Option B: You receive 40 SEK and the other participant receives 50 SEK
Do you choose option A or option B?
Option A: You receive 40 SEK and the other participant receives 40 SEK
Option B: You receive 35 SEK and the other participant receives 50 SEK

Do you choose option A or option B?
Option A: You receive 40 SEK and the other participant receives 40 SEK
Option B: You receive 45 SEK and the other participant receives 50 SEK

PART 3
In the third and last part you will answer questions that only concern you.

Choose a number that represents how well each statement applies to you. Work quickly and click on the first option you agree with. Enter one option for each question.

People in our society tend to have different views of the extent to which individuals should be allowed to make decisions for themselves. To what extent do you agree with or disagree with, each statement below?

1. The government interferes far too much in our everyday lives.
   1 = strongly disagree
   2 = partially disagree
   3 = partially agree
   4 = completely agree

2. Sometimes government needs to make laws that keep people from hurting themselves.
   1 = strongly disagree
   2 = partially disagree
   3 = partially agree
   4 = completely agree

3. It’s not the government’s business to try to protect people from themselves.
   1 = strongly disagree
   2 = partially disagree
   3 = partially agree
   4 = completely agree
4. The government should stop telling people how to live their lives.
1 = strongly disagree
2 = partially disagree
3 = partially agree
4 = completely agree

5. The government should do more to advance society's goals, even if that means limiting the freedom and choices of individuals.
1 = strongly disagree
2 = partially disagree
3 = partially agree
4 = completely agree

6. Government should put limits on the choices individuals can make so they don't get in the way of what's good for society.
1 = strongly disagree
2 = partially disagree
3 = partially agree
4 = completely agree

What do you think that the majority of participants in this study choose in the question concerning the donation of measles vaccine to UNICEF?

• I believe the majority chooses to take 63 SEK for themselves
• I believe the majority chooses to donate 63 SEK to UNICEF for the measles vaccines

What do you think the majority of participants in this study chooses in the question between a thermos mug and a sum of money?

• I believe that the majority chooses thermos mug
• I believe the majority chooses to receive 30 SEK

What do you think the majority of participants in this study chooses in the following options concerning the distribution of money between you and another participant?
• I believe the majority chooses to receive 40 SEK and give the other participant 40 SEK
• I believe the majority chooses to receive 40 SEK and give the other participant 50 SEK

Gender:
Female
Male

What year were you born?

What is your study field?

Business Law
Engineer
Business Administration and Economics
Physiotherapy
Teaching
Medicine
Cognition Science
Political Science
Human Resources
Nursing
Psychology
Computer Science
Statistics
Independent courses
Not a student
Other