

DONATING TO OTHERS UNDER DIFFERENT LIMITS OF DONATION

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Darovanie iným za rozličných podmienok týkajúcich sa darcovstva

Abstract: *Altruism is a moral principle that results in selfless helping to other people in order to give up resources which will benefit others. But what are the limits of human altruism? Is human altruism affected by the costs of donation? We use laboratory experiment to examine how increasing costs of giving affect willingness to help others. Furthermore, we test whether relations and cooperation in the group affect subject's altruistic behaviour. The paper demonstrates, that as the cooperation in the group rises, so does the subjects' willingness to donate. Moreover, the increasing costs of donation have almost no effect on the generosity of the subjects.*

Keywords: *altruism; experimental economics; costs of donation; limitations of donation; cooperation; in-group relations*

JEL Classification: D91, C91, C92

1 Introduction

Individuals often face the conflict between prosocial motivations for helping and selfish impulses that favour not helping. Human effort to help can be shown in many forms from donating money to charity, to volunteering time for altruistic causes, to rescue victims. To help others is socially and personally desirable. The trend of charitable giving has continued to grow and the level of charitable giving has consecutively reached record levels during the previous three years in a row. The donating public, not necessarily

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in terms of big foundations or corporations, but individuals are responsible for the vast majority of annual donations. It is therefore the individual who always represents the largest single source of donations. In the USA individuals gave \$286.65 billion, accounting for 70% of all charitable giving over 2016 (Giving USA, 2018). Subjects in economic laboratories have also been proving their unselfish behaviour in the form of cooperation in prisoners' dilemma games, giving to public goods, or donating money in dictator games (Engel 2011; List 2007). Charitable organizations support wide range of causes, and success of these organizations depends on the generosity and the willingness of the general public to provide gifts for charities in terms of monetary, goods and services donations in order to help them to carry out their charitable work. Many non-government organisations and fundraising charities are using text messages as effective fundraising tool. Yet, the costs of this messages strongly differentiate.

Prosocial altruistic behaviour supporting donation to others is inconsistent with traditional utility theory in which individuals care only for their own consumption. Pure altruism is entirely motivated by the generosity and concern for the welfare of the recipients (Warr, 1982). Impure altruism can be driven by desire to win respect from others or by desire to avoid scorn of others. Most cultural systems also promote helping for example religions, morals, and social groups honour and esteem individuals for acts of helping, by that providing another reason to help. Therefore, donors may gain utility from the overall act of giving. It is clearly the social pressure, guilt, sympathy, or simply the desire for a 'warm glow' which could play important roles in the decisions of donors (Andreoni, 1990). Prestige, respect from act of giving, yielding a positive image could drive donor's motivation in the first place.

The decision making of each individual is in real life influenced by the acts and thoughts of other individuals. Economic theory perceives that households and firms are making their decisions as groups where individuals interact with one another. Important economic and political decisions are made by groups of professionals or members of committees, the differences between individual and group decision making are becoming popular in the research of experimental economists and group identity became central concept in the social sciences. Chaundhuri (2011) examined that many participants in laboratory public goods experiments are conditional co-operators whose contributions to the public goods are positively correlated with their beliefs about the average group contribution. When group members cooperate, and are dependent on each other, they often rely on each other and they tend

to bond together. However, in the absence of realistic conflict and scarcity, neither strong in-group attachment nor outgroup hostility would be expected (Brewer, 2007). A similar kind of relationship might be found among fellow students where certain relationships are created and so is the reputation of each group member.

As each subject follows their preferences, they might be willing to donate based on various stimuli. Many field and laboratory studies have shown that a large proportion of people are willing to give up part of their money to help others (Camerer and Fehr, 2004; Andreoni, 2007). Harbaugh (1998) claims donors tend to donate just the minimum amount necessary to make their donation public and to gain prestige and respect from society by being recognized as donors. Croson and Shang (2008) studied the effect of social information on the voluntary provision of public goods. They proved positive social information effect on individual contribution and find that the social information increased contributions and did not crowd out future contributions. Information about person increases the likelihood of cognitive attention and thus deeper consideration of giving (Servátka, 2009, 2010); Meer and Rosen (2012); Small and Lowenstein (2003) proved that donation choices of subjects are affected by information about other people's previous donation decision. The mere fact of providing information about subject is a form of identification. The last line of research represents the exploration of reputation effects on indirect reciprocity by comparing the behaviour towards strangers and towards people with an established reputation. Nisvan, Gangadharan and Nikiforakis (2011) claims that subjects compensate unlucky group members by giving them significantly higher amounts and that putting subjects into unlucky situations also increase caring. The reputation not only provides information about the paired subject but it can also be seen as a signal of socially appropriate behaviour, especially when the reputation is represented by a past decision of the subject. Therefore, specific information about subjects' preliminary evaluation might increase donations.

However, when deciding whether to be engaged in pro-social behaviour, individuals consider both, the benefits and costs. But what happens when giving becomes costlier? For instance, long waiting time for donation negatively affects donor's motivation for future donations such as delayed returns or not returning at all. Craig et al. (2016) observed that longer waiting time not only delays returns, but also affects the type of donation that is made when the donor returns. Knowles and Servátka (2015) examined in their research, that people may intend to donate, but because of the transaction costs of doing so,

postpone making the payment until they are less busy. And having postponed making the donation once, they keep postponing. Therefore, from certain point the transaction costs can discourage donors from future donation.

In this paper, we study the effect of increasing limits of donation while asking whether a different level of costs affects individuals' willingness to donate. This paper complements recent studies that assess how different level of costs affect human willingness to donate and how subjects differentiate between strong relations and good cooperation in the group.

1.1 Data and methodology

To test subjects' willingness to donate under different costs we used the method of laboratory experimentation. Zero costs, Low costs, High costs represent treatments that differentiate by limitations of donation. To check for possible order effects, we presented the game in different orders. Our model build on the knowledge from previous findings and test the reputation hypothesis, with the possibility of real effort task for building subjects' relation to endowment. Subjects were engaged in dictator gamewhere the dictator receives an endowment (e.g., 10 tokens) and then decides how much (if any) to give to the recipient. The recipient does not have a say in the decision and cannot affect the dictator's outcomes. The prospect of helping thus presents an important case of motivation conflict, in which prosocial desires to help must compete against self-interested motives to refrain from helping and prevail either egoistic or altruistic behaviour. The focus of this research is to examine whether the increasing level of costs of donation can discourage donors from donation.

The experiment was conducted at the University of Economics in Bratislava. There were two rounds of experimentations. The subjects were 110 postgraduate students 70 women and 40 men. Students were divided into seven sessions according their class and each of them were exposed to three treatments. Experiment lasted about 30 minutes where subject earned maximum 10 points in each session (for the entire experiment 30 points). Each subject received written and spoken instructions of explanation of the tasks, description of how the payoff is divided. Subjects were informed that their future income depends on the number of correctly answered questions in the quiz and the time until they finished the quiz. On average, an experimental session lasted around 30 min including initial instructional period. The minimum number of participating subjects in a session was 13.

In each session, the participants were randomly divided into group i and group j . All subjects were then seated in cubicles, group i mixed with group j . They were told that for payoffs would be selected the treatment randomly at the end of the experiment to control for wealth and portfolio effects. Once the experiment started, a new set of individual instructions were provided for each subject upon completion of each task. The design also included use of a double-blind payoff protocol in which a subject's decisions are never linked with the subject's identity, thus minimizing possible experimenter demand effects on fairness behaviour. To avoid order effects the treatments were for every subject organized in different order.

The experiment investigates the relationship of earnings and giving in a new two staged game, using finitely repeated linear public goods game with $N > 2$ players. Participants in the first stage earn their income by answering the Quiz tasks and their deceptively earnings depend on their performance. Each quiz round consisted of 5 quiz questions and there were 3 quiz rounds. After answering the Quiz questions all the participants are ordered from the best to worst performance. The half with best performance score receives 10 points where $i \in \{0, 1 \dots N_1\}$ and the half with worst performance score receives 0 points where $j \in \{0, 1 \dots N_2\}$.

In the second stage the subjects are given a chance to transfer part of their earnings to group members scored 0 points. Subjects are asked a question "Some of your classmates have received 0 points. Are you willing to give away some of your tokens to help your classmates?" In each round subjects are limited in the minimum share if they want to donate some of the tokens. Donated amount will be distributed equally among all the group members who have not received any points. Subject may keep all the income for themselves – the sign of egoistic behaviour, or donate for the classmates – sign of altruistic behaviour. The payoff of player i with positive endowment in one round of the game is given by:

$$\pi_i = E_i - x_i \quad (1)$$

where $x_i \in \{0, 1 \dots E_i\}$ is the contribution by player i for the group scored 0 in Quiz task. This is referred as control treatment or our baseline. Initial endowment of each player is represented by $E = 10$. Treatment low limits of donation limited subjects by $x_i^L \in \{2, 3, \dots E_i\}$, treatment high limits of donation allowed to $x_i^H \in \{5, 6, \dots E_i\}$. No decimal numbers are participants able to donate.

For subjects y_i that received 0 points the payoff is defined by the sum of all

the contributions from players x_i where $\sum_{i=1}^{N_1} x_i = x_1 + x_2 + x_3 + \dots + x_{N_1}$ and divided equally between players y_i that received 0 endowment from the quiz task.

$$\pi_j = 0 + \sum_{i=1}^{N_1} x_i / N_2 \quad (2)$$

At the end of the experiment, subjects were asked to fill in the post experimental survey. Subjects answered the questions about their self-evaluation of the level of cooperation in the class, and the relations with their classmates. Cooperation in the group marked from 5– great, 4– good, 3– average, 2– below average, 1– bad. Relations in the group 5– great, 4– good, 3– average, 2– below average, 1– bad. Concluded with the question about the clearness of the instructions and thank you note.

1.2 Research questions

Donors tend to provide gifts in form of time, money, etc. When deciding whether to engage in pro-social behaviour, potential donors weigh both benefits and costs. Social acceptance, respect, rising social status or warm glow are all in favour of donation. Benefits stand against costs represented in form of time spent by donating, also by time travelling to donate, discomfort while donating or opportunity costs. The level of transaction costs might vary each time individual considers donating. With the increasing gift of donation, the transaction costs of donation increase as well. It is because donor spends longer time on such donation, and it is also associated with certain level of discomfort. People may intend to donate, but because of the transaction costs of doing so, postpone making the payment until they are less busy, and having postponed making the donation once, keep postponing (Knowles and Servátka, 2015). Are therefore different transaction costs discouraging donors from future donation?

- *When the donation process operates with different level of limitations, would increasing transaction costs discourage donors from future donation?*

Subjects tend to compensate unlucky group members by donating them significantly higher amounts. Therefore, we can say that putting subjects into unlucky situations also increase caring. Subjects in the same group are building their reputation by the decisions they make and by the way they treat other group members. The reputation not only provides information about the paired subjects but it can also be seen as a signal of socially appropriate

behaviour, especially when the reputation is represented by a past decision of the subject. In this experiment dictators were asked to donate to their classmates and mark the cooperation and relations in the classroom. The cooperation and relations are for the purpose of the experiment classified as reputation factor of the subjects. Good reputation represents values from great to average; bad reputation from below average to bad.

- *Will be there more generosity and altruistic behaviour towards subjects with positive reputation? Or the positive reputation would not have any effect on subjects' willingness to donate.*

2 Results

Before turning to regression analysis of the subjects' donations, descriptive statistics results showed that in all the treatments were more than a third of subjects willing to donate. Subjects could not submit their decisions until all blanks were filled.

Table 1: Summary statistics of donations

| | Zero costs | Low costs | High costs |
|--|------------|-----------|------------|
| Participants willing to donate | 89 | 88 | 80 |
| Average donation | 3,797 | 4,465 | 5,787 |
| Standard deviation | 2,496 | 2,593 | 2,908 |
| Mode donation (Mode donation 0 excluded) | 0 (3) | 0 (4) | 5 (5) |

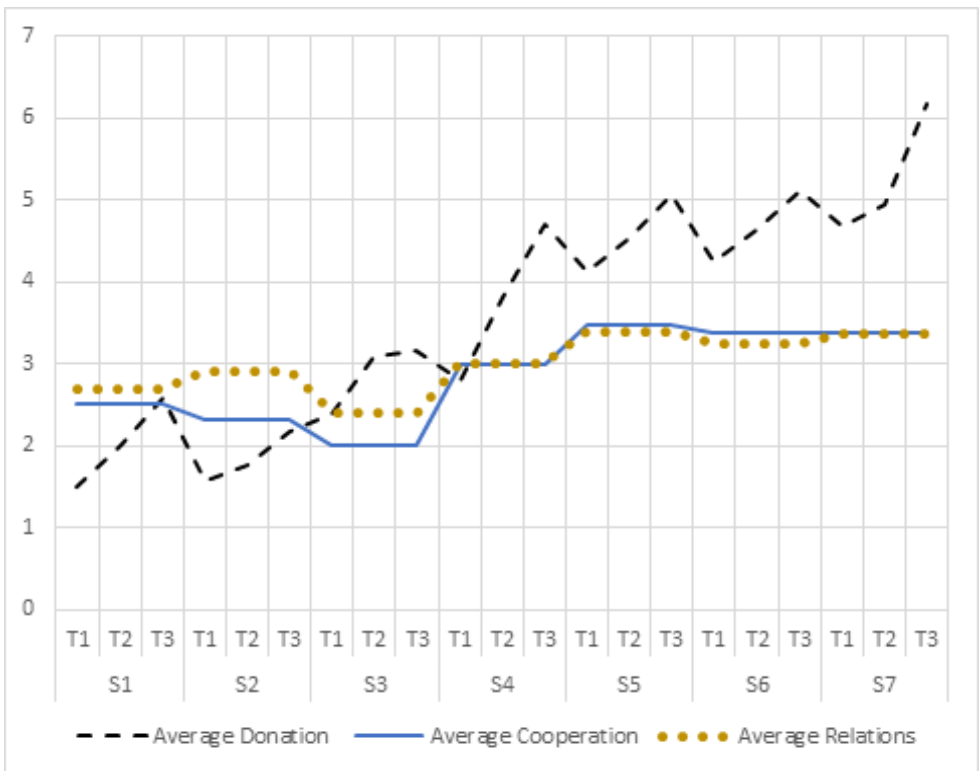
Source: author's calculation

Each treatment was applied on 1st, 2nd and 3rd session. From the three sessions where participated 110 subjects donated in Treatment 1 (control condition) in total 89 participants without any costs $x^i \in \{0,1...E\}$. In the Treatment 2 subjects donated 88 times under low costs $x_1^L \in \{2,3,...E\}$ and in the Treatment 3 were willing to donate 80 subjects under high costs $x_1^H \in \{5,6,...E\}$. The highest donation rate is represented in the control treatment; however, with increasing costs of donation almost every subject remained donating in Treatment 2.

Figure 1 below illustrates the rising trend of average donations throughout all seven sessions and peaking in 6,16 points while the level of cooperation

and relations were increasing only slightly. For each session was the most significant Treatment 3 when the subjects remained donating even though costs of donation changed. It is indicated in the figure, that subjects were evaluating the cooperation and relations in the group by similar values from sessions 4 to 7 and right on that basis the curves maintain common trend. To sum up, subjects in Sessions 4 to 7 were generally more generous than in previous three sessions and kept donating while limits of donation were increasing.

Figure 1: Average donations, cooperation, relations in Sessions 1 to 7



Source: author’s calculation

Table 2 below illustrates values for average donation in each treatments for all seven sessions. The average cooperation and average relations are listed as well. For each value its standard deviation is represented in the bracket. The colour scale illustrates how distant is the average donation from standard deviation. The lighter the colour the closer is the average to standard deviation, while the darker the colour the bigger is the gap between average

and standard deviation. The highest distance from average donation value to standard deviation were characteristic in sessions 4, 5, 6, 7. Treatment 3 is characteristic with the most extreme maximal average donation and biggest gaps between standard deviation and average values.

Table 2: Summary of average donations, average cooperation and average relations with standard deviations included

| | Average donation (standard deviation) | Average coopera- tion (standard deviation) | Average relations (standard deviation) |
|--------------------|---|---|--|
| Treatment 1 | | | |
| Session 1 | 1,571 (1,945) | 2,28 (1,224) | 2,643 (1,507) |
| Session 2 | 1,562 (1,632) | 2,312 (0,946) | 2,812 (0,834) |
| Session 3 | 2,384 (2,181) | 2,00 (1,080) | 2,415 (0,877) |
| Session 4 | 2,8 (1,794) | 3 (0,986) | 3 (1,023) |
| Session 5 | 4,13 (2,134) | 3,466 (0,516) | 3,4 (0,632) |
| Session 6 | 4,25 (2,955) | 3,375 (0,619) | 3,25 (0,683) |
| Session 7 | 4,687 (2,798) | 3,375 (0,619) | 3,375 (0,806) |
| Treatment 2 | | | |
| Session 1 | 1,571 (2,102) | 2,28 (1,224) | 2,643 (1,507) |
| Session 2 | 1,75 (1,807) | 2,312 (0,946) | 2,812 (0,834) |
| Session 3 | 2,769 (2,351) | 2,00 (1,080) | 2,415 (0,877) |
| Session 4 | 3,8 (2,093) | 3 (0,986) | 3 (1,023) |
| Session 5 | 4,533 (2,26) | 3,466 (0,516) | 3,4 (0,632) |
| Session 6 | 4,625 (3,074) | 3,375 (0,619) | 3,25 (0,683) |
| Session 7 | 4,937 (2,644) | 3,375 (0,619) | 3,375 (0,806) |
| Treatment 3 | | | |
| Session 1 | 2,571 (2,681) | 2,28 (1,224) | 2,643 (1,507) |
| Session 2 | 2,187 (2,562) | 2,312 (0,946) | 2,812 (0,834) |
| Session 3 | 3,154 (2,609) | 2,00 (1,080) | 2,415 (0,877) |
| Session 4 | 4,7 (1,75) | 3 (0,986) | 3 (1,023) |
| Session 5 | 5,066 (2,492) | 3,466 (0,516) | 3,4 (0,632) |
| Session 6 | 5,125 (3,481) | 3,375 (0,619) | 3,25 (0,683) |
| Session 7 | 6,187 (2,737) | 3,375 (0,619) | 3,375 (0,806) |

Source: author's calculation

Values in the control group and cooperation were close to the normal distribution in the group. In Treatment 2, 3 the data were more flattened, that is, the values were more distant from the average. Max amount donated was represented by 10, while for the variable cooperation and relation by 4. Descriptive statistics indicates Cooperation marked as average and the same with the Relations variable.

To verify whether there is a significant relationship between the impact of amount donated and the relations and cooperation in the group we have used Ordered logistic regression. Two models of Ordered logistic regression analysis were created to test the relation between relations, cooperation in the group (explained variables) and donations (explanatory variable).

According to the literature, we anticipated that subjects will be willing to donate more when there are good relations and good cooperation among classmates. However, increasing level of limitations will discourage their donation actions. According to positive relation of altruistic behaviour in group (donating points) and cooperation, relations in group the following hypotheses were determined:

H₀ = As the limitations (costs) of donation increases subjects are willing to donate less in spite of good level of cooperation and relations

H₁ = Points donated are incoherent with the level of cooperation and relations in group

See Table 3 below for all results from the regression analysis.

Table 3: Ordered logistic regression models

| | Model 1 (0 costs) | Model 2 (lowcosts) | Model 3 (highcosts) |
|-------------|--------------------------|---------------------------|----------------------------|
| | coeff (std. error) | coeff (std. error) | coeff (std. error) |
| Cooperation | – 0.676(0.288)** | – 0.819 (0.308)*** | – 0.649 (0.322) ** |
| Relations | 0.087 (0.323) | 0.244 (0.349) | – 0.074 (0.357) |
| /cut1 | – 2.792 (0.486)*** | – 2.776 (0.537)*** | – 2.580 (0.600)*** |
| /cut2 | – 2.092 (0.454)*** | – 2.489 (0.508)*** | 0.035 (0.532) |
| /cut3 | – 1.346 (0.435) *** | – 1.773 (0.473)*** | 0.376 (0.560) |
| /cut4 | – 1.080 (0.435) ** | – 1.444 (0.456)*** | 0.724 (0.559) |
| /cut5 | – 0.346 (0.435) | – 0.805 (0.437)* | 1.332 (0.596) ** |
| /cut6 | 1.285 (0.518)** | 0.811 (0.462) * | – |
| /cut7 | 1.561 (0.554)*** | 0.898 (0.461) * | – |
| /cut8 | 1.728 (0.580)*** | 1.758 (0,573) * | – |
| /cut9 | 1.923 (0.598)*** | – | – |
| Chi-square | 38.638 | 39.448 | 34.79 |

Source: author's calculation

Notes: ***Significant at the 1 percent level
 ** Significant at the 5 percent level
 * Significant at the 10 percent level

The number of observation is 110. The Chi-square test for Model 1 (with a value 38.638), Model 2 (with a value 39.448), Model 3 (with a value 34.79) shows that models fits the data well. Only explanatory variable Cooperation is statistically significant; Relations is not. For one unit increase in Cooperation, we expect a decrease in donated amount in 0.676 under zero costs according to Model 1. As Model 2 (low costs) suggests the decrease in points will be 0.816 and under high costs 0.649 given all of the other variables in the model are held constant. Therefore, it is listed that subjects were donating the same under high and zero limitations. According to theregression results from the models listed above, hypothesis H₀ was rejected as the Relations were not statistically significant for donations collected and points donated were incoherent with the level of cooperation and relations in group.

The cut points shown at the bottom of the output indicate where the latent variable is cut to make the two groups as observed in the data.

3 Conclusion

Human willingness to donate is affected by their will, greater moral values such as altruism, how much others need their help, social ties in the environment and how others helped them in their need. In Treatment 3, from 110 subjects - 8 did not donate under increasing limits of donation, nevertheless they donated before. Five participants were willing to donate 100% of their income in all three treatments which reflects extreme altruism. In general, people were mostly average donors – the most populated group. Yet, then the second largest group were generous donors who donated more than a half of their income. The results from this experiment demonstrated, that the willingness to help is not affected by increasing limitations of donation as the majority of subjects proved.

As subjects mark their level of cooperation in groups by higher values, they were willing to donate more in spite of any limits of donation. Thus, when subjects believe, that the cooperation in group is above average they do not hesitate to donate again and again. It is important to differentiate between Cooperation and Relations between group members, as the results indicated a negative correlation between the donated amount and cooperation. The results showed Relations and donated amount as not statistically significant. This relationship needs to be further verified by additional experimental replication due to a lack of sample participants at some income levels.

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