



# Responsibility and prosocial behavior - Experimental evidence on charitable donations by individuals and group representatives

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## ABSTRACT

In this paper we present a lab-in-the-field experiment with a large and diverse sample to compare charitable donations when individuals decide for themselves only and when they decide as a group representative. In contrast to the previous literature, we find that individuals make greater charitable contributions when they decide as a group representative than when they decide alone. This result demonstrates that being responsible for a group does not always lead to more selfish behavior.

## 1. Introduction

Do people make different prosocial decisions when they decide on behalf of a group than when they decide for themselves only? Many decisions in our everyday lives do not only have consequences for ourselves but also for other people, for example, decisions by the head of the household on behalf of the family, by the management on behalf of a company, or by the government on behalf of the constituency. Since such decisions also have consequences for other people, decision makers are *responsible* for others' welfare and hence may make different decisions compared to a situation when they decide only for themselves.

There is by now a rich literature explaining possible motivations for prosocial behavior including inequality aversion, reciprocity, reputation, and self-image when individuals make decisions on their own. The changes in motivations and behavior when moving from decisions made in isolation to decisions made by a group have received more attention lately. The focus has been on group decision making requiring some form of collective decision mechanism using, for example, unanimity or simple majority rules. The empirical results from this strand of the literature show that individuals in a group tend to make more selfish decisions because they feel less responsible or guilty (e.g., Charness and Sutter, 2012; Kugler et al., 2012; Christens et al., 2019). A representative of a group has, on the other hand, the power to make decisions without

considering the other group members' opinions. A key difference between joint and representative group decisions is responsibility. In the former case, joint and thus diffused responsibility results in more selfish choices compared to decision made by individuals alone. In the case of decisions made by a representative of the group, responsibility is not diffused but rather extended to include not only oneself but also other people.

Having the responsibility of a group might change behavior, though it is difficult to predict in which direction. In the case of risk behavior, for example, some studies find that people choose less risky strategies when they decide on behalf of a group than when they decide only for themselves (e.g., Charness and Jackson, 2009; Bolton et al., 2015; Atanasov and Kunreuther, 2016; Wang et al., 2018), while other studies find no difference (Humphrey and Renner, 2011; Batteux et al., 2019) or that group representatives choose more risky strategies (Chakravarty et al., 2011; Agranov et al., 2014).

When it comes to prosocial behavior, existing evidence suggests that responsibility for a group tends to reduce prosociality towards people outside the group. In a dictator game by Song et al. (2004), men transfer less money when they act as group representative than when they act alone, while women behave similarly under both conditions. In a trust game, group representatives send less money as trustor and also send less money back as trustee compared to when they decide solely on their

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own behalf (Song 2008). Humphrey and Renner (2011) investigate if the effect of responsibility depends on whether there is a social tie between the decision maker and the other group members. They find that responsibility reduces contributions in a public goods game when decision makers have a social connection with the other group members but not when they are anonymous strangers. The closest study to ours is Carlsson et al. (2017) who let subjects decide, either alone or on behalf of others, how much money to donate to a charity. They find that subjects donate less when they decide on behalf of a group than when they decide alone. When subjects have the chance to impose a minimum donation level on others, many of them impose a restriction but mostly at lower levels than their own individual donation. Subjects who demand less from others than from themselves have on average lower expectations about what others are willing to donate, which indicates that they are trying to take the group members' preferences into account.

In this paper, we investigate the effect of responsibility when people make a donation decision as a group representative compared to when they make the same decision for oneself only. Our design allows us to compare how much individuals donate when they decide solely on their own behalf and when they decide as a representative of a three-person group without communicating with the other group members. When subjects decide as a group representative, giving to the charity results in a cost that is imposed not only on the decision maker herself but also on the other members of the group. The flipside of the coin is that a higher cost to the group members' results in higher donations to the charity. Using a charitable organization as the receiver has the advantage that the receiver is the same for individuals and group representatives. The receiver is not aware of the game and thus cannot form (different) expectations about the donations by individuals and group representatives, which otherwise could influence behavior. An important difference to previous studies is that we do not use students as experimental subjects, but a diverse sample, representative of the German population, which allows us to analyze the effects of socio-demographic characteristics like age, education, and income.

We propose that there are three primary motives why group representatives may make different charitable decisions than individuals. The *first* motive is the responsibility that the group representative has for the group, which has already been emphasized by the previous literature. Deciding as group representative means deciding about the other group members' income. A generous decision that gives a large part of the money to the charity reduces the income of all group members. Conversely, a selfish decision makes all group members better off in monetary terms. In that sense, a selfish decision is nevertheless social from the perspective of the group (Diekmann, 1997). This aspect of deciding on behalf of a group predicts that group representatives put the group's interest first and choose a small donation. It is related to the idea of let-down aversion according to which people dislike disappointing others or being blamed by others for suboptimal outcomes (Battigalli and Dufwenberg, 2007). This aversion is especially influential if people overestimate the selfishness of other people as compared to their own (Epley and Dunning, 2000; Song et al., 2004; Carlsson et al., 2017) and the group representative is motivated to act in the group's best interest. The *second* motive is closely related to the first. Being responsible for a group offers an excuse for people to deviate from a social norm and behave selfishly. People generally dislike appearing selfish to others and themselves and often reluctantly sacrifice money in order to comply with the perceived social norm (Dana et al., 2007). An excuse helps them to overcome the desire to comply with the social norm and behave according to their genuine preferences. The *third* motive is particular to our context of charitable giving. Deciding as group representative means that more "good" can be done at the same personal cost. The group representative can obtain a large donation for the charity and pay only a part of the corresponding cost. This aspect focuses more on the charity than the other group members, and it predicts that group representatives choose a larger donation than individuals who decide only for themselves. Trading off the welfare of one group against the welfare of

another group is a common situation for decision makers in the real world. Previous studies find that this trade-off is mostly decided in favor of the own group. However, with weak social ties within their own group and a charity as receiver, as implemented in our experiment, this preferential treatment of the own group may change.

## 2. Experimental design

The experiment was part of an online survey using a representative sample of the German population aged 18 years or older with respect to gender, age, education, and regional distribution. Table 1 presents the descriptive statistics of the sample.<sup>1</sup>

Subjects were randomly assigned to one of several different treatments, each consisting of 150 subjects.<sup>2</sup> The receiver was the charity World Wide Fund for Nature (WWF). In the individual treatment ("DG"), subjects were asked to choose between the more selfish option (i) €70 for themselves and €30 for the charity and the more generous option (ii) €30 for themselves and €70 for the charity.<sup>3</sup> In the treatment "DG-Representative," subjects made their choice as a representative of a group of three people. Each of the group members was asked to choose either (i) €210 for the group (€70 for each group member) and €90 for the charity (€30 per group member) or (ii) €90 for the group (€30 for each group member) and €210 for the charity (€70 per group member). Although all three members made a decision, subjects knew that only the decision of one randomly selected group member would be

**Table 1**  
Descriptive statistics of the sample (n=450).

Variable	Description	Mean or proportion
Women		53.1%
Age	Average age of participants in years	49.5
High education	University or secondary school (at least 12 years of education)	29.3%
Household size	Average number of adults and children living in the household	1.84
High income	Net monthly household income of €3,000 or more	15.1%
Sustainable	Report that the issue of sustainability is important for them in their everyday life	60.2%
Religious	Belong to a religious community	43.8%
Conservative	Identify with conservative political views	15.3%
Liberal	Identify with liberal political views	23.1%
Social	Identify with social political views	50.4%
Green	Identify with green political views	36.0%

<sup>1</sup> The Psyma Research & Consulting GmbH conducted the survey between March and June 2015 with a representative online panel where participants were invited via email.

<sup>2</sup> A sample of 900 German citizens, age 18 or older, was randomly assigned to one of six different experimental treatments, each consisting of 150 subjects. A "Least filled quota" randomization was used: In that process, the first participant is randomly assigned to one treatment; the second participant is randomly assigned to one of the remaining five treatments; the third participant is randomly assigned to one of the remaining four treatments, and so on. After the first six participants have been assigned, the process starts anew. This process led to a balanced distribution of the main socio-demographic characteristics across treatments. Three treatments out of the six are presented in this paper. We conduct a balance test and we cannot reject a balanced sample across treatments in gender, education, location (Bundesland) and income (p-value > 0.55). The three treatments not included in this paper focused on the possibility for the subjects to delegate the donation decision to a random device. These treatments try to answer a different research question, namely when and why people try to avoid a donation decision.

<sup>3</sup> The values used in the experiment were derived from a pilot test to make sure that we get sufficient variation in behavior for all conditions.

implemented for the entire group. It was clearly described to the participants that the group earnings would be shared equally among members. We included another individual treatment (“*DG-Low*”) as control treatment, where it was less costly to choose the generous option; here subjects chose between (i) €55 for themselves and €45 for the charity or (ii) €45 for themselves and €55 for the charity. This treatment allows us to test the internal validity of our study, as a larger proportion of subjects should choose the generous option when this is cheaper. While the binary choice is not how the dictator game is typically played, the meta-study of dictator games by Engel (2011) shows that the choice space, i.e., the number of allocation options presented to subjects, has no effect on giving behavior.

The instructions for the experiment and the available options were presented on two separate pages. When reading the instructions, subjects had to wait for at least one minute before they could proceed to the decision page. This was implemented to prevent subject from making the decision without having read the instructions. They were informed that five percent of all participants would be randomly selected and their decisions would be implemented. Subjects in *DG-Representative* were informed that, in addition to the selected group representative, two more participants would be randomly selected to get paid as the passive group members using the decision of the representative.<sup>4</sup>

### 3. Results

Fig. 1 provides an illustration of the main result. In *DG*, where subjects made their choice for themselves only, 71% chose the selfish option and only 29% chose the generous option. In *DG-Representative*, where subjects chose as a representative of a group, 51% chose the selfish option and 49% chose the generous option. The choices in *DG-Representative* are significantly different from those in *DG* (Fisher’s exact test,  $p$ -value < 0.001). As expected, in *DG-Low*, where the cost of being generous was lower, the generous option was chosen significantly more often than in *DG* (56% in *DG-Low* vs. 29% in *DG*; Fisher’s exact test,  $p$ -value < 0.001). We also see that the effect of responsibility is comparable to the effect of reducing the cost of being generous as in both

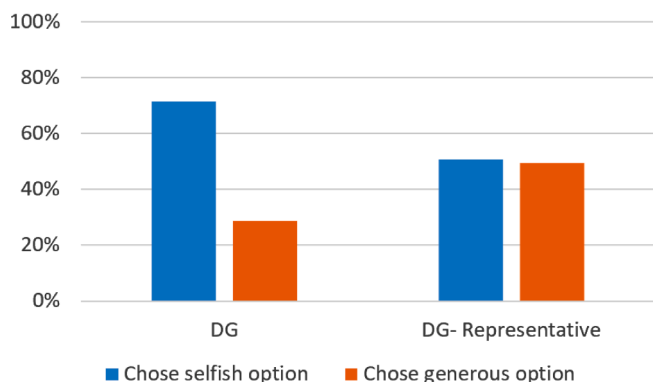


Fig. 1. Sharing decisions by treatment.

<sup>4</sup> Each participant had a 5% chance of being selected. In the *DG-Representative* treatment, the probability that an individual’s decision is selected is still 5%, although each member could potentially benefit from another group member if that other group member is selected. The expected payoff is therefore higher in this treatment. However, the individual cannot influence the expected payoff from the other selected group member and hence this should not affect her own decision. Out of the total of 900 participants 45 winners were randomly selected and paid according to their decisions. Additionally, 28 passive group members were randomly selected for payment. Overall, we paid €3,645 to the 73 randomly selected participants and €3,655 to the charity.

treatments *DG-Representative* and *DG-Low* roughly half chose the generous option.

In Table 2, we show regression results on choosing the generous option. Both *DG-Representative* and *DG-Low* significantly increase the likelihood of being generous, also when we control for socio-economic characteristics. Socio-economic characteristics do not have a significant effect.

We then investigate whether the effects of socio-economic factors and the treatments are the same for both males and females by running regressions on the full sample and two models constrained to males and females, respectively. Thus, we test the hypothesis if the coefficients are the same for males and females. The likelihood ratio test is insignificant ( $p$ -value = 0.69) indicating that none of the coefficients differs between male and female. Thus, unlike Song et al. (2004), we do not observe a significant difference between men and women.

### 4. Discussion and conclusion

Our results show that group representatives who have responsibility for making a decision on behalf of a group are more generous than individuals who decide for themselves only. This is in contrast to the previous literature, which mostly found more selfish behavior of group representatives. Overall, the results on group decision making, including ours, show that decisions made by individuals in isolation and in groups need to be investigated separately. Research based on individual decisions cannot be readily transferred to contexts in which group representatives make decisions.

An important implication of our results is that group decision making does not necessarily lead to more selfish decisions. Whether responsibility for a group leads to more or less prosocial behavior is likely to depend on how this responsibility compares to the importance of the prosocial act. In our experiment, we have implemented an extreme case where the group representative does not know and cannot communicate with the other members of the group. We have chosen this design to provide a clean comparison where the effects of having responsibility are not confounded with other effects such as familiarity or communication within the group. The results are therefore mostly relevant for settings in which there is some distance between the group

Table 2  
Probit regression results

Variables	Generous Marginal effects	Generous Marginal effects	Generous (Only male) Marginal effects	Generous (Only female) Marginal effects
<i>DG-Representative</i>	0.216*** (0.059)	0.229*** (0.060)	0.173** (0.086)	0.304*** (0.086)
<i>DG-Low</i>	0.282*** (0.059)	0.319*** (0.061)	0.330*** (0.090)	0.342*** (0.086)
Age		0.002 (0.002)	0.000 (0.002)	0.002 (0.002)
Education of at least 12 years		-0.010 (0.055)	0.089 (0.079)	-0.089 (0.083)
Individual net income of €3.000 or higher		-0.083 (0.073)	-0.084 (0.107)	-0.078 (0.100)
CONTROLS	NO	YES	YES	YES
Observations	450	450	211	239
Pseudo R <sup>2</sup>	0.041	0.072	0.076	0.094

Note: Marginal effects estimated at mean values. Levels of significance.

\*\*\*  $p$ -value < 0.01,

\*\*  $p$ -value < 0.05, \*  $p$ -value < 0.1 (standard errors in parentheses). Controls include total number of persons living in the household, perceived importance of sustainability in everyday life, affiliation with a religion, identification with conservative, liberal, social, or green policy.

representative and the other members of the group, for example in politics or business.

Considering the difference between our results and previous results on the responsibility effect, the question arises whether an explanation can be the lack of social ties within our groups or the use of a different sample as previous studies used university students. While we cannot directly compare our online experiment with an identical lab experiment, we can make comparisons within our sample. We begin to investigate the role of age. First, we run a regression on the full sample and two models constrained to above and below the age of 30 years, respectively, using the same control variables as in Table 2. Thus, we test whether the coefficients are the same for the two age groups. The likelihood ratio test is insignificant ( $p$ -value = 0.40), indicating that none of the coefficients differs between the two age groups. The same happens when we use 25 years as a cut-off age ( $p$ -value=0.30). The same procedure but splitting by whether or not a subject has a university degree or a university entrance qualification shows an insignificant likelihood ratio test ( $p$ -value = 0.93). If we make the sample more restrictive with respect to both age below 30 and degree, or age below 25 and degree, the results are again insignificant ( $p$ -values are 0.95 and 0.99, respectively). These comparisons suggest that the difference in the sample cannot explain the difference in results.

The most likely explanation then is the lack of social ties within our groups. The students used in previous studies live the same city, go to the same university, and may be sitting in the same room when they make their decisions. For example, the students in Carlsson et al., (2017) were recruited in lectures so that at least some of them knew each other. The students in Song (2008) performed a group-building exercise prior to the experiment to produce feelings of identify within the group. Humphrey and Renner (2011) explicitly control for the existence of social ties. They find that, when there are no social ties between decision makers and the other group members, responsibility actually increases contributions in a public goods game, though not significantly.

Together with the previous literature, our results suggest that the effect of responsibility depends on how decision makers perceive the trade-off between the welfare of the potential receiver of the prosocial act and the welfare of the own group. If social ties with the own group are perceived as weak or absent, responsibility may increase prosociality as something good can be done with other people's money. An interesting extension, to investigate whether the ability to do something good with other people's money really is the driver, would be to add a matching mechanism to the individual DG treatment so that every donation is tripled by the experimenter.

Our experiment was not designed to study all possible accounts or the robustness of the responsibility effect. But by showing that the responsibility effect can be positive under certain conditions, we have made progress in our understanding of decision making with

responsibility, which can help future investigations.

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