



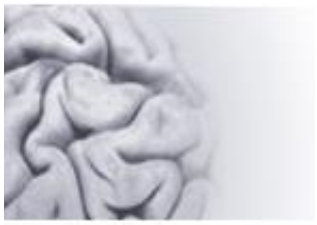

# The effect of leadership in volunteer dilemmas

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**Abstract**

A volunteer dilemma is a social dilemma where at least one volunteer is required in order to produce a collective good. When no one volunteers, everyone is negatively affected. The present study examines the effect of leadership in volunteer dilemmas and studies the willingness to volunteer when more volunteers are required. It was predicted that leaders would volunteer more often than followers and followers would volunteer less often than participants with no particular role. Furthermore, it was expected that when more volunteers were required, both leaders and followers would volunteer more often. A lab experiment was conducted in which participants dealt with a volunteer dilemma. We found that an increased number of required volunteers indeed led to an increase in participants opting to volunteer. No differences were found in volunteering rates between leaders and followers. Suggestions for further research are discussed.

## Introduction

When the electricity shuts down in a particular area, there has to be at least one person phoning the electricity company to report the problem. But who will volunteer? This is an example of a volunteer dilemma. In order to produce a collective good, at least one volunteer is required. The volunteer benefits of the produced collective good as well, but bears more costs than others. In the situation where no one volunteers, everyone is negatively affected (Diekmann, 1985). Another example is seen when a group of squirrels is in an open field and each squirrel occasionally checks if a predator is coming. If a predator is spotted, one must make a warning noise. However, the volunteer is in bigger risk because doing so might draw the predator's attention (Murnighan, Kim & Metzger, 1993).

A volunteer dilemma is an offshoot of a social dilemma (Dawes, 1980). These are dilemmas where the social payoff for an individual is higher when they show defecting behaviour instead of cooperative behaviour. However, if everyone shows defecting behaviour, everyone receives a lower payoff than if all cooperate. A soldier fighting a battle within the army is better off taking no risks, yet if no one takes any risks, this can result in a slaughter for all soldiers (Dawes, 1980). The difference between a social dilemma and a volunteer dilemma is that a volunteer dilemma requires at least one volunteer in order to produce a collective good, whereas this is not the case in a typical social dilemma.

The volunteer dilemma is somewhat related to the bystander effect. When a group of people witness someone who is in need for help, it requires at least one person coming to action. A well-known example that triggered a lot of research is the murder on Kitty

Genovese in 1964. The woman was murdered on the street while 38 people witnessed the crime from their apartments without intervening (Manning, Levine & Collins, 2007) . Subsequent research about helping behaviour led to what is called the 'bystander effect' and 'diffusion of responsibility'. Latané and Darley (1970) specified the bystander effect as the phenomenon that people are more likely to help someone in need when they believe that they are the only witness present. Helping behaviour declines as people perceive that there are others who can help as well (Latané & Darley, 1970). The diffusion of responsibility was described as the cause of the bystander effect. Witnesses of the murder on Kitty Genovese knew more people were watching, but they were unable to communicate and therefore the responsibility for helping was diffused among the witnesses (Darley & Latané, 1968). As in the case of helping behaviour, people in volunteer dilemmas are also sometimes unable to communicate. Diffusion of responsibility might therefore be a reason for not volunteering.

*Leaders in volunteer dilemmas*

What is not yet known is how one's position within the group influences voluntary actions. Despite no scientific research concerning this factor, being a leader or a follower might influence the decision to volunteer or not. Research on resource sharing tasks by De Cremer and Van Dijk (2005) showed that leaders took more than followers from a common resource. Subsequent analyses showed that leaders allocate more to themselves because of feelings of entitlement (De Cremer & Van Dijk, 2005). Although this situation is not fully equivalent to a volunteer dilemma, feelings of entitlement might cause leaders in a volunteer dilemma to seek for the highest possible outcome and withhold them from

volunteering. On the other hand, a leader might feel greater levels of social responsibility which in turn would increase volunteering rates (De Cremer & Van Lange, 2001).

Schneider, Melis and Tomasello (2012) created a volunteer dilemma experiment with chimpanzees. In order to give access to juice being dispensed or peanuts being sprayed into an opposing room, one chimpanzee had to volunteer to push a button. However, the costs for the chimpanzee pushing the button was that it possibly had a reduced amount of potential reward. What they found was that dominant individuals volunteered more often and subordinate individuals tended to free ride more often. Schneider, Melis and Tomasello additionally observed that the higher rank-individuals that pushed the button were always assured of their share of the reward and therefore argued that they faced less risks than subordinates. Dominant individuals would volunteer more often because they have the security of getting their share and it is in their own interest as well to produce the collective good. Subordinates on the other hand pay a larger price for volunteering because their share of the reward is not guaranteed (Schneider, Melis & Tomasello, 2012). This study might be a reason to hypothesize that leaders would volunteer more often than followers in a volunteer dilemma.

Keltner, Gruenfeld and Anderson (2003) discuss that being high in power would activate approach-related tendencies. In their article they associate elevated power with extraversion, dominance, reward focused- and disinhibited behaviour. These approach-related processes would be activated because power is connected to increased resources and the feeling that one can act without interference or severe consequences (Keltner, Gruenfeld & Anderson, 2003). Galinsky, Gruenfeld and Magee (2003) additionally showed that the behaviour of people that experienced power was linked to taking action.

They did several experiments where they primed people with high power. Subsequently, these people were more likely to take action against an annoying fan, they took more in a common good dilemma (antisocial action) but they also contributed more in a public good dilemma (prosocial action) (Galinsky, Gruenfeld & Magee, 2003). Because leaders are generally high in power, this research might again be a reason to assume that leaders would take action in a volunteer dilemma and thus opt to volunteer more often than followers.

In addition, Okere (2012) did an experiment where four participants were allocated the sum of four euros each, which was theirs to keep if one person would volunteer to give up two of his/her four euros. The study showed that participants who were assigned to the role of leader volunteered more often than participants in the role of subordinates. Leaders reported higher feelings of social responsibility in comparison to followers, which might influence volunteer decisions (Okere, 2012).

*Followers in volunteer dilemmas*

Keltner, Gruenfeld and Anderson (2003) also describe that being low in power would activate inhibition-related tendencies. Reduced power is connected to constrained behaviour, avoidance and response inhibition. They argue that this behaviour stems from less powerful people having less access to several resources and being more conscious of evaluations and potential constraints (Keltner, Gruenfeld & Anderson, 2003). Anderson and Berdhal (2002) similarly show that participants low in power had an activated inhibition system. Being low in power led to inhibited expression of attitudes and keeping disagreements to themselves (Anderson & Berdhal, 2002). Because followers are

generally low in power, this research might be a reason to assume that participants with the role of follower would be inhibited and therefore volunteer less often than participants with no particular role. Furthermore, the study of Okere (2012) not only showed that leaders volunteered more often than followers, but also that participants in the control condition (who were assigned to no particular role) volunteered more often than followers. Additionally, the subordinates reported significantly more feelings of entitlement compared to participants with no particular role and compared to leaders. Leaders and participants with no particular role did not differ significantly in feelings of entitlement. In contrast to what De Cremer and Van Dijk (2005) concluded in their research about the allocation of scarce resources, this study suggests being a follower would make one feel more entitled which would decrease volunteering rates (Okere, 2012).

*Number of required volunteers*

Murnighan, Kim and Metzger (1993) showed that the number of required volunteers influences volunteering rates. When a group of five participants were in a situation that required one volunteer, 44% of the participants pointed out that they would volunteer. When a group of five participants were in a situation that required three volunteers, 66% of the participants offered to volunteer and when four volunteers were needed, 88% offered to volunteer. They showed that an increased number of required volunteers hence led to an increase in the number of volunteers (Murnighan, Kim & Metzger, 1993).

*The present study*

The purpose of the present study was to test whether leaders or followers would be more willing to volunteer in a volunteer dilemma and what the consequences would be when more than one volunteer was required. Based on the described studies we expected leaders to have greater feelings of social responsibility in comparison to followers and hence we expected leaders to volunteer more often than followers. Followers were expected to have more feelings of entitlement compared to participants with no particular role and were expected to volunteer less often than participants in the control condition. Finally, we aimed to replicate the finding of Murnighan, Kim and Metzger (1993) and tested if an increase in the number of required volunteers led to an increase in participants opting to volunteer. This leads to the following hypotheses:

- *Hypothesis 1a:* Leaders will volunteer more often than followers.
- *Hypothesis 1b:* Leaders will have greater feelings of social responsibility in comparison to followers.
- *Hypothesis 2a:* Followers will volunteer less often than participants in the control condition.
- *Hypothesis 2b:* Followers will have stronger feelings of entitlement compared to participants with no particular role.
- *Hypothesis 3:* When more volunteers are required, both leaders and followers will volunteer more often.

## Method

### *Participants and design*

To answer our research questions we did a lab experiment with 206 participants, who were divided into six conditions. Participants were recruited largely from Leiden University, but people outside Leiden University were also allowed to participate in the study. Participants received 1 credit or €3,50 for their participation.

We used a 3 (leadership manipulation: leader vs. follower vs. control condition) x 2 (number of required volunteers: one volunteer vs. two volunteers) between subjects factorial design. The experiment was conducted in the laboratory in the faculty of social sciences in Leiden University.

### *Procedure*

Participants who agreed to take part were told that the experiment was about decision making skills. When they arrived in the laboratory they received an informed consent form to read and sign. Participants were subsequently led to different cubicles that contained a computer where they answered questions independently from each other. They started with answering some questions about demographic characteristics like age and gender. Participants were then told that they were in a group consisting of 4 people in which two participants were assigned to the role of leader and two participants were assigned to the role of follower. They were told which role they were assigned to. We chose to assign two leaders and two followers in order to eliminate alternative explanations due to unequal numbers of followers and leaders. The control condition also consisted of groups of four participants but they were not assigned to particular roles.

Participants subsequently got information about the volunteer dilemma task. They were told that they could receive additional money and got to choose between getting €2,- or €4,-. The number of required volunteers was manipulated at this moment. In the condition with one volunteer, participants were told that at least one person had to choose €2,- because otherwise no one would get the additional money. In the condition with two volunteers, participants were told that at least two persons had to choose €2,- because otherwise no one would get the additional money. So in each condition, one or two participants had to 'volunteer' to choose €2,- so that everyone would get additional money. After the volunteer dilemma was explained, participants got some questions to test whether they understood the task and the group they belonged to.

After these control questions the participants dealt with the volunteer dilemma. When participants finished, they learned that they were not actually in a group of 4 people and their choices were not dependent on one another. Participants then got €3,50 or 1 credit for their participation, irrespective of the choices they and other 'group members' had made.

*Dependent variable*

In this experiment, the dependent variable is volunteering or not volunteering to choose €2,- instead of €4,-.

**Results**

Several questions were asked to test whether participants fully understood the task. The first question was ‘How much does a group member get when he/she decides to opt for 2 euro?’. The correct answer (2 euro) was given by 81.6% of all participants. The second question was ‘How much do the four group members get when everyone decides to opt for 4 euro?’. This question was correctly answered (with zero euro) by 96.6% of all participants. The final question was ‘How much does a group member get when he/she decides to opt for 4 euro and one (or two) of his/her fellow group members opt(s) for 2 euro?’. The right answer (4 euro) was given by 96.1% of all participants. Despite the relatively high percentage of participants who chose a wrong answer at the first question, there were no participants who had two out of three questions wrong. Given this and given the high percentages of correct answers on question two and three, no participants were excluded from the study. The analysis showed that the task was understood correctly.

Subsequently participants were asked to indicate how many group members had to choose 2 euro so that everyone would get money, or in other words: how many volunteers were required for the task. In the condition where one volunteer was required, 98.1% of the participants reported the right answer. In the condition where two volunteers were required, 97.1% of the participants reported the right answer. These percentages show that participants understood the requirements in order for the group to get money.

Participants were also asked to report the role they had been assigned to as a check. This revealed a high percentage of correct answers, with 98.6% of the leaders who

reported the correct role, 97.1% of the followers who reported the correct role and 95.6% of the participants in the control condition who reported the correct answer. Furthermore, a manipulation check was conducted to determine whether participants who were assigned to the role of leader or follower also reported feeling as such. The questions participants answered for this check after completing the task were as follows: 'To what extent did you see yourself as a leader during the task?', 'To what extent did you see yourself as a follower during the task?', 'To what extent did you feel that you had a high status during the group task?' and 'To what extent did you feel that you had a low status during the group task?'. Participants could rate these questions on a scale from 1 to 7. A Cronbach's alpha .618 indicated a reasonable internal consistency between these four questions, which is why they were integrated into one scale. The questions were integrated in such a way that high scores meant high feelings of leadership and feelings of having a high status during the group task.

A one-way ANOVA revealed a significant difference between the groups with $F(2,203)=73,771$, $p<.001$. Subsequent a Tukey's post-hoc test was carried out to see which means differed significantly. As can be seen in Figure 1, leaders reported significantly higher scores than followers ($M= 5.24$ vs. $M= 3.43$, $p<.001$). Followers reported significantly lower scores than participants in the control condition ($M= 3.43$ vs. $M= 3.89$, $p=.011$) and participants in the control condition reported significantly lower scores than leaders ($M= 3.89$ vs. $M= 5.24$, $p<.001$). These results indicate that the manipulation evoked the aimed effect.

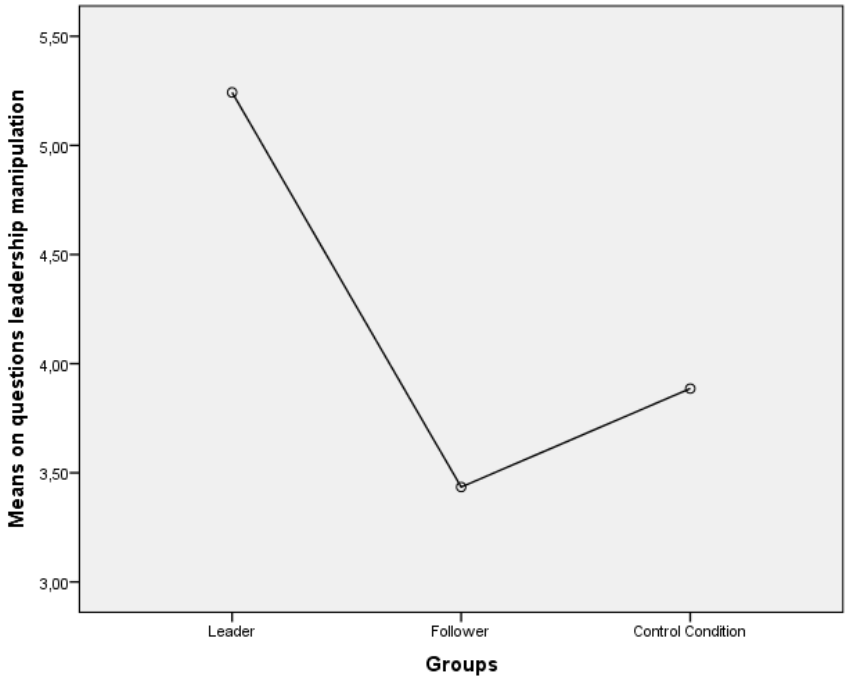


*Figure 1.* Group means on questions leadership manipulation

*Volunteering*

A logistic regression analysis was conducted using the ENTER method, with participants' choice to volunteer or not as dependent variable and the leadership manipulation (leader vs. follower vs. no particular role) and the required number of volunteers (one vs. two) as independent variables. The test of the main effect of leadership was non-significant, $X^2(2) = 3.120$, $p = .210$. Therefore hypothesis 1a and 2a – which predicted that leaders would volunteer more often than followers and followers would volunteer less often than participants in the control condition – were rejected.

The main effect of the number of required volunteers was significant, $X^2(1) = 7.307$, $p = .007$. This means that when more volunteers were required, both leaders and followers volunteered more often. As can be seen in Table 1, when one volunteer was required 51 out of 103 participants opted to volunteer, which equals 49.5% of the

participants in this condition. When two volunteers were required, 70 out of 103 participants opted to volunteer, which is 68% of the participants in this condition.

*Table 1.* Participant's choices to volunteer or not

| | | **Choice when one volunteer was required** | | **Choice when two volunteers were required** | | **Total** |
|---|---|---|---|---|---|---|
| | | Volunteering | Not volunteering | Volunteering | Not volunteering | |
| **Group** | Leader | 15 | 19 | 20 | 15 | 69 |
| | Follower | 17 | 18 | 25 | 9 | 69 |
| | Control | 19 | 15 | 25 | 9 | 68 |
| **Total** | | 51 | 52 | 70 | 33 | 206 |

*Feelings of social responsibility and entitlement*

For the hypothesis that leaders would have greater feelings of social responsibility than followers (hypothesis 1b), a one-way ANOVA was carried out. Questions regarding feelings of responsibility were: 'To what extent did you feel responsible for carrying out this task to a successful conclusion?' and 'To what extent did you feel it was your duty to work for your group?'. A Cronbach's alpha .818 indicated a high level of internal consistency, which is why these two items were integrated into one scale. The F-test came out non-significant, $F(2,203)=.164$, $p = .848$. This demonstrates no significant difference in feelings of social responsibility between leaders and followers.

For the hypothesis that followers would have more feelings of entitlement compared to participants with no particular role (hypothesis 2b), another one-way

ANOVA was carried out. In order to measure feelings of entitlement, participants were asked to what extent they felt they were entitled to more money than their fellow group members. The F-statistic came out non-significant, $F(2,203)= .947$, $p = .390$. This reveals no significant difference in feelings of entitlement between the followers and participants with no particular role.

## Discussion

There is relatively little scientific research on the phenomenon of volunteer dilemmas. The objective of the present study was to investigate whether leaders or followers would be more willing to volunteer in a volunteer dilemma and what the consequences would be when more than one volunteer was required. This was examined using a lab-experiment, where participants dealt with a volunteer dilemma on the computer. Subjects were assigned to the role of follower, leader or had no particular role. Leaders were expected to have greater feelings of social responsibility in comparison to followers and they were expected to volunteer more often than followers. Followers were expected to have more feelings of entitlement compared to participants with no particular role and they were expected to volunteer less often than participants in the control condition. Finally, it was hypothesized that an increase in the number of required volunteers would lead to an increase in participants opting to volunteer.

Our findings showed that an increase in the required number of volunteers indeed led to an increase in participants opting to volunteer. We hereby replicated earlier findings by Murnighan, Kim and Metzger (1993). But why do more people volunteer when 2 instead of 1 volunteers are required? A plausible explanation may be that people perceive the chance that the public good is being produced as smaller when 2 out of 4 volunteers are required, and hence that their own contribution is more necessary to reach this goal. As a consequence, they may feel a stronger urge to volunteer in this case.

No differences were found in volunteering rates between leaders and followers, as well as feelings of social responsibility and feelings of entitlement. A possible explanation for this is that the leadership manipulation did not evoke the required

mindset. Although people did report seeing themselves as being a leader or a follower, it could be that just assigning a random role (follower vs. leader) to participants did not make them act as if they were actually in that role. Okere (2012) did a similar experiment with a volunteer dilemma where she also included a leadership manipulation. In her study she manipulated roles (leader vs. follower) with the Management Assessment Inventory (MAI). This questionnaire consists of 26 items that are rated on a 5-point Likert scale. Participants were told that this questionnaire assessed their leadership qualities, whereas it actually functioned as a tool to manipulate leadership. Okere did find a significant effect: leaders volunteered more often than followers and she also found differences in feelings of social responsibility and entitlement. Although the volunteer task in Okere's study and the present study are not completely similar, it remains remarkable that she did find these differences between leaders and followers in volunteer dilemmas, whereas in the present study we did not. The MAI might have given participants a well-founded reason to believe that they were assigned to the role of leader or follower, which led them to act as if they were actually in that role.

The contrasting results could also be a result of the different versions of the volunteer dilemmas. A critical difference between the volunteer dilemma in Okere's study and the volunteer dilemma in the present study is that Okere used a setting where participants where endowed with €4,- and one participant had to volunteer to give up €2,- , whereas in the present study participants had to choose between €4,- and €2,-. That means that in the current study, people were seen as volunteers when they chose €2,- instead of €4,- and in Okere's study, people were seen as volunteers when they opted to give up €2,- of their €4,-. As a result, Okere's design might have led to different results

because of loss aversion. Loss aversion refers to the phenomenon that people are more aversive to losing something than they are happy with gaining something: losses loom larger than gains (Tversky & Kahneman, 1991). So there is more weight on volunteering in Okere's study compared to the present study, where people could only gain money and not lose it. It could be that people care less about gaining €2,- instead of €4,- than they care about losing €2,- or losing nothing. As a consequence, it is possible that Okere only found significant results of leadership in volunteer dilemmas because loss aversion played a role.

Another possible cause of the non-significant findings is that subjects might have been biased because they already had insights in psychological lab experiments. The data show that 71,1% of all subjects had already participated in one or more studies at Leiden University. Because many social science studies also focus on group-dynamics, people are often told that they are supposedly in a group of (in this case four) people. They are led to believe that their computers are linked to each other and their choices are dependent on one another. However, at the end of the study, participants are informed that this was not the case: that their computers were not linked and their choices were not dependent on one another. When these people participate in another study where they get a similar design, they will not buy the same story again. In this case, that means that you do not believe that your monetary reward is really dependent on the choices you make, because these choices are not dependent on the choices other 'group members' make. As a consequence non-significant findings are almost inevitable, because there are no group-dynamics to study anymore.

Suggestions for future research are first of all to investigate the boundary conditions of leadership manipulations. Our data indicate that people might need a well-founded reason to be assigned to the role of leader or follower in order to make them act as such. Second of all, it is also relevant to compare different versions of volunteer dilemmas, in order to address the role of loss aversion. It is furthermore suggested to look at a way to recruit subjects who did not participate in a psychological lab experiments before, for example by recruiting participants outside the University. A final suggestion is to carry out more research to demonstrate the effects of leadership in volunteer dilemmas. Taken together, the results presented here suggest that there is still a lot to be discovered in the field of volunteer dilemmas, the only question is, 'who will volunteer?'.

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