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**Article**

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Article

# Gender Differences in the Response to Decision Power and Responsibility—Framing Effects in a Dictator Game

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**Abstract:** This paper studies the effects of two different frames on decisions in a dictator game. Before making their allocation decision, dictators read a short text. Depending on the treatment, the text either emphasizes their decision power and freedom of choice or it stresses their responsibility for the receiver's payoff. Including a control treatment without such a text, three treatments are conducted with a total of 207 dictators. Our results show a different reaction to these texts depending on the dictator's gender. We find that only men react positively to a text that stresses their responsibility for the receiver, while only women seem to react positively to a text that emphasizes their decision power and freedom of choice.

**Keywords:** dictator game; framing; gender; experiment

**JEL Classification:** C91; D63; D64; D91

## 1. Introduction

The dictator game [1,2] has been used extensively in experimental economics and related fields in order to study social preferences such as fairness and altruism. In the basic game, a dictator has an endowment that she can allocate between herself and a receiver. While most results suggest that dictators do not always behave selfishly (see Engel [3] for a review and meta-analysis), it has been argued that the dictator game is rather sensitive to the context and the frame in which the game is presented [4–8].

In this paper, we study the effect of two different context frames [9] on dictators' decisions, specifically the effect of two different texts, which participants read before making their decision. In one treatment, this text affirms the dictators' freedom of decision and decision power<sup>1</sup> while in the other treatment the text reminds dictators of their responsibility for the other player.<sup>2</sup> Both texts have in common that they refer to the dictator's power, but they differ in the implied recommended use of this power: while the first one explicitly refrains from implying either a selfish or an altruistic decision and instead emphasizes using the power at one's discretion, the second one highlights that power comes with responsibility for others, which may increase giving to the recipient.

Reminding people that they are responsible for the other person (treatment *Responsibility*), but also that they are the sole decision maker (treatment *DecisionPower*) may make people perceive stronger

<sup>1</sup> The exact wording was: "You alone decide about the payoffs, and you are completely free in your decision",

<sup>2</sup> The exact wording was: "You bear the responsibility for both payoffs, your own and the one of participant B".

accountability for their own decision. Brañas-Garza et al. [10] show that feelings of accountability for the decision (or responsibility as it is called in their paper), which the authors define as having control over the decision, affect dictator's altruism. Following this definition, the treatment *Responsibility* may directly increase feelings of accountability while the treatment *DecisionPower* may indirectly increase feelings of accountability by reminding dictators that they are in control over the allocation decision. If people feel more accountable for their (selfish) action, it will be more difficult to maintain a positive self-image when acting in a selfish way. Thus, people may respond to both treatment conditions by giving more to the receiver [11,12].<sup>3</sup> Additionally, increasing the salience of being responsible for someone else (treatment *Responsibility*) makes it more likely that a dictator thinks about the consequences for the other person when making her decision. Besides increasing accountability, this may increase feelings of shame if a dictator would give little or nothing to the recipient. Feelings of shame have been shown to increase altruistic behavior [11,14–16].

We are especially interested in whether these texts trigger different reactions by female and male dictators. From previous research, we know that females tend to react stronger than males to the context of an experiment in general [17–20]. Furthermore, psychological research has shown that women are expected to be more caring, altruistic and other-oriented [21–24]. In a dictator game, women [25] or men and women likewise [26] believe that female dictators are more generous. Higher expectations to behave altruistically lead to higher social pressure to act accordingly [22,23,27]. Hence, women may feel a higher pressure to help a person in need. This form of social pressure to act altruistically is, therefore, mainly exerted by society but also by participants themselves if they want to maintain their self-image of being someone who follows social norms or fulfills expectations. We believe that the two frames in this experiment affect the social pressure to give differently. While the text highlighting dictator's freedom of choice attempts to decrease the pressure (“...you are completely free in your decision.”), the text emphasizing dictator's responsibility for the recipient may increase social pressure (“You bear the responsibility for both payoffs, ...”). Since women and men may initially feel a different level of social pressure, these texts could potentially trigger a different reaction depending on whether a male or female dictator reads them. Thus, we expect that both genders may respond differently to our treatment conditions.

In order to study this research question, we conduct a pen and paper dictator game experiment, comprising three treatments in a between-subject design. In two of the three treatments, either the text emphasizing the dictator's responsibility or the text highlighting the dictator's decision power is printed on top of the decision sheet. The third treatment serves as a control treatment without a text. In total, 207 participants in the role of the dictator participated in the experiment.

We find that highlighting the dictator's responsibility for the payoffs of both players has a positive effect on the amount given. This effect is driven by the behavior of men, who react strongly positive, whereas women show no response to this text. Emphasizing the dictator's decision power and freedom of choice has no significant effect; if at all, it tends to increase giving by female dictators.

## 2. Related Literature

Closest to our study is the one by Brañas-Garza [28], in which the text “Note that your recipient relies on you” is added to the bottom of the instructions of a dictator game. The author finds that adding this text increases dictators' giving significantly. This text is similar to our first text about the responsibility of the dictator. Besides replicating their findings in this respect, our paper adds the *DecisionPower* frame and a focus on gender differences with respect to the two different frames explained above. A recent study by Capraro et al. [29] asks dictators what they think would be the right thing to do or what they think society would consider the right thing to do before making their decision. They find that such a question increases dictator's giving significantly. Remotely related

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<sup>3</sup> See the theory of self-concept maintenance by Mazar et al. [13].

are two studies by Haley and Fessler [30] and Rigdon et al. [31], which also manipulate the decision environment in a dictator game by adding figures of “watching eyes” on the decision screen of the dictator and which also find that these manipulations increase dictators’ giving. Furthermore, it has been shown that communication between the dictator and the receiver affects giving positively and that the content of the communication matters [32–35]. Dal Bó and Dal Bó [36] use a similar approach to ours in a different context, i.e., a repeated public good game. After a first sequence of rounds, they show participants one of five different messages. They find that moral appeals increase contributions significantly but transitory.<sup>4</sup>

Another study closely related to the present one is Bruttel et al. [33], in which the effect of free-form text messages written by the receiver and read by the dictator prior to a binary dictator decision is analyzed. These text messages are categorized into eight categories, one of which contains statements that “the dictator has the sole decision power and / or the sole responsibility for both payments.” Such messages increase dictators’ willingness to share if the dictator is a women. However, this study cannot separate the effects of messages referring to the dictator’s responsibility from those mentioning the dictator’s decision power. Furthermore, the present paper analyzes the effect of the two different statements in a more controlled setting by not using free-form messages of the recipient but different texts written by the experimenters.

Regarding the context-dependence of dictator giving, it has been shown, for example, that dictators’ giving decreases if anonymity of decisions is increased [37–40]<sup>5</sup>, that the social distance between dictator and receiver affects dictators’ decision [38,42–45], that giving increases if the receiver is perceived as more deserving of help [46,47], that giving decreases if the endowment is earned instead of given by the experimenter [6,37,39], that giving decreases if the dictator has the additional option of taking money from the receiver [6,48], that giving decreases if the dictator can disguise her decision [11] and that giving increases if the receiver is referred to as a partner and that the joint endowment should be allocated between oneself and the partner [49]. There are mixed results regarding the question whether framing dictator’s decision as taking something from the receiver in contrast to the normally used frame of giving something to the receiver has an effect on dictator’s decision. While Dreber et al. [50], Suvoy [51] and Grossman and Eckel [52] find no effect, Cox et al. [53] and Korenok et al. [54] as well as Korenok et al. [55], who additionally let the respective party earn the endowment, find that receivers’ earnings are higher if dictators have to take funds from them.

Finally, a meta-analysis on gender differences in dictator games has shown that women give significantly more to receivers than men [3]. However, this result seems to depend heavily on the specific design and context of the experiment [17]. For example, Andreoni and Vesterlund [56] find that women are more concerned with equality of payoffs, whereas men are more concerned with maximizing the sum of payoffs. Furthermore, female dictators are found to be more sensitive to receivers’ gender, i.e., women give less to women than to men [57]. In a review of gender differences in the experimental economics literature, Croson and Gneezy [17] state that they believe women react stronger to the social conditions of an experiment on social preferences such as the dictator game.

### 3. Experimental Design and Procedures

In the experiment, participants play either the role of a dictator (named participant A) or the one of a receiver (participant B). Each dictator has an endowment of 30 Euros<sup>6</sup> and can decide how much of

<sup>4</sup> These messages either reminded participants “that moral actions are those that treat others as you would like to be treated” or “that actions are moral to the extent that they contribute to maximizing collective payoffs”.

<sup>5</sup> However, also paying the dictator in public can lead to lower generosity [41].

<sup>6</sup> 30 Euros  $\approx$  35 Dollars at the time of the experiment.

this endowment she wants to give to the receiver.<sup>7</sup> Every integer between 0 and 30 is a valid decision. This dictator game is played only once (one-shot).

The experiment consists of three different treatments in a between-subject design. In two of these treatments (*Responsibility* and *DecisionPower*), a specific text is shown to the dictators before they make their decision while the third treatment serves as a control treatment without such a text (*Control*). The text in the treatment *Responsibility* emphasizes the dictator's responsibility for the payoff of the receiver by saying "You bear the responsibility for both payoffs, your own and the one of participant B."<sup>8</sup> The text in the treatment *DecisionPower* emphasizes the dictator's decision power and freedom of choice by saying "You alone decide about the payoffs, and you are completely free in your decision."<sup>9</sup> At all other instances, the instructions were neutrally formulated and carefully avoided mentioning the hierarchical relationship between the dictator and the recipient.

The experiment was conducted in December 2017 in two lecture rooms at the University of Potsdam using pen and paper. In one of these rooms, 207 students arrived and were all assigned the role of the dictator.<sup>10</sup> The receivers, who were also students, were in another lecture room at the same time. The dictators were informed about this in the instructions.<sup>11</sup>

The experiment took place before a first-year bachelor course in microeconomics. Participants for the role of the dictators were recruited via mailing invitations to students of this course as well as an announcement in this course one week prior to the experiment. Participants in the role of recipients were invited to participate immediately before the start of their lecture at the day of the experiment. They were told that they would obtain the money other participants gave them and that the money would be paid out to them immediately after the end of that lecture. No one in that room refused to participate.

Of the 207 dictators, 105 (51%) were women and 101 (49%) were men. One dictator did not provide information on their gender. On average, participants were around 21 years old. The most frequent field of study was business administration (35% of the dictators), followed by economics (31%) and political sciences and economics (28%).

Before entering the room for the experiment, dictators received a randomly drawn card on which they found their assigned seat and their ID number. At their seat, participants found a large envelope with a sticker on it, which repeated the information from their card. Hence, they were randomly assigned to one of the three treatments. 56 dictators participated in the treatment *Control*, 77 in the treatment *Responsibility* and 74 in the treatment *DecisionPower*. Table A1 in the Appendix A provides information about the distribution of participants' characteristics (gender and age) across treatments. The envelope at the participants' seats contained general and specific instructions, one small envelope marked with the number 1, which contained the decision sheet, and one small envelope marked with the number 2, which contained the questionnaire.<sup>12</sup> Figure 1 shows the decision sheets for all three treatments. The additional texts on the decision sheets in the treatments *Responsibility* and *DecisionPower* are marked by a red dotted rectangle.

<sup>7</sup> Only 10% of the participants were paid after the experiment took place as is explained in detail in the end of this Section. The instructions, however, stress that dictators should think carefully about their decision as it has real consequences if they are drawn for payment. Paying only a fraction of participants is not uncommon in experimental economics, especially in classroom settings [58] or in survey experiments [59].

<sup>8</sup> The original text in German was: "Sie tragen die Verantwortung für beide Auszahlungen, Ihre eigene und die von Teilnehmer/-in B".

<sup>9</sup> The original text in German was: "Sie allein entscheiden über die Auszahlungen, und Sie sind völlig frei in Ihrer Entscheidung".

<sup>10</sup> Prior to the experiment, we did a power calculation in which we estimated effect sizes by using the results from Brañas-Garza [28]. We concluded that we would need around 25 observations for each gender for each treatment to find significant effects. Thus, we intended to conduct the experiment with a minimum number of 150 dictators.

<sup>11</sup> While it may potentially affect dictators' decisions that receivers are not in the same room, we do not see a reason why such an effect should differ between the treatments.

<sup>12</sup> Pictures of the material used for the experiment can be found in the Appendix C.

Entscheidung über die Aufteilung der 30 Euro	Entscheidung über die Aufteilung der 30 Euro	Entscheidung über die Aufteilung der 30 Euro
Ich entscheide mich für die folgende Aufteilung: (nur <b>ganzzahlige</b> Beträge zwischen 0 und 30 sind erlaubt)	<div style="border: 1px dashed red; padding: 2px; margin-bottom: 5px;"> <b>Bitte beachten Sie:</b> Sie tragen die Verantwortung für beide Auszahlungen, Ihre eigene und die von Teilnehmer/-in B.           </div> Ich entscheide mich für die folgende Aufteilung: (nur <b>ganzzahlige</b> Beträge zwischen 0 und 30 sind erlaubt)	<div style="border: 1px dashed red; padding: 2px; margin-bottom: 5px;"> <b>Bitte beachten Sie:</b> Sie allein entscheiden über die Auszahlungen, und Sie sind völlig frei in Ihrer Entscheidung.           </div> Ich entscheide mich für die folgende Aufteilung: (nur <b>ganzzahlige</b> Beträge zwischen 0 und 30 sind erlaubt)
Teilnehmer/-in B bekommt von mir: _____ Euro	Teilnehmer/-in B bekommt von mir: _____ Euro	Teilnehmer/-in B bekommt von mir: _____ Euro
Demnach behalte ich: _____ Euro	Demnach behalte ich: _____ Euro	Demnach behalte ich: _____ Euro
(Die Summe der beiden Beträge <b>muss</b> 30 Euro betragen.)	(Die Summe der beiden Beträge <b>muss</b> 30 Euro betragen.)	(Die Summe der beiden Beträge <b>muss</b> 30 Euro betragen.)
(a) <i>Control</i>	(b) <i>Responsibility</i>	(c) <i>DecisionPower</i>

**Figure 1.** Decision sheets depending on the treatment (in the original, German language).

In the beginning of the experiment, a short introduction was read aloud to all participants by the experimenter, who was not the lecturer of the microeconomics course. Then, participants read the general and specific instructions by themselves.<sup>13</sup> Afterwards, they opened the first envelope, made their decision and closed the envelope again. Next, they opened the second envelope, completed the questionnaire and closed the envelope again. Finally, they put everything back in the large envelope and sealed it. Subsequently, the envelopes were collected.

Participants were informed in verbal and written form that only 1 in 10 participants would be randomly selected for payment after all envelopes were collected. This was done by letting one of the participants publicly roll a 10-sided die. Each participant whose last digit of their ID number was the number diced was randomly matched with one receiver in the second room and received their payment subsequently. The participants in the second room randomly drew a card with a number on it to determine whether they would receive a payment. Each dictator chosen by the roll of the die was matched randomly to one of those receivers. Receivers who were not matched to one of the dictators did not receive a payment.<sup>14</sup> In total, 21 dictators were randomly matched to 21 receivers. Thus, 42 participants received a payment after the experiment.

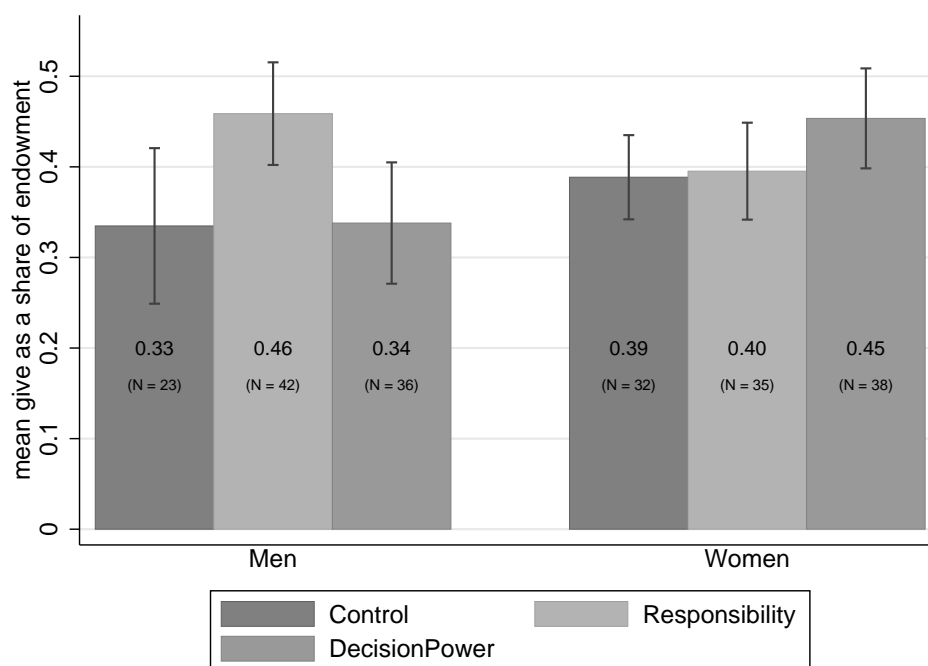
#### 4. Results

Participants in the role of a dictator on average give 40.2% of their endowment of 30 Euros to the receiver, i.e., 12.05 Euros. Dictators in the treatment *Control* give 36.8%, dictators in the treatment *Responsibility* give 43.0% and dictators in the treatment *DecisionPower* give 39.7% of their endowment. Averaged over all treatments, women are slightly more generous by giving 41.4 % compared to men giving 38.7% of their endowment. This difference, however, is not statistically significant (Wilcoxon Rank Sum test:  $z = 0.210$ ,  $p = 0.8340$ ).

Figure 2 shows average dictators' decisions as a share of endowment separated by treatment and gender. On average, men give 33.5% in the *Control* treatment, 45.9% in the *Responsibility* treatment and 33.8% of their endowment in the *DecisionPower* treatment. Female dictators seem to react completely different than men to the two frames. On average, they give 38.9% in the *Control* treatment, 39.5% in the *Responsibility* treatment and 45.4% of their endowment in the *DecisionPower* treatment.

<sup>13</sup> An English translation of the originally German verbal instructions, general instructions and specific instructions can be found in the Appendix B.

<sup>14</sup> There were fewer participants in the second room than in the first room. Participants in the role of the dictator who sat in the first room received no information about the number of participants present in the second room.



**Figure 2.** Mean giving separated by treatment and gender. Note: The figure shows means as well as 95% confidence intervals.

Since participants' characteristics are not perfectly balanced between treatments (see Table A1 in the Appendix A),<sup>15</sup> we use OLS (ordinary least squares) regressions to test for treatment and gender differences.<sup>16</sup> Table 1 presents the regression results. The first column uses the full sample, the second and third column present the results for male and female participants separately.<sup>17</sup>

The regression results for the full sample in column (1) show that the text emphasizing the dictator's responsibility has a positive and statistically significant effect on dictators' giving compared to the *Control* treatment. Adding a text that highlights the dictator's freedom of choice and decision power is also estimated to increase giving. However, this effect is not statistically significant ( $p = 0.336$ ).

In line with the descriptive analysis in Figure 2, columns (2) and (3) in Table 1 show that the positive effect of the *Responsibility* treatment on giving is entirely driven by male dictators ( $p = 0.015$ ). For female dictators, the effect of the *Responsibility* treatment is close to zero ( $p = 0.955$ ). On the contrary, the effect of the *DecisionPower* treatment is estimated to be close to zero for men ( $p = 0.946$ ), while the results suggest a positive effect for women, which is significant at the 10% level ( $p = 0.068$ ).

<sup>15</sup> For example, there are more men in the treatment *Responsibility* than in the treatment *Control*, who, on average, give slightly less than women. Hence, simply comparing the means may understate a potential effect.

<sup>16</sup> A Tobit model may be more appropriate for the analysis of the dictators' decision if left-censoring in the dependent variable is a concern. (See [60] or [3] for good discussions of the appropriateness of different models to analyze dictator game decisions.) However, only 7% of the dictators decided to give 0 Euro in our study, which is a very low fraction compared to other studies (A meta-analysis found 36% of dictators to give nothing to the recipient [3], while in a survey-experiment, which also paid only 1 in 10 participants, around 17% of dictators decided to give 0 Euro [59]). Therefore, we do not believe that censoring from below is an issue here and decided to use an OLS model due to the slightly easier interpretation of coefficients. Nevertheless, all of the results in Tables 1 and A2 are robust to using a Tobit model.

<sup>17</sup> Table A2 in the Appendix A additionally shows the results of an OLS regression including interaction effects of gender with the treatment variables.

**Table 1.** The ordinary least squares (OLS) regression results.

Variables	(1) Full Sample	(2) Men	(3) Women
<i>Responsibility</i>	0.063 ** (0.031)	0.125 ** (0.050)	−0.002 (0.037)
<i>DecisionPower</i>	0.030 (0.031)	−0.003 (0.052)	0.068 * (0.037)
male	−0.028 (0.025)		
age	−0.003 (0.004)	−0.003 (0.008)	−0.001 (0.005)
Constant	0.429 *** (0.099)	0.418 ** (0.189)	0.402 *** (0.106)
Observations	205	100	105
R-squared	0.100	0.171	0.136

Note: The dependent variable in all regressions is the share of the endowment given by the dictator. The regression depicted in column (2) only includes observations by male dictators, the one in column (3) only observations by female dictators. All regressions additionally control for participants' field of study. \*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%.

## 5. Discussion and Conclusion

In this study, we analyzed the effects of two different short texts, which were printed on the decision sheet, on giving in a dictator game. The *Responsibility* treatment reminded dictators of their responsibility for the recipient's payoff, the *DecisionPower* treatment highlighted the dictator's freedom of decision. Furthermore, we analyzed differences in behavior depending on dictator's gender.

We expected the *Responsibility* treatment to increase giving (because of the increased salience of responsibility), and more so for females than for males (because women are presumably under stronger social pressure to behave pro-socially [21–24,27]). In our data, however, the *Responsibility* treatment increases giving by male dictators only. One possible explanation for the lack of an effect when reminding women that they are responsible for the payoff (and, thus, for the well-being) of the receiver is that this text does not provide them with new information; they already feel responsible for the receiver due to the general expectation that females care for others who depend on them [21–24]. Hence, our treatment text would not increase the feelings of responsibility and the pressure to behave altruistically anymore. For men, however, who probably feel a much lower pressure to help the receiver and a lower level of responsibility for the well-being of the receiver initially, this text may be able to increase the feelings of responsibility and, thus, the pressure to help. This could then lead to the observed effect that men increase their giving after seeing the responsibility text.

With respect to the *DecisionPower* treatment, our prediction was less clear. If it reminds participants of their accountability for their action by highlighting their control over the decision, it may have increased giving compared to the *Control* treatment. On the contrary, if participants perceived the text in this treatment as a justification for selfish behavior, it may even have reduced giving compared to the *Control* treatment. Indeed, the insignificant overall effect we find may reflect that these behavioral forces counteract each other. Future research should try to disentangle these mechanisms. The weakly significant, positive effect for female dictators may be explained by the explicit reduction of social pressure to which female participants seem to respond positively. Presumably, they appreciate the reduction of the general pressure they usually face to behave altruistically. If future research should indeed confirm that women are more willing to do somebody a favor or to comply with a request when they are reminded of their freedom of choice than when they are told that they are responsible for the potential beneficiary of a request, this could have important implications. Besides direct applications such as everyday life situations of asking somebody a favor or charity organizations asking somebody for money, these insights may also be applicable to leadership strategies in the workplace: it may be



that female employees' compliance with a request could be increased by formulating such a request in a way as to highlight their freedom of choice and, thereby, presumably decrease the pressure to comply.

Our study contributes to the literature in several ways. The first contribution can be seen as a series of robustness checks or extensions: it replicates the findings of Brañas-Garza [28] that reminding the dictator that the other party depends on her has a significantly positive effect on dictators' giving, using a different version of the text for the frame.<sup>18</sup> Furthermore, this paper provides additional evidence of framing effects in dictator games [4,9]. In particular, we contribute evidence of how these frames are sensitive to the dictator's gender. More generally speaking, we thereby contribute to the literature on gender differences in the field of social preferences [17].

As another, probably more important contribution, the present paper provides novel insights into what has driven dictators' reaction to pre-play messages sent by the recipient in Bruttel et al. [33]. They report that only female dictators react positively to messages emphasizing the dictator's power position. Their dataset did not allow differentiating between messages emphasizing freedom of choice and those stressing the dictator's responsibility so that they could only report a joint positive effect of these types of messages. If our result regarding the weakly positive effect of highlighting the freedom of choice for female dictators is confirmed by future research, it will suggest that the aspect of the freedom of choice rather than the responsibility argument is responsible for this gender difference in their study. The relative weakness of this effect in the present study furthermore indicates that text messages sent by the recipient to the dictator have a stronger impact on giving decisions than a framing text written by the experimenter. However, particularly this last finding needs further substantiation by future research.

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**Author Contributions:** L.B. and F.S. conceived and designed the experiments; F.S. performed the experiment; F.S. analyzed the data; L.B. and F.S. wrote the paper.

**Conflicts of Interest:** The authors declare no conflict of interest.

## Appendix A. Supplementary Tables and Figures

**Table A1.** Descriptive statistics of the distribution of participants across treatments.

	Treatments		
	<i>Control</i>	<i>Responsibility</i>	<i>DecisionPower</i>
male	0.42 (a)	0.55	0.49
age	21.79	21.55	20.88
N	56	77	74

(a) One participant in the treatment *Control* did not provide information on their gender.

<sup>18</sup> Brañas-Garza [28] does not present results depending on gender.

**Table A2.** OLS regression results for a model including gender interaction effects.

<b>Variables</b>	<b>Give</b>
<i>Responsibility</i>	−0.004 (0.041)
<i>DecisionPower</i>	0.066 (0.041)
<i>Responsibility</i> × male	0.128 ** (0.061)
<i>DecisionPower</i> × male	−0.066 (0.061)
male	−0.050 (0.047)
age	−0.002 (0.004)
Constant	0.419 *** (0.098)
Observations	205
R-squared	0.155

Note: The dependent variable in the regression is the share of the endowment given by the dictator. The regression controls for participants' field of study. \*\* significant at 5%; \*\*\* significant at 1%.

## Appendix B. Instructions for Participants of the Experiment

The following section provides the English translation of the originally German instructions, which participants playing the role of the dictator received in the experiment:

### Verbal Instructions / Welcome Address

Hello, my name is Florian Stolley and I am a research assistant at the University of Potsdam. Today, you are participating in an experiment in which you make a simple decision. Please think carefully about this decision as it has real consequences.

By participating in this experiment, you support our research. Additionally, you can earn money. Following the experiment, a ten-sided die will be thrown. If the last digit of your participant ID—the so-called payoff-number—is thrown, you will receive a payment immediately after the lecture. The amount of the payment depends on your decision in this experiment. You will find more details about this in the instructions.

In front of you, you find a large envelope. This envelope contains:

1. the instructions.
2. a small envelope with the number 1 on it.
3. a small envelope with the number 2 on it.

Please start by reading the instructions carefully. Please open envelope 1 and make a decision only **after** reading the instructions. Afterwards, please open envelope 2 and fill in a questionnaire.

We ask you to be quiet and to not talk to each other during the experiment.

You can start now by opening the large envelope and reading the instructions carefully.

## **Welcome to this experiment!**

Thank you very much for participating in this experiment!

Thereby, you support our research and can earn money in addition.

- Please do not open the two small envelopes yet.
- Please read the instructions carefully and follow the instructions.
- Please stay quietly in your seat for the entire duration of the experiment and do not talk to other participants.
- Please refrain from using your cell phone during the experiment.
- Please do not look at other participants' sheets and do not let other participants look at yours.
- Please keep your place card until the end of the lecture. Only with this place card, you are able to receive a payment.

### **Use of data:**

Following today's experiment, the data will be analyzed anonymously. If you are chosen for payment by the throw of the die, you will have to acknowledge the amount received with your name and signature. These data are only used for the financial accounting of this experiment. Your name will not be linked to your decision or to your answers on the questionnaire. You can abort your participation in this experiment at any time; however, this would then result in you being ineligible for payment.

### **Instructions**

In the experiment, you will make a decision. After all participants in this room are finished with the experiment, it is going to be decided by chance (a public throw of a die) who of you receives a payment. The probability to receive a payment is 1 to 10 or 10%.

The amount of money you receive, if you are chosen by the throw of the die, depends on your decision in the experiment. Thus, your decision has real consequences. You should think carefully about your decision.

In the experiment, you and the other participants each assume a role. There are two different roles which will be called A and B from now on. You and the other participants in this room will all assume the role of "A." The participants, who will assume the role of "B," are in a parallel lecture, which takes place right now in another room on the Campus Griebnitzsee.

Should you be chosen by the throw of the die, you will be matched randomly with a participant B. You will not learn the identity of this person, neither before nor after the experiment. The participant B you were matched too will not learn your identity as well.

#### **Decision:**

You, as "A", receive an endowment of 30 Euros. The "B"s do not receive any endowment. You can decide on how much of your endowment you want to give to the participant B you are matched to. You can choose any integer amount between 0 and 30 Euros.

#### **Throw of the die:**

The last digit of your participant ID, which you can find, for example, on your place card or on your large envelope, is the payoff-number. The payoff-number is a number between 0 and 9. Following the experiment, a ten-sided die will be thrown here in the lecture room. The number thrown decides who of you receives a payment.

**Payment:**

After this lecture, the participants who have been chosen by the throw of the die for payment will receive their payment. The amount paid out depends on the individual decisions by the participants.

Please keep your place card until the end of the lecture because **only with the place card, you are able to receive a payment.**

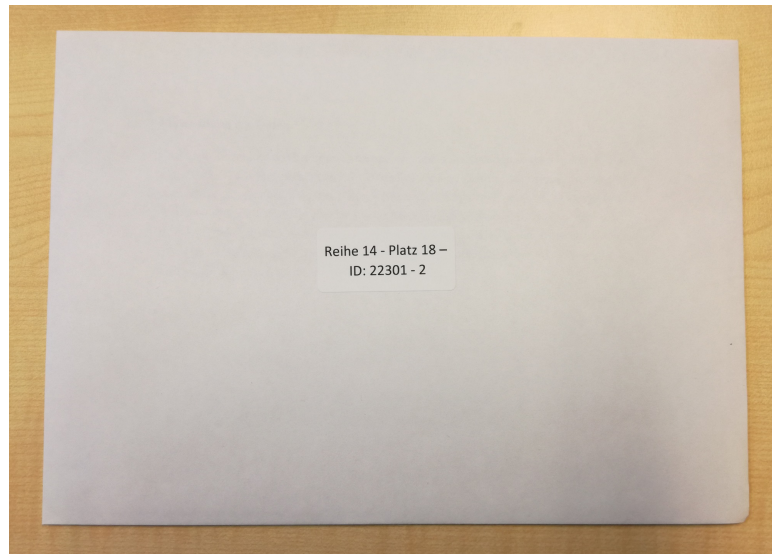
**Summary:**

- You are a participant A. The participants B are in another room in this building at this very moment.
- You decide on how much of your endowment of 30 Euros you want to give to the participant B you are matched to (if your payoff-number should be chosen by the throw of the die).
- You will receive your payment at the end of the lecture for handing in your place card (if your payoff-number should be chosen by the throw of the die).

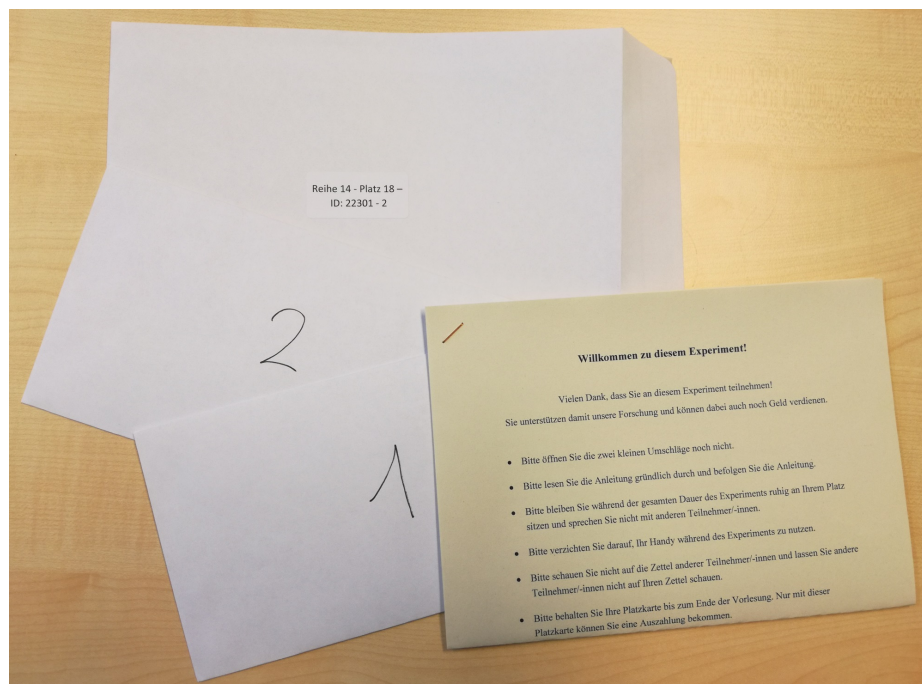
**Single steps:**

1. Open the envelope with the number 1 and note your decision on the inlying decision sheet.
2. Fold the decision sheet and put it back into the envelope number 1.
3. Open the envelope with the number 2 and fill in the inlying questionnaire.
4. Fold the questionnaire and put it back into the envelope number 2.
5. Put envelope number 1, envelope number 2 and the instructions into the large envelope and seal it.
6. Please wait quietly until all other participants are finished and all envelopes have been collected.

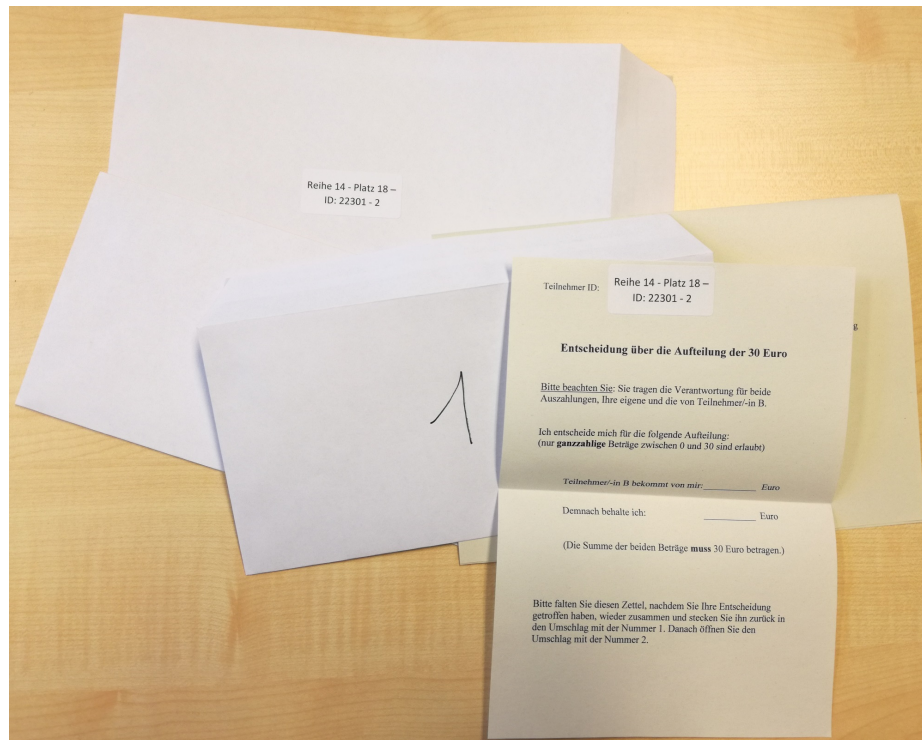
## Appendix C. Pictures of the Material Used for the Experiment



**Figure A1.** Large envelope with a sticker with seat and id on it



**Figure A2.** Content of the envelope—instructions and two smaller envelopes



**Figure A3.** Content of small envelope marked with a 1-decision sheet

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