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## Framing Matters in Gender-Paired Dictator Games

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University of Heidelberg

Department of Economics



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Framing Matters in Gender-Paired Dictator Games

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# Framing Matters in Gender-Paired Dictator Games\*

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## Abstract

We show that social context matters in gender-paired dictator decisions. Our experiment investigates the influence of gender-pairing and framing on monetary transfers in a 2x2x2 design where sender gender, recipient gender, and frame, i.e. give or take, are varied. We are the first to combine all three variables and uncover that giving information about the gender of the recipient accommodates framing effects. If each of the three manipulated variables were to be analyzed independently, our data would confirm previous findings where females transfer more than males and framing has no effect (Eckel and Grossman, 1998; Dreber et al., 2013). However, we investigate the manipulated variables in interaction and find that framing matters when information about recipient gender is salient. For both genders, transfers in opposite-sex pairs are always higher than in same-sex pairs, but significantly higher in the take frame. We thus suggest that the gender composition of the sample, gender-pairing, or beliefs about the counterpart's gender should be controlled for in experiments testing gender differences in social interaction.

**Keywords:** Framing · Gender Differences · Gender-Pairing · Dictator Game · Experiment  
**JEL Classification:** C72 · C91 · J16

## 1 Introduction

The comparison between decision makers' genders has been explored in experimental economics<sup>1</sup>, but gender-paired interaction has been rarely considered. Most real-life interactions cannot be modeled with an androgynous match, because individuals have either information, expectations, or beliefs about their counterpart. For instance, counterpart gender has been shown to mediate outcomes in strategic and non-strategic settings where the payoffs depend on the courtesy of others. In restaurants it is frequently observed that males on dates and groups of males are more generous towards waitresses than groups of females (Miller, 2000). Research in evolutionary psychology argues that preferential behavior towards the opposite sex has a signaling role and can be explained by the sexual selection hypothesis (Farrelly et al., 2007). Farrelly et al. (2007) explain that interacting partners behave more cooperatively to increase their attractiveness. The courtship behavior is meant to appear to be altruistically motivated particularly since it is costly and non-reciprocal.

Evidence also suggests that sharing is decreased within same-sex pairs (Buunk and Massar, 2012). With mate competition for reproduction and survival being the norm, aggression within

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<sup>1</sup>For a summary see Croson and Gneezy (2009).

genders is higher (Trivers, 1972, ch. 7) and this is especially prominent for men (Buunk and Massar, 2012). But also women see other women as competitors when gender is salient (Buss, 1999; Campbell, 1999; Kanazawa, 2005) and they become more competitive in single-sex environments (Gneezy et al., 2003). Houser and Schunk (2009) show that even school-age girls are already sensitive to gender-paired giving.

Given that gender considerations appear to be embodied in social interaction, we maintain that gender composition of the experimental sample, gender-pairing, or beliefs about it are an important factor for economic decision making and experimental methodology. Additionally, behavior in social games is often context dependent (Fehr and Schmidt, 1999) and context further interacts with gender (Croson and Gneezy, 2009) which is why the interplay of social context and gender-pairing must be scrutinized.

Our study is the first to focus on the interplay of decision maker’s gender, his/her counterpart’s gender, and framing. The most promising setting for this investigation is a non-strategic, anonymous environment because it elicits social preferences in the absence of most exogenous demands. The remainder of the paper is organized as follows: in Section 2 the existing literature is summarized. Section 3 presents the experimental design, followed by the hypotheses in Section 4. The results and the regression analysis are discussed in Section 5 and we conclude in Section 6.

## 2 Existing Literature

Individuals exhibit other-regarding preferences despite rational theory predicting the contrary (Camerer, 2003, chap. 2). This is observed even under conditions of double-blindness (Hoffman et al., 1996) and in contexts where reciprocity cannot be a motivational concern (Johannesson and Persson, 2000). Other-regarding preferences are cross-cultural and have been motivated by constructs such as inequality aversion (Fehr and Schmidt, 1999), (impure) altruism (Andreoni, 1989), Rawlsian “social welfare” preferences (Charness and Rabin, 2002), or other non-monetary benefits (Aknin et al., 2013).

In analyzing giving behavior, female gender has been positively correlated with the amount transferred (Eckel and Grossman, 1998; Engel, 2011). However, gender effects seem to be context dependent (Andreoni and Vesterlund, 2001; Bolton and Katok, 1995) since females’ preferences are more sensitive to social cues (Croson and Gneezy, 2009). One factor influencing social interaction is gender-pairing: offers are affected by the information on the responder gender. In an ultimatum game by Solnick (2001) amounts proposed to men are larger, especially those by women. Sutter et al. (2009) expand on this finding in a power-to-take game, reporting that in same-sex pairs the amounts proposed are lower than those in opposite-sex pairs. Finally, in a gender-paired dictator game, females transfer less to females than to males (Ben-Ner et al., 2004). However, others find that there is no effect of gender-paired transfers, i.e. women propose higher amounts regardless of responders’ gender (Eckel and Grossman, 2001). We think that these mixed results are due to different design approaches, such as the social distance between the participants and the decision elicitation method. In this paper we propose examining non-strategic gender interaction in a double-anonymous setting.

Another important aspect regarding social games is framing. Bardsley (2008) and List (2007) report that dictator giving might be an artefact of the experimental design while others report that framing matters. Evidence in this direction exists in public goods and bargaining research (Andreoni, 1995; Park, 2000; Leliveld et al., 2008). Yet other authors find no framing effect in dictator games (Dreber et al., 2013), in public goods contexts (Brandts and Schwiieren, 2007), or donations (Grossman and Eckel, 2012).

However, when the decision maker’s gender is scrutinized, framing creates differential effects. Fujimoto and Park (2010) find that there are no gender differences in contributions under a positive public goods frame, but women are more generous under a negative one. We go one

step further and investigate the additional influence of a third factor—recipient gender—on framed giving behavior. To our knowledge, we are the first to have employed a combination of the three aspects: gender, gender-pairing, and framing.

### 3 Experimental Design and Implementation

We conducted a double-anonymous dictator game where gender-pairing and framing are combined. In a 2x2x2 between-subjects design a) the framing of the decision is either give or take, b) the dictator gender is varied, and c) the recipient gender is varied. The basic experimental procedure, except gender-pairing, is a replication of Kettner and Waichman (2014)<sup>2</sup>.

The experiment was organized as follows: all participants were invited to the same room, signed up and received a €5 show-up fee. They thus became aware of the gender composition of the sample, and the fact that everybody had received the same show-up fee. Next, the way that experiment unfolded was dependent on the gender composition of the sessions' samples. For same-sex sessions, the participants drew a number or letter indicating the room and seat to which they were randomly assigned (numbers to dictators and letters to recipients). For opposite-sex sessions, participants were directed towards different rooms and there drew the seat number<sup>3</sup>. It is possible that separating participants by gender into different rooms might create additional distance but it was the method we have chosen to maintain full anonymity towards experimenters and other subjects.

After everyone had been assigned to a room and seated in a cubicle, the experiment began. In both rooms there were always two experimenters present –a male and a female– as experimenter gender might influence decisions (Innocenti and Paziienza, 2006). The first page of the instructions, including explanations on random matching and anonymity, was read aloud. The remainder was read by the participants themselves. Dictators found two envelopes in their cubicles, one labeled “Your Personal Envelope” and the other labeled “Other [male/female]<sup>4</sup> Participant’s Envelope”. In the give framing, €5 (ten €0.50 coins) together with ten metal washers were in the “Your Personal Envelope” and the “Other Participant’s Envelope” was empty. In the take framing, the €5 (ten €0.50 coins) together with ten metal washers were in the “Other Participant’s Envelope” and the “Your Personal Envelope” was empty. The metal washers ensured anonymity, as they mimic €0.50 coins in weight, diameter, and the noise they make. After being asked to count the contents of the envelopes and check that both ten €0.50 pieces and ten metal washers were in the correct envelope (depending on framing), participants made their decisions. They were instructed to place ten coins or washers in the “Other Participant’s Envelope”. In this way they could transfer from €0 to €5 in increments of €0.50 while ensuring their decision remained anonymous. Therefore, neither the experimenters nor other participants could observe decisions or connect a particular identity to a decision. Once a dictator had made a decision, he/she placed the sealed envelope labeled “Other Participant’s Envelope” in a collection box and started filling in demographic and psychometric questionnaires.

When all dictators had placed their sealed envelopes in the box, it was carried into the recipient room<sup>5</sup>. The experimenters in the recipient room, who were at no point present while the

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<sup>2</sup>Instructions are provided in the appendix.

<sup>3</sup>When participants who had signed up did not arrive on time and the group was uneven in number or in terms of gender, we proceeded as follows: if the missing participant belonged to the recipient group, the participant without a partner was assigned a dictator role and his/her decision was carried out and paired up by means of a lottery. If the missing participant belonged to the dictator group, the participant without a partner could not join the experiment.

<sup>4</sup>Gender is embedded in the inflection in the German language. It was therefore unnecessary to further emphasize the recipient’s gender.

<sup>5</sup>The ten coins/washers that were not transferred by the dictator were placed in the personal envelope and taken home. Therefore, dictators could not reveal their decision to the experimenter by returning the metal washers.

Give Framing				
Treatment	Male to Male (MM)	Male to Female (MF)	Female to Male (FM)	Female to Female (FF)
Observations	N=24	N=23	N=26	N=24
Age	23.52 (24)	22.48 (22)	22.27 (22)	23.17 (23)
Individual Income	678.26 (750)	691.30 (750)	601.92 (750)	650.00 (750)
Single	73.91%	82.61%	69.23%	50.00%
Household Size	3.61 (3)	2.96 (3)	2.69 (2)	2.54 (2)
Game Theory	56.52%	60.87%	23.08%	29.17%
Washer Value	4.96 (2)	5.26 (2)	15.29 (5)	15.85 (2.5)

Take Framing				
Treatment	Male to Male (MM)	Male to Female (MF)	Female to Male (FM)	Female to Female (FF)
Observations	N=26	N=25	N=23	N=24
Age	23.54 (22.5)	22.52 (23)	22.59 (22.5)	22.96 (22.5)
Individual Income	628.85 (750)	682.00 (750)	622.73 (750)	664.58 (750)
Single	80.77%	72.00%	72.73%	70.83%
Household Size	3.54 (3)	3.48 (3)	2.64 (2)	2.42 (2)
Game Theory	69.23%	64.00%	27.27%	41.67%
Washer Value	9.33 (4)	5.16 (5)	17.49 (5)	22.88 (5)

Note: the tables include mean values (where applicable, median values) and percentage frequencies

Table 1: Number of Independent Observations and Demographic Details per Treatment

dictators made their decisions, randomly distributed the envelopes to the recipients. The recipients opened the envelopes and counted the contents. The experimenters in the recipient room recorded the amounts transferred while the participants filled in demographic and psychometric questionnaires.

The experiment took place at the AWI Lab of the University of Heidelberg in February, April, and June 2013. Data was collected in thirty-three sessions with an average duration of thirty minutes. 376 participants were recruited from the ORSEE-student-pool (Greiner, 2004) after filtering for experience in similar experiments. Five subjects were excluded owing to their advanced age, two were excluded because they had misunderstood the instructions. After exclusion, the sender sample contained a total of 195 independent observations. The mean age of this sample was 22.89 and ranged from 18 to 33 years. 50.14% of the participants were females and 46.15% took a class in game theory indicating at least preliminary economic training. Another aspect we should mention is the valuation of the metal washers. Their market price is between 2 and 4 cents per piece. The majority of the participants (89.23%) attributed them a value below 50 cents with a mean of 12.01 cents (median = 4 cents). Further demographic details and the number of observations per treatment are displayed in Table 1.

## 4 Hypotheses

In the analysis that follows we first test the robustness of previously reported results and then uncover the interaction of the three manipulated variables. Namely, in Section (5.1) we check whether females transfer and receive more than males, and framing does not matter. In Section (5.2) we test the following hypotheses:

**Hypothesis 1** Framing does not affect higher transfers from and to females.

**Hypothesis 2** Transfers in opposite-sex pairs are different from transfers in same-sex pairs; this holds independent of framing.

## 5 Results

### 5.1 Average Amount Transferred and Frequency of Non-zero Transfers

The average amount transferred in the pooled decisions was 20.92% of initial endowment. For pairwise comparisons we use Mann-Whitney U-Tests and report significance levels. Dictator gender played a significant role in the distribution of transfers, while framing did not. Female dictators transferred 24.12%, while male dictators transferred 17.76% ( $p = 0.06$ ). Recipient's gender did not influence transfers significantly, as females received 21.04% and males 20.81% ( $p = 0.65$ ). Finally, the framing of the decision did not play a role ( $p = 0.68$ ). In the give frame 19.69% of the endowment was transferred; in the take frame 22.14% was sent to the recipient.

For the extensive margin, we analyze the percentage of participants transferring a non-zero amount and compare it between genders and frames through  $\chi^2$ -tests. 54.87% of the senders chose to transfer some money to the recipient. However, a split by dictator gender underlines that females transferred more than males: 61.86% of the females and 54.08% of the males transferred at least 50 cents ( $p = 0.05$ ). Between recipient genders and frames no difference is found: females received a non-zero amount in 58.33% of the cases, while males receive a non-zero amount in 51.52% of the cases ( $p = 0.34$ ). Give and take transfer frequencies were not significantly different either (55.67% versus 54.08%;  $p = 0.82$ ).

In summary, females are more likely to transfer non-zero amounts and, on average, transfer higher amounts than males. In what concerns the recipient, males and females receive similar average amounts and do not differ at the extensive margin. Finally, average transfers and transfer frequencies do not differ between frames. Now we put our design to test and analyze the interaction of the three manipulated variables.

### 5.2 Treatment Comparisons and Interaction Effects

Figure 1 displays the average transfers in percent for each of the eight experimental treatments. As shown in the left side (give framing), females transferred higher amounts than males regardless of recipient gender (on average 24.60% versus 14.47%;  $p = 0.02$ ). This difference is due to higher transfers to the opposite sex in the case of females and lower transfers towards the same sex in the case of males (26.54% versus 11.67%;  $p = 0.05$ ). This difference, driven by the sender's gender, disappears in the take frame (right side) where females and males transferred similar amounts (23.62% versus 20.78%;  $p = 0.59$ ). This stems from opposite-sex befriending behavior: females transferred significantly more to males than to females (31.30% versus 16.25%;  $p = 0.05$ ) and males transferred significantly more to females than to males (27.60% versus 14.23%;  $p = 0.03$ ). Non-parametric tests comparing contributions between all experimental treatments are displayed in Table 2.

Figure 2 presents non-zero transfer frequencies for all eight experimental treatments. In the give frame females were on average more likely to transfer non-zero amounts (66.00% versus 44.68%;  $p = 0.04$ ) and none of the genders discriminated one of the two recipient genders (females gave to females 70.83% and females gave to males 61.54%;  $p = 0.48$ ; males gave to males 41.67% and males gave to females 47.83%;  $p = 0.67$ ). In the take frame transfer frequencies analysis reveals the same pattern as the analysis at the intensive margin. On average, females and males were equally likely to transfer non-zero amounts (57.45% versus 50.98%;  $p = 0.52$ ). When we consider gender-pairing we find again that in opposite-sex pairs the frequency of non-zero transfers is significantly higher than in same-sex pairs. This result is robust across dictator genders: females transferred non-zero amounts more frequently to males than to females (69.57% versus 45.83%;  $p = 0.10$ ) and males transferred non-zero amounts more frequently to females than to males (68.00% versus 34.62%;  $p = 0.02$ ).

**Result 1a** In the Give frame, females were generally more likely to transfer non-zero amounts and, on average, transferred higher amounts than males.

Gender-Pairing within Give and Take Framing

Give Framing			Take Framing		
MM vs MF	$p = 0.43$		MM vs MF	$p = 0.03$ (**)	
MM vs FM	$p = 0.05$ (**)		MM vs FM	$p = 0.02$ (**)	
MM vs FF	$p = 0.03$ (**)		MM vs FF	$p = 0.60$	
MF vs FM	$p = 0.22$		MF vs FM	$p = 0.66$	
MF vs FF	$p = 0.29$		MF vs FF	$p = 0.07$ (*)	
FM vs FF	$p = 0.76$		FM vs FF	$p = 0.05$ (**)	

Gender-Pairing and Framing Interaction

	TMM	TMF	TFM	TFF
GMM	$p = 0.93$	$p = 0.02$ (**)	$p = 0.01$ (**)	$p = 0.56$
GMF	$p = 0.48$	$p = 0.12$	$p = 0.08$ (*)	$p = 0.83$
GFM	$p = 0.06$	$p = 0.76$	$p = 0.50$	$p = 0.15$
GFF	$p = 0.07$ (*)	$p = 0.50$	$p = 0.39$	$p = 0.18$

Note: Results from Mann-Whitney U Tests; p values rounded to the second decimal; in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$

Notation of the treatments: first letter indicates the framing (i.e. either Give or Take), the second letter the gender of the dictator (i.e. either Female or Male), and the third letter shows the recipient gender (i.e. either Female or Male)

Table 2: Treatment Comparison

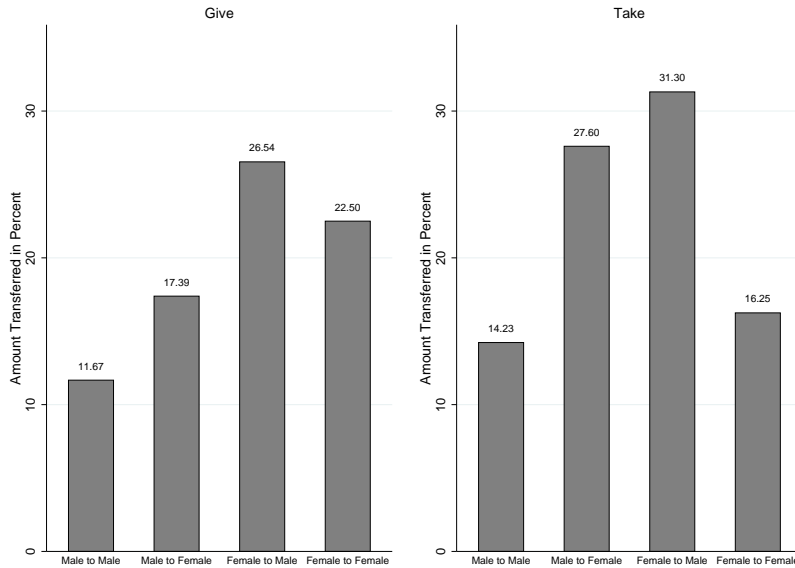


Figure 1: Average Amount Transferred in Percent by Treatment



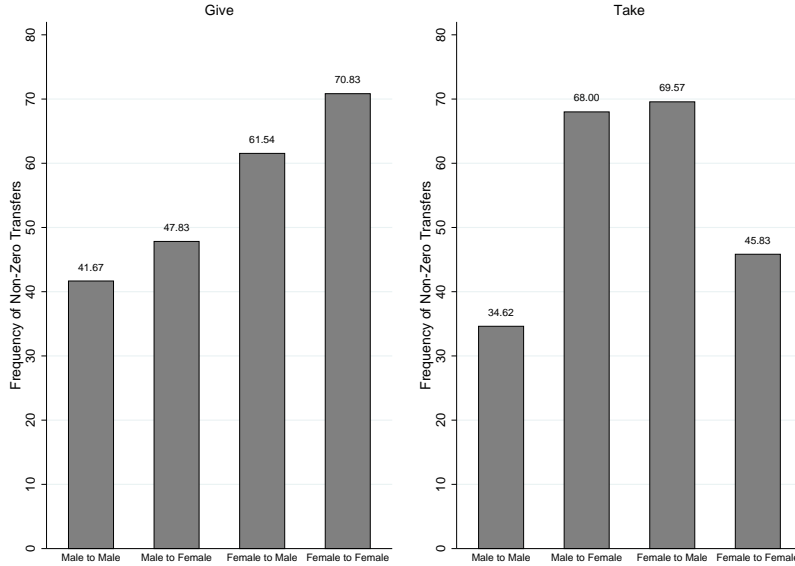


Figure 2: Non-zero Transfers: Frequencies by Treatment

**Result 1b** In the Take frame, transfer frequencies and average transfers were not different between dictator genders.

**Result 2** Framing matters in gender-paired decisions: opposite-sex preferences were stronger when the endowment belonged to the recipient<sup>6</sup>. Average transfers were higher in opposite-sex pairs, but only significantly higher in the take frame.

The exposed interplay of the three binary variables, i.e. framing, dictator gender, and recipient gender, is further scrutinized in a regression analysis.

## Regression Analysis

In Table 3 we specify five regression models to explain the amounts transferred in our experiment and thus confirm the results of the pairwise tests. Since our data is censored, the Tobit estimation with robust standard errors is the most applicable way of testing our models<sup>7</sup> (Engel, 2011).

The first model solely includes the *frame* (0=Take, 1=Give), a dummy for the *sender's gender* (0=Male, 1=Female), and a dummy for the *recipient's gender* (0=Male, 1=Female). Model (2) expands with the interactions of the three dummies, and Model (3) adds the triple interaction. Further, to test the robustness of our results, Model (4) includes the following demographic controls: age in years, income category, relationship status (0=Relationship, 1=Single), and household size. Lastly, Model (5) controls for the additional effect of game theory knowledge as we expect that trained participants will adopt a rational behavior more often (Marwell and Ames, 1981; Frank et al., 1993).

Our results can be summarized as follows: in the limited Model (1) only the *sender's gender* reveals a positive, significant coefficient. Therefore, controlling for framing and recipient gender, we confirm the previously discussed findings where females transfer significantly more than males. In Model (2) the *sender's gender* maintains a positive, significant coefficient, while the recipient's gender coefficient also becomes positive and significant. This indicates that females

<sup>6</sup>We are claiming that the endowment belonged to the recipient, but we are aware of the fact that the dictator –having to physically manipulate the money– might have developed ownership over it.

<sup>7</sup>Additionally, we re-run the models as a robust standard error OLS. Results are presented in the appendix (Table 5).

receive higher transfers. *Framing*, in line with Dreber et al. (2013), does not affect transfers. However, the interaction of *sender and recipient gender* reveals a significant, negative coefficient. This shows that the recipient’s gender negatively affects the positive effect of the sender’s gender on the amount transferred. Plainly, the fact that females transfer generally more is reversed when the recipient is another female. This supports the results we explained in the previous subsection, where in female-female pairs (and also in male-male pairs) transfers are lower than in mixed pairs. In this model, *framing* interacted with either *sender* or *recipient gender* does not reveal a change in the first difference. When we control for the triple interaction in Model (3), we see a weakly significant indication of how framing affects the interplay of sender and recipient genders: the second difference decreases when framing changes from Take to Give.

Model (4) supports these results and further demonstrates that they are independent of age, income, relationship status, and household size<sup>8</sup>. Model (5) additionally shows that holding everything else constant, education in game theory influences transfers negatively, as we expected. Nonetheless, all previous effects from Model (4) remain, except the coefficient of the sender’s gender, which weakens. We interpret this as an indication that education/expert knowledge converges (female) subjects into rational behavior.

To parallel the extensive margin tests, we additionally apply a logistic model with robust standard errors. Explanatory variables included in Models (6)-(10) are equivalent to Models (1)-(5) and results, i.e. marginal effects, are presented in Table 4. We re-confirm the previous findings: in the limited model the *sender’s gender* weakly influences transfer probabilities, meaning that females are more likely to transfer non-zero amounts. This persists and is even more pronounced in the later models, where we introduce more controls. In Model (7) the coefficient of the recipient’s gender increases, although it remains insignificant. The interaction of *sender* and *recipient gender* is negative and significant, allowing us to restate that the second difference affect the *sender’s gender* effect. *Framing* and its interactions are insignificant and, at this point, an overall influence of framing can be rejected. Finally, the triple interaction effect in Model (8) reveals the influence of framing on the second difference of gender-pairing. This should be read as follows: higher transfer frequencies exist in mixed pairs, but this effect of gender-pairing is more pronounced in the take framing. Models (9) and (10) strengthen our findings, proving that the effects we claim are mediated by education, but hold independent of age, income, relationship status, and household size.

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<sup>8</sup>We must specify that most of our participants were single and they are thus driving the results. If we re-run the models in the small subsample of individuals in a relationship, the effects we report disappear. This does not mean there are no effects for committed individuals, but only that this subsample is too small to draw any definitive conclusions. Our data suggests that the influence of marital status should be analyzed in a larger sample.

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
Framing (0 = Take, 1 = Give)	-3.085 (5.858)	-11.36 (10.63)	-0.469 (12.59)	1.311 (12.42)	-1.906 (12.36)
Gender Sender (0 = Male, 1 = Female)	12.20** (5.902)	21.63** (10.58)	31.60** (12.71)	34.80*** (12.60)	23.96* (12.16)
Gender Recipient (0 = Male, 1 = Female)	2.485 (5.814)	16.96* (9.864)	26.58** (11.57)	27.60** (11.58)	26.08** (11.38)
Framing x Gender Sender		12.70 (11.41)	-7.355 (17.06)	-10.91 (16.95)	-8.808 (16.22)
Framing x Gender Recipient		3.622 (11.46)	-17.05 (16.69)	-19.23 (16.47)	-17.83 (16.01)
Gender Sender x Gender Recipient		-31.61*** (11.47)	-51.21*** (16.73)	-54.53*** (16.76)	-49.69*** (16.08)
Framing x Gender Sender x Gender Recipient			39.66* (22.94)	44.23* (22.51)	41.15* (21.56)
Age				0.690 (1.038)	0.872 (0.991)
Income Category				0.965 (5.511)	1.063 (5.349)
Relationship Status (0 = Relationship , 1 = Single)				5.011 (6.778)	5.721 (6.619)
Household Size				-0.0946 (1.446)	-0.470 (1.438)
Game Theory (0 = No, 1 = Yes)					-23.35**** (5.842)
Constant	2.804 (6.340)	-1.136 (8.550)	-6.223 (9.671)	-27.63 (28.44)	-14.29 (28.29)
sigma Constant	37.62**** (2.450)	36.46**** (2.399)	36.22**** (2.368)	35.76**** (2.360)	33.93**** (2.334)
N	195	195	195	193	193

Note: robust standard errors in parentheses;

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , \*\*\*\*  $p < 0.001$

Table 3: Tobit Regression Results

	Model (6)	Model (7)	Model (8)	Model (9)	Model (10)
Framing (0 = Take, 1 = Give)	0.0122 (0.0723)	-0.0785 (0.127)	0.0739 (0.144)	0.0981 (0.144)	0.0707 (0.155)
Gender Sender (0 = Male, 1 = Female)	0.139* (0.0711)	0.199* (0.119)	0.347*** (0.134)	0.390*** (0.134)	0.310** (0.152)
Gender Recipient (0 = Male, 1 = Female)	0.0690 (0.0720)	0.190 (0.117)	0.331** (0.131)	0.341** (0.133)	0.348** (0.141)
Framing x Gender Sender		0.149 (0.137)	-0.162 (0.206)	-0.221 (0.206)	-0.213 (0.213)
Framing x Gender Recipient		0.0270 (0.146)	-0.277 (0.191)	-0.308 (0.189)	-0.306 (0.199)
Gender Sender x Gender Recipient		-0.272** (0.135)	-0.519**** (0.137)	-0.553**** (0.132)	-0.548**** (0.142)
Framing x Gender Sender x Gender Recipient			0.447**** (0.116)	0.473**** (0.0999)	0.472**** (0.101)
Age				0.00223 (0.0138)	0.00446 (0.0141)
Income Category				-0.00852 (0.0709)	-0.000264 (0.0747)
Relationship Status (0 = Relationship , 1 = Single)				0.0862 (0.0878)	0.108 (0.0927)
Household Size				0.00223 (0.0183)	-0.00252 (0.0175)
Game Theory (0 = No, 1 = Yes)					-0.260**** (0.0781)
N	195	195	195	193	193

Note: marginal effects reported; robust standard errors in parentheses;

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , \*\*\*\*  $p < 0.001$

Table 4: Logistic Regression Results

## 6 Conclusion

We have shown that in a non-strategic game gender-pairing matters and social context influences preferential money transfers towards the opposite sex. Generally, both females and males transfer more to the other gender. Yet, common favoritism is statistically significant only when context implies that the endowment, but not the decision, belongs to the recipient. We conclude that framing matters for gender-paired dictator games.

Gender considerations are important in social interactions and social interactions are rarely context-free. Thus, the interaction between gender-pairing and framing should not be ignored. If we overlook this interaction, our data confirms that females transfer more than males and framing does not matter. But, as pointed out before, we discovered that gender-paired dictator game transfers can be context-sensitive. That is, females take significantly more from females than from males and give less to females than to males when the money is theirs. In a similar fashion, males take significantly more from males than from females and give less to males than to females when the endowment belongs to them.

For now we cannot disentangle the motives behind this observed behavior, but we would like to signal the importance of gender-pairing for social games and its interaction with framing. Additional insights into the motives might be gained in settings where money transfers are publicized, the marital status is revealed, or the allocation of the endowment is also determined by an effort task in both frames.

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## Appendix

	Model (1b)	Model (2b)	Model (3b)	Model (4b)	Model (5b)
Framing (0 = Take, 1 = Give)	-2.682 (3.280)	-7.111 (5.085)	-2.564 (5.560)	-1.899 (5.636)	-3.575 (5.816)
Gender Sender (0 = Male, 1 = Female)	6.464* (3.287)	12.42** (6.093)	17.07** (7.297)	19.04** (7.398)	13.25* (7.135)
Gender Recipient (0 = Male, 1 = Female)	0.159 (3.279)	8.917 (5.414)	13.37** (6.144)	13.95** (6.177)	13.34** (6.150)
Framing x Gender Sender		6.994 (6.459)	-2.202 (9.597)	-3.966 (9.817)	-2.771 (9.470)
Framing x Gender Recipient		1.638 (6.443)	-7.645 (8.392)	-8.688 (8.449)	-7.652 (8.304)
Gender Sender x Gender Recipient		-19.14*** (6.451)	-28.42*** (9.541)	-30.67*** (9.757)	-28.20*** (9.430)
Framing x Gender Sender x Gender Recipient			18.66 (12.86)	21.34* (12.87)	19.27 (12.42)
Age				0.467 (0.583)	0.557 (0.557)
Income Category				1.162 (3.010)	1.520 (2.940)
Relationship Status (0 = Relationship , 1 = Single)				2.734 (3.921)	3.458 (3.888)
Household Size				-0.157 (0.750)	-0.409 (0.772)
Game Theory (0 = No, 1 = Yes)					-13.61**** (3.262)
Constant	18.96**** (3.159)	16.41**** (3.983)	14.23**** (4.200)	-0.326 (15.64)	6.694 (15.73)
N	195	195	195	193	193

Note: robust standard errors in parentheses;

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ , \*\*\*\*  $p < 0.001$

Table 5: OLS Regression Results



## Instructions

*In what follows we present the translated instructions of the Give Male to Female treatment. Please note that the translation highlights the gender of both sender and recipient. In German this is not necessary since gender is embedded in the inflection. The original German instructions, except for the gender-pairing details, were used by Kettner and Waichman (2014).*

### General Information

Dear (male) participant,

Thank you for participating in this study on decision making. In the following you will be informed about the rules and procedures. Every (male) participant has received the same printed instructions as you did. Please take your time and read the instructions carefully.

### No communication with other (male) participants

All decisions in this study are private. Please do not communicate with the other (male) participants. Otherwise, we are forced to exclude you from the experiment and you will have to forgo your payment. If you have any questions, please raise your hand. The (male or female) experimenter will answer your question quietly.

### Anonymous matching

In this study, you will be randomly matched with another (female) participant from the other room. The randomization is carried out according to the number you drew during registration at the beginning of this study. The matching will not be made public and no (male) participant can reconstruct which other (female) participant he is matched to.

**This experiment is completely anonymous. Your identity will not be made public and you will not receive information about the identity of the other (male) participants in this room and the other (female) participants in the other room.**

### General information about the decision task

Both you and the matched (female) participant received 5€ for your participation at the beginning. In addition to this, you have another 5€ which is in *your personal envelope*, on the table in front of you. The other matched (female) participant has nothing (0€).

**You can now leave the amount you just received unchanged or reduce it, and increase the amount of the (female) participant you have been matched with.**

### How to make your decision

On the table in front of you, you see two envelopes: one is your personal envelope and the other envelope belongs to the other (female) participant. In order to distinguish between the envelopes, they are marked: your personal envelope is marked "YOUR PERSONAL ENVELOPE"; the envelope of the other (female) participant is marked "ENVELOPE OF OTHER (FEMALE) PARTICIPANT".

### Content of the two envelopes

Your personal envelope contains a total of 20 coins, out of which ten are 50 cents coins (5€) and ten are worthless coins (metal washers). The washers have the purpose of keeping your decision completely anonymous with respect to other persons including the (male and female) experimenters.

The envelope of the other (female) participant is empty.

Please make sure, that your personal envelope contains ten 50 cents coins and ten worthless washers by emptying the contents onto the table in front of you.

Receipt 2: This receipt is only for accounting purposes. After you signed the receipt, we ask

you to place it in the sealed collection box and continue with your decision. The sealed box is used so that the (male and female) experimenters cannot see the name written on the receipt. All (male) participants in this room sign the second receipt. The (female) participants in the other room will not sign such a receipt.

### **The Decision**

After you have emptied the contents of your personal envelope on the table in front of you and signed the receipt, please put exactly ten coins/washers back in your personal envelope. Similarly, put exactly ten coins/washers into the envelope of the other (female) participant. In the appendix, we present all possible decisions (for the appendix see last page of instructions).

### **Completing the decision and sealing the envelopes**

As soon as you have made your decision, put your personal envelope into your pocket (coat etc.). Please seal the envelope of the other (female) participant (i.e. use the flap-tape to seal the envelope) and place it in the box located behind you, on the floor. (*Important: Please do not hand the envelope to another person or to the (male or female) experimenter, but place it directly in the collection box.*)

After all (male) participants in this room have made their decision, a (male or female) experimenter will carry the box to the other room in which a second (male or female) experimenter will take over the box and distribute the envelopes to the assigned (female) participants. Nobody in the other room is informed about your identity.

### **Anonymity**

We have planned the experiment in a way which guarantees your anonymity at all times.

1. Your identity is never revealed to another person.
2. The (male or female) experimenter who distributes the envelopes to the (female) participants in the other room was not present at the time you made your personal decision. He or She and the other (female) participants do not know from whom they received the envelope.
3. After the decision we will ask you to fill in an anonymous questionnaire. The questions are used for the evaluation of the study and none of your answers can be linked to your identity.

**Thank you very much for your support!**

### **General Information**

Dear (female) participant,

Thank you for participating in this study on decision making. In the following you will be informed about the rules and procedures. Every (female) participant has received the same printed instructions as you did. Please take your time and read the instructions carefully.

### **No communication with other (female) participants**

All decisions in this study are private. Please do not communicate with the other (female) participants. Otherwise, we are forced to exclude you from the experiment and you will have to forgo your payment. If you have any questions, please raise your hand. The (male or female) experimenter will answer your question quietly.

### **Anonymous matching**

In this study, you will be randomly matched with another (female) participant from the other room. The randomization is carried out according to the number you drew during registration at the beginning of this study. The matching will not be made public and no (female) participant can reconstruct which other (female) participant she is matched to.

**This experiment is completely anonymous. Your identity will not be made public and you will not receive information about the identity of the other (female) participants in this room and the other (female) participants in the other room.**

### **General information about the decision task**

Both you and the matched (female) participant received 5€ for your participation at the beginning. In addition to this, the other (female) participant you are matched with has another 5€ in the envelope labeled *envelope other (female) participant*. It is found on the table in front of you. You have nothing (0€).

**You can now leave the amount she just received unchanged or reduce it, and increase the your amount.**

### **How to make your decision**

On the table in front of you, you see two envelopes: one belongs to the other (female) participant and the other is your personal envelope. In order to distinguish between the envelopes, they are marked: the envelope of the other (female) participant is marked "ENVELOPE OF OTHER (FEMALE) PARTICIPANT"; your personal envelope is marked "YOUR PERSONAL ENVELOPE".

### **Content of the two envelopes**

The envelope the (female) participant contains a total of 20 coins, out of which ten are 50 cents coins (5€) and ten are worthless coins (metal washers). The washers have the purpose of keeping your decision completely anonymous with respect to other persons including the (male and female) experimenters.

Your personal envelope is empty.

Please make sure, that the envelope of the other (female) participant contains ten 50 cents coins and 10 worthless washers by emptying the contents onto the table in front of you.

Receipt 2: This receipt is only for accounting purposes. After you signed the receipt, we ask you to place it in the sealed collection box and continue with your decision. The sealed box is used so that the (male and female) experimenters cannot see the name written on the receipt. All (female) participants in this room sign the second receipt. The (female) participants in the

other room will not sign such a receipt.

### **The Decision**

After you have emptied the contents of the envelope of the other (female) participant on the table in front of you and signed the receipt, please put exactly ten coins/washers back in the envelope of the other (female) participant. Similarly, put exactly ten coins/washers into your personal envelope. In the appendix, we present all possible decisions (for the appendix see last page of instructions).

### **Completing the decision and sealing the envelopes**

As soon as you have made your decision, put your personal envelope into your pocket (coat etc.). Please seal the envelope of the other (female) participant (i.e. use the flap-tape to seal the envelope) and place it in the box located behind you, on the floor. (*Important: Please do not hand the envelope to another person or to the (male or female) experimenter, but place it directly in the collection box.*)

After all (female) participants in this room have made their decision, a (male or female) experimenter will carry the box to the other room in which a second (male or female) experimenter will take over the box and distribute the envelopes to the assigned (female) participants. Nobody in the other room is informed about your identity.

### **Anonymity**

We have planned the experiment in a way which guarantees your anonymity at all times.

1. Your identity is never revealed to another person.
2. The (male or female) experimenter who distributes the envelopes to the (female) participants in the other room was not present at the time you made your personal decision. He or She and the other (female) participants do not know from whom they received the envelope.
3. After the decision we will ask you to fill in an anonymous questionnaire. The questions are used for the evaluation of the study and none of your answers can be linked to your identity.

**Thank you very much for your support!**

You	Other (female) participant	Return to your personal envelope	Place in envelope of other (female) participant
5€	0€	10 x 50 cents coins and 0 x washers	0 x 50 cents coins and 10 x washers
4.5€	0.5€	9 x 50 cents coins and 1 x washers	1 x 50 cents coins and 9 x washers
4€	1€	8 x 50 cents coins and 2 x washers	2 x 50 cents coins and 8 x washers
3.5€	1.5€	7 x 50 cents coins and 3 x washers	3 x 50 cents coins and 7 x washers
3€	2€	6 x 50 cents coins and 4 x washers	4 x 50 cents coins and 6 x washers
2.5€	2.5€	5 x 50 cents coins and 5 x washers	5 x 50 cents coins and 5 x washers
2€	3€	4 x 50 cents coins and 6 x washers	6 x 50 cents coins and 4 x washers
1.5€	3.5€	3 x 50 cents coins and 7 x washers	7 x 50 cents coins and 3 x washers
1€	4€	2 x 50 cents coins and 8 x washers	8 x 50 cents coins and 2 x washers
0.5€	4.5€	1 x 50 cents coins and 9 x washers	9 x 50 cents coins and 1 x washers
0€	5€	0 x 50 cents coins and 10 x washers	10 x 50 cents coins and 0 x washers

Table 6: Last Page of the Instruction: Give Male to Female

Other (female) participant	You	Return to other (female) participant envelope	Place in your envelope
5€	0€	10 x 50 cents coins and 0 x washers	0 x 50 cents coins and 10 x washers
4.5€	0.5€	9 x 50 cents coins and 1 x washers	1 x 50 cents coins and 9 x washers
4€	1€	8 x 50 cents coins and 2 x washers	2 x 50 cents coins and 8 x washers
3.5€	1.5€	7 x 50 cents coins and 3 x washers	3 x 50 cents coins and 7 x washers
3€	2€	6 x 50 cents coins and 4 x washers	4 x 50 cents coins and 6 x washers
2.5€	2.5€	5 x 50 cents coins and 5 x washers	5 x 50 cents coins and 5 x washers
2€	3€	4 x 50 cents coins and 6 x washers	6 x 50 cents coins and 4 x washers
1.5€	3.5€	3 x 50 cents coins and 7 x washers	7 x 50 cents coins and 3 x washers
1€	4€	2 x 50 cents coins and 8 x washers	8 x 50 cents coins and 2 x washers
0.5€	4.5€	1 x 50 cents coins and 9 x washers	9 x 50 cents coins and 1 x washers
0€	5€	0 x 50 cents coins and 10 x washers	10 x 50 cents coins and 0 x washers

Table 7: Last Page of the Instruction: Take Female from Female