

# Mine or ours? Unintended framing effects in dictator games

Rationality and Society  
2022, Vol. 0(0) 1–18  
© The Author(s) 2022



Article reuse guidelines:  
[sagepub.com/journals-permissions](https://sagepub.com/journals-permissions)  
DOI: 10.1177/10434631211073326  
[journals.sagepub.com/home/rss](https://journals.sagepub.com/home/rss)



**Andreas Bergh** 

Department of Economics, Lund university, Sweden; The Research Institute of Industrial Economics (IFN), Stockholm, Sweden

**Philipp C Wichardt**

Kiel Institute for the World Economy, Germany; Department of Economics, Lund university, Sweden; Department of Economics, University of Rostock, Germany; CESifo Munich, Germany

## Abstract

This paper reports results from a classroom dictator game comparing the effects of three different sets of standard instructions. The results show that seemingly small and typically unreported differences in standard instructions induce different perceptions regarding entitlement and ownership of the money to be distributed, and that these perceptions influence behaviour. Less is given when the task is described as a task of generosity and more when the task is a task of distribution (average 35% vs. 52%). The results can contribute to explaining the large variation in dictator game giving reported in the literature and show that even small and unreported differences in instructions change how the game is perceived.

*JEL codes:* C70; C91; D63

## Keywords

dictator games, framing effects, property rights, social preferences

---

### Corresponding author:

Andreas Bergh, Department of Economics, Lund University, PO Box 7082, Lund SE-22007, Sweden.

Email: [andreas.bergh@ifn.se](mailto:andreas.bergh@ifn.se)

## Introduction

The dictator game – a person distributing a fixed monetary amount between themselves and a receiver – was introduced in economics as a hypothetical choice experiment by [Kahneman et al. \(1986\)](#). The idea was to test whether people really take as much as they can for themselves if possible.<sup>1</sup> The common finding in standard dictator games is that most dictators give between nothing and half of their endowment with considerable variance in distributions between treatments ([Camerer, 2003](#); [Engel, 2011](#)). A meta-study of 129 papers published between 1992 and 2009 reports that dictators on average give 28% of the endowment ([Engel, 2011](#)).

The behaviour in the dictator game is typically interpreted as evidence for substantial (unconditional) generosity, altruism or fairness preferences. Such interpretations are not uncontentious, and some evidence points in different directions.<sup>2</sup> For example, [Oxoby and Spraggon \(2008\)](#) show that the percentage of subjects who give nothing can be as low as 10% or as high as 100%, depending on how subjects perceive the property rights (dictators who first earn the money give nothing; if receivers first earn the endowment, they get a lot).<sup>3</sup> Moreover, [Bardsley \(2008\)](#) shows that giving is lower than usual if the action set also permits taking money from others, concluding that dictator game generosity is an artifact of the experimental design. In fact, [Winking and Mizer \(2013\)](#) find no altruistic giving in a natural field dictator game.

Taking up the above discussion, the present study focuses on the influence of the combination of the aforementioned framing effects ([Bardsley, 2008](#)) especially the perceived ownership effect demonstrated by [Oxoby and Spraggon \(2008\)](#). In particular, we report the results from a randomized experiment with three different sets of standard dictator game instructions.<sup>4</sup> While all instructions describe the same task to be performed (an endowment to be divided), they differ in terms of the implicit description of initial ownership: In treatment 1, the dictator gives a share of the money allocated to him/her; in treatment 2, the dictator distributes the money allocated to him/her; in treatment 3, the dictator distributes an amount of money.

As expected, different treatments induce a different perception of the task with treatment 1 resulting in the lowest fraction of subjects (48%) perceiving the task as distributive, compared to one of generosity/giving, and treatment 3 resulting in the highest (70%; 63% for treatment 2). Moreover, in line with the results by [Oxoby and Spraggon](#), the more the task is perceived as one of generous giving (stronger entitlement for the dictator), the lower are average offers to receivers. Thus, our findings show that already small variations in standard dictator game instructions (with no intended framing) give rise to tangible framing effects which significantly impact on how the dictator task is perceived with respect to entitlements/property rights.

Such differences in perception are important to understand as they affect the subjects frame of mind when deciding how much to transfer, as demonstrated by the ownership effects found by Oxoby and Spraggon. In a similar vein, albeit focusing more on effects of emphasizing socially desired behaviour, [Branas-Garza \(2007\)](#) shows that adding the sentence ‘Note that your recipient relies on you.’ to the instructions induces a tangible increase in the average amount transferred; in this case by making the moral aspect of the task (the dependence of another person on the decision) more salient. Many other interesting framing effects have been studied in connection with the dictator game (e.g. [Branas-Garza, 2006](#); [Charness and Gneezy, 2008](#); [Dreber et al., 2013](#)).

Adding to this discussion, the present study shows that already small variations in the instructions give rise to (supposedly unintended<sup>5</sup>) framing effects that significantly affect the subjects’ perception of the task and subsequent behaviour (a stronger perception of generous giving inducing lower transfers). As instructions for simple standard games are often no longer reported, we believe that our finding offers a possible explanation for at least some of the variance in distributions found for dictator games by [Engel \(2011\)](#). It also seems likely that other games with distributional aspects and unbalanced initial endowments such as the ultimatum game ([Güth et al., 1982](#)) or possibly even the trust game ([Berg et al., 1995](#)) may show similar framing effects. Yet, based on the present data, we can of course only speculate about the wider relevance of the argument.

Regarding the more specific discussion concerning the dictator game, we see our results as giving further support to the idea that giving in this game is not necessarily a sign of general generosity, fair-mindedness or altruism (cf. [Camerer, 2003: 56](#)). Instead, we believe that the different degrees of other-regarding behaviour in this game are rather an attempt to find an appropriate response to uncertainty about the demands of the situation, including vagueries regarding the ownership/entitlement of the initial endowment. Note that pure altruism should induce substantial giving especially if there was no doubt about the money belonging to the dictator. Yet, as already demonstrated by [Oxoby and Spraggon \(2008\)](#), if it is perfectly clear that the money was earned by the dictator, much less was given; if it is perfectly clear, that it was earned by the receiver, there is a strong tendency to give a lot (or even everything).

Adding to this discussion, the present findings indicate that the transition between the two extreme cases may indeed be ‘continuous’. A formal argument emphasizing effects of uncertainty about the social aspects of a situation is provided in the next section. The argument draws on the simple framework proposed by [Bergh and Wichardt \(2018\)](#) designed to account for both monetary and non-monetary, context-specific incentives. As we demonstrate below, it can be used to illustrate how changes in the subjects perception of the situation – induced through small changes in the

instructions – may affect behaviour in the observed way if we explicitly consider the subjects’ beliefs about what is appropriate in the context.

Before we go on to illustrate how the occurrence of such effects can be accounted for using a very special (and admittedly stylized) framework, it is worth noting that there has recently been a more general discussion about framing and focusing effects in the literature (see in particular [Kőszegi and Rabin, 2008](#); or [Loewenstein and O’Donoghue, 2007](#), for a more detailed account and further references). For example, [Kőszegi and Rabin \(2008\)](#), discussing the benefits of broadening the conception of utility in the context of welfare, emphasize that framing effects may be either due to mistakes in the perception of the task or to context-specific changes in actual preferences. As the dictator game is comparably simple, we believe that mistakes are rather unlikely in our context.<sup>6</sup> The framework used therefore models (context-specific) changes in preferences and not mistakes.<sup>7</sup>

## Model and hypotheses

As indicated in the introduction, the main hypothesis motivating the present study was that already small and seemingly innocuous variations in the description of the dictator game may lead to significant differences in perceived entitlement/ownership, thereby having a tangible effect on subsequent behaviour. More specifically, we assume that the small variations in the instructions affect social/socio-psychological incentives.

In order to illustrate the supposed underlying mechanism more formally, we use the framework proposed by [Bergh and Wichardt \(2018\)](#) for cases where utility comprises monetary as well as social incentives (e.g. a desire to conform to some sharing norms). For such cases, Bergh and Wichardt suggest that utility can be thought of as distinctly covering two different incentive components, one monetary and one social, that is

$$U_i = U_i(\text{monetary}) + U_i(\text{social})$$

where  $U_i(\text{social})$  reflects contextual social incentives, such as to conform to some norm, as well as the relative importance the respective player assigns to the (possibly uncertain) social aspects of the decision.<sup>8,9</sup> Note that the additive linkage of incentives is used essentially for ease of exposition.

For a standard normal form game,  $G$ , with set of players  $N$ , strategies  $S_i$  and a (standard) utility function  $u_i: \times_{i \in N} S_i \mapsto \mathbb{R}$  for each player  $i$ ,  $i \in N$ , overall utility can be written as

$$U_i(s_i, s_{-i}) = u_i(s_i, s_{-i}) + \sum_{k=0}^n p_k \Phi_{i,G}^k(s_i)$$

where  $u_i(s_i, s_{-i})$  reflects standard preferences over economic outcomes (corresponding to  $U_i(\textit{monetary})$ ) and  $\sum_{k=0}^n p_k \phi_{i,G}^k(s_i)$  covers expected contextual effects (corresponding to  $U_i(\textit{social})$ ). In particular,  $\phi_{i,G}^k(s_i)$  represents player  $i$ 's utility from choosing (pure) strategy  $s_i$  when  $G$  is played in some context  $k$ ,  $k = 0, \dots, n$ , and  $p_k \in [0, \textit{one}]$  represents the ex-ante probability of  $k$ .<sup>10</sup> Context here, of course, refers to classes of situations and not to particular ones (which would be tautological).<sup>11</sup> Moreover, following the original argument,  $k = 0$  represents the case where only economic payoffs matter, that is,  $\phi_{i,G}^0(s_i) = 0$ , for all  $i \in N$  and  $s_i \in S_i$ .

For the dictator game studied in the sequel,  $\sum_{k=0}^n p_k \phi_{i,G}^k(s_i)$  can be thought of as reflecting player  $i$ 's expected non-monetary reward from choosing  $s_i$  – depending on how he assesses the nature of the context (i.e. which probability weight he assigns to different possible interpretations) and how far behaviour,  $s_i$ , corresponds to or deviates from the social norm in the corresponding context. For example, if the available information in the experiment (instructions, other external clues) renders social sharing norms more salient, the probability of contexts in which giving little leads to socio-psychological disutility should increase.<sup>12</sup> Assuming the disutility of not sharing to decrease from taking all towards a 50/50 sharing, the tradeoff between the monetary benefits,  $U_i(\textit{monetary})$ , and socio-psychological ones,  $U_i(\textit{social})$ , obviously shifts towards giving more and, hence, average transfers should increase.

For the dictator game analyzed in the sequel, we therefore expect a stronger framing towards possession of initial endowments by the dictator to (1) increase the frequency with which subjects state that they see the task as one of giving rather than distributing and (2) to decrease the average share given to the receiver. Moreover, we expected (3) a positive correlation between the perception of the task as distributive and the amount allocated to the receiver.

**Hypothesis 1.** *For the three treatment frames – T1: allocation to A and giving to B, T2: allocation to A and distributing, T3: distributing – we expected the following orderings in the subjects responses:*

1. *Perception: A stronger framing in terms of entitlement of the dictator induces a stronger perception of the task as generous giving. Relative frequencies of subjects referring to the task as ‘giving’ are highest in T1, intermediate in T2 and lowest in T3.*
2. *Behaviour: A stronger framing in terms of entitlement of the dictator induces a smaller average allocations to the receiver. The average amount given should be highest in T3, intermediate in T2 and lowest in T1.*
3. *Behaviour conditional on perception: On average, subjects who perceive the task as giving should give less than subjects who perceive the task as distributive.*<sup>13</sup>

## Experimental design and procedures

### Design

The study was designed as a standard (classroom) dictator game experiment composed of three treatments with three different sets of instructions (see [Table 1](#)). The main difference in instructions was in how they described the money to be used in the game. Treatments 1 and 2 both begin with ‘Person A gets 100 kronor’ (100 kronor  $\approx$ 10\$). In the next sentence, Treatment 1 describes how person A can choose to ‘keep her money’ or ‘give’ some, whereas Treatment 2 describes how person A can decide how to ‘distribute the money’. Treatment 3, finally, omits the sentence ‘Person A gets 100 kronor’ and describes person A’s task to distribute 100 kronor between herself and person B.<sup>14</sup>

**Remark 1.** *Note that among the three wordings, T1 most clearly describes the money as belonging to the dictator. T3 does the opposite by talking about a task of distribution, and T2 falls in between these two. We want to emphasize that the corresponding instructions were not framed on purpose. Instead, all three instructions surfaced when looking and asking around for*

**Table 1.** Instructions for the three dictator game treatments.

Treatment	English version	Swedish original
T1: Strong entitlement (own)	Person A gets 100 kronor. Person A can choose whether to keep his/her money or to give a part X to an anonymous and randomly determined person B	Person A får 100 kronor. Person A kan välja att behålla sina pengar eller ge bort en del X till en anonym och slumpmässigt utvald Person B
T2: Generosity (Kocher)	Person A gets 100 kronor. It is Person A’s task to distribute the money between him-/herself and a randomly and an anonymous and randomly determined person B, such that B gets X kronor and A gets 100-X kronor	Person A får 100 kronor. Person A’s uppgift är att fördela pengarna mellan sig själv och en anonym och slumpmässigt utvald Person B så att B får X kronor och A får 100-X kronor
T3: Distribution (Holm)	Person A is given the task to distribute 100 kronor between him-/herself and a randomly and an anonymous and randomly determined person B, such that B gets X kronor and A gets 100-X kronor	Person A har i uppgift att fördela 100 kronor mellan sig själv och en anonym och slumpmässigt utvald Person B så att B får X kronor och A får 100-X kronor

*instructions for the standard dictator game. Thus, while we were interested in differences in perceptions and assumed that there would be some kinds of (unintended) implicit framing in different standard instructions, only the choice between the different suggestions we encountered was intentional but not the wording itself.*

In order to find out how subjects perceive the task, we first asked them to state whether they see it mainly as ‘giving away mine’ or ‘distribute’, see [Table 2](#). After that, subjects were asked to indicate the amount they thought appropriate to be transferred, their guess about other participants view on the appropriate amount and the actual average transfer of other participants. Each question was asked on a separate sheet.

The order of questions (asking about perception before asking about amount transferred) was chosen to ensure that task perception — our primary variable of interest — is based only on task instructions, ruling out potential ex-post justifications for behaviour where (part of) the stated perception of the task is used as a justification for earlier transfers (or lack of such).<sup>15</sup> Of course, a possible consequence of the chosen question order is that answers about task perception may influence the transfer decision, potentially strengthening the effect on transfers. However, we see no reason why this influence should be more than one of strength of effects.<sup>16</sup>

In addition, at the beginning of the experiment, we gathered information about gender, age, number of siblings, parent’s education, previous participation in economic experiments (yes/no) and self-stated political view on a scale from 1 to 5, with 4 and 5 indicating ‘somewhat’ or ‘strongly’ to the right, with 3 labeled ‘center’. Finally, because [Zizzo and Fleming \(2011\)](#) find that dictator game behaviour is connected to sensitivity to social pressure, we ask subjects ‘How important is it for you to be liked by others’ ranging from 1 (completely unimportant) to 5 (very important).

## Procedures

The experiment was conducted, using pen and paper, at the beginning of a first year economics course at Lund university in September 2014. In order to

**Table 2.** Perception question.

---

According to you, which of the following two claims best describes the situation described on the previous sheet?

---

- Person A is supposed to choose how much of his/her money to give to Person B
  - Person A is supposed to choose how to divide 100 kronor between Person A and Person B
  - Cannot decide
-

have time for the experiment, the lecture was ended a little earlier, and interested students were invited to take part in the experiment. 276 students (approximately 90 percent of all students present) decided to do so; 48% women, mean age 22 years.

The three treatments were randomly distributed among the participating students. Students were asked to treat the questionnaire like an exam, that is, no discussion of answers et cetera was allowed. Also, it was made clear to students that all answers remain anonymous and that once all questionnaires were returned 20 answer sheets would be randomly drawn and paid as described (being paired randomly with someone else from the group).<sup>17</sup> Some descriptive statistics about student characteristics and behaviour are shown in [Table 3](#).

## Results

The results of our study are presented below. As we will show, analysis of the data essentially confirms our hypotheses.

### Perception

The share of participants who perceive the task as one of distribution varies as expected between the treatments. In T1, participants are completely divided: 48% perceive the task as distributive, and 5% cannot decide. In T2 and T3, 63% and 70% perceive the task as distributive (with 2% and 3% being undecided).

**Table 3.** Summary statistics. Experience with experiments is measured binary (1 – yes); parents education, social sensitivity and political right-wing are measured from 1 (low) to 5 (high/strong).

Variable	Mean	Std. Dev	Min	Max	N
Female	0.478	0.5	0	1	272
Age	21.473	1.898	18	32	273
Number of siblings	1.563	0.981	0	6	272
Parent's education	4.572	0.922	1	6	269
Terms at university	2.59	2.069	0	12	273
Experiment experience	0.324	0.469	0	1	272
Social sensitivity	3.967	0.749	1	5	273
Political right-wing	3.722	1.214	1	5	270
Money given	40.897	25.349	0	100	273
Own opinion	40.844	20.814	0	100	269
Belief others opinion	39.58	15.61	0	80	257
Belief others money given	37.927	15.661	0	80	259



A linear probability model (cf. Table 4) shows that both T2 and T3 significantly (statistically and regarding effect size) decrease the probability that the task is perceived as a task of generosity. As expected considering that the experiment was randomized, coefficients change only marginally when controlling for individual characteristics.<sup>18</sup>

## Behaviour

Subjects presented with the instructions which most clearly indicated dictator ownership, that is, T1, on average give 35% of their endowment. Instructions for the intermediate frame in T2 resulted in transfers of 39%. Finally, framing in T3, which described the task distributive, resulted in subjects transferring on average 52%. Thus, the ordering of shares allocated to the receiver is exactly in line with our hypotheses.

**Table 4.** Linear probability model explaining the perception of the task as generous giving, T1 as baseline. *t*-statistics in parentheses.

	(1)	(2)
Treatment 2	-0.123 <sup>+</sup> (-1.74)	-0.124 <sup>+</sup> (-1.74)
Treatment 3	-0.214 <sup>**</sup> (-2.86)	-0.191 <sup>*</sup> (-2.38)
Female		-0.062 (-1.00)
Age		-0.043 <sup>*</sup> (-2.24)
Number of siblings		-0.021 (-0.67)
Parent's education		-0.033 (-0.97)
Terms at university		0.063 <sup>**</sup> (3.28)
Experiment experience		0.010 (0.15)
Social sensitivity		-0.051 (-1.19)
Political right-Wing		0.015 (0.60)
Constant	0.489 <sup>**</sup> (9.44)	1.589 <sup>**</sup> (3.36)
Observations	264	255

<sup>+</sup>  $p < .10$ ; <sup>\*</sup>  $p < .05$ ; <sup>\*\*</sup>  $p < .01$ .

The difference between T1 and T2 is not significant at conventional levels ( $p = 0.21$ ), but T3 is significantly different from both T2 ( $p = 0.0012$ ) and T1 ( $p = 0.0000$ ). This suggests that the part of the instructions saying ‘person A gets 100 kronor’ has a substantially stronger effect in terms of induced feelings of entitlement than describing the task as ‘giving’ instead of ‘distributing’.

### *Behaviour conditional on perception*

As shown in [Table 5](#), the effect of T3 remains also when controlling for beliefs, perceived ownership and personal characteristics. Note that while perceived ownership reduces transfers, the variable does not account for the whole treatment effect. A likely reason for this is that the perception question is binary in combination with subjects being partly unaware of the motivation behind their behaviour. Note also that the results confirm standard findings (e.g. [Croson and Shang, 2008](#)) that social reference, here captured by the stated appropriate transfer and beliefs about others’ transfers, has a statistically significant influence on behaviour.<sup>19,20</sup>

Finally, it can be verified that, in line with Hypothesis 1.3, subjects perceiving the task as distributive – according to their own answers – transfer more than those who do not: 44 SEK vs 35 SEK ( $p = 0.0056$ ).

### *Summary*

We summarize the main findings of our study below. Compared with our expectations, the results essentially confirm our hypotheses from [Section 2](#).

**Result 1.** For the three treatment frames – T1 allocation to A and giving to B, T2 allocation to A and distributing, T3 distributing – the data show the following patterns:

1. *Perception: A stronger framing in terms of entitlement of the dictator induces a stronger perception of the task as generous giving. Relative frequencies of subjects referring to the task as ‘giving’ are highest in T1, 70%, intermediate in T2, 63%, and lowest in T3, 48%.*
2. *Behaviour: A stronger framing in terms of entitlement of the dictator induces a smaller average allocations to the receiver. The average amount given is highest in T3, 52%, intermediate in T2, 39% and lowest in T1, 35%. The difference between T1 and T2 is not statistically significant, though.*
3. *Behaviour conditional on perception: On average, subjects who perceive the task as giving indeed give less (35%) than subjects who perceive the task as distributive (44%).*

**Table 5.** OLS regression explaining the amount transferred; TI as baseline. *t* statistics in parentheses.

	(1)	(2)	(3)
Treatment 2	3.690 (1.12)	0.300 (0.11)	0.285 (0.11)
Treatment 3	17.36** (4.34)	8.405* (2.31)	7.364* (2.00)
Appropriate transfer		0.631** (8.44)	0.652** (8.33)
Belief: Others' belief appropriate transfer.		-0.114 (0.90)	-0.115 (-1.02)
Belief: Others' transfer		0.345** (2.99)	0.388** (3.51)
Perceived ownership		-3.010** (-1.04)	-4.821 <sup>+</sup> (-1.88)
Female			-3.577 (-1.43)
Age			-1.785 <sup>+</sup> (-2.26)
Number of siblings			-0.317 (-0.23)
Parent's education			-1.823 (-1.23)
Terms at university			1.297 <sup>+</sup> (1.86)
Experiment experience			1.360 (0.50)
Social sensitivity			0.150 (0.08)
Political right-Wing			-0.125 (-0.13)
Constant	34.99** (14.81)	4.390 (0.66)	47.19* (2.26)
Observations	273	238	231

<sup>+</sup>  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ .

## Discussion

We conclude the results section with some additional comments regarding the theoretical framework presented in [Section 2](#).

As we have seen, small changes in the instructions of the dictator game – which do not affect the structure of monetary incentives – have a considerable effect on both the subjects' perception of the situation and, subsequently, the amount transferred to the receiver. As we have argued in [Section 2](#), a

likely reason for these changes is the subjects' uncertainty regarding appropriate behaviour in the – typically rather uncommon – situation of the dictator game (cf. [Zizzo, 2013](#)). Subjects looking for clues as to how to behave, when monetary incentives certainly favour keeping the whole endowment, take the description of the situation, the instructions, as their best guidance. Thus, framing instructions slightly towards dictator ownership and generosity rather than distribution of joint resources induces a stronger perception of 'money belonging to the dictator' and more selfish behaviour. In terms of the framework presented in [Section 2](#), the expected non-monetary utility from keeping more decreases once subjects are led to believe that the context is more likely to be one in which taking is appropriate.

Note that the argument remains agnostic about the exact sources of the non-monetary (dis-)utility from not sharing. We are convinced that the differences in motivations such as a warm glow of giving ([Andreoni, 1990](#)), identity (e.g. [Akerlof and Kranton, 2000](#)), feelings of guilt (e.g. [Charness and Dufwenberg, 2006](#)) or general equality concerns (e.g. [Fehr and Schmidt, 1999](#)) are important and interesting to study. Yet, we also believe that for many economic questions, the exact details of what prevents people from solely following monetary incentives are less important. In the present setting, for example, uncertainty about the appropriate interpretation of the context (among probably many) and the possibility to affect the subjects' judgement in this respect are likely to be decisive. The framework used allows us to account for this using simple comparative statics (a more 'distributive' context implies stronger 'sharing incentives'). No details about the nature of the non-monetary incentives are needed. This may well be different if we are interested not only in motivating behaviour but also want to say more, for instance, about details of the motivation or welfare consequences (cf. [Köszegi and Rabin, 2008](#)).<sup>21</sup>

Moreover, once we recognize the role of uncertainty regarding contextual effects, it becomes easier to justify more 'continuous' transitions of aggregate behaviours in experiments where social incentives (of whatever form) are likely to matter, too. The above discussion of the dictator game exemplifies this point.

## **Concluding remarks**

The data presented in this paper show that different instructions in dictator games induce different perceptions of the task – giving away versus distributing money – and different levels of giving. Moreover, the statistical analysis relates this effect to particularities of the framing. The more explicitly the task is described in terms of dictator entitlement and generous

giving (rather than distribution of joint resources), the more it is perceived accordingly and the less dictators give.

Our findings are in line with earlier studies showing that when the endowment to be allocated is provided by having one subject earning it, this induces higher allocations to the respective subject (cf. Hoffman et al., 1994; Oxoby and Spraggon, 2008). Adding to these findings, the present study demonstrates that ownership effects do not necessitate a behavioural act justifying them (e.g. filling in a test) to become effective. Instead, small and often unintended variations in the wording of the instructions are enough to trigger tangible changes in the subjects' perception of the task.

A possible explanation for the effect of framing on perception is that subjects in artificial decision situations which they have no experience with are highly responsive to small clues about appropriate behaviour. As argued by Zizzo (2013: 3), a person coming to the lab 'needs to make sense of the decision environment to identify what he or she is expected to do'. And instructions naturally provide important guidance in this exercise. Seen from that angle, giving in dictator games would be much less of a sign of intrinsic preferences for equality, though, rather than a response to allusions to sharing norms by contextual clues.<sup>22</sup> In that sense, we are inclined to agree with Bardsley (2008) that giving in dictator games to a large extent is an artifact of the framing, albeit focusing on a different aspect of the frame.

It is beyond the scope of this paper to adjudicate on the correct interpretation of giving in dictator games. Yet, we believe that the general thrust of the results presented here – as well as the earlier studies cited above – is interesting: The more selfish behaviour is permitted by (even small) contextual clues, the more it is exercised. And the more social norms about sharing are alluded to (e.g. talking about distribution), the more they are followed.

Following the present line of argument, some of the variation in aggregate behaviour can be ascribed to uncertainty about the appropriate interpretation of the context (cf. Bergh and Wichardt, 2018). Of course, individual differences in how this uncertainty is resolved or in the weighing of social versus selfish incentives are difficult to assess. Yet, the general message seems clear: once contextual clues emphasize social connotations, the relevance of socio-psychological aspects of utility (i.e. their probability weight) becomes more prominent and *aggregate* behaviour reacts accordingly.

To conclude, we believe that uncertainty about the non-monetary incentives in a certain context (i.e. their relative importance) is likely to be relevant also in other experimental settings. We can of course only speculate about how far it will affect the outcomes in settings with strong strategic aspects, which are absent in dictator games. Yet, in our view, the dictator game experiment presented in the present paper nicely illustrates the main aspects of the argument.

## Acknowledgements

We thank Roberto Weber as well as two anonymous reviewers and the editor for helpful comments. Financial support from Jan Wallanders och Tom Hedelius stiftelse (grant P19-0180) and Torsten Söderberg's Foundation (Bergh) and from the Arne Ryde Foundation (Wichardt) is gratefully acknowledged. The project once started as a joint work with Manuela Oberauer from the University of Innsbruck who later decided not to continue. We are grateful for her contribution in the early stages of the project.

## Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by the Vetenskapsrådet; Jan Wallanders och Tom Hedelius Stiftelse samt Tore Browaldhs Stiftelse.

## ORCID iD

Andreas Bergh  <https://orcid.org/0000-0003-2621-6769>

## Notes

1. The first use with actual money was by Forsythe et al. (1994).
2. Considerable scepticism regarding the interpretation of results and the possible lessons to learn is expressed, for example, by Oechssler (2010); see also Zizzo (2013), Bardsley (2008), List (2007) and Branas-Garza (2007).
3. The role of perceived entitlement is also demonstrated by Hoffman et al. (1994), who focus on the case of dictators earning the money.
4. The instructions used are all based on suggestions from experienced experimenters. They were acquired without asking for a specific framing; see Section 3, Remark 1 for further details.
5. Cf. Footnote 4.
6. A nice study focusing on mistakes is Fosgaard et al. (2017).
7. Loewenstein and O'Donoghue (2007) present an intriguing model combining deliberate and affective aspects of decisions. Compared to our model presented below, they are more specific about the details behind decisions in their argument. For the present purposes, we believe the simple framework used here, which largely ignores the details of the non-monetary incentives involved, is more convenient.
8. As pointed out by Bergh and Wichardt (2018), the exact interpretation of the additional payoff – for example, a warm glow (e.g. Andreoni, 1990), feelings of guilt (e.g. Charness and Dufwenberg, 2006) and identity concerns (e.g. Akerlof and Kranton, 2000; Wichardt, 2008) – is not crucial.

9. A similar utility function is, for example, also used by [Andreoni and Bernheim \(2009\)](#) or [Krupka and Weber \(2013\)](#). Different from the present study, they focus only on monetary utility and a second component reflecting compliance to social norms. While the difference is mostly in the interpretation, we consider it important not to focus only on social norms but also to consider general context effects (including all possible psychological components irrespective of whether they can be traced back to compliance with norms or not).
10. Ex-ante uncertainty about the context is not strictly necessary for the argument to follow. Yet, given the arguably unusual situation of common ‘experimental’ situations in economics, it seems plausible that subjects will indeed be uncertain about the nature of environment and the social rules of it.
11. Classes of contexts can, for example, be thought of as competitive (where sharing norms may be less important) or social (when sharing norms will be more important).
12. For example, the findings by [Branas-Garza \(2007\)](#) that emphasizing reliance of the receiver on the dictator increases transfers, as well as entitlements effects found by [Oxoby and Spraggon \(2008\)](#) would both fit nicely into this type of explanation.
13. Note that Hypothesis 1.3 is not implied in case Hypotheses 1.1 and 1.2 are satisfied as – theoretically – subjects could divide in two types in their responses to the treatment (stronger framing towards possession of the dictator): one type whose perception is unaffected while allocations are reduced, and one type whose allocations are unaffected while their perception is changed.
14. The wording of Treatment 1 was taken from own experience with the dictator game. For the wordings in Treatments 2 and 3, we thank Martin Kocher and Hakan Holm for making suggestions for a standard wording and allowing us to use these.
15. Psychologists have long since identified a phenomenon referred to as *cognitive dissonance* (cf. [Festinger, 1957](#)). The general effect being that people who voluntarily act in a way that conflicts with their idea of themselves experience a negative feeling of mental stress which they tend to reduce, for example, by ex-post adjusting beliefs about in a way that is more consistent with their behaviour. For example, subjects who keep a lot for themselves despite perceiving the task to be distributive may (later) overrate their earlier perception of ‘it was my money’ to avoid cognitive dissonance/a guilty conscience (see, e.g. [Brehm \(1956\)](#); see [Wichardt \(2012\)](#) for a summary of cognitive dissonance effects and further references).
16. Typical cognitive dissonance effects suggest that people, for example, adjust beliefs (reported perceptions) so as to be consistent with earlier behaviour in order to alleviate dissonance effects (cf. Footnote 15). By the same token, we see no reason why people should behave in a way that would conflict with stated beliefs/perceptions, as this would create dissonance rather than alleviate it. Accordingly, while the strength of behavioural effects may be stronger than

without asking about perceptions first, we would not expect any changes in directions. As we cannot control peoples' mindset when entering the experiment, however, it may well be that the mine-ours dimension is not decisive when taking a decision on transfers but is adjusted according to behaviour afterwards in case the order of questions was different.

17. Each participant got an extra sheet with a number to identify themselves.
18. An interesting side observation is that time at university induces people to see the task as less distributive. Note that this is in line with arguments put forward, for example, by [Rubinstein \(2006\)](#) that teaching economics to students increases self-focused maximization behaviour.
19. The variable 'appropriate transfer' was elicited after the actual amount transferred to obtain information about potential differences between actual behaviour and what people themselves would indicate as appropriate. The assumption here was that, as answers are anonymous, 'appropriate transfer' could function as a proxy for social incentives as perceived by the subjects as such and might well deviate from the actual transfer.
20. Note that an additional reason for the size of our effects may lie in the fact that the experiment was conducted in class (see [Branas-Garza, 2006](#)).
21. Note that for welfare it may well be relevant whether A gives to B to avoid a guilty conscience or to enjoy a warm glow.
22. Such norms, then, would be followed also in the lab, for example, due to concerns about identity consistent behaviour (e.g. [Akerlof and Kranton, 2000](#); [Wichardt, 2011](#)).

## References

- Akerlof G and Kranton R (2000) Economics and identity. *Quarterly Journal of Economics* 115: 715–753.
- Andreoni J (1990) Impure Altruism and donations to public goods: a theory of warm glow giving. *Economic Journal* 100: 464–477.
- Andreoni J and Bernheim BD (2009) Social image and the 50-50 norm: a theoretical and experimental analysis of audience effects. *Econometrica* 77: 1607–1636.
- Bardsley N (2008) Dictator game giving: Altruism or artefact? *Experimental Economics* 11: 122–133.
- Berg J, Dickhaut J and McCabe K (1995) Trust, reciprocity, and social history. *Games and Economic Behavior* 10: 122–142.
- Bergh A and Wichardt P (2018) Accounting for context: separating monetary and (uncertain) social incentives. *Journal of Experimental and Behavioral Economics* 72: 61–66.
- Branas-Garza P (2006) Poverty in dictator games: awakening solidarity. *Journal of Economic Behaviour and Organisation* 60: 306–320.
- Branas-Garza P (2007) Promoting helping behavior with framing in Dictator Games. *Journal of Economic Psychology* 28: 477–486.



- Brehm J (1956) Postdecision changes in the desirability of alternatives. *Journal of Abnormal and Social Psychology* 52: 384–389.
- Camerer C (2003) *Behavioral Game Theory*. New York: Princeton University Press.
- Charness G and Gneezy U (2008) What's in a name? Anonymity and social distance in dictator and ultimatum games. *Journal of Economic Behavior and Organization* 68: 29–35.
- Charness G and Dufwenberg M (2006) Promises and partnership. *Econometrica* 74: 1579–1601.
- Croson R and Shang J (2008) The downward impact of social information on contribution decisions. *Experimental Economics* 11: 221–233.
- Dreber A, Ellingsen T, Johannesson M, et al. (2013) Do people care about social context? Framing effects in dictator games. *Experimental Economics* 16: 349–371.
- Engel C (2011) Dictator Games: a meta study. *Experimental Economics* 14: 583–610.
- Fehr E and Schmidt K (1999) A theory of fairness, competition and cooperation. *Quarterly Journal of Economics* 114: 817–868.
- Festinger L (1957) *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press.
- Forsythe R, Horowitz J, Savin NE, et al. (1994) Fairness in simple bargaining experiments. *Games and Economic Behavior* 6: 347–369.
- Fosgaard T, Hans L and Wengström E (2017) Framing and misperception in public good experiments. *Scandinavian Journal of Economics* 119: 4435–4456.
- Güth W, Schmittberger R and Schwarze B (1982) An experimental analysis of ultimatum bargaining. *Journal of Economic Behavior and Organization* 3: 367–388.
- Hoffman E, McCabe K, Shachat K, et al. (1994) Preferences, property rights, and anonymity in bargaining games. *Games and Economic Behavior* 7: 346–380.
- Kahneman D, Knetsch J and Thaler R (1986) Fairness and the assumptions of economics. In: Hogarth RM and Reder MW (eds), *Rational Choice*. Chicago: University of Chicago Press, 101–116.
- Köszegi B and Rabin M (2008) Choices, situations, and happiness. *Journal of Public Economics* 92: 1821–1832.
- Krupka E and Weber R (2013) Identifying social norms using coordination games: why does dictator game sharing vary? *Journal of the European Economic Association* 11: 495–524.
- List JA (2007) On the interpretation of giving in Dictator Games. *Journal of Political Economy* 115: 482–493.
- Loewenstein G and O'Donoghue T (2007) The heat of the moment: modeling interactions between affect and deliberation. working paper.
- Oechssler J (2010) Searching beyond the lamppost: let's focus on economically relevant questions. *Journal of Economic Behavior and Organization* 73: 65–67.
- Oxoby RJ and Spraggon J (2008) Mine and yours: property rights in dictator games. *Journal of Economic Behavior and Organization* 65: 703–713.

- Rubinstein A (2006) A sceptics comment on the study of economics. *Economic Journal* 116: C1–C9.
- Wichardt P (2008) Identity and why we cooperate with those we do. *Journal of Economic Psychology* 29: 127–139.
- Wichardt P (2011) Identity, utility, and cooperative behaviour: an evolutionary perspective. *Scandinavian Journal of Economics* 113: 413–448.
- Wichardt P (2012) Norms, cognitive dissonance, and cooperative behaviour in laboratory experiments. *International Journal of Social Economics* 39: 342–356.
- Winking J and Mizer N (2013) Natural-field dictator game shows no altruistic giving. *Evolution and Human Behavior* 34: 288–293.
- Zizzo DJ and Fleming P (2011) Can experimental measures of sensitivity to social pressure predict public good contribution? *Economics Letters* 111: 239–242.
- Zizzo DJ (2013) Do Dictator Games measure altruism? In: Bruni L and Zamagni S (eds), *Handbook on the Economics of Philanthropy, Reciprocity and Social Enterprise*. Cheltenham: Edward Elgar, 108–111.