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Mine, Ours or Yours? Unintended Framing Effects in Dictator Games

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Mine, Ours or Yours? Unintended Framing Effects in Dictator games*

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Abstract

This paper reports results from a classroom dictator game comparing the effects of three different sets of standard instructions. As was shown by Oxoby and Spraggon (2008), inducing a feeling of entitlement – one subject earning the endowment – strongly affects allocations in dictator games towards the owner of the money (both dictator and receiver). The present results show that seemingly small differences in instructions induce fundamentally different perceptions regarding entitlement. Behavior is affected accordingly, i.e. instructions inducing subjects to perceive the task as distributive rather than a task of generosity lead to higher allocations to receivers (average 52% vs. 35%). A theoretical explanation integrating monetary as well as social incentives and emphasizing potential effects of uncertainty about the latter is discussed (cf. Bergh and Wichardt, 2018).

Keywords: dictator games; framing effects; property rights; social preferences

JEL codes: C70; C91; D63

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1 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, Knetsch, and Thaler (1986). The idea was to test whether people really take as much as they can for themselves if possible.¹ 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 behavior in the dictator game is typically interpreted as evidence for substantial (unconditional) generosity, altruism, or fairness preferences. Such interpretations are not uncontroversial, and some evidence points in different directions.² For example, Oxoby and Spraggan (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).³ 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 artefact 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) with the perceived ownership effect demonstrated by Oxoby and Spraggan (2008). We conducted a randomized experiment with three different sets of standard dictator game instructions.⁴ 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: (a) the dictator giving a share of the money allocated to him, (b) the dictator distributing the money allocated to him, (c) the dictator distributing an amount of money.

As expected, different treatments induce a different perception of the task with treatment (a) resulting in the lowest fraction of subjects (48%) perceiving the task as

¹The first use with actual money was by Forsythe et al. (1994).

²Considerable 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), or List (2007).

³The role of perceived entitlement is also demonstrated by Hoffman et al. (1994), who focus on the case of dictators earning the money.

⁴One based on instructions previously used by one of the authors, two based on suggestions from experienced experimenters.

distributive, compared to one of generosity/giving, and treatment (c) resulting in the highest (70%; 63% for (b)). 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, already small variations in standard dictator game instructions give rise to tangible (but supposedly unintended) framing effects that significantly impact on both perception of the task and behavior. As instructions for simple standard games as the present one are often no longer reported, we believe that such framing effects offer a possible explanation for at least some of the variance in distributions found for dictator games by Engel (2011). Moreover, it seems likely that other games with distributional aspects and unbalanced initial endowments such as the ultimatum game (Güth, Schmittberger, and Schwarze, 1982) or possibly even the trust game (Berg, Dickhaut, McCabe, 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 about the dictator game, we see our results as giving further support to the idea that giving in this game is less of sign of general generosity, fair-mindedness or altruism (cf. Camerer, 2003, p.56). Instead we believe that the different degrees of other-regarding behavior are rather an attempt to find an appropriate response to uncertainty about the demands of the situation, including vagueness regarding the ownership 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 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 all, to them.

Adding to this discussion, the present findings indicate that the transition between the two extreme cases may indeed be “continuous.” A formal argument emphasising 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 behavior in the observed way if we explicitly consider the subjects’ beliefs about the possible demands of the context.

Before we go on to illustrate how the occurrence of such effects can be accounted

for using a very special (and admittedly stylised) 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 Köszegi and Rabin, 2008; or Loewenstein and O'Donoghue, 2007, for a more detailed account and further references). For example, Köszegi and Rabin (2008), discussing the benefits of broadening the conception of utility in the context of welfare, emphasise that framing effects may be due either to mistakes in the perception of the task (thus affecting stable underlying preferences) or to context-specific changes in actual preferences. As the dictator game is rather simple, we believe that mistakes are rather unlikely in our context.⁵ The framework used, therefore, is one which models (context-specific) changes in preferences.⁶

2 Model and Hypotheses

As indicated in the introduction, the main hypothesis motivating the experiment was that differences in perceived entitlement/ownership have a tangible effect on behavior in the dictator game through induced changes in social/socio-psychological incentives. Moreover, we expected that small variations in instructions of the game already suffice to induce such differences in an observationally relevant way.

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, i.e.

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

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.⁷ Note that the additive linkage of incentives

⁵A nice study focusing on mistakes is Fosgaard et al. (2017).

⁶Loewenstein 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.

⁷As pointed out by Bergh and Wichardt (2018), the exact interpretation of the additional payoff – e.g. a warm glow (e.g. Andreoni, 1990), feelings of guilt (e.g. Charness and Dufwenberg, 2006), identity concerns (e.g. Ackerlof and Kranton, 2000; Wichardt, 2008) – is not crucial.

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 $\sum_{k=0}^n p_k \phi_{i,G}^k(s_i)$ corresponds to $U_i(\text{social})$. 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 $p_k \in [0, 1]$ represents the ex ante probability of k .⁸ Context here, of course, refers to classes of situations and not to particular ones (which would be tautological).⁹ Moreover, following the original argument, $k = 0$ represents the case where only economic payoffs matter, i.e. $\phi_{i,G}^0(s_i) = 0$, 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 behavior, 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. Assuming the disutility of not sharing to decrease from taking all towards a 50/50 sharing, the tradeoff between the monetary benefits, $U_i(\text{monetary})$, and socio-psychological ones, $U_i(\text{social})$, obviously shifts towards giving more and, hence, average transfers should increase.

For the dictator game analysed 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.

⁸Ex 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.

⁹Classes 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).

Hypothesis 1 *For the three treatment frames – (a) allocation to A and giving to B, (b) allocation to A and distributing, (c) 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 (a), intermediate in (b) and lowest in (c).*
2. Behavior: *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 (c), intermediate in (b) and lowest in (a).*
3. Behavior conditional on perception: *On average, subjects who perceive the task as giving should give less than subjects who perceive the task as distributive.*¹⁰

3 Experimental Design and Procedures

Design. The study was designed as a standard (classroom) dictator game experiment comprised of three treatments with three different sets of instructions (see Table 1 below). The main difference in instructions was in how they described the money to be used in the game. Treatment 1 and 2 both begin with “Person A gets 100 kronor” ($100 \text{ kronor} \approx 10\text{\$}$). 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.¹¹

Remark 1 *Note that among the three wordings, Treatment 1 most clearly describes the money as belonging to the dictator. Treatment 3 does the opposite by talking about a task of distribution, and Treatment 2 falls in between these two. The differences*

¹⁰Note 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.

¹¹The wording of Treatment 1 was taken from own experience with the dictator game. For the wordings in Treatment 2 and 3 we thank Martin Kocher and Hakan Holm for making suggestions for a standard wording and allowing us to use these.

Treatment	English Version	Swedish Original
1: 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.
2: 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 get 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.
3: 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 get 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.

Table 1: Instructions for the three dictator game treatments.

are entirely in the wordings, and all three instructions describe the standard dictator game.

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 below. 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.

In addition, at the beginning of the experiment, we gathered information about gender, age, number of siblings, parents education, previous participation in economic experiments (yes/no), and self stated political view on a scale from 1 to 5, with 4 and

<p>According to you, which of the following two claims best describes the situation described on the previous sheet?</p> <p><input type="checkbox"/> Person A is supposed to choose how much of his/her money to give to Person B.</p> <p><input type="checkbox"/> Person A is supposed to choose how to divide 100 kronor between Person A and Person B.</p> <p><input type="checkbox"/> Cannot decide.</p>
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Table 2: Perception Question.

5 indicating “somewhat” or “strongly” to the right, with 3 labeled “center.” Finally, because Zizzo and Fleming (2011) find that dictator game behavior 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 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. It was made clear to students that 20 answer sheets would be randomly drawn and paid as described (being paired randomly with someone else from the group).¹¹ Some descriptive statistics about student characteristics and behavior are shown in Table 3.

4 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 Treatment 1 (henceforth T1), participants are completely divided: 48% perceive the task as distributive, and 5% can not decide.

¹¹Each participant got an extra sheet with a number to identify themselves.

Variable	Mean	Std. Dev.	Min.	Max.	N
Female	0.478	0.5	0	1	272
Age	21.473	1.898	18	32	273
Number 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

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

In Treatment 2 and 3 (henceforth T2 and T3), 63% and 70% perceive the task as distributive (with 2% and 3% being undecided).

A linear probability model (cf. Table 4) shows that both T2 and T3 significantly (statistically and economically) decreases 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.¹²

Behavior

Subjects presented with the instructions which most clearly indicated dictator ownership, i.e. 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 are exactly in line with our hypotheses.

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 suggest that the part of the instructions saying “person A get 100 kronor” has a substantially stronger effect in terms of induced feelings of entitlement than describing the task as “giving” instead of “distributing.”

¹²An 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 behavior.

	(1)	(2)
Treatment 2	-.123*	-.124*
	(-1.74)	(-1.74)
Treatment 3	-.214***	-.191**
	(-2.86)	(-2.38)
Female		-.062
		(-1.00)
Age		-.043**
		(-2.24)
Number of Siblings		-.021
		(-.67)
Parents Education		-.033
		(-.97)
Terms at University		.063***
		(3.28)
Experiment Experience		.010
		(.15)
Social Sensitivity		-.051
		(-1.19)
Political Right-Wing		.015
		(.60)
Constant	.489***	1.589***
	(9.44)	(3.36)
Observations	264	255

Table 4: Linear probability model explaining the perception of the task as generous giving. T1 as baseline. *t*-statistics in parentheses. * $p < .10$; ** $p < .05$; *** $p < .01$.

Behavior 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, have a statistically significant influence on behaviour.

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

	(1)	(2)	(3)
Treatment 2	3.690 (1.12)	.300 (.11)	.285 (.11)
Treatment 3	17.36*** (4.34)	8.405** (2.31)	7.364** (2.00)
Appropriate Transfer		.631*** (8.44)	.652*** (8.33)
Belief: others' belief appr. tansf.		-.114 (.90)	-.115 (-1.02)
Belief: others' transfer		.345*** (2.99)	.388*** (3.51)
Perceived Ownership		-3.010*** (-1.04)	-4.821* (-1.88)
Female			-3.577 (-1.43)
Age			-1.785* (-2.26)
Number of Siblings			-.317 (-.23)
Parents Education			-1.823 (-1.23)
Terms at University			1.297* (1.86)
Experiment Experience			1.360 (.50)
Social Sensitivity			.150 (.08)
Political Right-Wing			-.125 (-.13)
Constant	34.99*** (14.81)	4.390 (.66)	47.19** (2.26)
Observations	273	238	231

Table 5: OLS regression explaining the amount transferred; T1 as baseline. *t* statistics in parentheses. * $p < .10$; ** $p < .05$; *** $p < .01$.

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 – (a) allocation to A and giving to be, (b) allocation to A and distributing, (c) 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 (a) - 70%, intermediate in (b) - 63% and lowest in (c) - 48%.*
2. Behavior: *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 (c) - 52%, intermediate in (b) - 39%, and lowest in (a) - 35%. The difference between (a) and (b) is not statistically significant, though.*
3. Behavior 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%).*

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 situations and the amount transferred to the receiver. As we have argued in Section 2, we believe that a likely reason for these changes is the subjects’ uncertainty regarding appropriate behavior in the – typically rather uncommon – situation of the dictator game (cf. Zizzo, 2013). Subjects looking for clues as to how to behave, when certainly monetary incentives favor keeping the whole endowment, take the description of the situations, the instructions, as their best guidance. Thus, framing instructions slightly towards dictator ownership and giving rather than distribution of joint resources induces more selfish behavior. 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 okay.

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. Ackerlof 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 understanding behaviour but what to say more, for instance, about welfare consequences (cf. Köszegi and Rabin, 2008).¹³

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

5 Concluding Remarks

The data presented in this paper show that different instructions in dictator games induce different perceptions of the task – giving away vs. distributing money – and different levels of giving. Moreover, the statistical analysis relates this findings to the particularities of the framing. The more explicit the task is described in terms of dictator entitlement and generous giving (rather than distribution of joint resources) the less dictators give.

These findings are in line with earlier studies showing that, if the endowment to be allocated is provided by having one subject earning it, this induces a lot 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 behavioral act justifying them (e.g. filling in a test) to become effective. Instead already already small variation in the wording of the instructions are enough to trigger tangible changes in the subjects responses.

A possible explanation for this effect is that subjects in artificial decision situations, which they have no experience with, are highly responsive to small clues about appropriate behavior. As argued by Zizzo (2013, p.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.¹⁴ In that sense, we are inclined to agree with Bardsley (2008) that giving in dictator games to a large extent is an artefact of the framing, albeit focusing on a different aspect of the frame.

¹³Note that for welfare it may well be relevant whether A gives to B to avoid a guilty conscience or to enjoy a warm glow.

¹⁴Such norms, then, would be followed also in the lab, for example, due to concerns about identity consistent behavior (e.g. Akerlof and Kranton, 2000; Wichardt, 2011).

Of course, 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 behavior is permitted by (even small) contextual clues, the more it is exercised. And the more social norms about sharing are alluded to (talking about distribution), the more they are followed.

Following the present line of argument, some of this variation in aggregate behavior 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 vs 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* behavior 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.

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