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Abstract

A number of recent papers on double-blind dictator games have obtained significant generous behavior when information regarding the recipient or any other social context is provided. In contrast, the lack of information discourages other-regarding behavior and the subject's behavior closely approximates the game-theoretic prediction based on the selfishness assumption. This paper uses framing to explore the role of helping–behavior in dictator games. The whole experiment includes both classroom and regular experiments for the baseline and the framing treatment. To promote these motivations we included a "non–neutral" sentence at the end of the instructions, which reads "Note that he relies on you". Our baseline and framed DG are statistically different from each other, indicating that the additional sentence promotes generous-regarding behavior.

Keywords: dictator game, framing effects, helping behavior, altruism.

Psychological classification codes: 3020.

JEL Class.: D63, D64, C91

1 Introduction

How sensitive are experimental subjects to information regarding their own choices? Are their decisions easily manipulable? Do framing effects really matter? Bertrand *et al.* [1] show that small psychological nuances not only affect experiments in the lab, but also field experiments where subjects make choices about loans which have real consequences . This paper offers experimental evidence regarding this issue in Dictator Games.

Recent literature on Dictator Games[1] (DG hereafter) shows that a large percentage of the variability observed in the results is due to the control of key factors: the lack of ANONYMITY of the experimental subjects with respect to both experimentalists and other participants (see Hoffman *et al.* [13]); the absence of INFORMATION about the recipient (see, among others, Burham, 2003 or Charness & Gneezy, 2001); the lack of an appropriate SOCIAL CONTEXT (Eckel and Grossman, 1996), which promotes both social behavior and increases dictator RESPONSIBILITY and, even more so, the lack of CREDIBILITY about the experiment (see Frohlich *et al.*, 2001).

[1] The Dictator Game is a decision problem in which a player (the dictator) decides how to allocate a fixed amount of money between another player (the recipient) and himself. Initially this was considered an excellent way of analysing human altruism because any amount of money not kept by the dictator was incompatible with a purely selfish subject and was accordingly interpreted as showing some kind of altruism.

A number of papers with neutral instructions and strong mechanisms for anonymity [see for instance, Bolton *et al.* (1998) or Hoffman *et al.* (1996)] reports deviations from the theoretical prediction in very few cases, that is, completely selfish behavior.

In contrast, papers which deal with any of the issues mentioned above –non-neutral instructions, information about recipients, etc.– find more positive results in terms of altruism. Papers that provide examples of how sensitive dictators' behavior is to the experimental design include that by Eckel & Grossman (1996) using the American Red Cross as a recipient, Burham's paper (2003) in which dictators are provided photos of their recipients, Charness & Gneezy (forthcoming) who give dictators the names of their recipients or the paper by Brañas-Garza (forthcoming), who informs dictators about recipients' poverty .

As a result of these modifications, the amount of money left to the recipients increases considerably, while the percentage of non-zero giving proves overwhelming. Thus, the conclusion is that the behavior of subjects in the DG is greatly influenced by how the situation is framed. The idea behind this is that the information provided to the dictators creates a *context* that motivates other-regarding behavior. As Eckel & Grossman (1996) state, in

the absence of this context, purely selfish behavior drives individual decision making.

More recently, papers have also focused on selfish motivations which also promote altruism: dictators are considered to attach a cost (in moral terms) to the strategy of giving zero. The degree of dictator responsibility and hence, the magnitude of the cost, increase with problem size. Brañas–Garza *et al.* (2005) gives dictators a random device to solve an allocation problem. Surprisingly, 50% use this mechanism to relinquish their responsibility. In Dana *et al.* (2004) or Lazear *et al.* (2005) subjects are offered the possibility of exiting the DG at a cost. Based on these arguments a significant number of players choose to exit the game. Note that playing the game presents not only larger individual earnings but also potential Pareto (social) gains. Thus, the observed altruistic behavior *is not just the outcome of other-regarding preferences, but also arises from well–defined, self-centered preferences.*

This paper promotes more generous behavior, albeit without any kind of "procedural/environmental" context. Instead of providing the dictators with information or devices, *we add an additional sentence to the neutral instructions while keeping anonymity mechanisms.* The purpose of the sentence is to call the subject's attention to a particular moral rule rather than to create

a context in which that moral rule applies, as Eckel & Grossman (1996) and the other papers cited above did.

Our experiment uses a sentence which is intended to encompass the "universal" moral rule of helping: "*Note that your recipient relies on you*".[2] This sentence is in line with several papers which focus on the emergence of helping behavior [see Schwartz (1970) and Eagly & Crowley (1986)]. We explore these ideas in two different settings: a classroom experiment and a regular economic experiment. We found that this sentence promotes generous behavior to a large extent. In fact, *the average, the median and the mode donation increases as a result of the additional sentence.* The rest of the paper is structured as follows. Our experiment is described in Section 2. The results are shown and discussed in Section 3. Finally, conclusions are drawn in Section 4.

2 Methods and procedures

The full experimental procedure used in this paper includes two clear features: a simple procedure for framing –just a sentence! - and two parallel

[2]The original wording in Spanish was "Recuerda él está en tus manos". An alternative translation might be "He depends on you".

settings: a classroom experiment and a regular economic experiment. We shall now explain both settings and the framing.

Both the classroom and the regular economic experiments comprised two treatments[3]: the baseline and the framed *Dictator Game*. In each experiment, both treatments were performed at the same time, in a single room, in order to increase experiment credibility –following Frohlich *et al.* (2001, Maryland one-room treatment).

Treatment 1, T1 (*Baseline*): A standard DG. Dictators were given their instructions and recipients were kept ignorant of what was going on. The instructions read:

> "A fixed amount of 10 experimental units has been provisionally allocated to you and your recipient. These 10 units are equal to 0.5 extra points towards your final grade in Intermediate Microeconomics. Your task is to decide how to divide this amount of points between your recipient and yourself. Any division (even keeping all for yourself) is allowed. Your partner will be randomly selected from the 20 subjects sitting in the row to your left. Thank you for participating"[4]

[3]The classroom experiment also included a second step in which subjects (after changing roles) played another framed DG. These actions were ex–post and did not affect the decisions shown in this paper.

[4]The above text was handed out after the following initial paragraph was read aloud:

Treatment 2, T2 (*Framing*): A framed DG in which dictators received identical instructions to those given in treatment T1 with the exception of an additional (non-neutral) sentence at the end of the text. The sentence read as follows: "*Note that your recipient relies on you*". Although Figure 1 refers to R1 & R2, it gives a clear idea:

Figure 1: VISUALIZATION OF FRAMING (R1 VS R2)

R1

(fase 2) Problema: Hay 10 monedas de 0.5€ (repito dinero real) en el sobre que tienes encima de la mesa. Este dinero está provisionalmente destinado para ti y otro sujeto. Tú has de decidir cómo dividir esas 10 monedas entre ese otro individuo y tú. Cualquier asignación, incluso aquella donde tú te quedas con todo y él recibe nada es válida. Tu tarea es de tomar la decisión que desees.

¿Con quién vas a jugar?: Tu pareja será escogida al AZAR de la lista de toda la clase excluyendo a tus amigos (revelados en TU lista).

La división la realizarás de la siguiente manera. Dado que tienes dos sobres pon en un sobre lo que quieras dejar y en otro lo que quieras llevarte. Solo has dejar encima de la mesa uno de los dos sobres. El otro se va contigo. Lo que lleves dentro del mismo sólo lo sabrás tú.

POR FAVOR, recuerda rellenar la autorización, firmarla y dejarla encima de la mesa. Son requisitos legales necesarios para la investigación.

R2

(fase 2) Problema: Hay 10 monedas de 0.5€ (repito dinero real) en el sobre que tienes encima de la mesa. Este dinero está provisionalmente destinado para ti y otro sujeto. Tú has de decidir cómo dividir esas 10 monedas entre ese otro individuo y tú. Cualquier asignación, incluso aquella donde tú te quedas con todo y él recibe nada es válida. Tu tarea es de tomar la decisión que desees.

¿Con quién vas a jugar?: Tu pareja será escogida al AZAR de la lista de toda la clase excluyendo a tus amigos (revelados en TU lista).

La división la realizarás de la siguiente manera. Dado que tienes dos sobres pon en un sobre lo que quieras dejar y en otro lo que quieras llevarte. Solo has dejar encima de la mesa uno de los dos sobres. El otro se va contigo. Lo que lleves dentro del mismo sólo lo sabrás tú.

POR FAVOR, recuerda rellenar la autorización, firmarla y dejarla encima de la mesa. Son requisitos legales necesarios para la investigación.

RECUERDA él está en tus manos

Although the regular experiment essentially replicates the classroom experiment (both treatments R1 and R2 were conducted at the same time in a single room), we introduced some relevant variations in the regular experiment in order to increase dictator anonymity (regarding the experimentalist). These included monetary rewards (ten 0.5€ coins plus a 2€ show-up fee for

"Welcome to this experiment on decision making, etc." Between-subjects anonymity was fully guaranteed. The original instructions were written in Spanish.

both dictators and recipients), double–blind procedures and two "unknown" instructors to conduct the experiment.

Another key difference of this new setting is that subjects were asked to reveal the names of their friends in the class before playing the DG. After they revealed the list of their friends, they were informed that they would be matched up with a recipient[5]. Partners were then randomly chosen from the list of students enrolled in the first-year course with the exception of themselves and their friends. We chose to do so because our recent investigation focusing on *Favoritism* (Brañas *et al.* [5]) shows that when experimental subjects (dictators) play with their friends, they donate more.

Recall that the only difference between both treatments (T1 vs T2; R1 vs R2) is the sentence at the end of the instructions, as shown in Figure 1.

The *classroom experiment was* conducted in March 2004 at the University of Jaén, Spain. The total population sample was comprised of 80 students. The students were volunteers from two groups enrolled in the course titled "Intermediate Microeconomics".[6] All of the students were first-year business

[5] The original instructions in Spanish read: **¿Con quién vas a jugar?:** Tu pareja será escogida al AZAR de la lista de toda la clase excluyendo a tus amigos (revelados en TU lista). A close translation could be: **Who are you going to play with?:** Your partner will be randomly chosen from the whole class list, with the exception of your friends (given in YOUR list).

[6] Note that the author was the teacher of this course.

majors in their second semester, meaning that they had been given no previous training in Game Theory. Students were recruited by open invitation to participate in a voluntary exam. Eighty-one students came to the voluntary exam the day of the experiment. Given that our design required the number of subjects to be a multiple of four, one of the subjects was randomly selected to act as monitor and awarded 0.25 points as a show-up fee. The remaining 80 subjects participated in the experiment. Once students were randomly placed in four rows containing 20 individuals each, the Column 1 subjects (left side) played treatment T1 at the same time as the column 3 individuals played treatment T2.

The *regular experiment* was conducted in January 2006 at the University of Granada using first-year students with identical training to those in T1-2. Participation in the experiment was voluntary. In order to ensure anonymity we gave the experimental subjects two envelopes: one for the money they would keep and another for the money they would like to donate. The instructions clearly explained the decision problem, the basic rules (see instructions on page 7 –the "experimental units" were substituted for "0.5€ coins") and the fact that when the experiment ended, the students had to exit the room, leaving only one envelope on the table (the money for the

recipient). Subjects were informed that would be randomly paired with any individual on the class list, except themselves and their friends. To increase reputation and to avoid any doubt about the procedure, we informed the students that a list with the name (and earnings) of the recipients[7], not the dictators, would be made public one hour later. Another potential problem of the classroom setting was that the Intermediate Microeconomics professor was in charge of the investigation. Thus to avoid any "experimentalist effect", this session was conducted by two Master students[8] who were unknown to the students. 27 individuals received regular instructions (treatment R1) and 26 received framed instructions (R2) as shown in Figure 1 and explained above (see instructions on page 7). On average, the subjects –both dictators and recipients– earned 4.5€ (including the show-up fee) in less than half an hour.

[7] To do this we followed a very simple procedure. We took the complete class list and deleted, for each individual, both his own name and the name of his friends. Once we had a pure stranger list, we randomly chose one of the names on the list. We had no problems with our time commitment and made the list public within the hour!

[8] The instructions also said that the money for the experiment was not ours but had come from a research project coordinated by a Professor from the Basque Country University (as was the case).

3 Results

The effect of framing on dictators' donations (in our four treatments) is shown in Table 1. Recall that treatments T1 and R1 were baseline treatments, whereas treatments T2 and R2 were our modified treatments.

Table 1: Donations in T1, T2, R1 & R2.

Donations	T1	T2	R1	R2
0	11	2	5	1
1	1	0	2	2
2	4	3	6	3
3	2	7	6	5
4	1	5	5	10
5	1	3	3	5
N	20	20	27	26
Mean	1.2	3.1	2.4	3.3
Median	0	3	3	4
Mode	0	3	2/3	4
St. Dev.	1.5	1.4	1.6	1.3

Firstly, we analyze the success of our moral framing in promoting more generous behavior by comparing our framed treatments with their associated baseline treatments. Recall that the additional sentence read: *Your recipient relies on you (in Spanish "is in your hands").* Our motivation here is that by making the dictators aware of their recipients' powerlessness, they will respond by displaying more generous behavior[9].

The Mann-Whitney ($\chi^2 = -3.42; p = 0.00$) rejects the null indicating that T1 and T2 are not drawn from the same population, the comparisson between R1 and R2 ($\chi^2 = -2.10; p = 0.03$) also dipport differences among treatments. The later means that *the additional sentence has an effect on subjects' behavior.*

By looking at Figure 2 below, where the cumulative frequencies for these two treatments are plotted, we see that the donations in T2 (R2) first-order stochastically dominate the donations of the baseline treatment (T1 and R1). Hence, the additional sentence promotes more generous behavior.

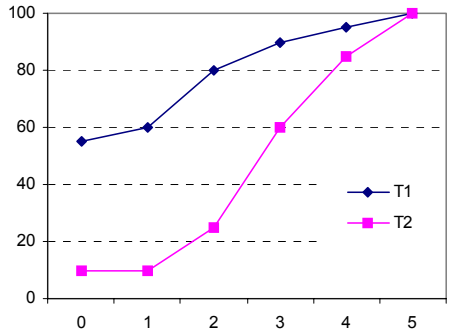
The statistical analysis of the donations provided in Table 1 shows that the use of the additional sentence (i) increases the average, the mode and the median contribution and (ii) the number of subjects leaving nothing vanishes.

[9] Observe that we motivate altruism in the sense of charity (see Khalil, 2004).

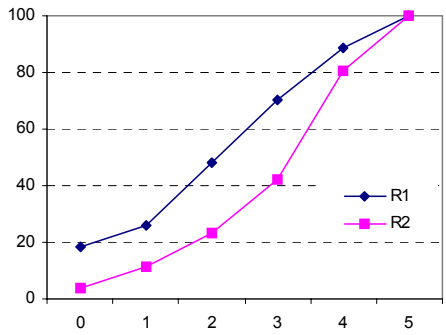
Therefore, our conclusion is that the addition of a promoting-helping sentence affects behavior.

Figure 2: TREATMENT EFFECTS

(a) T1 vs. T2



(b) R1 vs. R2



Finally, we pool the data arising from both experimental settings to perform an additional econometric exercise. This estimation permits us to distinguish the pure framing effect from other effects caused by our procedures. Recall that differences between T's and R's mainly arise from two sources: when money is given instead of points and double-blind (with the experimentalist) vs. single-blind procedures are used. To control other potential effects we also include data arising from other experimental sessions. In sum, we join data from our four treatments (40 and 53 observations), from Hoffman *et al.* [13] (36 observations) and from Frohlich *et al.* [12] (17 observations). The main features of each experiment are labeled using dummy variables.

This set of independent dummy variables includes:

- framing (F) which takes value 1 for T2 & R2 and 0 otherwise,
- point–rewards mechanism (PRM) which takes value 1 for T1 and T2 and 0 otherwise,
- two–rooms ($2R$) which takes value 1 for R1, R2 and Hoffman *et al.* [13] and 0 otherwise.

The last variable ($2R$) permits us to check, with a high degree of precision, the difference between using separate rooms for dictators and recipients or not. These variables are used as explanatory variables in a dictator giving equation and are estimated using OLS and a total of 146 observations. The estimation of the determinants of dictator giving (DG) is as follows:

$$\begin{array}{cccccc} DG & =2.47 & +1.83 \cdot F & -1.23 \cdot PRM & -0.89 \cdot 2R \\ & (0.62) & (0.33) & (0.54) & (0.48) \end{array}$$

where $\bar{R}^2 = 0.15$ and where $\widehat{c}$ and $\widehat{F}$ (standard errors between brackets) are significant for any value of α, $\widehat{PRM}$ for $\alpha = 0.02$ and $\widehat{2R}$ for $\alpha = 0.06$.

The results can be summarized as follows:

i) In line with recent literature, which precisely begins with Hoffman *et al.* [13], the level of social distance with other experimental subjects (two

room condition) does in fact matter. Two opposing explanations arise: *a*) with a 2–room design dictators may believe that recipients do not exist (since they doubt about the recipient's existence, they give nothing), *b*) with two rooms, dictators anticipate that there is no room for negative reciprocation (not revenge) if recipients are unable to infer anything about dictator behavior. Given that in our setting the first explanation seems to be inappropriate (we made a clear commitment to give the recipients' their money within the hour), we go to the second: dictators believe that recipients exist but as they are not close by, they decide to give nothing. In sum, this is yet another example of the lack of social context.

ii) Framing goes in the opposite direction. Although we use double–blind procedures and two rooms, the use of the sentence promotes helping behavior, that is, we create this social environment! Hence, there is a positive relation between framing and giving and, as noted by Eckel & Grossman, this is exactly the proof needed that altruism requires a context.

iii) The use of points instead of real money also diminishes dictator contri-

butions. This can be easily explained by the fact that students consider points towards their grades to be more "dear" than money. Thus, the use of points instead of money makes students more competitive.[10]

In sum, our results indicate that separating dictators and recipients (two–rooms) is negative for giving, that a point–reward mechanism is an extraordinarily competitive device and that, with framing, it is easy to promote a context in which subjects face a social problem. Hence we can conclude these estimations with two final ideas. i) Framing matters in the sense that *simple and direct advice to subjects causes the effect* that the experimentalist was interested in promoting. ii) According to the recent field work by Bertrand et al [1], although *framing is not the only device, it is a powerful one to promote (generous) behavior.*

4 Conclusions

The traditional way of promoting other-regarding behavior in DG experiments is to create a context in which fairness and altruism come about as

[10] Observe that we cannot distinguish between double–blind procedures and point mechanisms. Our replications (R1 and R2) use double–blind treatments plus monetary incentives. Recall that the single–blind treatment disminishes individual privacy to behave selfishly. However, given that the net effect is so negative we may conclude that *distance with the experimentalist* is not relevant in this particular setting.

natural responses (see Eckel & Grossman (1996)). In this paper, that context has been replaced with a sentence, i.e. we add a sentence to the neutral instructions used in standard DG experiments. The aim of adding this sentence is to draw the subjects' attention to a particular social or moral rule. Hence, in our paper, rather than creating the context in which a particular social or moral rule applies, we induce subjects to use a particular rule. To make dictators become aware of the powerlessness of their recipients we use the sentence "*Note that your recipient relies on you*". Fortunately, they responded by displaying more generous behavior. We analyze this framing in two different settings: a classroom experiment using grade points and regular experiments with monetary incentives (and double-blind). Both environments support the same result: *the above sentence is successful at increasing dictator donations.* In fact, purely selfish behavior, which is so commonly observed in DG with neutral instructions and strong mechanisms for anonymity, vanishes in our experiment.

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