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Game or frame?

Incentives in modified Dictator Games

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Abstract

We use modified dictator games in which the productivity of taking or giving is varied. Subjects have to decide which of the different games will be payoff relevant in the end. We can show that the behavior of dictators does not depend on the productivity of their gifts, but that their behavior is strongly influenced by the right to choose the relevant game. If the recipients have the right to choose, the dictators become more generous.

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1. Introduction

The experimental research of the last two decades has confronted economists with a great number of anomalies concerning individual behavior in various laboratory experiments. Subjects make voluntary contributions in public good games, they cooperate in situations where defection is the dominant strategy, and they make significant donations when it comes to charitable giving. The standard approach of rational choice theory, combined with the standard assumption of strictly selfish behavior, cannot explain any of these observations. The challenge for economic theory is to explain, without departing too far from standard theory, why subjects deviate from strict selfishness.

One way to tackle this challenge is to stick to the assumption that individuals decide strictly rationally, but to alter the assumptions concerning their aims and motives. With this research strategy, it is rather easy to construct theories that explain non-selfish behavior and at the same time contain selfishness as a special case. Thus, they are able to explain behavior the standard theory describes correctly.

Currently, rational choice theories with new assumptions about individual preferences dominate the market for explanations of non-standard behavior. Starting with RABIN'S (1993) attempt to incorporate the idea of fairness into standard game theory, a great number of theories have been developed, all following the same research strategy. FEHR AND SCHMIDT (1999) and BOLTON AND OCKENFELS (2000) introduced the assumption that subjects may be inequality averse. ANDREONI AND MILLER (2002) and ANDREONI, CASTILLO AND PETRIE (2005) assume that people may harbor altruistic preferences and CHARNESS AND RABIN (2003) combine inequality aversion with a sense for reciprocity. Reciprocal behavior is at the center of the approaches of GEANAKOPLOS, PEARSE, AND STACCHETTI (1989), LEVINE (1998) and DUFWENBERG AND KIRCHSTEIGER (2004) as well as FALK AND FISCHBACHER (2006). COX, FRIEDMAN, SADIRAJ (2008) extend ANDREONI AND MILLER (2002) by combining 'neoclassical' other-regarding preferences with different forms of reciprocity.

What all these theories have in common is that they are based on assumptions about preferences individuals may have for different distributions of payoffs. The only ingredient that goes beyond the assumptions on payoff distributions is reciprocity. For reciprocal behavior, it is essential that the fellow player has helping or harming *intentions* – and these intentions may not be fully reflected in particular payoff distributions. But besides this exception, all important theories on individual behavior that are currently discussed can be characterized by the assumptions on the preferences over payoff distributions they use. This has an important implication. Although these theories try to generate explanations for the entire spectrum of anomalies observed in the laboratory, the most important experimental test is given by non-strategic games in which subjects only decide on payoff distributions. If the theories mentioned above fail to explain the choices of subjects in such games, their core assumptions would be confuted.

This is the reason for the revival of the scientific interest in dictator games. Experiments using dictator games seem to be the natural way to test the new generation of behavioral assumptions which dominate the field. ANDREONI AND MILER (2002) introduced a modification of the standard dictator game which proved to be able to test preference assumptions very effectively. The modified dictator games differ from the standard games in an important aspect: Dictators distribute money between themselves and the recipients; the amount to be distributed, however, is not fixed, but varies systematically. Subjects are confronted with 'budget lines' which display different distributions of payoffs between *self* and *other*. By varying the slope of these budget lines it is possible to generate observations which allow various assumptions about preferences for payoff distributions to be tested.

The modified dictator games introduced by ANDREONI AND MILLER are used by FISMAN, KARIV AND MARKOVITS (2007). In a computerized experiment, they confronted subjects with 50 different budget lines displayed on a computer screen. For each budget line, subjects were asked to click on the point representing their favorite distribution of payoffs given the particular budget restriction. With this technique FISMAN ET AL. collected 50 observations per subject and used these data to estimate a CES utility function. The main finding is that a large share of individual behavior can be rationalized by the assumption that individual behavior can be described as following a CES utility function. The drawback, however, is that the parameters of the CES functions vary considerably. Subjects' behavior is extremely heterogeneous.

There is a second paper which makes use of the modified dictator games and which shows a very different picture. BROSIG, RIECHMANN AND WEIMANN (2008) use two kinds of modified dictator games to test whether subjects behave *consistently* and if their behavior is *stable over time*. To investigate consistency, BROSIG ET AL. formulate very general versions of the theories of inequality aversion and altruism and check if one of these theories could consistently explain observed individual behavior in different modified dictator games. Stability of behavior was investigated in a rather simple way. The experiments were repeated identically with the same subjects two times with one month in between each repetition ("wave"). All theories which try to explain individual behavior as the result of optimizing some kind of "other regarding preferences" implicitly assume not only that behavior is consistent but also that it is stable, because none of these theories says that preferences change over time. Consequently, testing the stability of behavior directly tests these theories.

The results of BROSIG ET AL. are surprising in that they demonstrate that the repetition of the experiment leads to a strong dynamic of individual behavior. In the first wave, behavior was very similar to the observations reported in the literature on dictator games. Only a small fraction of subjects showed selfish behavior, and the theories of inequality aversion and altruism could explain a substantial part of the non-selfish behavior. On the other hand, only a small proportion of subjects displayed consistent behavior over the different games. But in the second and third wave the consistency rates increased sharply as more and more subjects decided consistently selfishly. Moreover the standard approach of rational selfish behavior ex-

plained more than 90% of all the observations of the last wave. The most important finding of BROSIG ET AL. concerns the stability of behavior. Only few subjects showed stable behavior over the course of the experiments and all of these were strictly selfish. There was no subject who displayed stable "other regarding preferences".

Based on the experimental evidence provided by the Fismen et al. and the Brosig et al. papers, what we can say about the behavior in dictator games is that subjects optimize very heterogeneous utility functions which change over time. This is neither an elegant way to describe behavior nor a way that allows us to make predictions on individual behavior in dictator games. The FISMAN ET AL. and the BROSIG ET AL. papers demonstrate that it may be fruitful to investigate the question of what rules behavior in non-strategic situations such as dictator games more deeply. Besides the standard interpretation of dictator game findings, there is an entirely different hypothesis, which is formulated by BARDSLEY (2008) and LIST (2007) . In their view, the surprising result is not that under some conditions dictators *do not* donate money. The really surprising result is that they *do* donate money in conventional dictator games. People need reasons for giving money to other people. What are their reasons in a simple dictator game? The conjecture by BARDSLEY and LIST is that the experimental setting activates *social norms* of giving. Subjects receive a gift from the experimenter and then the same experimenter asks them if they are willing to give some money to a different subject who was not lucky enough to get money from the experimenter. This procedure may indeed force subjects not to be too greedy and therefore to give some money to their peers. If this interpretation is correct, then changes in the experimental setting can destroy the norm activation. In their papers, BARDSLEY and LIST demonstrate this by giving the dictators not only the opportunity to give money to the recipient, but also to take money from him. The effect was that dictators decided to make their recipient a bit poorer, not richer.

In a setting in which it is allowed to take money from the other player without any punishment, the social norm that induced giving in the standard experiments vanishes. The same may be true of the change in the standard design introduced by BROSIG ET AL. When subjects are in the dictator position for the second and the third time, they may no longer feel obliged to conform to the norm that ruled their behavior in the first wave.

CHERRY ET AL. (2002) add further evidence that the institutional setting of a dictator game may be of great importance. They demonstrate that dictators no longer make donations when they have to earn the money which can be divided between themselves and others.

In this paper, we investigate the relation between institutions and the behavior of dictators further. In order to do so, we also make use of the "modified dictator game methodology".

The modified dictator games introduced by ANDREONI AND MILLER confront subjects with situations where the relative price of the payoff to *others* in terms of the payoff to *self* is varied. This price can be interpreted in the following way. A low price means that the payoff increase of the *other* for a given sacrifice of *self* is high. In other words, it is very productive

to give up own payoff for the sake of making a present to the other player. A high price indicates low productivity because *self* has to give up a lot in order to increase the payoff of *other*.

In our experiments, subjects either had to decide on their gifts in different games with different degrees of productivity, or they could choose between games with different productivities. In the "take games", dictators can increase their own payoff by taking money from the recipient and in the "give games", they can increase the payoff of recipients by transferring money. This design allows us to disentangle the two possible decisions which are incorporated in one game in the design used by LIST and BARDSLEY. Furthermore, we varied the mechanism which determines the productivity of the dictator game. It was chosen randomly, by the dictator or by the recipient. Giving either the dictator or the recipient the power to decide which game will actually be played can be interpreted as a variation of the *property rights* over the games we offer to the subjects. If subjects decide on the basis of an evaluation of payoff distributions alone, the property right should not influence their decision. On the other hand, if we find that property rights do have an impact on the dictator decisions, this would support the view that social norms play a role.

The main finding of our paper is that dictators seem to ignore the productivity of their gifts, but that they change their behavior if the productivity is chosen by the recipient as compared to the cases in which they decided themselves or the productivity was picked by chance. The distribution of property rights significantly influences the dictator decisions while relative prices, which are core elements of economic theory, do not.

2. The games

We employed the modified dictator games as they were used in BROSIG ET AL. This means that we had two types of games – *give games* and *take games*.

Take games

In each of the four take games, starting with the initial endowment $(\pi_A^E, \pi_B^E) = (500, 500)$[2], player A (the dictator) can reduce player B's (the recipient) payoff by $d\pi_B$ in order to increase his own payoff by $d\pi_A$ at a constant relative price of $p_A = |d\pi_B / d\pi_A|$, such that $\pi_A = 500 + (1 / p_A)(500 - \pi_B)$. This budget constraint can be re-formulated as $\pi_B = 500 + p_A (500 - \pi_A)$. Accordingly, the 'budget line' has a slope of $d\pi_B / d\pi_A = - p_A$. The four games only differ with respect to this slope: In the first game, T1, we have $p_A = p_A^{T1} = 1/2$; in the remaining games, the values are $p_A^{T2} = 2/3$, $p_A^{T3} = 1$, and $p_A^{T4} = 2$, respectively. Except for the equal payoff distribution, all possible options in the take games are chosen in such a way that player A is assured of a higher payoff than player B, i.e., $\pi_A > \pi_B$. The experimental set-up of the four games is illustrated in Table 1.

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2 Here payoffs are measured in euro cent.

T1	π_A	500	600	700	800	900	1000	1100	1200	1300	1400	1500
$P_A = ½$	π_B	500	450	400	350	300	250	200	150	100	50	0
T2	π_A	500	575	650	725	800	875	950	1025	1100	1175	1250
$P_A = 2/3$	π_B	500	450	400	350	300	250	200	150	100	50	0
T3	π_A	500	550	600	650	700	750	800	850	900	950	1000
$P_A = 1$	π_B	500	450	400	350	300	250	200	150	100	50	0
T4	π_A	500	525	550	575	600	625	650	675	700	725	750
$P_A = 2$	π_B	500	450	400	350	300	250	200	150	100	50	0

Table 1: Payoffs in the four take games in euro cent.

Give games

In each of the four give games, starting with the initial endowment $(\pi_A^E, \pi_B^E) = (1500, 0)$, player A (the dictator) can increase player B's (the recipient) payoff by $d\pi_B$ at a personal cost of $d\pi_A$ at a constant relative price of $p_A = |d\pi_B / d\pi_A|$, such that $\pi_A = 1500 - (1/p_A)\, \pi_B$. Again, this budget constraint can be re-formulated as $\pi_B = 750 - p_A\, \pi_A$. Accordingly, the 'budget line' has a slope of $d\pi_B / d\pi_A = - p_A$. The four games only differ with respect to this slope: In the first game, G1, we have $p_A = p_A^{G1} = ½$; in the remaining games, the values are $p_A^{G2} = 3/4$, $p_A^{G3} = 1$, and $p_A^{G4} = 5/4$, respectively.

G1	π_A	1500	1400	1300	1200	1100	1000	900	800	700	600	500	400	300	200	100	0
$P_A = ½$	π_B	0	50	100	150	200	2500	300	350	400	450	500	550	600	650	700	750
G2	π_A	1500	1400	1300	1200	1100	1000	900	800	700	600	500	400	300	200	100	0
$P_A = ¾$	π_B	0	75	150	225	300	375	450	525	600	675	750	825	900	975	1050	1125
G3	π_A	1500	1400	1300	1200	1100	1000	900	800	700	600	500	400	300	200	100	0
$P_A = 1$	π_B	0	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
G4	π_A	1500	1400	1300	1200	1100	1000	900	800	700	600	500	400	300	200	100	0
$P_A = 5/4$	π_B	0	125	250	375	500	625	750	875	1000	1125	1250	1375	1500	1625	1750	1875

Table 2: Payoffs in the four give games in euro cent.

Figure 1 displays the budget lines of both the give and the take games. Please note that for G1 and T1 the lines are identical above the point (500, 500).

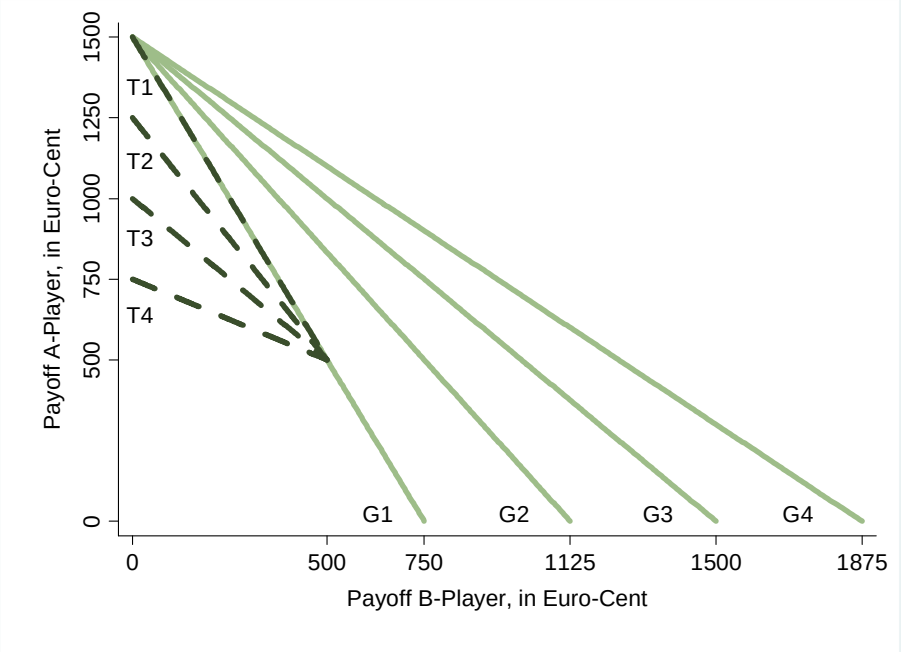

Figure 1: Budget lines in the take and give games

3. Experimental design

In each session, we had between 8 and 24 dictators and the corresponding number of recipients located in separate rooms. Dictators (A-players) were told that they would be paired with one of the subjects in the other room (B-players) randomly. A- and B-players had no contact before or after the experiment. Either the four give games or the four take games were considered in each session. We altered the sequence of the games in some sessions in order to test sequence effects while we used modified instructions in other sessions to check the robustness of the results with respect to the wording of the instructions. It turned out that neither the wording nor the sequence had any significant effect. Thus we pooled the data. Table 3 summarizes the experimental treatments. In total, we had 178 dictators (90 in the take games and 88 in the give games).

Game	*Session*	*Order of Decisions*	*Modified instructions*	*Number of Subjects*
Take	1	D1, D2, D3	no	12
	2			22
	3-6	D3, D2, D1		8
	7	D1, D2, D3	yes	24
Give	1	D1, D2, D3	no	12
	2			20
	3-6	D3, D2, D1		8
	7	D1, D2, D3	yes	24

Table 3: Number of sessions, treatment variables, and number of subjects per session

In all the "take sessions" and the "give sessions" (which were played with different subjects) the dictators had to make three decisions. In the following, we present parts from the instructions to the dictators in order to describe the decisions.

Decision 1:

"Please indicate *for each of the four games* which of the given payoff distributions you want. After your decision one of the games *will be chosen randomly* and the payoff distribution you decided on will be the *relevant payoff distribution* for decision 1."

Decision 2:

"First, you can choose one of the four games we offer. After that, please indicate which of the payoff distributions in the chosen game you prefer. This will be the relevant payoff distribution for decision 2."

Decision 3:

"Now your B-Player will decide which game will be played. You will not be informed about his decision. Please indicate for each of the four games which payoff distribution you prefer. Together with the decision of the B-player this determines the relevant payoff distribution for decision 3."

The B-players had to make only one decision. They chose one of the four games in order to determine the payoffs belonging to decision 3. All subjects were informed that after the three decisions had been made, one of them would be chosen at random. The relevant payoff distribution of this decision was paid to the subjects in euro and the experiment ended. All experiments were computerized and the program was written with z-Tree[i].

4. Results

4.1 Choice of games

In decision 2, the A-player (the dictator) decides which game will be relevant and, in decision 3, it is the B-player (the recipient) who has the right to choose. For A-players this decision involves no strategic uncertainty. In the take sessions, it is a dominant strategy for A-players to choose T1, the game in which taking money from B is most productive. In the give sessions, it is a weakly dominant strategy to select the most productive game, G4. If a dictator plans to give something to the B-player, he should select G4 because the price for any gift made to the B-player is lowest in G4. If he plans not to give anything, he should be indifferent between all four games.

In decision 3, the B-player's decision as to which game to choose depends on his beliefs about the dictator's reaction. If a recipient is interested in his own payoff, he should choose the game in which he believes that the dictator will give the most or take the least. Therefore, not selecting G4 in the give sessions is only a rational choice if the B-player believes that the dictator will give more in games in which it is more expensive to give than in G4 or that the dictator will give nothing in all give-games. Other motivations, such as inequality aversion or altruism, can hardly account for a choice of G1 – G3 because, for every point *X* that can be reached in these games, there exists a point in G4 that Pareto dominates this point without changing the distributional properties of *X*.

In the take sessions, if the B-player assumes that dictators have no sense of reciprocity, they should select the game with the lowest productivity of "taking away something", T4. If he expects the dictator to take money, then the incentive to take is lowest in T4. But if the recipient expects the dictator to behave reciprocally, he should choose the efficient game, T1. From the dictators point of view, this would be a nice move and reciprocal behavior should result in a decision which leaves more for the B-player than decisions in T2 – T4. Figures 2 and 3 show the distributions of games chosen in the take and the give sessions by both the A- and the B-player:

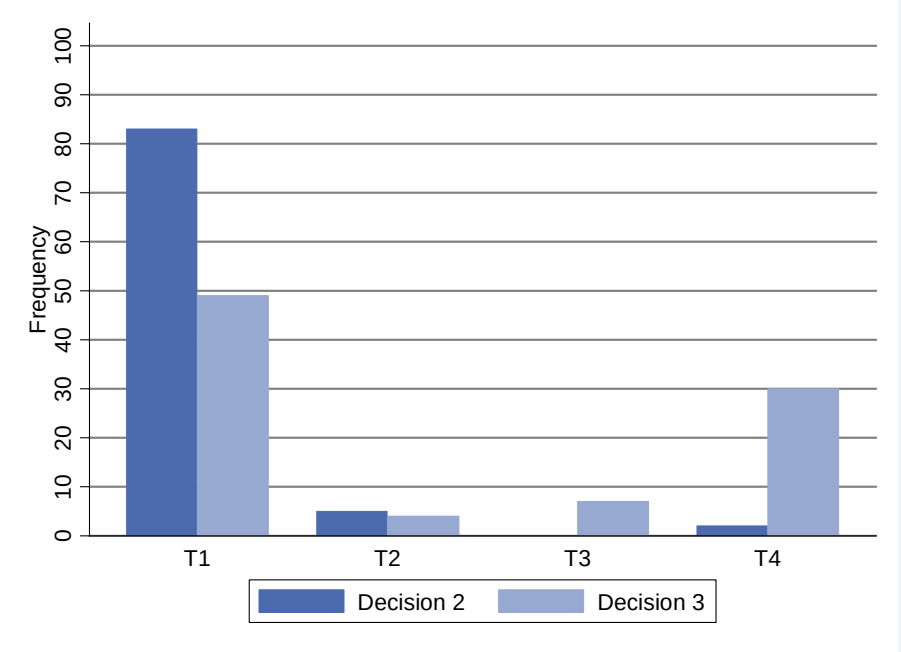

Figure 2: Number of games chosen by A-players (decision 2) and B-players (decision 3) in the take sessions

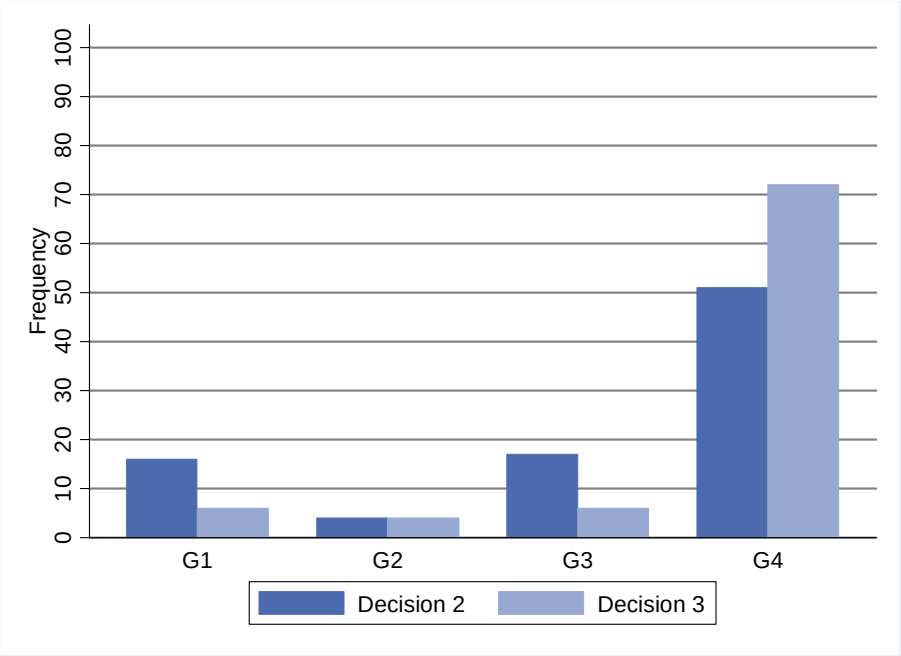

Figure 3: Number of games chosen by A-players (decision 2) and B-players (decision3) in the give sessions

In the take sessions, almost all A-players (83 of 90) chose T1, the most productive game. The A-players chose more productive games than the B-players (p=0.000, two-tailed Wilcoxon test). 54% (49 of 90) of the B-players chose T1, although the incentive for the dictator to 'take' money was strongest in this game. As already mentioned, a possible explanation is that they hoped for reciprocation or assumed that dictators would be satisfied with a fixed amount of money. In the latter case, the payoff for the B-player would be highest in T1 for any amount the dictator wanted for himself. 33% (30 of 90) of the recipients seemed to assume that the

dictator would reacts to the price p_A and they chose T4, the game with the highest price for the dictator payoff.

In the give sessions, 82% (72 of 88) of the B-players chose the efficient game G4, but only 58% (51 of 88) of the dictators did so. The remaining 37 subjects chose either G1 or G3. 20 of them chose to give something to the B-player. It is not clear why so many dictators chose a dominated strategy. On average, the B-players chose games with a higher value of p_A (p=0.001, two-tailed Wilcoxon test).

4.2 Behavior in the take games

Figure 4 shows the payoff of the B-players in the take games in decision 1 and 3 (π_B). Recall that the maximal payoff of B is 5 euro.

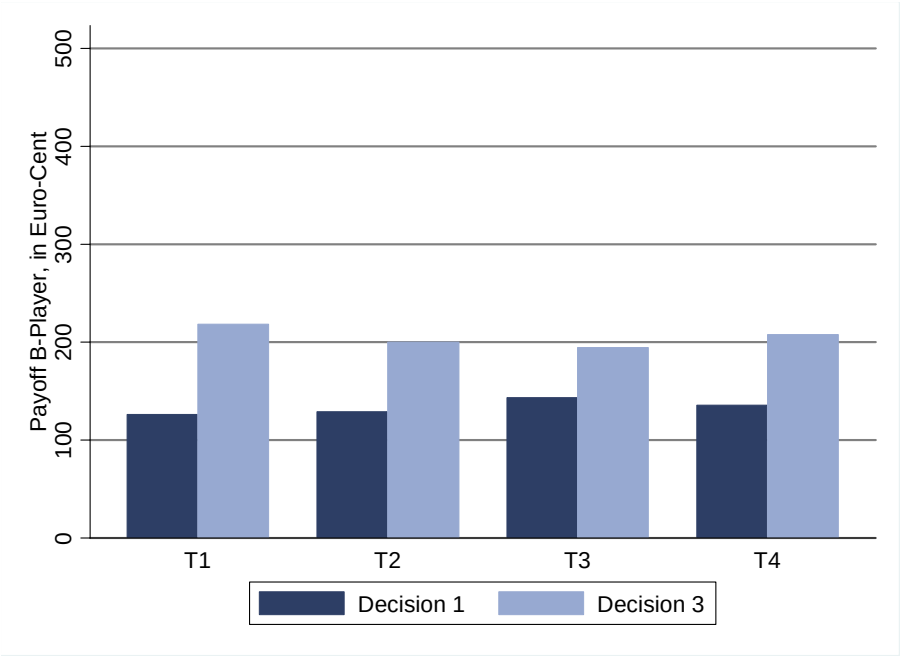

Figure 4: Average payoff of the B-players in the take games of decisions 1 and 3.

The two decisions 1 and 3 can be directly compared because in both cases the dictators have to decide how much to take in each of the four games. Figure 4 shows that the amount left to the B-players does not vary between the four games. This is supported by testing for differences between games in this respect, which finds none of the differences to be significant in decision 1 (p>=0.274, two-tailed Wilcoxon tests). In decision 3, more money is left in T1 than in T3 but the difference is small (0.24 euro) and only weakly significant (p=0.070).There are no other significant differences (p>=0.425, two-tailed Wilcoxon tests). Applying a Friedman test, the null-hypothesis that the amounts left across the games come from the same popula-

tion cannot be rejected for decision 3 (p=0.313). It is significant, however, that the dictators in all four games leave *more* to the B-players in decision 3 (p<0.010, two-tailed Wilcoxon tests). Obviously, the A-players are willing to leave more to the B-player when the recipient is in the position to decide which game to play. Since the average amount left to the B-player in all four games is the same, the dictators' decisions do (on average) not depend on the game chosen by the B-player. This is surprising insofar as one might think that the dictator should be willing to leave more to the B-player in those cases in which the recipient chooses a productive game like T1. Obviously the aggregated data do not display any kind of reciprocal behavior on the part of the dictators.

Dictators on average leave 1.33 of the 5 euros when the game is chosen at random and 2.05 euros when the B-player decides on the game. Because the productivity of "taking money from B" decreases from T1 to T4, the constant absolute amounts taken lead to decreasing payoffs for the dictators (π_A), as figure 5 shows:

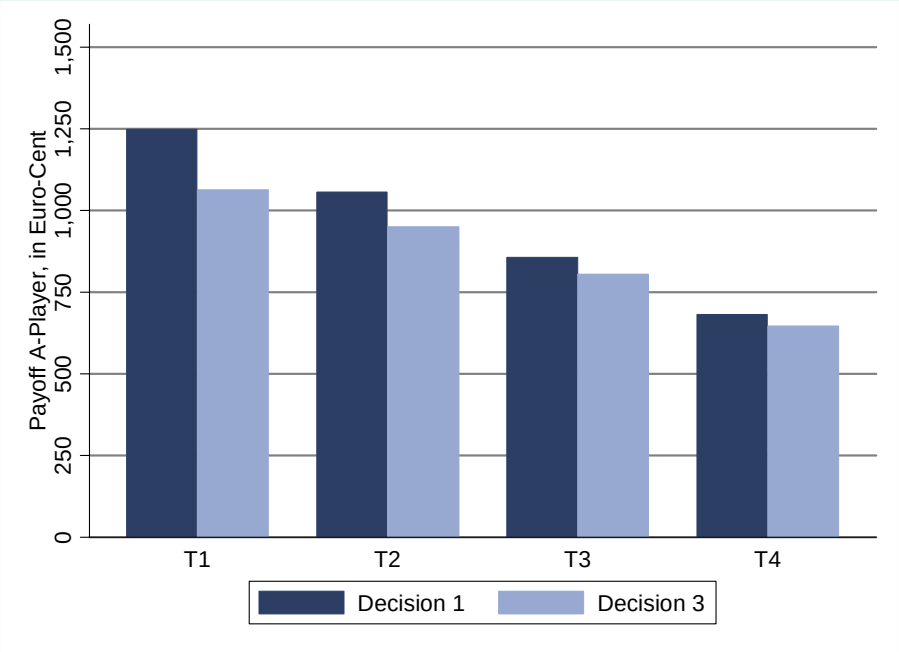

Figure 5: Average payoff of the A-players in the take games of decisions 1 and 3.

Averaging the payoffs in decision 1 across the four games, dictators choose a payoff of 9.61 euros when the relevant game is randomly selected. In decision 3, the dictators become more generous and their payoff drops to 8.66 euros on average. The behavior shown by the A-player in decision 2, where A-players also decided which game is relevant, is very similar to the behavior in decision 1. In decision 2, 83 of 90 A-players select T1, choosing an average payoff of 12.92 euros. This does not differ significantly from the average payoff of 12.77 euros which they choose in T1 of decision 1 (p=0.555, two-tailed Wilcoxon test). In T1 of deci-

sion 3, subjects choose a significantly lower payoff for themselves (10.80 euros) than in T1 of decision 2 ($p<0.001$, two-tailed Wilcoxon test).

Table 4 reports the results of a Tobit-regression for the payoff of the B-player for decision 1 and 3. Apart from that for the constant, the only significant coefficient is the one for the decision. In particular, the game coefficients are not significant. This once again demonstrates that dictators do not react to the different prices for gifts to the B-players, but significantly change their behavior if the B-Player has the right to choose the relevant game.

Independent variables	Coefficient (Standard Errors)
T2 1 if decision in take game 2 and 0 else	-8.841 (25.063)
T3 1 if decision in take game 3 and 0 else	1.656 (25.146)
T4 1 if decision in take game 4 and 0 else	9.983 (25.205)
D1 1 if decision 1 and 0 else	-144.541*** (18.120)
Constant	246.137*** (40.594)
Rho	0.725 (0.026)
N	720
Log-Likelihood	-2453.086
Chi-squared p-value	0.000

Random effects Tobit model including session dummies (not reported)
Dependent variable: Payoff of the B-player
Significance levels: * p<0.10, ** p<0.05, *** p<0.01

Table 4: Take Games - Tobit regression for the payoff of the B-players in decisions 1 and 3

4.3 Behavior in the give games

Figure 6 shows the average amount of money the dictators kept for themselves (π_A) in the give games. The dictators constantly keep about 12 (12.05 euros) of the 15 euros in all four games when the relevant game is chosen randomly and one euro less (10.97 euros) when the B-player selects the relevant game. Once again, the differences between decision 1 and 3 are significant ($p<0.05$, two-tailed Wilcoxon tests), but between the games within a decision no significant difference can be found ($p>=0.412$, two-tailed Wilcoxon tests). As in the take games, the dictators do not react to the different degrees of productivity a euro given to the B-player has, but their decision is influenced by the way the relevant game is selected.

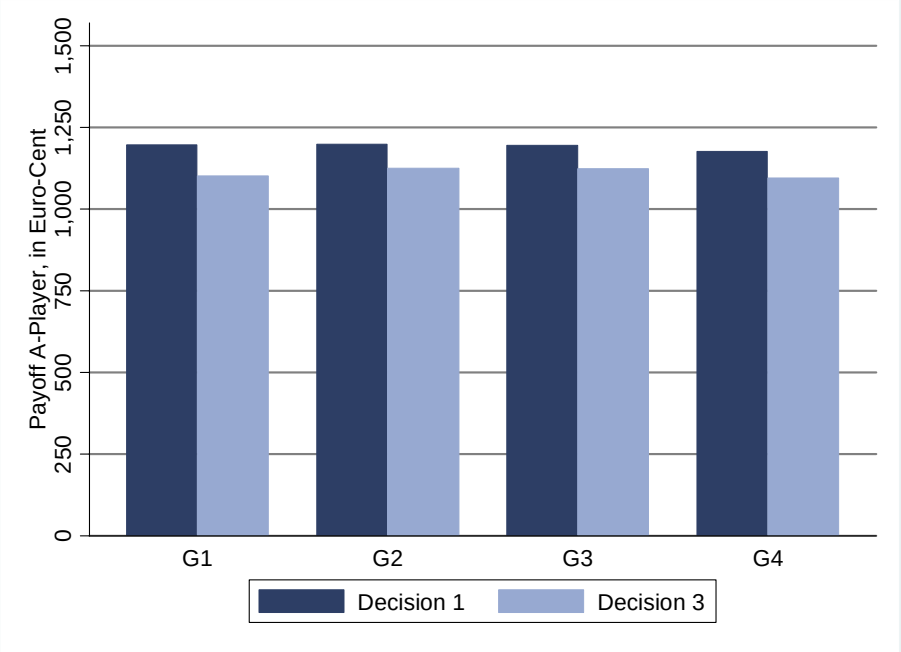

Figure 6: Average payoff of the A-players in the give games of decisions 1 and 3.

In the take games, the A-players' payoffs decrease with p_A and the B-players' payoffs remain constant. In the give games, it is the other way around. As the dictators now decide to keep a fixed amount of money for themselves, figure 6 also shows their (constant) payoffs over the four games within a decision. Figure 7 demonstrates that the payoffs of the B-players (π_B) increase in p_A in the give games.

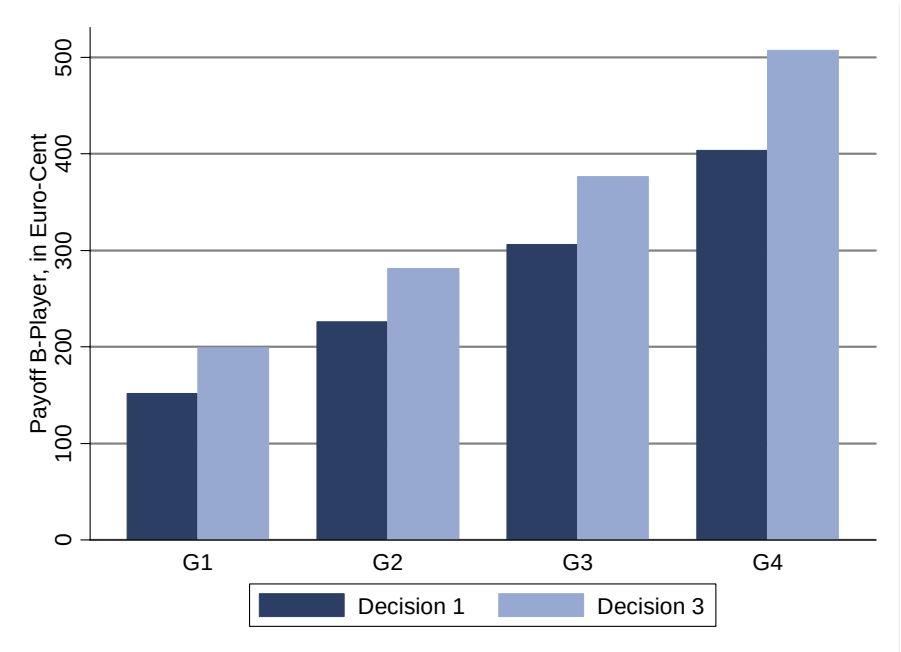

Figure 7: Average payoff of the B-players in the give games of decisions 1 and 3

When A-players can select a game in decision 2, 51 of 88 select G4, earning 11.45 euros on average. This does not differ significantly from the 11.94 euros these players earn in G4 of decision 1 (p=0.286, two-tailed Wilcoxon test). The 16 (17) subjects choosing G1 (G3) in decision 2 do not behave significantly different in G1 (G3) of decision 1. In both games, they opt for an average payoff of about 13 euros (10 euros) (p>=0.438, two-tailed Wilcoxon test).

As for the take games, the Tobit-regression for the amount kept by the A-players in decisions 1 and 3 in the give games clearly shows that the productivity of the gifts does not have a significant influence on the dictator decision, but that the property right does:

Independent variables	Coefficient (Standard Errors)
G2 1 if decision in give game 2 and 0 else	13.291 (33.015)
G3 1 if decision in give game 3 and 0 else	-5.890 (32.763)
G4 1 if decision in give game 4 and 0 else	-46.290 (32.660)
D1 1 if decision 1 and 0 else	118.434*** (23.162)
Constant	1250.482*** (41.851)
Rho	0.729 (0.020)
N	704
Log-Likelihood	-3247.078
Chi-squared p-value	0.000

Random effects Tobit model including session dummies (not reported)
Dependent variable: Payoff of the A-player
Significance levels: * p<0.10, ** p<0.05, *** p<0.01

Table 5: Give Games - Tobit regression for the payoff of the A-players in decisions 1 and 3

5 Discussion

The main results of our experiment are as follows.

1. Dictators do not condition their choices on the different prices their gifts have in the different give and take games.
2. In the give games, they choose a constant amount they keep for themselves and, in the take games, a constant amount left to the B-players.

3. Individual decisions significantly depend on the way the payoff-relevant game is selected. In the case of the B-players having the right to choose, dictators are more generous.

All these findings are demonstrated graphically in figure 8:

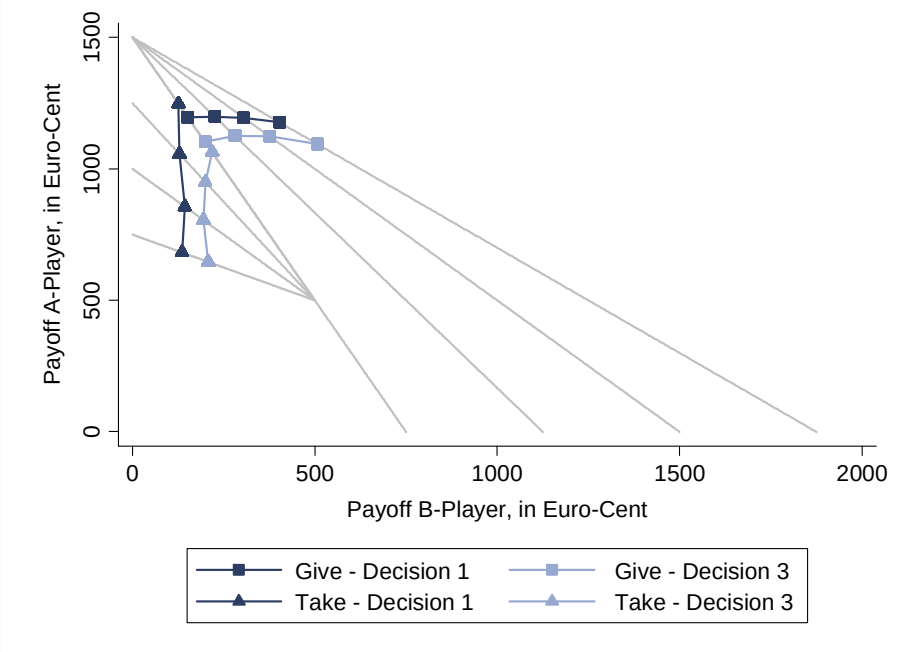

Figure 8: Average payoff for the A- and B-players in decisions 1 and 3 across games

On the individual level, we found great heterogeneity of behavior but, once again, apparent disregard for the price and a systematic reaction to the frame, which is identical to the one observed on the aggregate level. The recipients show heterogeneity in their beliefs about the dictator behavior as the observation that B-players chose different games in decision 3 shows.

Obviously the question of who owns the "property right" over the games plays an important role. This cannot be incorporated into the standard formulation of inequality aversion and altruism. Given the same choice among payoff pairs, subjects should always choose the same if their behavior only depends on payoff distributions.

In summary, our experiment shows that the behavior in dictator games cannot be fully explained by theories focusing solely on preferences over payoff distribution. A somewhat different view of behavior in dictator games seems to be at stake. Obvious features of the games, such as the right to choose the relevant game from four possibilities, may serve as a point of orientation and forces subjects to be more generous if this right is in the hands of the other player. One possible explanation for this property rights effect is that the possession of the "right to choose" activates a social norm that forces the dictators to give more to, or take less from, the recipient as compared to the situation in which this is the right of the dictator.

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