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MAKING THE WORLD A BETTER PLACE: EXPERIMENTAL EVIDENCE FROM THE GENEROSITY GAME

Werner Güth
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Abstract

We study ultimatum and dictator experiments where the first mover chooses the amount of money to be distributed between the players within a given interval, knowing that her own share is fixed. Thus, the first mover is faced with scarcity, but not with the typical trade-off between her own and the other's payoff. Removing the trade-off inspires significant generosity, which is not affected by the second mover's veto power. On the whole our results confirm heterogeneity in behavior, but point to efficiency concerns as the predominant motive.

Keywords: Ultimatum, Dictator, Social Preferences

JEL Classification: C70, C91, D63

I. Introduction

Laboratory and field evidence from ultimatum and dictator games indicates that people are not only motivated by material self-interest but also care positively or negatively for the material payoffs of others, i.e., they exhibit other-regarding concerns. In a typical ultimatum or dictator game, a player can increase the other's payoff only by giving up something.[1] In this paper, we experimentally examine behavior in a two-person game (the *generosity game*, Güth forthcoming) in which there is scarcity but no trade-off between self-interest and other-regarding concerns: the proposer chooses the size of the "pie" (i.e., the monetary amount to be divided between the players) within a finite interval, knowing that her own share is given. Hence, the proposer can grant more money to the other without bearing any monetary cost.

List (2007) and Bardsley (2008), among others, show that behavior is sensitive to the specification of the action set. To explore how the potential for generosity affects the proposer's propensity to be generous, we consider three treatments varying the range of possible pie sizes. In all treatments, efficiency (measured by the sum of individual payoffs) requires the proposer to choose the highest feasible pie. Yet, in two treatments the efficient choice maximizes the absolute difference between the players' payoffs so that efficiency concerns and inequality aversion (as formulated in Fehr and Schmidt [1999] or Bolton and Ockenfels [2000]) suggest different decisions. Only in one treatment, efficiency coincides with the inequality aversion prediction, but contrasts with the choice predicted by competitive preferences (i.e., the desire of lowering the other's payoff).

[1] Allocation tasks where the decision maker has no pocketbook interests at stake have been explored by Engelmann and Strobel (2004). Charness and Rabin (2002) have as well a treatment (*Berk29*) where the dictator's choice does not affect her own payoff.

Although experiments using the generosity game can provide insights into several types of social preferences, in the ultimatum variant of the game it may be in the proposer's own interest to offer the highest possible pie if she fears that the responder will veto lower offers. To disentangle intrinsic generosity from such strategic considerations, we run a dictator variant of the generosity game that excludes the fear of rejection.

Several experimental studies investigate the relative importance of competing types of social preferences. Charness and Rabin (2002) conduct a wide range of dictator and response experiments[2] and find that efficiency dominates equality concerns. Conversely, Iriberri and Rey-Biel's (2009) experiment with modified dictator games ranks efficiency concerns below equality motives.[3] Other studies aimed at identifying and quantifying different types of preferences are Blanco et al. (2007), Fisman et al. (2007), and Kamas and Preston (2007). An important finding in this line of work is the great heterogeneity in individual behavior.

A study closely related to the dictator variant of the generosity game is Engelmann and Strobel (2004). In their P treatment, the allocator receives a constant payoff across three feasible allocations. From the findings of their classroom experiment (conducted at the end of an economics lecture) the authors conclude that concerns for efficiency outperform equality motives. Our laboratory experiment, using undergraduates from various fields of science, greatly expands the first mover's action set. Moreover, our main interest is the conflict resolution between proposers and responders when there is scarcity but no trade-off.

Our findings suggest hardly any effect of veto power and a predominance

[2]In response experiments, the first mover is asked to choose either an outside option or to give the responder a choice between two alternatives.

[3]Iriberri and Rey-Biel compare behavior with and without role uncertainty. We report on the results of the latter treatment, which is more comparable to ours.

of efficiency concerns. Equality seeking behavior is non-negligible while just a tiny fraction of choices can be classified as competitive. Altogether our results confirm heterogeneity in behavior, but point to efficiency concerns as the predominant motive.

The rest of the paper is organized as follows. Section II introduces the generosity game and explains our experimental procedures. Our results are presented and interpreted in Section III. Section IV concludes.

II. The Experiment

II.A. Interaction Structure and Behavioral Predictions

The "generosity game" is played by two players: X and Y.[4] X chooses the size of the pie that is to be distributed between X and Y, knowing that her own share of the pie is fixed. Let p denote the pie size chosen by X, where $p \in [\underline{p},\ \overline{p}]$, and let x be X's exogenously given share of p, with $0 < x \leq \underline{p} < \overline{p}$. In the ultimatum (U) variant, Y learns about X's choice of p and decides whether to accept it or not. If Y accepts, then the payoff of X is $\pi_X = x$ and the payoff of Y is $\pi_Y = p - x$. If Y rejects, then neither player receives anything. In the dictator (D) variant, Y is a mere recipient with no veto power. Thus, the payoffs are $\pi_X = x$ and $\pi_Y = p - x$. In both variants of the generosity game, X is faced with scarcity (both players can share at the most $\overline{p}$), but not with the typical trade-off between self-interest and other-regarding concerns.

If all players have purely selfish preferences, responders in the U variant should accept any proposed pie. Anticipation of such response behavior renders the proposers' payoff independent of the pie choice p. Thus, no unambiguous selfish decision p exists. Assuming no fear of rejection or no

[4]For the sake of simplicity, we will always refer to X as 'proposer' and to Y as 'responder'.

veto power of Y allows us to distinguish different types of social preferences. Efficiency concerns (i.e., interest in increasing the sum of π_X and π_Y) require X to choose $p = \overline{p}$. Equality seeking (i.e., the desire to achieve an equitable distribution of material resources) entails reducing the absolute difference between π_X and π_Y. Finally, competitive preferences (i.e., wishing one's own payoff to be high in relation to the other's payoff) suggest to increase the difference between π_X and π_Y and thereby choosing $p = \underline{p}$.[5] In the U variant of the generosity game, formulating clear predictions based merely on social preferences is difficult because generous offers may be due to selfish concerns like a fear of rejection. However, assuming rational expectations, the above predictions for X-participants should apply at least to the range of pies that are accepted by all Y-participants.

Previous studies have demonstrated that changing the choice set may affect behavior (List 2007; Bardsley 2008). To carefully control for the choice set, we conduct three treatments modifying the range of possible pie sizes in a systematic way, but keeping x constant at €6. In one treatment we set $\underline{p} =$ €7 and $\overline{p} =$ €11, i.e., equality and efficiency concerns are perfectly aligned and suggest $p = 11$. Since the agreement payoff π_X is always greater than π_Y, we refer to this treatment as favoring X (F_X). In another treatment with $\underline{p} =$ €13 and $\overline{p} =$ €17 the two motives are in conflict: equality seeking implies $p = 13$ whereas efficiency concerns suggest $p = 17$. In this treatment, all possible pies advantage Y and thus we refer to it as the favoring Y (F_Y) treatment. The third treatment with $\underline{p} =$ €7 and $\overline{p} =$ €17 is the only one allowing player X to choose $p = 12$ and consequently we refer to it as the equal-split treatment (hereafter treatment E).

[5] These predictions can be illustrated with the help of a linear formulation of distributional preferences like the one proposed by Fehr and Schmidt (1999) or Charness and Rabin (2002).

Pure consequentialistic other-regarding concerns suggest that X should rely on the same principle across treatments. For example, an inequality averse proposer should choose in all treatments p closest to 12. Yet, the available choice set may affect behavior, for instance, because of its influence on the "perceived" fairness of a proposal. This perception may be different depending on whether efficiency and equality are perfectly aligned or not.

The two variants of the generosity game (U and D) and the three action sets (F_Y, F_X, and E) yield a 2×3 experimental design. The characteristics of our six treatments, namely UF_Y, UF_X, UE, DF_Y, DF_X, and DE, are summarized in Table I.

[Insert Table I about here]

II.B. Participants and Procedures

We ran two sessions of each of the six treatments, with 32 subjects in each session (for a total of 384 participants). This yields 32 independent observations for proposers in each treatment and 32 independent observations for responders in each U treatment. All sessions were run computerized, via z-Tree (Fischbacher 2007), at the laboratory of the Max Planck Institute in Jena. Participants (all being students from various fields at the University of Jena) were recruited using the ORSEE software (Greiner 2004).[6] Upon arrival, they were randomly seated at visually isolated computer terminals. Written instructions (in German) were then distributed and read aloud to establish public knowledge (see the appendix for an English translation). Sessions lasted, on average, 35 minutes.

[6]Fehr et al.'s (2006) study indicates strong subject pool effects in allocation experiments: students of economics and business administration tend to overstate (understate) the relevance of efficiency concerns (inequality aversion). About 8% of our subject pool consisted of students enrolled in economics and business administration.

In all sessions, it was commonly known that X had to choose a pie size within a fixed interval (choices were restricted to integer values). In the six D sessions, Y had no decisions to make. In the six U sessions, we used the *strategy method*: Y had to indicate for each of the possible pie sizes whether or not she would veto it.[7]

Subjects were paid privately at the end of each session and never learned the identity of their counterpart. Player Y's average earnings (including a €2.50 show-up fee) were €9.78 in the D variant and €10.02 in the U variant. Overall, 4 proposals (1 in UF_Y and 3 in UE) were rejected.

III. Experimental Results

We start by examining responders' behavior in the three U treatments. Acceptance rates are illustrated in Figure I. In UF_Y, acceptance rates are very close to one for all potential proposals. In UF_X and UE, about half of the responders reject minimal pies of $p = 7$ and $p = 8$ and acceptance rates are monotonically increasing to one when the pie allowing for the (nearly) equal split is reached. Compared to the findings of standard ultimatum games where offers smaller than 25% of the proposer's payoff are frequently rejected (see, e.g., Camerer [2003]), acceptance rates in the generosity game are rather high: although $p = 7$ grants the responder a payoff which is only 16.67% of π_X, 16 out of 32 Y-participants accept it.

[Insert Figure I about here]

[7] By having the responder indicate her decision for all possible proposer's actions, the sequential two-person two-stage game is converted into a two-person normal-form one-stage game for each subject. Although it has been argued (see, e.g., Roth [1995]) that the strategy method may induce different behavior as compared to subjects who are confronted with actual choices, Cason and Mui (1998) and Brandts and Charness (2000) find no significant difference in behavior between the 'cold' and the 'hot' method.

The distributions of X-participants' choices in each of the six treatments are shown in Figure II. In each graph, we report also the average value.[8] In treatment UF_Y (upper right graph of Figure II), $p = 17$ is the predominant choice (62.5%) although $p = 13$ is selected a few times (15.6%). In treatment UF_X (median right graph), almost all proposers (96.9%) choose $p = 11$. In treatment UE (lower right graph), half of the observations lie at $p = 17$ and 28.1% at $p = 12$. As to the three D treatments, the distribution of choices in each one of them is similar to that in the corresponding U treatment, although $p = 11$ is chosen less often in DF_X (65.6% of the times) than in UF_X. Kolmogorov-Smirnov tests (hereafter KST) and Fisher's exact tests (hereafter FET) confirm that the U and D variants of the generosity game are significantly different for the treatment where all the offers favor X (KST: p-value = 0.088, FET: p-value = 0.001).[9] For the other two choice sets, the null hypothesis of no difference cannot be rejected (KST: p-value = 0.428; FET: p-value = 0.384 for UF_Y vs. DF_Y; KST: p-value = 0.999, FET: p-value = 0.832 for UE vs. DE). Combining these findings about proposers with responders' acceptance rates indicates that fearing veto power only in UF_X is rational: X-participants correctly anticipate that offering in UF_X the same pie as in DF_X would result in rejections.

[Insert Figure II about here]

To better understand the motivations of X-participants, we perform a series of tests comparing the empirically observed distributions of choices with randomly generated distributions. The latter may reflect the hypothesis that selfish X-participants choose randomly because they can only earn x.

[8] To favor a direct visual comparison of the treatments, the horizontal axes of the graphs all have the same scale although certain choices were not feasible in F_Y and F_X.

[9] Unless otherwise stated, all statistical tests are two-sided. The data analysis was conducted in the R environment (R Development Core Team, 2005).

From this perspective, rejecting the null hypothesis of no difference between the empirical and the random distributions would suggest non-selfish concerns of X participants. For each of the three possible choice sets (F_Y, F_X, and E) we generate 10,000 simulated distributions having the same number of elements as the experimental sample (the random draw is conducted with replacement). Then, each simulated distribution is confronted with the corresponding observed distribution using a FET with a significance level of 5%. If the percentage of non-significant tests (indicated by $\%_{FET}$) is smaller than 5%, the empirical distribution is regarded as non-random.

The results of the simulations support the non-randomness hypothesis when all possible p-choices favor the proposer ($\%_{FET}$ equals 2.3% for DF_X and 0% for UF_X) and when the choice set allows for equal split ($\%_{FET}$ equals 0.7% for DE and and 0.1% for UE), but not when all possible choices favor the responder ($\%_{FET} = 37.2\%$ and 13.9% for DF_Y and UF_Y, respectively). Therefore, according to this analysis, other-regarding concerns may be driving behavior in all treatments other than F_Y.

Does the available choice set affect behavior? To answer this question, we proceed in two different ways. First, we test whether the ratio of the frequencies of the choices located at the boundaries, $\underline{p}$ and $\overline{p}$, of treatments F_X and F_Y differs from the ratio of these same frequencies in treatment E. If selfish proposers choose randomly, the availability of alternative options should not affect these ratios. A series of FET reveal that the difference in the frequencies of $p = 7$ and $p = 11$ is significant when comparing DF_X and DE (p-value = 0.020) and weakly so when comparing UF_X and UE (p-value = 0.061). Turning to the frequencies of $p = 13$ and $p = 17$, a weakly significant difference is detected between DF_Y and DE (p-value = 0.056), while there is no difference between UF_Y and UE (p-value=0.137).

This corroborates the results of the above simulations: only if all feasible pies favor the responder, the hypothesis of random behavior cannot be discarded.

The second procedure we use to provide insights into the influence of the choice set on behavior relies on censoring the distributions of choices in the E treatments at the upper bound of F_X and at the lower bound of F_Y, meaning that p-choices that in E are higher (lower) than 11 (13) are shifted to 11 (13). We compare these modified E distributions with the corresponding F_X or F_Y distribution (see Table II).

[Insert Table II about here]

The distributions of choices in DF_X and the corresponding modified E are significantly different (p-value = 0.006; FET), with choices of $p = 11$ being less frequent in DF_X. In contrast, the distributions of choices in UF_X and modified UE do not differ significantly (p-value = 0.484; FET). The lower bound of the F_Y treatments ($p = 13$) is chosen less often in UF_Y and DF_Y than in the modified E distributions. The FET rejects the hypothesis of no difference between UF_Y and modified UE (p-value = 0.043) as well as between DF_Y and modified DE (p-value = 0.018). This supports the conclusion that the available choice set influences behavior.

Let us use the dictator variant of the generosity game to assess the influence of distributional preferences on X-participants' behavior.[10] Our setting allows us to identify three types of social preferences: competitive (CP), inequality aversion (IA), and efficiency concerns (EF).[11] An unam-

[10]The fact the responder participants essentially reject only pies yielding them less than $\pi_x = 6$ and, in that range, the smaller the pie, the higher the rejection rate (see Figure I) does not permit a clear classification: such response behavior may be explained by both inequality aversion and competitive preferences. On the other hand, an efficiency minded responder should not veto at all. The overall shares of Y-participants who never reject are 87.5%, 50% and 53.125% in treatments UF_Y, UF_X, and UE, respectively.

[11]In addition to these social preferences, one should take into account self-interest. The implicit assumption here is that selfish players choose randomly. Thus, their choices can

biguous classification is only possible in treatment DE where a person is regarded as CP if she chooses $p = 7$, as IA if she chooses $p = 12$, and as EF if she chooses $p = 17$. The other two choice sets do not allow for a univocal distinction. In treatment DF_X, an individual is classified as both IA and EF if she offers $p = 11$ and as CP if she selects $p = 7$. In treatment DF_Y, on the other hand, a person is regarded as both CP and IA if she chooses $p = 13$ and as EF is she opts for $p = 17$.

Figure III illustrates how social preferences are distributed in our population. The percentage on top of each bar indicates the relative frequency of subjects in that category.[12] It is evident that, whatever the choice set, the most frequent social preferences are EF, followed by IA. CP preferences are almost negligible.

[Insert Figure III about here]

To extend the empirical classification of types in DE to the confounded motives in DF_X and DF_Y, we apply the following identification strategy: when a choice can be attributed to two preference types, the frequency of that choice is shared between the two types in accordance to their relative proportion in DE.[13] By aggregating across choice sets we obtain the following rough estimation of social preference types: 3.47% of the participants are CP, 24.72% are IA, and 44.37% are EF. This confirms that concerns for efficiency are by and large the dominant motivation in the setting under

be considered as a white noise component that does not bias the signal produced by the social preference type.

[12]Some participants are omitted from the analysis because they cannot be assigned into any category. For instance, only 5 out of 32 participants are not classifiable in DE. The small number of unclassifiable subjects corroborates the efficacy of the employed identification procedure.

[13]Consider, for example, the 21 IA and EF types in DF_X. If we normalize to 1 the sum of the IA and EF types in DE, then the ratios $\frac{\text{EF}}{\text{EF + IA}}$ and $\frac{\text{IA}}{\text{EF + IA}}$ are $\frac{15}{25} = 0.6$ and $\frac{10}{25} = 0.4$, respectively. Thus, out of the 21 subjects that in DF_X choose the IA/EF option, 21×0.4 are classified as IA and the remaining as EF.

investigation, but that inequality aversion still plays a non-negligible role.

We conclude the analysis of types by reporting the results of a conditional logit estimation (similar to that described by Engelmann and Strobel [2004]).[14] We use data from the DE treatment and include as explanatory variables (a) the chosen pie p and (b) the absolute difference between the chosen pie and the equal split pie, i.e., $|p - 12|$. The former regressor provides us with a measure of efficiency concerns and the latter with a measure of inequality aversion. The estimation shows that efficiency concerns have a significant positive impact on choices (odds ratio=1.275, p-value=0.003), but inequality aversion has not (odds ratio=0.928, p-value=0.574). These results do not qualitatively change if we pool the data from the D and the U variant.

IV. Conclusions

In the generosity game, the payoff of the proposer is fixed whereas the payoff of the other can be varied by the proposer who chooses the pie size. In the ultimatum variant, responders (who have no strategic considerations to follow) are found to reject 'unfair' pie offers (i.e., pies smaller than $2x$), although the observed acceptance rates are very high compared to standard ultimatum games. Anticipating such response behavior, proposers avoid choosing these pie sizes. To rule out the fear of rejection, we have investigated the dictator variant of the generosity game that allows to identify several types of social preferences, like competitive inclinations, equality motives, and efficiency concerns, whereas purely selfish preferences do not yield an unambiguous

[14]This estimation neglects individual heterogeneity and collinearity issues (Engelmann and Strobel 2004; Fehr et al. 2006). Moreover, the observed relevance of the choice set questions the reliability of the estimation because the conditional logit model requires the ratio of the probabilities of choosing any two alternatives to be independent of any other alternative. When the independence from irrelevant alternatives property is violated, other estimation techniques should be applied (see, e.g., Cameron and Trivedi [1998]).

prediction. We also explored whether distinct choice sets affect behavior.

Previous experimental studies trying to assess the relative importance of different social preference types have mainly adopted dictatorial distribution of own and others' payoffs (e.g., Charness and Rabin [2002]; Engelmann and Strobel [2004]). In line with these studies, we find that concerns for efficiency are strongly predominant. Although most participants display the largest possible degree of generosity, equality concerns account for a non-negligible share of choices. Competitive preferences, instead, are almost absent. This picture holds for both the ultimatum and the dictator variant of the generosity game. Apparently, a distribution task without a payoff trade-off helps the parties resolve conflict.

The manipulation of the choice set indicates that the relative frequency of choices depends on the available alternatives. This is consistent with previous studies (e.g., Bardsley [2008]) and represents an important methodological issue for the analysis of other-regarding concerns: it points to the potential inconsistency of estimates based on independence from irrelevant alternatives.

The reason why we observe so much generosity may be that the generosity game avoids a key prerequisite for equality seeking, namely the trade-off between one's own and the other's payoff (see, e.g., Bolton and Ockenfels [2006]). Usually, when reaching the efficiency frontier, agents face a trade-off: one can gain only if someone else loses. Within the interval of possible pie sizes, this trade-off is not present in the generosity game. Hence, when generosity is costless, most of us try to make the world a better place.

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Appendix: Experimental Instructions

This appendix reports the instructions (originally in German) we used for treatments F_Y. The instructions for treatments F_X and E were adapted accordingly.

General instructions. Welcome and thanks for participating in this experiment. You will receive 2.50 euros for having shown up on time. Please remain quiet and switch off your mobile phone. Please read the instructions − which are the same for everyone − carefully. During the experiment you are not allowed to talk to other participants. If you do not follow this rule you will be excluded from the experiment and you will not receive any payment. Whenever you have a question, please raise your hand. An experimenter will then come to you and answer your question privately. The show-up fee of 2.50 euros and any additional amount of money that you will earn during the experiment will be paid out to you privately in cash at the end of the experiment.

Detailed information on the experiment. In this experiment, two participants will interact with each other just once. Each of the two members of a pair will be randomly assigned to one of two roles: X or Y. Your role will be told to you at the beginning of the experiment. Your identity will not be revealed to any other participant.

Each pair can share a certain amount of euros. In the following, we shall refer to this amount as the "pie" and denote it by p.

If you are the X-participant in your pair, you will have the right to propose/choose (in UF_Y/DF_Y, respectively) the value of the pie p to share. More specifically, you can propose/choose a pie of 13, 14, 15, 16, or 17 euros. Whatever p you propose/choose, you will always claim 6 euros for yourself, and the remaining $(p-6)$ euros will be offered to Y. For example, if you propose/choose $p = 13$, you claim 6 euros for yourself and 7 euro will be offered to Y; if you propose/choose $p = 14$, you claim 6 euros for yourself and 8 euros will be offered to Y; and so on.

[*Participants in* UF_Y *read*: If you are the Y-participant in your pair, you will have to decide, for each possible pie p that X may propose, if you "accept" or "reject" it. Thus, you will face the following table:

	Pie				
	13	14	15	16	17
accept	○	○	○	○	○
reject	○	○	○	○	○

For each pie that X may propose, you must specify if you accept or reject it by clicking the corresponding button with your mouse (therefore, you are required to make 5 decisions).

After all participants have made their choices, the earnings of your pair will be determined as follows. First, the computer will check the pie p actually proposed by the X-participant in your pair. If you have "accepted" the actual pie proposed by X, then X will earn 6 euros and you will earn $p-6$ euros. If you have "rejected" the actual pie proposed by X, then both X and Y will earn nothing.]

[*Participants in* DF_Y *read*: If you are the Y-participant in your pair, you will not have to make any decision. After all X-participants have made their choices, the earnings of your pair will be determined based on the pie p chosen by the X-participant in your pair.]

The earnings that the two participants in the pair will receive are summarized in the table below:

[*Participants in* UF_Y *read*:

		X earns	Y earns
X chooses $p = 13$	Y accepts	€6	€7
	Y rejects	€0	€0
X chooses $p = 14$	Y accepts	€6	€8
	Y rejects	€0	€0
X chooses $p = 15$	Y accepts	€6	€9
	Y rejects	€0	€0
X chooses $p = 16$	Y accepts	€6	€10
	Y rejects	€0	€0
X chooses $p = 17$	Y accepts	€6	€11
	Y rejects	€0	€0

]

[*Participants in* DF_Y *read*:

	X earns	Y earns
X chooses $p = 13$	€6	€7
X chooses $p = 14$	€6	€8
X chooses $p = 15$	€6	€9
X chooses $p = 16$	€6	€10
X chooses $p = 17$	€6	€11

]

The instructions are now over. Please remain quiet.

If you have any questions, please raise your hand.

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TABLE I
Summary of Experimental Design

Treatment	Y has veto power	X's choice set
UF_Y	Yes	$\{13, 14, \ldots, 17\}$
UF_X	Yes	$\{7, 8, \ldots, 11\}$
UE	Yes	$\{7, 8, \ldots, 17\}$
DF_Y	No	$\{13, 14, \ldots, 17\}$
DF_X	No	$\{7, 8, \ldots, 11\}$
DE	No	$\{7, 8, \ldots, 17\}$

TABLE II

DISTRIBUTION OF CHOICES IN F_X, F_Y AND MODIFIED E, SEPARATELY FOR THE U AND THE D VARIANT OF THE GAME

	7	8	9	10	**11**
UF_X	0	0	1	0	31
UE (modified)	1	0	1	2	28
DF_X	0	3	1	7	21
DE (modified)	2	0	0	1	29
	13	14	15	16	17
UF_Y	5	2	2	3	20
UE (modified)	14	0	0	2	16
DF_Y	8	2	6	1	15
DE (modified)	16	1	0	0	15

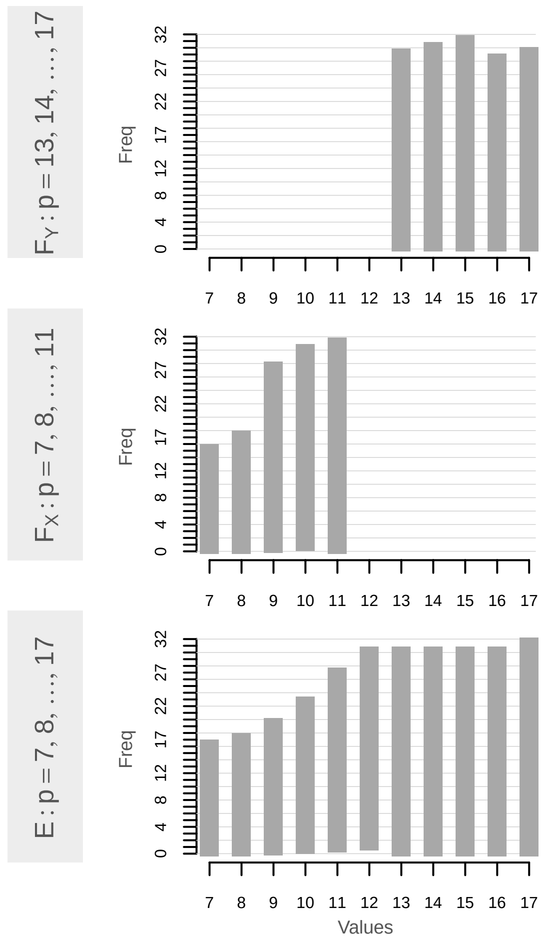

FIGURE I
Responders' Acceptance Rates in the Three U Treatments

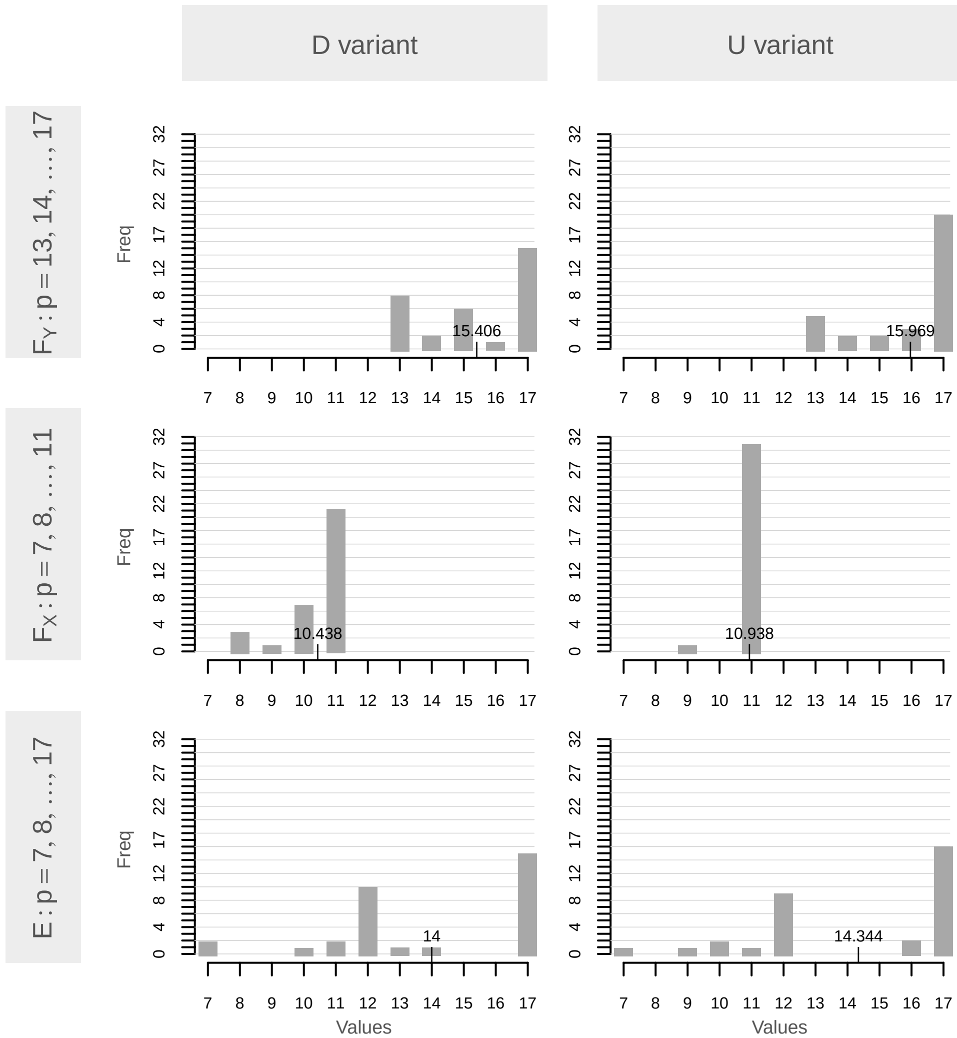

Figure II
Absolute Frequencies of X's Choices, Separately for Each Treatment

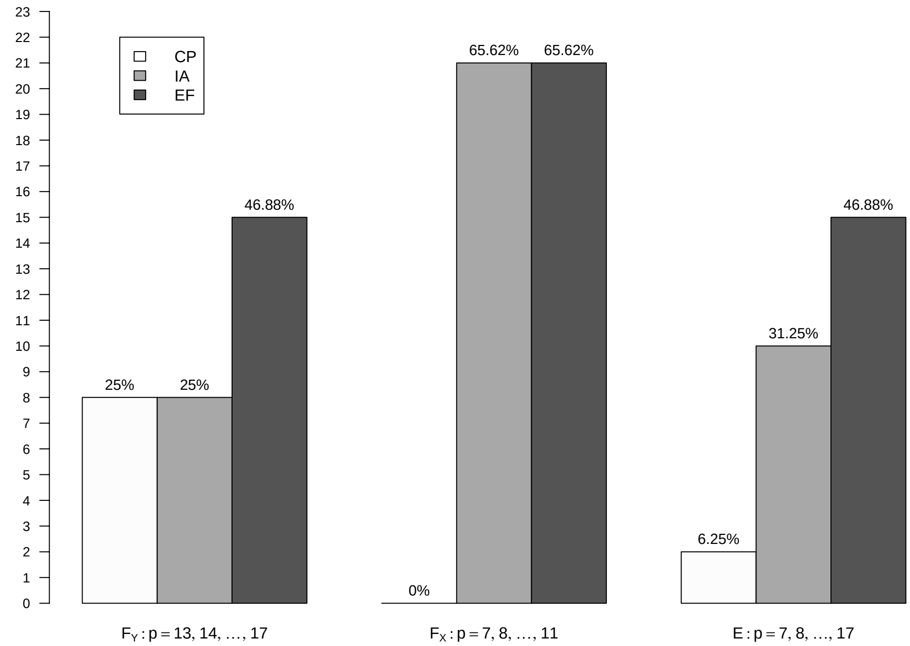

Figure III
Absolute and Relative Frequencies of Social Preference Types in the D Variant of the Game