CESifo *Working Paper Series*

WHY DO PEOPLE VETO?
AN EXPERIMENTAL ANALYSIS OF THE VALUATION AND THE CONSEQUENCES OF VARYING DEGREES OF VETO POWER

Werner Güth
Judit Kovács

Working Paper No. 308

June 2000

CESifo
Poschingerstr. 5
81679 Munich
Germany
Phone: +49 (89) 9224-1410/1425
Fax: +49 (89) 9224-1409
http://www.CESifo.de

CESifo *Working Paper No. 308*
June 2000

WHY DO PEOPLE VETO? AN EXPERIMENTAL ANALYSIS OF THE VALUATION AND THE CONSEQUENCES OF VARYING DEGREES OF VETO POWER

Abstract

By vetoing one questions mutually efficient agreements. On the other hand the threat of vetoing may prevent exploitation. Based on a generalization of ultimatum bargaining (Suleiman, 1996) we first elicit the responders' certainty equivalents for three different degrees of veto power. Afterwards the corresponding bargaining rule is implemented. The experimental data reveal that proposers are afraid of more veto power but that responders only care for commanding veto power at all, not for its strength

JEL Classification: C9, C7, H8

Werner Güth
Humboldt-University at Berlin
Department of Economics
Spandauer Str. 1
10178 Berlin
Germany
email: gueth@wiwi.hu-berlin.de

Judit Kovács
University of Debrecen
Hungary

Why do people veto?
An experimental analysis of the valuation and the consequences of varying degrees of veto power

Werner Güth
(Humboldt-University at Berlin)

and

Judit Kovács
(University of Debrecen)

Abstract

By vetoing one questions mutually efficient agreements. On the other hand the threat of vetoing may prevent exploitation. Based on a generalization of ultimatum bargaining (Suleiman, 1996) we first elicit the responders' certainty equivalents for three different degrees of veto power. Afterwards the corresponding bargaining rule is implemented. The experimental data reveal that proposers are afraid of more veto power but that responders only care for commanding veto power at all, not for its strength.

1. Introduction

Unlike when asking "Why do people vote?" (see Güth and Weck-Hannemann, 1997 for an experimental study) the question "Why do people veto?" does not consider a large voting body, but rather small groups. Veto power is crucial in the ultimatum game (see Roth, 1995, for a survey of experimental results). Here a positive monetary amount (the "pie") is distributed by first letting the proposer choose how much to offer and then the responder accept or reject the offer. In case of acceptance the pie is shared as proposed. In case of rejection both receive nothing.

Suleiman (1996) has generalized the ultimatum game by allowing for various parameters λ in the range $0 \leq \lambda \leq 1$ measuring which share of the pie can be distributed even when the responder rejects. More specifically, it is assumed that both, proposer and responder, receive only a λ-share of what has been proposed when the proposal is rejected. One extreme is $\lambda=0$, i.e. the ultimatum game, the other extreme $\lambda=1$ captures the dictator game where the responder has no veto power at all (one can hardly call him a responder then, but we do nevertheless.) By allowing also for intermediate values of λ with $0 < \lambda < 1$ one can distinguish various degrees of veto power, measured by $1-\lambda$.

In our experimental study we allow for λ= 0, 1/3, 2/3, and 1. Whereas Suleiman (1996) only explores how allocation behavior depends on λ, we are also interested in how much responders care for the various degrees of veto power. The main regularities, observed by Suleiman (1996) are that

- mean offers do not monotonically increase with veto power (more specifically, $1-\lambda=0$ inspires more generous offers than $1-\lambda=0,2$ what could be viewed as a crowding out of intrinsic proposer generosity, see Frey, 1997)
- high veto power ($1-\lambda\geq 0,8$) increases offers on average by 50% if compared to low or no veto power ($1-\lambda\leq 0,2$)
- rejection rates for $\lambda<1$ increase greatly (to 33%) when offers become unfair and $1-\lambda$ is positive.

Altogether the degree of veto power is strategically anticipated by proposers and provides an effective insurance of responders against exploitation. In our experiment we explore the anticipation of veto power more directly:

- Will responders invest in the acquisition of veto power?
- Does their willingness to pay for veto power increase with the degree $1-\lambda$ of veto power?
- Do acceptance thresholds of responders increase with their willingness to pay for veto power?
- Does the possibility to buy veto power suggest new fairness ideas, e.g. in the sense of new reward standards as used in equity theory (see Homans, 1961)?

One weakness of most experimental studies is that the payoff prospects are provided freely and often randomly, i.e. participants do not feel entitled to fully exploit the advantages of their position (see for a discussion Hoffman and Spitzer, 1985). This could be avoided by auctioning roles instead of giving them away freely (see Güth and Tietz, 1986). Here we do not auction roles as such but only the responders‘ degree of veto power. More specifically, the responder either buys veto power (in the sense of $\lambda<1$) or he commands no veto power at all ($\lambda=1$). To elicit responders‘ certainty equivalents for the three levels of positive veto power (λ= 0, 1/3, 2/3) we rely on the random price mechanism (Becker, de Groot, and Marshak, 1964) which is incentive compatible (only truthful bids are weakly undominated strategies).

First responders bid for all three positive degrees of veto power[1]. Simultaneously proposers choose their four offers for the four game types (if no veto power is bought, the dictator game is played). Responders then determine their acceptance thresholds for the three λ-rules with $\lambda<1$. Finally we determine randomly the price for veto power and which of the three λ values can be bought. Knowing the bids by responders and the random price we can determine for each pair (of one proposer and one responder) the game type, i.e. the λ -value. By matching the respective offer with the corresponding acceptance threshold also the bargaining outcome can be assessed. The monetary payoffs π of the proposer, respectively responder are determined as

$$\pi_{proposer} = 3000-y_\lambda \quad \text{, in case of acceptance}^{2}$$
$$\pi_{proposer} = (3000-y_\lambda)\cdot\lambda \quad \text{,in case of rejection}$$

$$\pi_{responder} = y_\lambda - p + 1500 \quad \text{, in case of acceptance}$$
$$\pi_{responder} = y_\lambda \cdot \lambda - p + 1500 \quad \text{, in case of rejection}$$

where $\lambda=1$ implies p=0 and where

[1] Thus we elicit the responder’s willingness to pay for the possible degrees of veto power. A willingness to accept-study would have provided responders with veto power and asked then at which prices they are willing to give up veto power.
[2] The unit is HUF (Hungarian Forint), 250 HUF=1$.

y_λ is the offer in case of λ-veto power
p is the price of veto power with $\lambda<1$
3000 is the size of the pie
1500 is the monetary endowment of a responder [3]

After information feedback has been provided about the bargaining outcome participants repeat this overall game once with a new partner. Our statistical analysis can also rely on the answers of a post-experimental questionnaire asking for reasons, emotional reactions, and personal attitudes.
The following section describes the experimental protocol in more detail. Sections 3, 4 and 5 describe and analyze the results before discussing them in section 6. Section 7 concludes.

2. Experimental protocol

The experiment was performed at the University of Debrecen in February 2000. There were 5 sessions with 16 participants each and heterogeneity in the background of our volunteer[4] participants (students of biology, mathematics, law, economics, medicine, etc.). When participants arrived we seated them randomly. By doing so we decided on their roles (proposer, responder). They were placed as far as possible from each other in a large lecture hall not being aware of the others'role.
After they had read the instructions (see Appendix A for an English translation) they could privately ask for clarification. Then they had to fill out a pre-experimental control questionnaire (see Appendix A) and got feedback on the answers immediately by the experimenters. The rules were clarified privately till all participants had answered all questions correctly. Reading the instructions and answering the control questionnaire took 60 minutes. Additional 30 minutes were needed to perform the two rounds, including the time for providing feedback.

Each round consists of the following stages:

- Subjects in the role of responders decide about their bids l for the different degrees of veto power (1-λ where λ= 0, 1/3, 2/3) with $0 \le l \le 1500$. If they cannot buy veto power – because the price of veto power turns to be higher then their certainty equivalent l they play the dictator game with λ= 1. The responders do not know in advance which λ-veto power can be bought. This is decided by chance after all decisions sheets are collected. While the responders determine the bids the proposers choose their four offers y with $0\le y \le 3000$ for any possible game-type with λ=0, 1/3, 2/3, 1. They know neither the λ-value nor the price of veto power.

- Responders choose –still not knowing the price of veto power- their acceptance threshold δ with $0 \le \delta \le 3000$ for λ= 0, 1/3, 2/3 –veto power and specify their expected offer for λ=1 which they cannot reject (see Appendix A for decision form).

[3] To exclude negative outcomes.
[4] We recruited them on leaflets saying "if you are interested in an experiment where you make decisions and can earn money depending on your decisions- you are invited then to participate. Register for one of the 5 sessions...".

- Experimenters determine the (for all responders same) random price from the set {1, 2, ..., 1500} and via the code-number the λ-value with λ< 1 which can be bought by an individual responder.

- Calculation of the results and providing the necessary feedback information about the outcome (proposers: λ-rule and whether this λ-offer is accepted or not; responders: random price, λ-rule, λ-offer).

After repeating this once with a new partner (from a matching group consisting of two proposers and two responders) participants fill out the post-experimental questionnaire (see Appendix A) before being privately paid.

3. Descriptive data analysis

Choosing veto power means to aim at a certain institutional setup. More veto power will be usually more or less preferred if one expects better or worse payoffs. We therefore discuss first of all the results of the various λ-games before turning attention to how responders evaluate the various degrees of veto power.

a. Playing the games

Contrary to the experimental process but in line with backward induction (see Selten, 1975) we first look at response behavior, i.e. which offers *y* are seen as acceptable and how this depends on the parameter λ.
Figures III.1.a, b, and c illustrate the distribution of acceptance thresholds δ (in the sense that only offers $y \geq \delta$ are accepted) for λ=0, 1/3, respectively 2/3, for those participants who have chosen a positive limit price *l* for buying the respective 1-λ veto power.[5]

[5] The share of responder participants who did not bid positively (l>0) for veto power in the 1st round, is 22 %, 10%, and 8% for λ=0, 1/3, 2/3, respectively. In the 2nd round these ratios are : 22%, 8%, 5%.

Figure III.1.a: The distribution of acceptance thresholds d for l=0 (mean=1245, std.dev.=492,48, N=61)

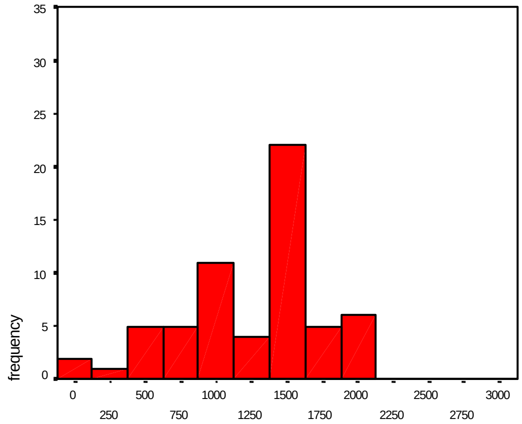


Figure III.1.b: The distribution of acceptance thresholds d for l=1/3 (mean=1318, std.dev.=484,52, N=73)

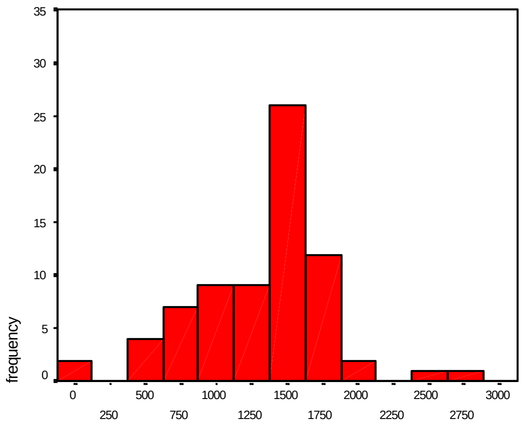
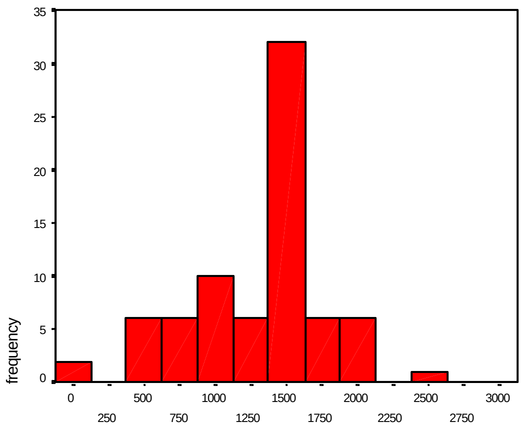


Figure III.1.c: The distribution of acceptance thresholds d for l=2/3 (mean=1317, std.dev.=478,72, N=75)



There are no significant experience effects regarding acceptance thresholds (Wilcoxon-tests), so that is why the results from the two rounds are pooled .
The mode is always the equal split, i.e. the most frequent attitude is to reject any unfair offer ($y < 1500$). Standard deviations are very similar but quite unexpectedly the mean acceptance threshold is with 1245 smallest for $\lambda = 0$. The Number N of observations differs since the number of positive limit prices *l* is not the same for the λ-values (see Footnote 5.)
The acceptance thresholds for $\lambda = 0$ on the one hand and $\lambda = 1/3$ and 2/3 on the other hand differ significantly in both[6] rounds (Kendall-W-test, p=0,1)[7] while the thresholds for the two higher value of λ are the same both in the 1st and in the 2nd round. Altogether λ does not have a systematic effect on response behavior, and if at all, its effect is minor.[8] On how much proposers offer, the degree of veto power, however, has a decisive influence. In table III/1 the average absolute and relative offers, i.e. as shares of 3000 for the four different values of λ are listed. According to the non-parametric Wilcoxon –tests, there is a significant difference in the offers for any pair of two different λ values[9] but again no significant experience effects exist for any λ-rule.

Table III/1.: The average absolute and relative offers of 3000 for the four different values of l

λ	mean offers (y) in 1st round		mean offers (y) in 2nd round	
	absolute	relative (3000)	absolute	relative (3000)
0	1080	36%	1073	35%
1/3	848	28%	841	28%
2/3	765	25%	758	25%
1	363	12%	341	11%

The average relative offer in the ultimatum game ($\lambda=0$), and the modal offer (equal split) (see Figure III.2.a) are quite similar to the usual findings (see for example Bolle, 1990, Prasnikar and Roth, 1992). This is by no means obvious since the responders' earnings can also include the money, not spent on buying veto power. However, since the allocators are quite uncertain about the price of veto power, they seem to ignore these additional earnings.
The additional earnings may, however, account for the dictator offers. Suleiman (1996) has observed that allocators on average give 28% of the pie to responders whereas this share is only 12 or 11% here. But if we compare the Suleiman data with the distribution of the shares $(y+1500)/4500$ of the "enlarged pie" by taking into account the unspent monetary endowment of responders, this share is increased to 40%. Thus in view of the "enlarged pie" our proposers appear as more generous and in view of what proposers can actually distribute (the

---

[6] According to rigorous statistical standards in the 2nd round only the averages of matching groups are independent. Since all experience effects are minor, this is neglected here. Our essential results rely on significant 1st round-effects and are confirmed by 2nd round effects.
[7] When comparing the thresholds we only consider the cases with $l_{\lambda=0} > 0$ & $l_{\lambda=1/3} > 0$ & $l_{\lambda=2/3} > 0$. Figures III.1.a, b and c condition separately on positive limits. $\delta_{\lambda=0} < \delta_{\lambda=1/3}$ (Wilcoxon-test, p=0,05) in both rounds. $\delta_{\lambda=0} < \delta_{\lambda=2/3}$ (Wilcoxon-test, p=0,05) in the 1st round.
[8] In our analyses we usually use non-parametric tests for measuring relative but not absolute differences. Obviously the absolute differences in the offers are much larger than in the acceptance thresholds (compare Figures III.1.a, b, c to Figures III.2.a, b, c, d).
[9] $y_{\lambda=0} > y_{\lambda=1/3}$, p= 0,05, in the both rounds; $y_{\lambda=1/3} > y_{\lambda=2/3}$, p=0,1 for the 2nd round, non-significant for the 1st round ; $y_{\lambda=2/3} > y_{\lambda=1}$, p= 0,01, in both rounds.

"small pie" of 3000) as more thrifty.[10] For an easy graphical illustration Figures III.2.a to d present the offer distributions for λ=0, 1/3, 2/3, and 1, respectively.

Figure III.2.a: The offer distribution for l=0 (mean=1078, std.dev.=629,04, N=80)

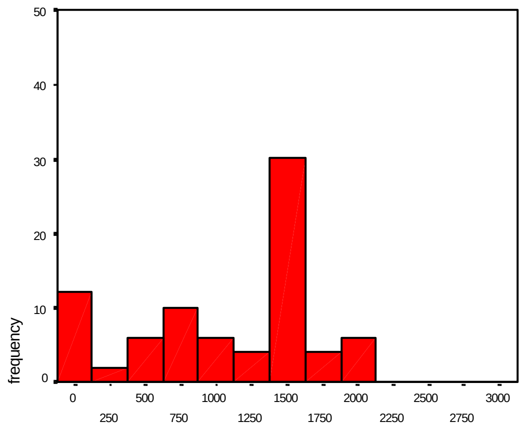
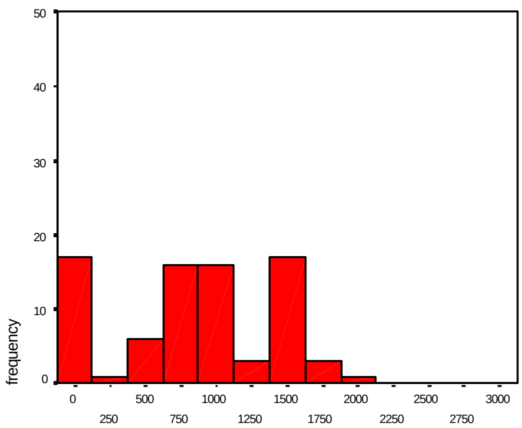


Figure III.2.b: The offer distribution for l=1/3 (mean=842, std.dev.=565,23, N=80)



[10] Another explanation would be that proposers do not care for the responder's well being if the weakness of responders is (most likely) self selected (see Weiner, 1980 for related effects of self-responsibility).

Figure III.2.c: The offer distribution for l=2/3 (mean=770, std.dev.=579,95, N=80)

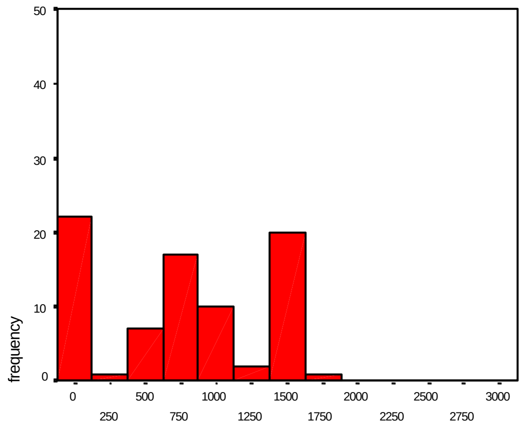
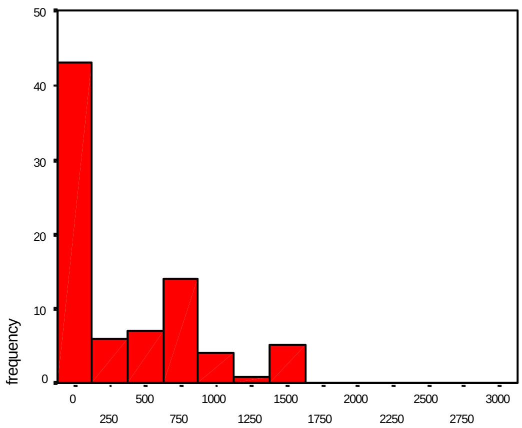


Figure III.2.d: The offer distribution for l=1 (mean=353, std.dev.=458,45, N=80)



Only for the extreme values of λ there is an outstanding mode, namely the lowest range in case of the dictator game (λ=1), and the equal split-range in case of the ultimatum game (λ=0). For the intermediate λ-values both modes coexist. What is different here is a stronger tendency of compromising between strategic and fairness concerns by choosing offers y in the range $350 \leq y \leq 1350$ which accounts for 51% of the offers for λ=1/3, and for 45 % in case of λ=2/3 (for λ=0 and 1 the corresponding shares are 32 % each).[11]

a. Choosing between games

Let us now describe how responders evaluate the different degrees of veto power (with no veto power, i.e. λ=1 serving as the status quo). Figures III.3.a, b and c give the distribution of limit prices for λ=0, 1/3, and 2/3.[12] The result is quite counterintuitive. On average responders

[11] The minor peak around y=750 can be, of course, also explained by equity theory applied to the "enlarged pie" of 4500=3000+1500.

[12] Although there is an experience effect for λ=1/3 and λ=2/3 (Wilcoxon tests, p=0,05), for an easy illustration we present the results for both rounds. When testing the effect of λ on limit prices we consider the 1st and 2nd rounds separately.

seem to evaluate more veto power less (the mean limit price is 381,4; 512,5; and 613,5 for λ=0, 1/3, and 2/3 respectively) and this difference is significant for any comparison of limit prices for different λ-values in the both rounds (Wilcoxon test, p=0,05). Whereas for λ=1/3 and 2/3 the mode is to invest up to one third of the monetary endowment (1500) in veto power, limit prices for λ=0 are more evenly distributed in the range $0 \leq l \leq 700$ (the standard deviation is largest for λ=0). We thus can conclude:

More veto power is evaluated less. More specifically, the certainty equivalents l for higher (l=0 versus l=1/3 or 2/3, l=1/3 versus l=2/3) veto power are usually lower.

4. Explaining behavior

Let us start our discussion with ***response*** behavior. The thresholds are lower for the ultimatum game than for the other two values of $\lambda<1$, but there is no significant difference in thresholds between λ=1/3 and 2/3. Neither game theory nor equity theory suggests that acceptance thresholds should depend on λ. In table IV.1 we view any threshold $\delta \leq 200$ as confirming game theory and any threshold between 1400 and 1600 as inspired by equity theory where we include all responder participants. [13] We can conclude that 50% of the δ-decisions (120 out of 240) fall either into the category reflecting strategic thinking or equity considerations. More (than twice as many) responders engage in equity considerations than in strategic thinking.

Table IV.1.: The distribution of d decisions in the strategic (d£200) or equity (1400£d£1600) range

	λ=0 (N=80)	λ=1/3 (N=80)	λ=2/3 (N=80)	All (N=240)
$\delta \leq 200$	2+19	2+7	2+5	6+31
$1400 \leq \delta \leq 1600$	25	26	32	83

Responders –who are in general very much inclined to punish[14]- may, of course, consider carefully how much it costs them to harm a greedy proposer. More specifically, responders might rely on the relation $(1-\lambda)x$ / $(1-\lambda)y$ for $\lambda<1$ measuring the relative loss of the proposer (as compared to the one of the responder) in case of rejection: Since the factor $1-\lambda$ cancels out, this provides another justification of no or weak λ-effects on response behavior. This can account for the similarity of the $\delta_{\lambda=1/3}$ and $\delta_{\lambda=2/3}$ distribution. [15]

[13] For all participants who chose 0 as limit price the threshold is 0. We account for them separately by adding their number to the number of responders who bid positively and choose 0 as threshold.
[14] The % share of positive acceptance thresholds is 74, 89, and 91 % for λ=0, 1/3, 2/3.
[15] A version of the ultimatum game where the relation of losses of both players is always 1 has been experimentally investigated by Ahlert et al. (1999).

Figure III.3.a: The distribution of limit prices for l=0 (mean=381, std.dev.=388,58, N=80)

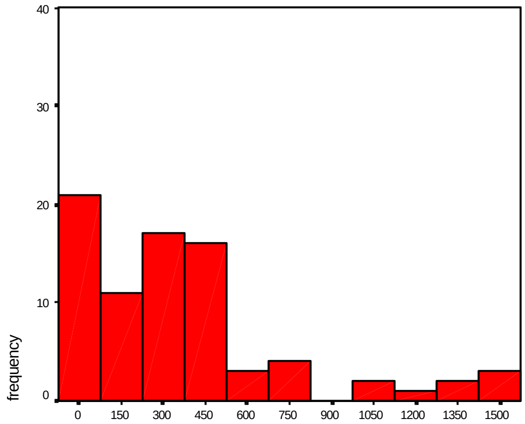


Figure III.3.b.: The distribution of limit prices for l=1/3 (mean=513, std.dev.=326,62, N=80)

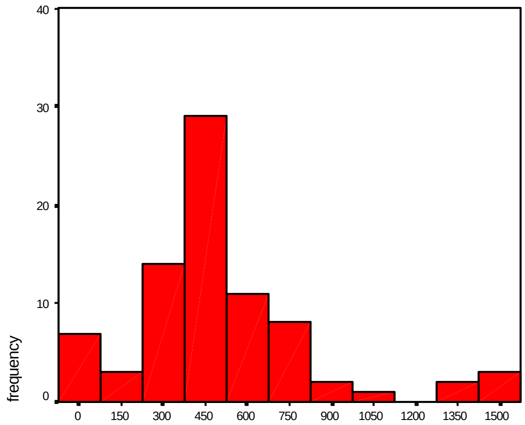
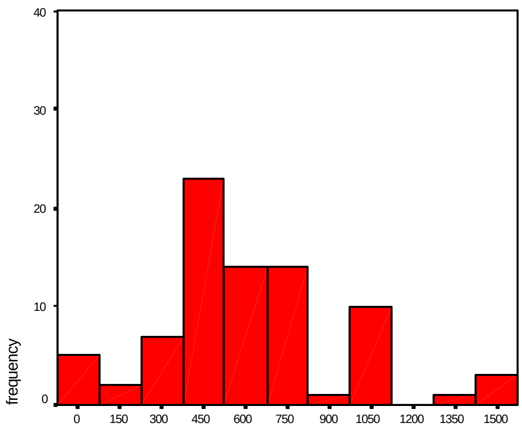


Figure III.3.c.: The distribution of limit prices for l=2/3 (mean=613, std.dev=326,24, N=80)



In sum we can conclude:
Acceptance thresholds usually are not higher for stronger veto power..

Regarding the ***choice of certainty equivalents*** (*l*-values) our main result was that more veto power is evaluated less. Since one does not command veto power at all when not buying it, the payoff expectations for the dictator game (λ=1) might explain why responders do not react monotonically to veto power. Figures IV.1.a and b illustrate the expected offers for λ= 1, separately for the 1st and 2nd round .

Figure IV.1.a:
The expected offers for l= 1 for the 1st round
(mean=1030, std.dev.=679,13)

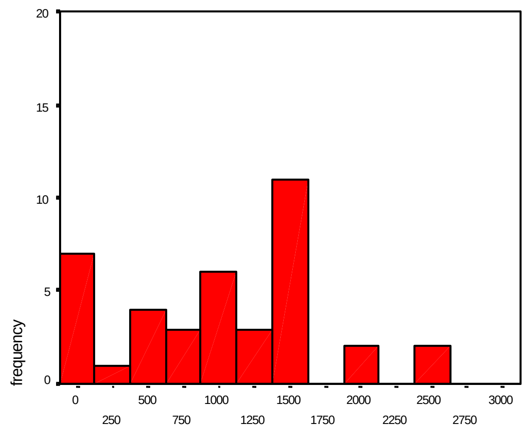
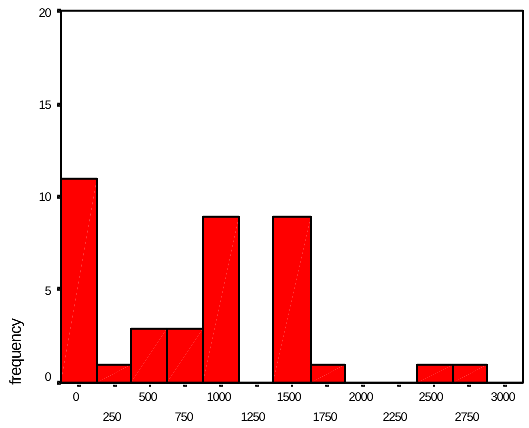


Figure IV.1.b:
The expected offers for l= 1 for the 2nd round
(mean=862, std.dev.=718,43)



Compared to the actual offer distributions the expectations are far too optimistic. Even more surprisingly they did not become significantly more realistic with experience (Wilcoxon test). Although the payoff expectations for λ= 1 might explain why responders do not want to invest in veto power they cannot explain why the limit price *l* increases with λ.

Whereas the threat of veto power is an effective mean to induce fair offers (see Figures III.2.a, b, c, d)) its actual execution implies always an inefficiency which increases with 1-λ. Could it be that responders care for efficiency but anticipate that they might nevertheless engage in punishing meager offers? More specifically, assume that a responder when choosing the limit price *l* is mainly guided by efficiency considerations but anticipates that she will reject meager offers, e.g. offers in the range $y \leq 1000$ for λ<1. If this responder expects – quite realistically- heterogeneity in offers, she will predict conflict with positive probability. Then the efficiency minded responder, when choosing *l*, could argue: "I better do not care for more veto power since this would imply an (even greater) inefficiency in case of conflict".

Whereas such an argument can explain even a decreasing evaluation of (the strength of) veto power, it does not account for the phenomenon of positive limit prices *l* (87% of all limit prices *l* are positive). By setting *l*=0 an efficiency minded proposer always could exclude veto power and thus the risk of rejection. Apparently most responder participants were afraid of being powerless (in spite of their too optimistic expectations for $\lambda = 1$). It seems that veto power is seen as an effective mean of self defense (preventing exploitation by meager offers) but also as something to be afraid of (one can hurt oneself by executing veto power). [16]

Another explanation for avoiding strong veto power can be the (belief in) crowding out (see Frey, 1997) of proposer generosity by veto power. The argument is here that proposers only feel responsible for the well-being of responders when responders are powerless. So acquiring veto power means to substitute intrinsic proposer generosity by proposer fear of rejection, a substitution which a responder may regret. This can explain why veto power is only poorly (small l values) or not at all (l=0) evaluated. The argument does not explain, however, that the counterintuitive λ-monotonic evaluation of veto power usually goes along with high limit prices l. [17]

In view of our data (especially the expected offers in case of $\lambda=1$) responders were much too optimistic concerning proposer generosity when proposers do not have to fear a veto. Did this result in higher limit prices in the 2nd round (after experiencing proposer greediness)? In Figures IV.2 the left diagram illustrates the actual $\lambda=1$ offer distribution in the 1st round. The right diagram presents the change in the average limit prices of their responders(individual averages of the three l-choices for $\lambda = 0, 1/3, 2/3$) from round 1 to round 2. For only 1 responder the change is negative, for 14 there is no change whereas 18 reacted with a higher (average) evaluation of veto power. Although altogether the correlation between experienced $\lambda=1$-offers in round 1 and the change in the average limit price from the 1st to the 2nd round is insignificantly negative(Spearman correlation, -0,21), this negative dependence becomes significant (Spearman correlation: -0,34) when excluding responders whose average limit prices did not change at all.

[16] One is reminded of the discussion (mainly in the United States of America) whether arms (guns etc.) in private hands is a welcome possibility of self-defense or a risk (by allowing much more dramatic accidents and crimes).

[17] Crowding out is usually seen as being driven by extrinsic concerns (here veto power) and not by their relevance (here the degree of veto power). λ-monotonicity at high limit prices would mean that responders believe in λ-dependent crowding out but trust even more in proposers' fear of rejection.

Figure IV.2: Actual offer distribution in the 1st round for l=1(mean=373, st.dev.:500,30, N=33)

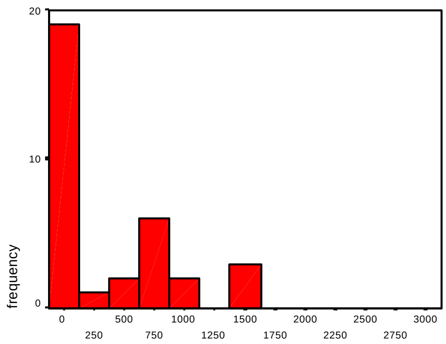
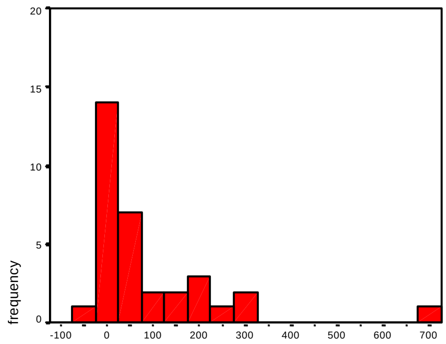


Figure IV.2: Change in average limit prices from round 1 to round 2 for those responders who played the dictator game in the 1st round (mean=88, std.dev.=143,34, N=33)



We can conclude that responders trust less in intrinsic proposer generosity in the 2nd round[18]. Moreover, the changes in limit prices from the 1st to the 2nd round are negatively correlated with experienced dictator offers. Nevertheless in the 2nd round many responders remain λ-monotonic in limit prices (mean l for λ=0, λ=1/3, λ=2/3 are 310, 515, 612, respectively). Thus from the 1st to the 2nd round responders did not vary much in their regard of efficiency and /or crowding out.

5. Types of behavior

We again start with responders who can be classified in

-(weakly) 1-λ-monotonic types satisfying $l\,(\lambda=0) \geq l\,(\lambda=1/3) \geq l\,(\lambda=2/3)$ who do not evaluate more veto power less [19] and

-λ-monotonic types with $l\,(\lambda=0) \leq l\,(\lambda=1/3) \leq l\,(\lambda=2/3)$ and $l\,(\lambda=0) < l\,(\lambda=2/3)$ who at least once react negatively to more veto power [20].

In Table V.1. we count the two types separately for the 1st and 2nd round and for constancy over both rounds. Of the altogether 40 responders 21 are constantly λ-monotonic, i.e. meet the criterion of λ-monotonicity in both rounds. Thus 5 λ-monotonic responders unlearn and 3 other responders learn λ-monotonicity from the 1st to the 2nd round [21].

---

[18] The limit price l in the 2nd round is larger than the one in the 1st round for responders with λ=1 in the 1st round (for λ=1/3 and 2/3 it is significant at p=0,01, Wilcoxon test, for λ=0 it is weakly significant, p=0,108).

[19] Notice that game theory suggests l=0 and 0- acceptance thresholds, i.e. non-reactivity to λ.

[20] There were only 2 persons in both rounds who did not correspond to one of the two types. We ignore them in the following.

[21] One might , of course, rely on a more demanding classification of types by demanding the corresponding criterion also for the acceptance thresholds, e.g. $\delta\,(\lambda=0) \geq \delta\,(\lambda=1/3) \geq \delta\,(\lambda=2/3)$ for (weakly)1-λ-monotonic demands. In Table V.1 the numbers, implied by such a more restrictive definition are given in brackets. Regarding thresholds δ we let equality even for the group called by limit prices 1-λ-monotonic:$\delta\,(\lambda=0) \leq \delta\,(\lambda=1/3) \leq \delta\,(\lambda=2/3)$. The number of consistently λ-monotonic types, whose thresholds δ also are λ-monotonic is (with 13 out of 40 or 32 %) still impressively large.

Table V.1.: The classification of responders' types
The first number refers to classification based on certainty equivalents, the numbers in brackets also take the thresholds into account .

type	1st round	2nd round	in both rounds
(weakly)1-λ-monotonic	12 (12)	14 (11)	10 (8)
λ monotonic	26 (21)	24 (17)	21 (13)

Table V.2 reveals a dramatic difference in the expected $\lambda=1$-offer for 1-λ-monotonic (mean expected offer 625) and λ-monotonic (mean expected offer 1225) types in the 1st round (p=0,01, Mann-Whitney test). For the 2nd round the difference is greatly reduced and non-significant.[22]

Table V.2: Expected dictator-offers for the two responder types

type of responder	mean expectation ($y_{\lambda=1}$) in the 1st round	mean expectation ($y_{\lambda=1}$) in the 2nd round
(weakly)1-λ- monotonic	625	893
λ monotonic	1225	979

Proposers are mostly 1-λ-monotonic in the sense $y(\lambda=1) \leq y(\lambda=2/3) \leq y(\lambda=1/3) \leq y(\lambda=0)$ and $y(\lambda=1) < y(\lambda=0)$ of offering more when facing a more powerful responder (19 of altogether 40 proposers in the 1st round, 20 in the 2nd round and 17 consistently for both rounds). 4 proposers who are consistently λ-monotonic in both rounds when $\lambda<1$ offer less in the dictator game than in the game with $\lambda=2/3$.
The equity oriented proposers with $1400\leq y \leq 1600$ regardless of $\lambda = 0, 1/3, 2/3$ or 1 are rather rare (3 in the 1st round, 2 in the 2nd round and 1 consistently over both rounds). There is another equity oriented type of proposers who rely on the "enlarged pie" of 4500 by including the 1500 endowment of proposers. Such proposers offer y=750 what implies (in case of acceptance) an equal split of the "enlarged pie" (10%, 12% in the 1st, respectively in the 2nd round, 8 % constantly for both rounds). For a larger range, e.g. in the sense of $650\leq y\leq 850$ the percentages do not much increase.
The dominance of λ-monotonic limit prices in the strict form of $l(\lambda=0\leq l(\lambda=1/3)\leq l(\lambda=2/3)$ & $l(\lambda=0)< l(\lambda=2/3)$ is very surprising and appears at first sight quite counterintuitive. Let us therefore perceive the situation of a responder who, when determining the three limit prices $l(\lambda=0)$, $l(\lambda=1/3)$, $l(\lambda=2/3)$ has to anticipate how offers y and-in a multiple selves –tradition [23] (see Frank, 1996)-how acceptance thresholds δ depend on λ. How can one specify such anticipated reactions? One way is to assume true expectations, i.e. responders anticipate the true offers y and the true acceptance thresholds δ. The implications for true expectations are described by Table V.3. It lists for each λ-value in the first column the expected joint payoff (the sum of the average expected payoffs for the proposer and the responder) and the average

[22] There is diversity in information feedback: Some responders learn what the dictator offers ($\lambda=1$) but others do not. Consequently for a more clear picture in the 2nd round one should control for information feedback, especially which dictator offer has been experienced in the 1st round.
[23] What is meant here is that a responder predicts his own response behavior as he predicts proposer behavior, e.g. like "I can well imagine that a meager offer will upset me a lot and that I will love to reject it if I can".

rejection rate, in the second column the average expected responder payoff, separately for 1-λ-monotonic and for λ-monotonic responders.[24]

Table V.3.: Expected joint and individual outcomes

λ	1-λ-monotonic		λ-monotonic	
	expected joint outcome from the small pie (3000) -rejection-rate	expected individual outcome from the small pie (3000)	expected joint outcome from the small pie (3000) -rejection-rate	expected individual outcome from the small pie (3000)
	1st round			
0	1560 48%	764	1410 47%	752
1/3	1820 59%	604	1560 72%	520
2/3	2475 52%	694	2253 75%	618
1	3000 0%	363	3000 0%	363
	2nd round			
0	1410 53%	681	1680 44%	819
1/3	1660 67%	551	1600 70%	536
2/3	2350 65%	642	2270 73%	626
1	3000 0%	341	3000 0%	341

What Table V.3. suggests is that λ-monotonic responders could be efficiency guided or rejection-minded: In the range λ< 1 both, the "expected sum" as well as the "rejection rate" are largest for λ=2/3 in round 1 and 2. Since the average (expected) responder payoff is always largest for λ=0, this can be viewed as supporting "1-λ-monotonicity". These payoffs are, however, consistently u-shaped, i.e. higher for λ=0 and λ=2/3 than for λ=1/3. The average limit prices *l* neither of the (weakly) 1-λ-monotonic nor of the λ-monotonic responders reflect the u-shaped incentives derived from true expectations.

Now responders could hardly know how proposers and responders will play the various λ-games. Furthermore, a responder might not care what responders in general will reject but rather rely on his own, possibly very untypical (anticipated) response behavior. Nevertheless we think that Table V.3. provides a surprising insight in actual incentives of responders: Since a switch from λ=0 to λ=2/3 increases the "expected sum" by 843 or 60% at the expence of a 134 or 18% reduction of the own payoff in the 1st round, respectively by 599 or 35% at the expense of 193 or 24% in round 2, efficiency minded responders could be induced to avoid the "less efficient" ultimatum game. Whereas it could be intuitively expected how the sum of payoffs increases with λ and that responders will earn most by playing the ultimatum game, the u-shape of the average expected responder payoff is a striking phenomenon which apparently none of the responder participants has anticipated.

[24] The calculation for each λ-value matches every λ-offer with every λ-acceptance threshold of our data file what determines an average rejection rate and average payoffs.

6. Discussion

To answer the question "Why do people veto?" let us first consider why responders could care for veto power. A convincing reason is that proposers offer more the more veto power responders command. Thus by accepting all (positive) offers responders would earn more and should thus be willing to decrease *l* with an increasing λ-parameter. This can explain the behavior of only one of the altogether 4 responders with strictly monotonic limit prices l (λ=0) > l (λ=1/3) > l (λ=2/3) and low acceptance thresholds, e.g. $\delta \leq 200$. Since most responders do not accept all positive offers in case of $\lambda < 1$, their expectations for the various λ-rules should also take into account the possibility of rejecting such offers. As shown by Table V.3. the incentive to acquire veto power is then less obvious. Thus the crucial question seems to be "why do people veto?".

The answer to "Why do responders care for veto power?" does not predetermine how to answer "Why do responders veto?". Influencing the λ-rule via one's bid l for a λ-rule with λ<1 instead of playing the λ=1 dictator game is an institutional device which affects both, the proposer who can condition his offer on the prevailing λ-rule as well as the responder. Compared to this vetoing by choosing a positive acceptance threshold δ is a behavioral attitude within a given institutional setting (in the sense of a given λ-rule). It is quite reasonable to bid 1-λ monotonically –l (λ=0) > l (λ=1/3) > l (λ=2/3) – but not to veto at all (e.g. in the sense of $\delta \leq 200$ for any λ).

Nevertheless we have strong evidence that responders veto (91% of all responders choose at least one acceptance thresholds δ> 200; for the 1st (2nd) round this share is 90 % and 92 %, respectively). Most theoretical studies, inspired by data of ultimatum experiments, have tried to answer the question why responders reject substantial positive offers like *y* offers satisfying y > 200 (for instance see Bolton,1991, Rabin,1993, Kirchsteiger, 1994, Bolton and Ockenfels, 1999, Fehr and Schmidt,1999, Binmore and Samuelson, 1994, Huck and Oechsler, 1999, Roth and Erev,1995). Generally, the explanation is based on fairness issues: Responders reject those offers which are seen as unacceptably unfair even if substantial.
Table VI.1. shows the importance of fairness according to the post-experimental questionnaire[25] by those responders who chose δ below (above) the median δ for λ=0, 1/3, and 2/3. The last column lists the means from those responders who were consistent in choosing relatively low (high) δ values for the different degrees of veto power.

Table VI.1.: Do responders reject offers driven by motive of fairness? The subjective importance of fairness for groups of relatively low (high) acceptance thresholds d.
(Only cases l > 0 are presented.[26])

	λ=0	λ=1/3	λ=2/3	λ=0 & λ=1/3 & λ=2/3
$\delta \leq$ median δ	3,46 (N=15)	3,38 (N=18)	3,3 (N=18)	3,1 (N=10)
δ> median δ	3,60(N=15)	3,86 (N=18)	3,9 (N=19)	4 (N=10)
Results from M-W-u tests	Non sign.	p= 0,1	p=0,05	p=0,1

[25] Two questions are related to the importance of fairness issues. The subjects replied from 1 to 5 expressing the subjective importance of the following motives playing the game: "I wanted a fair income distribution with my partner" and "I wanted to prevent the chance of injustice". The correlation of the answers to these two questions (in the sample of responders) is 0,48, so that the use of a combined value is justified (the average).
[26] Although l=0 implies (factually) δ=0, it does not mean necessarily that the responder would accept any offer if she played ultimatum game.

The results are in line with the hypothesis that responders who reject larger offers care more about fairness. Quite interestingly this relationship is the strongest when λ=2/3. Fairness driven responders express their behavioral attitude more consistently when environmental constraints are weaker in the sense that the losses resulting from rejections are low. This is perfectly in line with the results of research focusing on the relationship between attitude and behavior (Ajzen and Fishbein, 1977, Ajzen, 1991).
Moreover this result attracts attention to another explanation of why less veto power is evaluated more. Weaker veto power allows responders to express quite freely their attitudes, i.e. opinions about the fair distribution . Such possibility is appreciated by those engaged in the interaction. This effect is known as "voice" effect (Thibaut and Walker, 1978, Greenberg,1990) in social justice research.

Since veto power is not granted freely, we might explain positive acceptance thresholds by a sunk cost argument[27] (which would also be applicable in the study of Güth and Tietz, , who have auctioned responder roles). When testing this effect we control for fairness orientation. More specifically the linear regression analysis of the average acceptance threshold accounts for the average limit price and the relative importance of fairness. That is why we test the sunk cost hypothesis choosing the method of linear regressions on the average acceptance threshold where we enter the average limit price and the relative importance of fairness.[28]
In Table VI.2. we present the regression results for both rounds. In view of the poor explanation for the whole sample, we executed regression analyses separately for the two major responder types (1-λ-monotonic, λ-monotonic). By doing so we reached considerable improvement. Based on the results presented in Table VI.2 we can conclude that for 1-λ-monotonic-type it is the sunk-cost argument which explains the variance in acceptance thresholds. This is in sharp contrast with the group of λ-monotonic responders who are more influenced by fairness considerations.

Table VI.2.: What are the determinants of thresholds?
The results from linear regressions on average d
β_F= the β value for subjective importance of fairness in the equation
β_l= the β value for the average limit price in the equation

	1st round	**2nd round**
all responders (bidding positively for limit prices, N=30)	R=0,27 R^2=0,07 p=0,34 β_F=0,15 p=0,33 β_l=0,22 p=0,33	R=0,20 R^2=0,04 p=0,55 β_F=0,09 p=0,62 β_l=0,19 p=0,31
1-l -monotonic-type N=10 (13) for the1st (2nd) round	R=0,72 R^2=0,52 p=0,07 β_F= -0,37 p=0,21 **b_l=0,519 p=0,10**	R=0,40 R^2=0,16 p=0,40 β_F= -0,33 p=0,27 β_l=0,23, p=0,43
l -monotonic -type N=19 (16) for the1st (2nd) round	R=0,63 R^2=0,40 p=0,02 **b_F= 0,60 p=0,01** β_l= 0,14 p=0,47	R=0,58 R^2=0,33 p=0,07 **b_F= 0,55 p=0,03** β_l=0,30 p=0,21

[27] Normatively sunk costs do not matter, of course, but behaviorally we are prone to yield to them
[28] Taking the averages is justified because the sunk cost effect works at the individual level and since nothing speaks for a λ-dependence.

7. Conclusions

How do our results help to answer the questions, raised in the introduction?

Do responders invest in veto power? More than 90% invested at least in one λ-type of veto power with $\lambda<1$ and this attitude is rather stable (see Footnote 5). Those who invest (choose positive limit prices l) usually invest 1/3 of the monetary endowment of 1500. Thus overall responders are reluctant to rely on trust that proposers are intrinsically fair (even when $\lambda=1$).

Do limit prices l increase with 1-λ? This is true only for ¼ of the responders who were classified as "1-λ- monotonic". The stronger group of "λ-monotonic" responders surprisingly evaluates more veto power (smaller λ) less although many of them rely on substantial limit prices. One can explain the latter type of behavior by a desire of responder to have a "voice", i.e. to be able to reject, but not necessarily in a harmful way.

Do acceptance thresholds δ increase with the willingness to pay l for veto power? The answer is yes for the 1-λ-monotonic responders whereas the surprisingly much stronger group of λ-monotonic responders is more influenced by fairness concerns.

Does costly acquired veto power suggest new fairness ideas? At least for the dictator game ($\lambda=1$) there is an obvious alternative to fair offers y=1500, namely to split the "enlarged pie" 4500=3000+1500 equally, i.e. the offer of y=750. According to Figure III.2.d proposers, if they are fair, prefer usually the lower fair offer of 750. Most proposers, however, do not mind to rely on y=0 what means that the responder only keeps his monetary endowment. For λ-values with $\lambda<1$ one would expect that the commonly known price of λ-veto power suggests new contributions and/or rewards in the terminology of equity theory (Homans, 1961). Since the information has not been provided in our experiment, we cannot asses the importance of such alternative ideas. Future research which is mainly interested in testing such competing fairness ideas should inform both players about the actual price of veto power (if bought) before playing the game.
The tremendous support of endowment or status quo-effects (see, for instance Kahneman, Knetch, and Thaler, 1990) suggests that in a willingness to accept-study (responders get λ-veto power instead of their monetary endowment, see Footnote 1) limit prices or certainty equivalents will be substantially higher. We nevertheless expect that a substantial fraction of responders will bid λ-monotonically as observed here.

References

Ahlert, M. , A. Crüger and W. Güth (1999): How Paulus Becomes Saulus-An Experimental Study of Equal Punishment Games, *working paper,* Humboldt –University of Berlin.

Ajzen, I. (1991): The theory of planned behavior, *Organizational Behavior and Human Decision Processes* 50, 179-211.

Ajzen, I. and M. Fishbein (1977): Attitude-behavior relations: a theoretical analysis and review of empirical research, *Psychological Bulletin* 84, 888-918.

Becker, J.M., M.H. de Groot and J. Marshak (1964): Measuring ability by a single-response sequential method, *Behavioral Science* 8, 41-55.

Binmore, K. and L. Samuelson (1994): An economist's perspective on the evolution of norms, *Journal of Institutional and Theoretical Economics* 150 (1), 45-63.

Bolle, F. (1990): High reward experiments without expenditure for the experimenter? *Journal of Economic Psychology* 11, 157-167.

Bolton, G. (1991): A comparative model of bargaining: Theory and evidence, *American Economic Review* 81, 1096-1136.

Bolton, G. and A. Ockenfels (2000): ERC-A Theory of Equity, Reciprocity and Competition. *American Economic Review*, forthcoming.

Frank, B. (1996): The use of internal games: The case of addiction, *Journal of Economic Psychology* 17, 651-660.

Frey, B. (1997): *Not just for the money. An economic theory of personal motivation*, Cheltenham: Edward Elgar Publishing.

Fehr, E. and K. Schmidt (1999): A theory of fairness, competition and cooperation, *Quaterly Journal of Economics* 114, 817-868.

Greenberg, J. (1990): Organizational justice: yesterday, today and tomorrow, *Journal of Management* 16/2, 399-432.

Güth, W. and R. Tietz (1986): Auctioning ultimatum bargaining positions. How to decide if rational decisions are unacceptable? *Current Issues in West German Decision Research*, ed. R.W. Scholz, Frankfurt, 173-185.

Güth, W. and H. Weck-Hannemann, (1997): Do people care about democracy? – An experiment exploring the value of voting rights, *Public Choice* 91, 27-47.

Hoffman, E. and M.C.Spitzer (1985): Entitlements, rights and fairness: an experimental examination of subject concepts of distributive justice, *Journal of Legal Studies* 14, 259-297.

Homans, G. C. (1961): *Social behavior: Its elementary forms*, New York: Harcourt Brace

Huck, S. and J. Oechssler (1999): The indirect evolutionary approach to explaining fair allocations, *Games and Economic Behavior* 28, 13-24.

Kahneman, D., Knetch, J.L., and Thaler, R. (1990): Experimental test of the endowment effect and the Coase theorem. *Journal of Political Economy* 98, 1325-1348.

Kirchsteiger, G. (1994): The role of envy in ultimatum games, *Journal of Economic Behavior and Organization* 25, 373-389.

Prasnikar, V. and E. Roth (1992): Considerations of fairness and strategy: Experimental data from sequential games, *Quaterly Journal of Economics* 106, 865-888.

Rabin, M. (1993): Incorporating fairness into game theory and economics, *American Economic Review* 83, 1281-1302.

Roth, A.E. (1995): Bargaining Experiments, in: J.Kagel and A.E. Roth (eds): *Handbook of Experimental Economics*, Princeton: Princeton University Press.

Roth, A.E. and I. Erev (1995): Learning in extensive-form games: Experimental data and simple dynamic models in the intermediate term, *Games and Economic Behavior* 8, 164-212.

Selten, R. (1975): Reexamination of the perfectness concept for equilibrium points in extensive games, *International Journal of Game Theory* 4, 25-55.

Suleiman, R. (1996): Expectations and fairness in a modified ultimatum game, *Journal of Economic Psychology* 17, 531-554.

Thibaut, J. and L. Walker (1978). A theory of procedure, *California Law Rev*iew 66, 541-566.

Weiner, B. (1980): A cognitive (attribution) emotion-action model of motivated behavior: An analysis of judgments of help-giving. *Journal of Personality and Social Psychology* 39, 186-200.

Appendix

Instructions

You are ahead of two rounds in the experiment. You and some other person whose anonymity will not be revealed by us can share 3000 HUF in both rounds. Your partners in the two rounds are different persons. First we explain the rules, according to which the money is shared, then you make decisions. All participants read the same instructions. After carefully reading these instructions you can privately ask clarifying questions. Please refrain from any public comments.
Your code number in the experiment:............................
Save this sheet with your code for sake of identification when you get the money . The money, earned in the experiment will be paid to you in room 120, right after the experiment.

The meaning of l
The two participants of the decision situation who can share 3000 HUF are X and Y. (the first character in your code tells you whether you are an X or Y).
X decides on his offer y to Y with $0 \leq y \leq 3000$, which is what she suggests that Y should get of the total amount of 3000 HUF. The remainder 3000-y is what X wants to keep. Then Y decides whether to accept the offer y by X or not. If she accepts it X and Y get the portions as suggested by X. If Y rejects the offer y, these portions are modified in a well-defined manner. However, Y has the latter chance (whether to accept or reject) only if she bought the right of rejecting in advance. If she does not have this right of rejection they share the pie as suggested by X for sure.
Let us call this rejection right as λ! This parameter λ can have three possible values (0, 1/3, 2/3). In the case of rejection λ functions as a factor, X gets an amount of $\lambda\cdot$ (3000-y), and Y an amount of $\lambda\cdot y$ from the pie. As you can see, by rejection $(1-\lambda)\cdot$ 3000 HUF is lost – the smaller the value of λ the more money is lost and the more the amounts suggested by X for Y and for himself change.

How is l determined?
Whether the rejection right, available for Y, relies on the λ-value 0, 1/3 or 2/3 is not known in advance. It is randomly determined after Y and X have made their decisions in the experiment. So, Y has to decide for all three possible λ values how much it is worth to her to play the game with rejection right instead of playing it without this right.

The random price mechanism
Assume that the Y's decision is about how much it is worth to him to play the game with rejection right $\lambda=2/3$ instead of not having this right. She can simply make this decision by stating an upper price limit l with $0\leq l \leq 1500$. For buying the right she gets 1500 HUF from us. The money not spent on this right can be kept by Y. How much the decisional right actually costs is determined randomly. We randomly choose a value (price=p) in the range $0< p\leq 1500$. If this randomly chosen p is larger than the limit price l, then Y does not buy the rejection right with $\lambda=2/3$, i.e. X and Y share the money as X dictates. In case of $p\leq l$, Y has bought this $\lambda=2/3$-rejection right, i.e. she can decide whether to accept or reject (multiply both proposed amounts 3000-y and y by $\lambda=2/3$). The price p is subtracted from what Y receives in total (the 1500 HUF plus what he gets from the pie).
In the same way Y has to choose a limit l for $\lambda= 0$ and $\lambda=1/3$.

The experiment will proceed as follows (3.a) and (3.b) are simultaneous decisions.
1.Everybody understand the rules reading carefully these instructions.

2.You will have to fill out a simple questionnaire with few control questions regarding the rules.

3.a.) Y chooses her upper price limit for buying rejection right forλ=0, 1/3 and 2/3. Y will have to specify the limit l for all three λ-values separately.

3.b) X chooses his offer y to Y for all four possibilities (Y has no rejection right, Y has rejection right with λ=0, 1/3 and 2/3). X will have to specify the offer y for all four possibilities.

4. Y decides about her acceptance thresholds separately for all λ values(λ=0, 1/3 and 2/3).
The acceptance threshold means that Y accepts any offer not smaller than the threshold. Y will have to choose an acceptance threshold for all three λ-values.

5.Knowing all three limits l for all Y participants we randomly select a price p in the interval $0< p \leq 1500$ which price will be publicly announced. By a random move it will be decided for each pair of X and Y whether the value λ=0 or λ=1/3 or λ= 2/3 can be bought by Y.

6. We compute the earnings of all participants and inform them about what they have earned. After the 1st round the experiment is once repeated. In the 2nd round you meet a new partner, but keep your role (X or Y).

Let us summarize the earnings (π) of X and Y in a round:
If the rejection right is bought by Y:

$\pi X = 3000 - y_\lambda$, in case of acceptance[29]
$\pi X = (3000 - y_\lambda) \cdot \lambda$,in case of rejection

$\pi Y = y_\lambda - p + 1500$, in case of acceptance
$\pi Y = y_\lambda \cdot \lambda - p + 1500$, in case of rejection

If Y does not buy rejection right:

$\pi X = 3000 - y$
$\pi Y = y + 1500$

Control sheet
We give you an easy numerical example for sake of practice. The choices are the same for different λ-values just to make your calculations easier. Of course, in the experiment you can give different values!
Let's suppose that Y makes the following decisions:
"I am ready to pay at maximum the following amount of money (l) for the different rejection rights (with different ***l****-values):*
(i) ***l****=0 l=550*
(ii) ***l****=1/3 l=550*
(iii) ***l****=2/3 l=550"*

"My acceptance thresholds are as follows:
(i) λ=0 I accept all offers with $y \geq 1700$
(ii) λ=1/3 I accept all offers with $y \geq 1700$
(iii) λ=2/3 I accept all offers with $y \geq 1700$"

X makes the following decisions:
"(i) ***l****=0 y=1650*
(ii) ***l****=1/3 y=1650*
(iii) ***l****=2/3 y=1650*
if Y has no rejection right: y=1650"

the price of rejection right=500

How much X and Y earn if Y can buy rejection right with 0 or 1/3 or 2/3?

Which λ is available for Y?	Does she buy it?	Does Y accept the offer?	X's earning	Y's earning from sharing the pie 3000 with X	The money, not spent on the rejection right from the sum of 1500 HUF:	Y's sum earning
0						
1/3						
2/3						

[29] The unit is HUF (Hungarian Forint), 250 HUF=1$.

Data sheet

X	Y	round	$y_{(\lambda=0)}$	$y_{(\lambda=1/3)}$	$y_{(\lambda=2/3)}$	$y_{(\lambda=1)}$	$l_{(\lambda=0)}$	$l_{(\lambda=1/3)}$	$l_{(\lambda=2/3)}$	$\delta_{(\lambda=0)}$	$\delta_{(\lambda=1/3)}$	$\delta_{(\lambda=2/3)}$	$Y_{expected\ (\lambda=1)}$
111	111	1	0	0	0	0	0	200	400	1700	1700	1800	1600
112	112	1	1000	500	1000	100	500	700	1000	1499	1700	1900	1500
121	121	1	750	750	750	750	200	350	500	2000	2400	2100	2500
122	122	1	2000	1500	1500	500	1500	500	1000	1500	1500	1500	100
131	131	1	700	1200	1500	400	350	450	550	1000	1500	1500	500
132	132	1	1500	1500	1500	1500	0	0	0	0	0	0	
141	141	1	1500	1500	1500	200	300	600	600	1500	1500	1500	1000
142	142	1	1500	500	1000	0	300	300	500	1500	1500	1500	1500
211	211	1	1800	1700	1600	1500	500	500	1000	1800	1800	1800	1500
212	212	1	2000	1800	1200	1000	1000	750	500	1300	1200	1000	700
221	221	1	1800	0	0	0	0	400	500	1300	1400	1500	1350
222	222	1	750	750	750	750	200	400	800	1400	1600	1500	1500
231	231	1	750	750	750	750	500	500	500	1000	1000	1000	1000
232	232	1	1000	1	1	100	200	500	800	1000	1200	1500	1300
241	241	1	0	0	0	0	0	0	0	0	0	0	0
242	242	1	1500	0	0	0	0	0	600	0	0	1600	0
311	311	1	2000	1000	100	0	550	650	750	900	1000	1100	2000
312	312	1	1000	950	850	750	200	400	600	1500	1500	1500	1000
321	321	1	500	500	500	0	500	500	500	1500	1500	1500	1500
322	322	1	1500	0	0	0	0	0	0	0	0	0	100
331	331	1	400	1000	700	1	0	500	1000	500	500	500	1100
332	332	1	0	0	0	0	500	500	500	750	750	750	11
341	341	1	0	0	0	0	100	250	500	800	900	800	800
342	342	1	1500	750	750	0	0	500	600	1500	1500	1500	2500
411	411	1	750	750	750	750	500	500	500	1500	1500	1000	0
412	412	1	1000	1200	1500	500	1500	1500	1500	1800	1700	1500	1500
421	421	1	1500	1000	1000	0	1250	1350	1000	350	800	1280	800
422	422	1	1200	900	600	300	500	600	600	1600	1800	1500	1900
431	431	1	0	2000	1000	0	200	400	600	500	500	500	1000
432	432	1	1200	1450	1400	1000	250	550	750	1500	1700	1600	1400
441	441	1	1500	1500	1500	1500	200	250	250	1250	1250	1250	1000
442	442	1	500	650	1000	200	300	500	700	1000	1500	1500	1500
511	511	1	1500	750	750	0	10	113	320	1326	1450	1499	1300
512	512	1	1500	750	0	0	0	300	300	0	1500	1500	1400
521	521	1	1500	1500	1500	750	700	600	500	1500	1200	1000	500
522	522	1	300	600	700	750	300	300	300	750	650	500	300
531	531	1	0	0	0	0	500	700	700	1500	1800	1800	0
532	532	1	1400	900	500	500	600	500	400	1700	1600	1500	500
541	541	1	1601	1601	1601	0	250	500	600	2000	1600	1300	1500
542	542	1	1600	1501	1501	0	300	200	100	0	0	0	500
111	112	2	0	0	0	0	500	800	1000	1000	1500	2000	1500
112	111	2	1000	1000	1000	0	0	400	500	1800	1800	1800	0
121	122	2	750	750	750	750	1400	600	800	1400	900	1400	1100
122	121	2	2000	1600	1600	500	250	450	500	2000	2650	2500	2500
131	132	2	500	1500	1700	200	0	0	0	0	0	0	
132	131	2	1500	1500	1500	500	350	450	550	1000	1500	1500	500
141	142	2	1500	1200	1000	0	500	500	500	1500	1500	1500	1500
142	141	2	300	550	500	0	300	600	600	1500	1500	1500	1000
211	212	2	1800	1750	1600	1000	800	700	600	1400	1200	1000	800
212	211	2	1500	1000	1000	500	500	600	1000	1000	1800	1800	1500
221	222	2	2000	0	0	0	300	900	750	1400	1000	1500	1100
222	221	2	750	750	750	750	0	400	600	1500	1400	1100	2700
231	232	2	750	750	750	750	200	500	800	500	1000	1500	1500

232	231	2	1	1	1	100	800	800	800	1000	1000	1000	1000
241	242	2	0	0	0	0	0	0	600	0	0	1500	0
242	241	2	1500	1500	1500	0	0	300	500	0	1500	1000	0
311	312	2	2000	1000	100	0	200	600	1000	1500	1500	1500	1000
312	311	2	1500	950	850	750	1000	1500	1500	950	1200	1450	0
321	322	2	500	500	500	0	0	0	0	0	0	0	0
322	321	2	1500	0	0	0	800	800	800	2000	2000	2000	1500
331	332	2	1800	970	450	1000	500	500	500	750	750	750	11
332	331	2	0	0	0	0	0	1000	1000	500	500	500	1400
341	342	2	0	0	0	0	0	500	600	1500	1500	1500	0
342	341	2	1500	750	750	0	250	325	499	500	700	800	0
411	412	2	1500	1500	1500	1500	1500	1500	1500	1700	1800	2000	1800
412	411	2	700	1000	1250	200	500	500	500	1500	1000	500	0
421	422	2	1500	1000	1000	0	0	890	950	500	1000	800	1500
422	421	2	1500	300	300	0	1400	1400	1400	500	800	1000	800
431	432	2	1500	1000	0	0	250	500	750	1500	1700	1600	1400
432	431	2	1100	1000	1000	1200	200	300	400	500	500	500	1000
441	442	2	1500	1500	1500	1500	500	500	500	2000	2000	2000	1000
442	441	2	500	700	800	200	300	300	300	1250	1250	1250	1000
511	512	2	1500	750	750	750	0	300	300	0	1200	1200	1000
512	511	2	1500	750	0	0	1	326	326	1400	1500	1500	0
521	522	2	1500	1500	1500	750	200	300	400	750	700	750	500
522	521	2	750	750	750	750	500	600	700	1500	1300	1500	500
531	531	2	0	0	0	0	600	500	400	1700	1600	1500	800
532	531	2	1200	900	600	0	500	700	700	1000	1800	1800	0
541	542	2	1601	1601	1601	0	350	250	150	0	0	0	200
542	541	2	1200	1401	1501	0	300	601	983	1999	1500	1221	1500