

**I want to know:**

**Willingness to pay for unconditional veto power**

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### Abstract

In the Yes/No game, like in the ultimatum game, proposer and responder can share a monetary reward. In both games the proposer suggests a reward distribution which the responder can accept or reject (yielding 0-payoffs). The games only differ in that the responder does (not) learn the suggested reward distribution in the Ultimatum (Yes/No) game. Although an opportunistic responder would always accept and therefore should not be willing to pay for knowing the proposal, earlier results (Güth, Levati, Ockenfels, and Weiland, 2005) show that offers in the Yes/No game are less generous and that responders, on average, earn less in the Yes/No game. By experimentally eliciting the willingness to pay for learning the proposal, we investigate whether these effects are adequately anticipated or whether they are overstated, as observed in an earlier related study (Gehrig, Güth, Levinsky, 2003).

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JEL classification: D82, C91

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## 1 Introduction

Recent work by Güth, et al. (2005) has shown that, although they expect lower offers, proposers tend to bid more aggressively in the Yes/No game relative to the ultimatum game and responders are more willing to accept offers. This is a surprising feature since two games only differ in the information the responder has about

the proposer's offer. In order to shed more light on these behavioral traits, we have designed a set of experiments whereby responders can acquire the relevant information. We measure their willingness to pay for this information. Moreover, we analyze how proposers react to information acquisition by responders.

## 2 Specification of the underlying games

Before we describe the experimental setup, let us explain the basic issue more carefully. Consider two parties who can share a given positive monetary amount  $\omega$ . Let  $\varepsilon$  be the smallest positive monetary unit. In any finite alternating offer process, there is the final stage where one party, proposer  $X$ , decides about a final proposal, which her negotiation partner, responder  $Y$ , can accept or reject. Such a bargaining outcome can be described as

$$(x, y) \text{ with } x, y \geq \varepsilon \text{ and } x + y = \omega,$$

where  $x$  determines the share, proposer  $X$  demands for herself, and  $y$  describes her offer to responder  $Y$ . Since there is no further round of negotiations, this final proposal  $(x, y)$ , qualifies as an ultimatum. When the final stage is reached, the final proposal  $(x, y)$  can be accepted by responder  $Y$ , meaning that  $X$  earns  $x$  and  $Y$  earns  $y$ , or rejected, implying 0-payoffs for both.

Essentially, the ultimatum game (Güth, Schmittberger, and Schwarze, 1982) captures this last stage of a negotiation procedure. Compared to alternating offer games (for a very elegant analysis, see Rubinstein, 1982), the ultimatum game appears procedurally less fair. This also applies to the Yes/No game (Güth, Ockenfels, Levati, and Weiland, 2005). The games, however, differ in what responder  $Y$  knows about  $X$ 's ultimatum proposal  $(x, y)$ . In the ultimatum game, responder  $Y$  can condition her response on the specific proposal  $(x, y)$ , e.g. in the sense that she accepts some proposals  $(x, y)$  and rejects others. In the Yes/No game, such conditioning is

excluded, i.e., responder  $Y$  has to decide between acceptance (“Yes”) or rejection (“No”) without knowing the division  $(x, y)$  of  $\omega$ , suggested by  $X$ .

If responder  $Y$  behaves completely opportunistically, i.e., when she is only interested in her own monetary payoff, acceptance is strictly better than rejection, regardless whether she is aware of the actual proposal  $(x, y)$  or not. In other words: Yes is the strictly dominant strategy in the Yes/No game, whereas general acceptance in the ultimatum game is only weakly dominant. A purely opportunistic proposer who expects an opportunistic responder will, furthermore, propose  $(\omega - \varepsilon, \varepsilon)$  in both games. This suggests that opportunistic responders  $Y$  will not want to waste money on transforming the Yes/No game into an ultimatum game.

Not surprisingly, this line of reasoning does not aptly describe observed behavior in most experiments on variants of the ultimatum game. In simple variants the fair division  $(\omega/2, \omega/2)$  is often dominant. Compared to the fair split of surplus in the ultimatum game, however, in the Yes/No game observed offers tend to be significantly smaller (Güth, Ockenfels, Levati, and Weiland, 2005). Thus, responders might have an incentive to transform a Yes/No game (YNG) into an ultimatum game (UG). They can do this by acquiring (costly) information about the details of the proposal.

On the other hand, responders might think that changing from YNG to UG signals mistrust in the proposer’s generosity and thus crowds out intrinsic fairness of proposers (see Frey, 1997, and, for evidence of such crowding in principal-agent experiments, see Irlenbusch and Sliwka, 2003). If this would be anticipated, responder participants might ask for a compensation to give up YNG for UG.

Using the YNG (no conditional veto power) and the UG (conditional veto power), we first explore whether there is a difference in subjects’ behavior or not. If so, we secondly assess how adequately subjects anticipate this difference in the two situations of (un)conditional veto power. Third, we check for a possible crowding out

effect and for an endowment effect by differentiating participants who are endowed with conditional or only unconditional veto power.

We experimentally elicit responder  $Y$ 's willingness both to pay and to ask for transforming the Yes/No game into an ultimatum game by employing the random price mechanism (Becker, DeGroot, Marschak, 1963). Responder participants choose a bid  $b$ , meaning that

- at all random prices  $r \leq b$  they are willing to pay  $r$  for transforming the game
- at random prices  $r > b$  they refrain from such an investment.

To compare the behavioral intentions of  $X$  and  $Y$  in both games, both participants decide for both games, i.e.,

- proposer  $X$  chooses a proposal  $(x, y)$  for YNG and a possibly different proposal  $(x, y)$  for UG,
- responder  $Y$  selects between Yes or No in YNG and a response strategy in UG

in addition to her bid  $b$ , i.e., her willingness to pay (to accept), delineating the range  $r \leq b$  ( $r > b$ ) of (un)acceptable random prices  $r$  for transforming YNG(UG) into UG(YNG).

Without incentives to answer truthfully, we also ask for the hypothetical choices in the other role in both games and for first and second order expectations<sup>1</sup> about the other's behavior in both games.

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<sup>1</sup>Eliciting such expectations may allow to check for effects of intentionality or let-down aversion (see Geanakoplos, Pearce and Stacchetti, 1989, Rabin, 1993, and Charness and Dufwenberg, 2004).

### 3 Experimental procedure

With the help of z-tree (Fischbacher, 1998) we performed four computerized experiments in the computer laboratory of the Max-Planck-Institute in Jena. Three sessions involved 32 participants, 16  $X$ - and 16  $Y$ -participants. One session included 24 participants.

In addition to the computerized experiments in Jena, we ran an extra control session without computer support at the University of Freiburg. Here we had 41 students, 21  $X$ - and 20  $Y$ -participants. This extra experiment should help to check for systematic differences between computerized experiments and those relying on traditional pen and paper.

After reading the instructions, which were also made commonly known in Jena and Freiburg, participants had to answer a control questionnaire, checking

- for both games (YNG and UG), whether it was understood how choices determine earnings, and
- for the random price mechanism, how the bid  $b$  delineates the region of (un)-acceptable random prices  $r$ .

After the control session proposers had to simultaneously decide about offers  $(x, y)$  in YNG and UG. We also asked proposers to state hypothetical bids  $b$  for transforming the game and to state their hypothetical choices for the role as a responder in YNG and UG. Furthermore, proposers were asked to state expected response strategies of the actual responder and the expected expectations of the responder concerning own actual behavior.

Responders also had to decide simultaneously and independently about their choice in YNG, their response strategy in UG, and their bid  $b$  for transforming YNG and

UG. We additionally asked responders to state their hypothetical proposal in role  $X$  in YNG and UG and about their expected offers in YNG and UG. Furthermore, we asked responders to state their beliefs about what proposer expects to be the own actual behavior.

Since  $\omega$  was set to 10€ and  $\varepsilon$  to 1€, there existed only nine possible proposals  $(x, y)$ , namely

$$(9, 1), (8, 2), (7, 3), (6, 4), (5, 5), (4, 6), (3, 7), (2, 8), (1, 9).$$

A response strategy in UG thus required a choice between

$$\delta(x, y) = \begin{cases} 1 & \text{i.e., acceptance of proposal } (x, y) \\ 0 & \text{i.e., rejection of proposal } (x, y) \end{cases}$$

for each of these nine proposals  $(x, y)$ . Thus,  $X$  earns  $x\delta(x, y)$  and  $Y$  the amount  $y\delta(x, y)$ . In YNG,  $\delta$  cannot depend on  $(x, y)$ . Denoting by  $\delta = 1$  unconditional acceptance and by  $\delta = 0$  unconditional rejection,  $X$  earns  $x\delta$  and  $Y$  the amount  $y\delta$  in YNG.

After playing this extended game with YNG and UG as proper subgames, the experiment was repeated once with a new partner but keeping the original role ( $X$  or  $Y$ ). Actually, we relied on matching groups of four participants, two  $X$ - and two  $Y$ -participants, which qualify as independent observations even in the repetition.

If nature selects YNG as the status quo game and  $r \leq b$ , then the actual payoffs are those of the UG-play where, of course, the  $Y$ -participant must pay  $r$ . An  $X$ -participant thus earns  $x\delta(x, y)$  and the  $Y$ -participant  $y\delta(x, y) - r$ .

If, however, the randomly selected price  $r$  exceeds  $b$ , i.e.,  $b < r$ , then

- $Y$  does not have to pay  $r$  and
- the choices of  $X$  and  $Y$  for the YNG rules determine the interaction payoffs;  $x\delta$  for  $X$  and  $y\delta$  for  $Y$ .

While  $r$  was randomly chosen from  $-5 \leq r \leq 5$ , the interval  $[-5, 0]$  determined the willingness to accept (wta) and  $]0, 5]$  the willingness to pay (wtp). Note that  $Y$ 's bid  $b$  is not what  $Y$  actually receives or has to pay, but only what she is minimally willing to accept for transforming the game or, respectively, maximally willing to pay for installing the UG rather than the YNG rules.

Since responders had to decide for  $b$  in both games, we offered the following suggestion in YNG(UG)<sup>2</sup>: “If you prefer YNG(UG), how much should we pay you to make you switch to UG(YNG) voluntarily? Instead, if you do not prefer YNG(UG), how much would you pay to switch to UG(YNG)? The cost level where you are indifferent or undecided between YNG and UG is your best bid  $b$ .” If YNG(UG) is preferred, subjects will want to install YNG (UG) rules – if at all – only at low prices and abstain from this when prices  $r$  are too high.

An experimental session lasted about 60 minutes. The average earnings were 9.23€ and 7.65€ for the proposer and the responder, respectively.

## 4 Results

We first check if the embedding of UG and YNG in a broader context corresponds to earlier findings of Güth et al. (2005) and whether the advantage of conditional veto power has been anticipated. We then report a clear endowment effect, demonstrating that responders value conditional veto power much more highly, if endowed with it. Finally, we report similar results of the pen and paper experiment run in Freiburg.

In our experiment the extended game (either YNG or UG) is repeated once. Concerning the distributions of the  $x, y$  offers<sup>3</sup> as well as of the willingness to pay (accept)

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<sup>2</sup>The English translation of the instructions is available from authors upon request.

<sup>3</sup>( $p = 1.0$ , two sample Kolmogorov-Smirnov test)

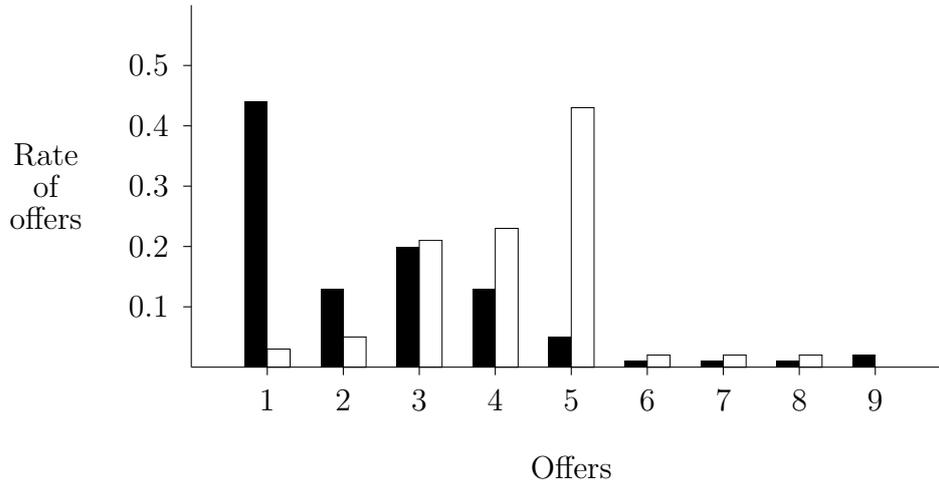


Figure 1: Comparison of offers in YNG (black columns) and UG (white columns)

$b$  of first and second play, they exhibit no significant<sup>4</sup> differences. Thus, we pool the data, which, when neglecting repeated measurement, leaves us with 120 proposals and responses in Jena and 42 proposals and 40 responses in Freiburg.

## 4.1 Subgame behavior

**Result 1** *Offer behavior in YNG and UG differs significantly.*

Proposers in Jena offered, on average, 2.42€ (1.71) in YNG but 4.18€ (1.27) in UG. A one-sided Wilcoxon rank sum test indicates (see Figure 1 for a graphical illustration) that offers in YNG are significantly smaller than offers in UG ( $p < 0.001$ ) confirming the earlier experimental findings (Güth, Levati, Ockenfels, and Weiland, 2005). The same test suggests that proposers do not offer higher payoffs to responders than to themselves ( $p < 0.001$  for both games). Offers significantly exceed the minimum offer of  $y = 1$  (Wilcoxon  $p < 0.001$  for both games). There is little support for concerns about equity in YNG: 90.8% of proposers offered less than 5€. Only 17 of the 120 YNG-offers were rejected, which was never observed in the earlier study, yielding an acceptance rate of 85.8%. However, the hypothesis of general acceptance in YNG must still be rejected (Binomial test  $p < 0.001$ ).

<sup>4</sup>(Kolmogorov-Smirnov  $p > 0.94$  for each session, for YNG and UG)

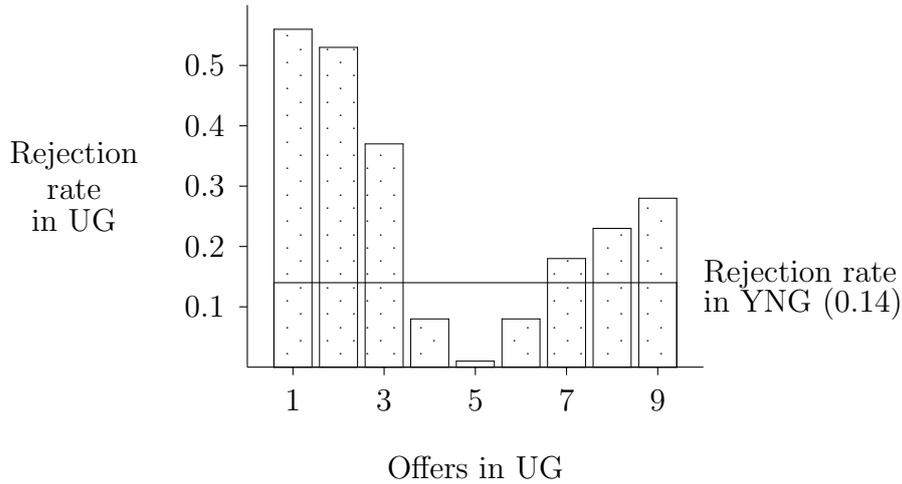


Figure 2: Rejection rates in YNG and UG

In UG just 51.66% of the proposals offered less than 5€ to the responders and 43.33% the equal split (5, 5). In spite of the higher offers in UG, the acceptance rate for actual plays is, with 82.45%, still lower than in YNG. Out of 120 responders 85 have monotonic response strategies (if an offer  $y$  is accepted at all, all higher offers are accepted as well). The dramatic evidence of non-monotonic response behavior (see the u-shaped acceptance rate curve in Figure 2) questions the frequent practice of eliciting acceptance thresholds only (see Camerer, 2003, for a recent survey). The hypothesis of general acceptance is rejected (Binomial test  $p < 0.001$ ): of the 120 response strategies, 67 would not accept minimum offers (of  $y = 1$ ).

Since the opportunistic benchmark solution predicts acceptance of all offers, it is interesting to compare the share of Yes-choices in YNG with 85.83% with the share of general acceptance strategies of 21.66% in UG.

Without incentives to answer truthfully, we elicited first and second order beliefs to shed some light on the subjects' intentions and expectations. In YNG, offers and expectations about offers differ significantly: responders expected proposers to be more generous than proposers actually were (Wilcoxon signed rank test  $p < 0.001$ ). Since responders anticipate to get on average 1.18 (2.99) more, this could justify the slightly higher acceptance rate in YNG. Regarding  $X$ -participants, 15 out of the 120 (12.5%), when asked whether they expected acceptance of their YNG offer, expected

rejection and would have rejected their own offer equally often when answering hypothetically.

In comparison to the YNG, a two sample Kolmogorov-Smirnov test indicates no significant difference between offers and expectations about offers ( $p = 0.388$ ) in the UG. The average estimation error of responders guessing the UG offer is  $-0.31\text{€}$  (2.22). Thus, responders seemed to anticipate proposer behavior quite correctly. On the other hand, proposers expected responders to reject minimum offers (of  $y = 1$ ) in 77.5% of the cases, while actually just 44.16% did. All 120 proposers anticipated correctly the acceptance of the equal split. Therefore higher offers in UG could result from the fear of rejection rather than from own intrinsic fairness concerns. In total, 78.33% of the proposers expected the acceptance strategies of responders in UG correctly. In the  $Y$  role, 87.5% would, as proposers, have accepted their own offer.

## 4.2 Willingness to pay vs. willingness to accept

Matching a single response strategy with all observed offers instead of just one such offer informs us about the average payoff achieved by this response strategy. We computed these averages for all response strategies, leaving us with an idea of how profitable an average response strategy is in YNG and UG. The difference in profit between YNG's and UG's average response strategies reveals the (dis)advantage of that game for the responder. Evaluating the game transformation in this way, measures the (dis)advantage of (un)conditional veto power and can therefore be considered as the true value of the rule transformation ( $(-1.66\text{€})$ ) for the average responder (the true value of the rule transformation varies, of course, with the response strategy). Figure 3 compares this difference to the willingness to pay (accept) as well as to the hypothetical bids and the beliefs of proposers concerning the bid choices of responder participants.

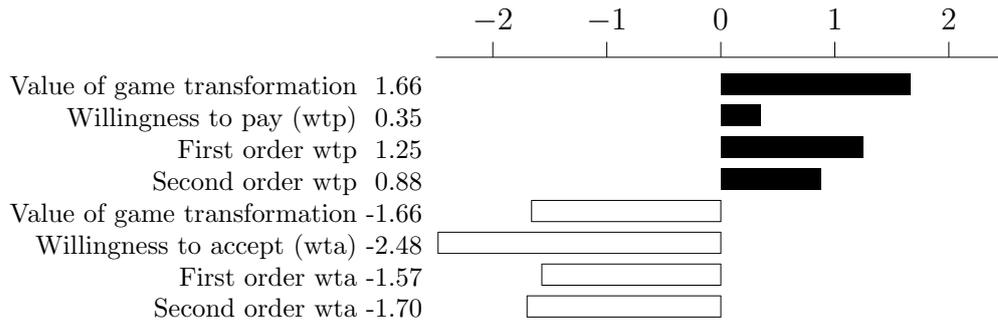


Figure 3: Willingness to pay/to ask in YNG and UG

**Result 2** *Subjects anticipate the (dis)advantage of UG(YNG) but over(under)-estimate the true (dis)advantage.*

With correct expectations the average responder should be willing to pay or to accept a compensation up to the true (dis)advantage of (-)1.66€ , which we use as the benchmark when discussing the willingness to pay (accept) data. Participants want to pay on average 0.35€ (1.78) for transforming YNG into UG, which is significantly positive ( $p < 0.001$ ). Thus, subjects anticipate the disadvantage of unconditional veto power by a positive willingness to pay for transforming the YNG into UG. Nevertheless, they underestimate the disadvantage (-1.66€) by 78.92% significantly ( $p < 0.001$ ).

To accept the transformation of UG into YNG, responders asked for a significantly negative monetary amount ( $p < 0.001$ ) of, on average, -2.48€ (1.79). Their revealed willingness to accept the change of UG into YNG overestimates - in contrast to YNG – the advantage of UG (1.66€) significantly ( $p < 0.001$ ) by 49.39%.

**Result 3** *There is a strong endowment effect of conditional veto power, revealed by the large and significantly positive difference between wtp and wta.*

Participants clearly prefer UG over YNG (Wilcoxon signed rank test  $p < 0.001$ ): when UG instead of YNG is the status quo, subjects require a much larger compensation to give up that position (2.48€) than they would pay for reaching it (0.35€).

Since the wta/wtp ratio is 7.09, we found a remarkable endowment effect (responder participants value the advantage of UG over YNG as nearly seven times higher when being endowed with conditional veto power).<sup>5</sup>

In both games, proposers stated beliefs about responders' willingness to pay (accept). On average, proposers expected responders to be willing to invest 1.25€ (2.02) to change YNG into UG. This is significantly more than responders were willing to pay ( $p < 0.001$ ). According to the proposers' hypothetical bid for changing YNG into UG, they would have paid on average 0.88€ (2.24).

For changing the conditional veto power position (UG) into the unconditional one (YNG), proposers expected responders to ask, on average, for 1.57€ (2.97), which is not significantly less than the actually stated willingness to accept ( $p = 0.134$ ). This "close to real advantage expectation" is in line with proposers' hypothetical bids. When asked for their own behavior in the position of the responder, they would have demanded 1.7€ (2.84) to accept the transformation of UG into YNG.

A one-sided Wilcoxon test indicates that the gap between expected and actual bids is smaller in UG than in YNG ( $p = 0.059$ ). Proposers seem to anticipate much better responder behavior in UG, while they fail to anticipate the behavior of responders with unconditional veto power.

In our interpretation, negative bids by participants, when asked whether to change YNG in UG, and positive bids when asked for the reverse, signal anticipation of crowding out intrinsic proposer fairness. Clustering responders in subjects considered to prefer UG over YNG (*normal*), to be indifferent between UG and YNG (*indifferent*), and to prefer YNG over UG due to crowding out concerns (*crowding*) reveals a more detailed view on the behavioral dimensions. As can be seen in Table 1, we subdivided the responders further into subjects revealing a higher wta than

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<sup>5</sup>See Sayman, S. and A. Öncüler (2005) for a review of 39 studies, reporting a mean ratio of wta/wtp of 7.1 but with a median ratio of 2.9.

Jena	Normal	Indifferent	Crowding	$\Sigma$
Endowment	75	10	4	89
No endowment	8	9	1	18
Contra endowment	10	2	1	13
$\Sigma$	93	21	6	120

Table 1: Responder participants in behavioral dimensions

wtp or just a wta (*endowment types*), revealing a wta equal to wtp (*no endowment types*), or stating a wtp higher than wta or only a wtp (*contra endowment types*). Out of 120 responder participants 77.5% preferred UG over YNG, 17.5% were indifferent between both games, and just 5% preferred YNG over UG. Seventy-five of the 93 responder subjects preferring UG revealed a strong endowment effect: Their average wtp to transform YNG into UG was 0.44€ (1.37),<sup>6</sup> while they asked for 3.31€ (1.24)<sup>7</sup> to accept UG to be transformed into YNG. The endowment types revealing a crowding behavior asked for on average 1.48€ (1.37)<sup>8</sup> to accept the transformation of YNG into UG and were willing to pay on average 0.5€ (1.00)<sup>9</sup> to transform UG into YNG. The vast majority of the subjects preferred UG over YNG and revealed an endowment effect (wta/wtp ratio of 7.52), which is nevertheless found as well among those, preferring YNG over UG (wta/wtp ratio of 2.96).

### 4.3 Computerized vs. pen and paper

**Result 4** *The classroom results mainly confirm not only the computerized sessions results but also that fairness concerns are stronger in pen and paper classroom experiments.*

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<sup>6</sup>significantly positive at  $p < 0.001$

<sup>7</sup>significantly negative at  $p < 0.001$

<sup>8</sup>significantly negative at  $p < 0.001$

<sup>9</sup>significantly negative at  $p < 0.001$

	YNG			UG		
	Jena	Freiburg	$\Delta(\%)$	Jena	Freiburg	$\Delta(\%)$
Average offer	2.42 (1.71)	2.61 (1.77)	7.85	4.18 (1.27)	4.76 (2.23)	13.88
Value of game trans.	1.66	2.33	40.36	-1.66	-2.33	40.36
Willingness to pay /willingness to accept	0.35 (1.78)	1.71 (2.17)	388.57	-2.48 (1.79)	-2.76 (2.09)	11.29
Over(under)estimation	77.7%	26.6%		-58.0%	-18.4%	
1 <sup>st</sup> order wtp/wta	1.25 (2.02)	1.42 (2.84)	13.60	-1.57 (2.97)	-1.76 (3.73)	12.10
2 <sup>nd</sup> order wtp/wta	0.88 (2.24)	1.48 (2.99)	68.18	-1.70 (2.84)	-2.21 (3.43)	30.00

Table 2: Comparison of Jena and Freiburg

While all previous data were elicited in the computer laboratory of the Max-Planck-Institute in Jena, we ran two pen and paper sessions of the same experiment in Freiburg. Table 2 compares the data of Jena and Freiburg. Even though the average offers in YNG and UG were slightly higher in Freiburg, the differences were insignificant ( $p = 0.255$  in YNG and  $p = 0.129$  in UG). We reproduced the results of Jena, confirming significantly smaller offers in YNG than in UG ( $p < 0.001$ ). In both games offers to the responder were significantly smaller than the own payoff ( $p < 0.001$  in YNG and  $p = 0.02$  in UG) but clearly higher than the minimum offer ( $y = 1$ ).

In Freiburg 85.7% of the YNG-proposals – instead of 90.8% in Jena – offered less than 5€. Additionally, the YNG-acceptance rate of 72.5% was significantly lower than in Jena ( $p = 0.0136$ ).

Elicitation of first and second order beliefs revealed no difference between offers in YNG and expected YNG-offers ( $p = 0.324$ ). Proposers in Freiburg worried more about the acceptance of their YNG-offer: 32.4% instead of 12.5% in Jena expected a

rejection. Furthermore, 60% would reject their own offer when acting hypothetically as a responder.

Compared to 48.33% in Jena, just 30.95% of the UG-proposals were below the equal split (5, 5), which was by far the most frequent offer (in 57.14% of all cases). The UG-acceptance rate in Freiburg (77.5%) was significantly below the acceptance rate in Jena ( $p < 0.001$ ) but still slightly higher than the YNG-acceptance rate. In the pen and paper experiment, general acceptance was not confirmed, neither in YNG nor in UG (Binomial test  $p < 0.001$  for YNG and UG).

In contrast to Jena, responders underestimated UG-offers by 12%: the average offer of 4.76€ (2.23) was significantly higher than expected (4.25€ (1.32), Wilcoxon signed rank test  $p = 0.0223$ ). Proposers in Freiburg took a more cautious attitude than in Jena: in 92.85% of the cases (instead of 77.5% in Jena), Freiburg proposers expected the rejection of the minimum offer in UG. Since 85% of the responders actually did reject (compared to 44.16% of minimum rejections in Jena), this turned out to be a good idea. The acceptance of the equal split was expected by 88.09% of the proposers, 97.5% of those offers were actually accepted. This indicates that participants, in spite of understanding the rules of the experiment, were not sure what to expect.

Interestingly, responders in Jena overestimated YNG-offers, while they seemed to anticipate UG-offers more correctly. In Freiburg, responders anticipated YNG-offers better than UG-offers, which were underestimated.

Turning to the willingness to pay (accept), Table 2 shows the true value of transforming the rules in Freiburg and compares it to the revealed willingness to pay (accept).

Average bids for transforming YNG into UG with 1.71€ (2.17) are significantly higher than in Jena ( $p=0.015$ ). Underestimating the true value (2.33€) with 26.26% is much lower compared to Jena (78.92%).  $X$ -participants expected  $Y$ -participants

to be willing to pay 1.42€ (2.84) for transforming YNG into UG, exceeding expectations in Jena by 13.6%. Asked for their behavior in the hypothetical position of a responder, proposers said they would pay on average 1.48€ (2.99) – a 68.18% higher hypothetical bid than in Jena.

The willingness to accept transformation of UG into YNG is, with -2.75€ (2.09), significantly negative ( $p < 0.001$ ) and differs by 11.29% insignificantly ( $p = 0.339$ ) from the wta of -2.48€ (1.79) in Jena. Responders underestimate the true transformation value (2.33€) by 18.45%. The expected wta for transforming UG into YNG is 1.76€ (3.73) – just slightly different from the first order expectation of -1.57€ (2.97) in Jena. Comparing the second order beliefs, expectations in Freiburg differ by 30% from those in Jena. *X*-participants asked, on average, for 2.21€ (3.43) in the hypothetical position of a responder, which is almost in line with the true disadvantage of YNG over UG (2.33€).

The pen and paper experiment also reveals an endowment effect since responders value the advantage of UG over YNG 1.5 times higher if they are endowed with conditional veto power. Still, the dramatic endowment effect in evaluating conditional veto power (nearly seven times higher for wta than wtp in Jena) has not been confirmed by the Freiburg experiment.

Clustering responder subjects again reveals a majority of 80% preferring UG over YNG and just a fraction of 7.50% of responders being concerned about a crowding out effect. Interestingly, 12 of those 32 subjects, preferring UG over YNG, revealed a wtp equal to the wta of 3.21€ (1.16).

The experimental setup influenced the behavior of the participants slightly, mostly by stronger fairness concerns in the pen and paper, rather than the computerized setting. Still, the anticipation of the (dis)advantage of UG(YNG) as well as the wtp/wta discrepancy has been robustly confirmed.

## 5 Conclusion

First, we find that proposers offer significantly more in UG than in YNG, as suggested by fear of rejection in UG where what is offered is known. This measures the (dis)advantage of the UG(YNG) in comparison to the YNG (UG) in terms of responder payoffs.

Second, subjects anticipate the (dis)advantage of UG(YNG) by stating significantly positive (negative) willingness to pay for transforming the game, but do not value it adequately. While they are willing to pay for changing YNG into UG, responders underestimate the true advantage of transforming the game by 78.91% in Jena and still 26.26% in Freiburg. If assigned to UG, subjects in Jena ask for a 49.39% (18.45% in Freiburg) higher compensation than justified by the true disadvantage of YNG when asked whether to change the game from UG into YNG.

Third, this reveals a huge endowment effect in Jena ( $wta/wtp = 7.09$ ) and, less dramatically, in Freiburg ( $wta/wtp = 1.61$ ). The variance in the  $wtp/wta$  discrepancy illustrates how important it is to elicit behavior in different experimental setups and to check the robustness of extraordinary findings.

We conclude from our overall results that subjects do not easily give up conditional veto power, which they clearly prefer over unconditional veto power, and that pen and paper experiments trigger a more generous offer behavior and thus also smaller bids. When offers are fairer in both games, if elicited in the pen and paper way, there is less need to transform the game than in the computerized sessions in Jena (see Güth, Schmidt, Sutter, 2002, for evidence of how the medium by which one submits decision data reveals how one decides).

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## 6 Appendix

### Freiburg Results

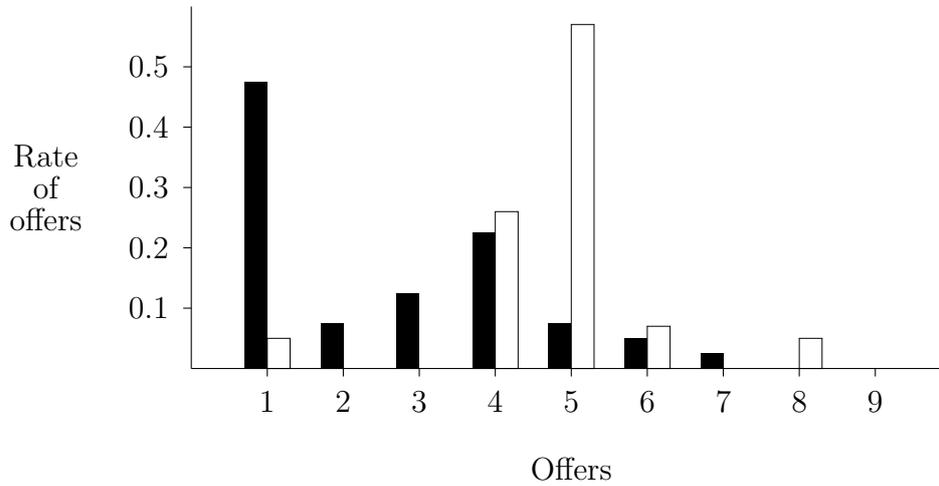


Figure 4: Comparison of offers in YNG (black columns) and UG (white columns)

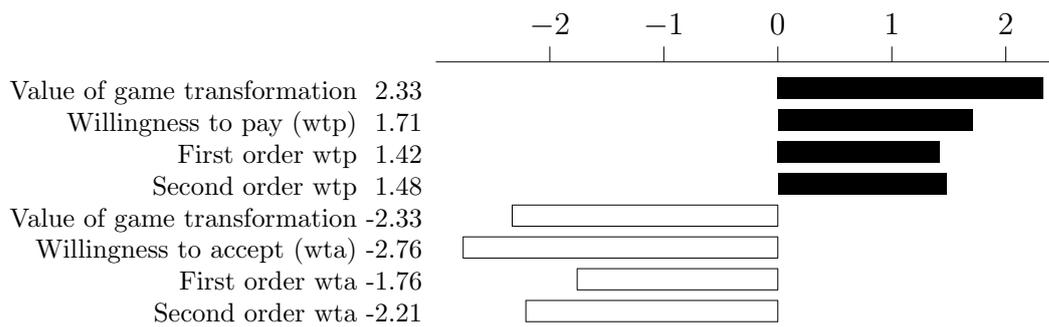


Figure 5: Willingness to pay/to ask in YNG and UG