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## **Ethics in economic decision-making**

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## Chapter 2

### Initial Ownership in Bargaining: Introducing the Giving, Splitting, and Taking Ultimatum Bargaining Game

*Based on Leliveld, Van Dijk, & Van Beest (2008a)*

Most negotiations are conflicts about property (Carnevale, 1995). Who has the property, and who will get it? In the present article, we draw attention to a situational variable that seems essential to understand how bargainers eventually distribute the property. We focus on how *initial* ownership of property affects bargaining behavior. Who initially owns the property and who will eventually get it? Who will lose property and who will gain? We argue that perceptions of initial ownership strongly influence bargaining behavior and test this assumption in an ultimatum bargaining setting in which, from a rational perspective, initial ownership should not make any difference.

The Ultimatum Bargaining Game (UBG; Güth, Schmittberger, & Schwarze, 1982) is especially suited to study bargaining behavior. In the UBG two players - an allocator and a recipient - bargain about the distribution of a certain amount of money. The allocator makes an offer to the recipient. The recipient subsequently decides whether to accept or reject this offer. When the offer is accepted, the money will be divided according to the allocator's offer. When the offer is rejected, both players receive nothing. With its simple structure, the UBG is perfectly suited to investigate motivated bargaining behavior. If bargainers would only be motivated by self-interest, allocators should offer the recipient only a fraction of the total pie. Self-interested recipients should accept this offer because it is always better than receiving nothing. However, in reality this rarely happens. Allocators often offer a substantial amount of the pie to the recipient and most recipients reject offers lower than 30% (e.g., Güth, Ockenfels & Tietz, 1992; see also Camerer & Fehr, 2006; Handgraaf, Van Dijk & De Cremer, 2003).

Later research on the UBG showed that allocators are not always as fair as it seemed to be (e.g., Fellner, & Güth, 2003; Kagel, Kim, & Moser, 1996). In some of these studies participants had to bargain over chips that were worth

more to the allocator than to the recipient. When allocators thought the recipient was not aware of this value difference, they offered fewer chips than when they thought the recipient was also informed about the difference. Allocators thus ended to use their information advantage to increase their own outcomes. Van Dijk, De Cremer, and Handgraaf (2004), however, showed that this is not a general effect, but is dependent on personality (i.e., social value orientation). A significant part of the people compensates the value difference, and is therefore willing to behave more other-oriented. These results suggest that bargainers are driven by a concern for their own outcome, but also by a more other-oriented concern. This view is in line with the social utility model, which argues that own outcomes as well as other's outcomes may play a role in interdependent decision-making (e.g., Blount, 1995; Handgraaf et al., 2003; Loewenstein, Thompson, & Bazerman, 1989).

Note that in the UBG nothing is said about the ownership of the property *before* negotiation starts. Participants simply learn that there is a certain property over which they have to bargain. In some studies, participants learned that they had to *earn* the initial property in, for example, a general knowledge quiz (Hoffman, McCabe, Shachat, & Smith, 1994; Fahr & Irlenbusch, 2000; Staub & Noerenberg, 1981). In these studies, the rights to own a property were unequal. For instance, in recent work on property rights in a dictator game (Oxoby & Spraggon, 2008), the dictator or the receiver earned the property before the game started, and by that legitimizing the assets. Compared to the situation in which neither one earned the property initially, offers to the recipient were lower in the 'dictator earned' condition, and higher in the 'recipient earned' condition. In this, and other studies on earned property rights, the conclusion was that the stronger one's property right, the more property one will eventually obtain (e.g., Frey & Bohnet, 1995).

In the current article we draw attention to the fact that people may ascribe ownership even in situations where no further justification is offered. To give a simple but maybe familiar example, consider the situation where several research groups share a lab, which is situated at the hallway of one specific research group. Without further justification, people may perceive the lab to be more owned by the specific research group that is situated in the hallway, than by the rest of the faculty. In this tentative example, the initially ascribed ownership may be more a matter of perception than a reality.

We created three new types of the UBG. In the first type of UBG, the *giving* UBG, the property is located at the allocator, and the allocator has to

decide how many chips to give to the recipient. In the second new type of the UBG, the *taking* UBG, the property is located at the recipient, and the allocator has to decide how many chips to take from the recipient.<sup>3</sup> Thirdly, we also created the *splitting* UBG, which is similar to the traditional UBG. In this type of UBG the allocators are told that there is a certain property which has to be divided by making an offer to the recipient.

How will bargaining behavior be affected by our manipulations of game type? Objectively, the initial assignment and location of chips should not influence the behavior of allocators, as the payoff structures of the three game types are identical. However, we call upon two theoretical insights to argue that bargaining behavior will be affected: loss aversion and the do-no-harm principle. These principles will lead to similar behavioral results, but reflect different underlying processes.

### **Loss aversion and the do-no-harm principle**

The concept of loss aversion arose from prospect theory (Kahneman & Tversky, 1979; 1984) which describes how individuals evaluate their own outcomes in terms of potential gains and losses. People perceive their own losses as more unpleasant than they perceive commensurate gains as pleasant. People are therefore more inclined to prevent a loss than to obtain a gain (Tversky & Kahneman, 1991). How can this self-oriented perspective affect behavior in the three game types? In the giving UBG, the allocator initially owns the property. By allocating a certain part of the property to the recipient, the allocator will lose. In the taking UBG the recipient initially owns the property and taking a part from the recipient implies a gain for the allocator. The principle of loss aversion therefore implies that allocators in the giving UBG should be less willing to give (i.e., lose) than allocators in the taking UBG are willing to take. Offers to the recipient should be higher in the take-some UBG than in the give-some UBG.

For quite some time researchers assumed that loss aversion increased self-interested behavior and concession aversion (Bottom, 1988; De Dreu, Carnevale, Emans, & Van der Vliert, 1994; Kahneman, 1992) while a viable alternative in terms of do-no-harm (Baron, 1995; 1996; Van Beest, Wilke & Van Dijk, 2003; Van Beest, Van Dijk, De Dreu & Wilke, 2005) only recently has come to the fore. This do-no-harm principle provides a more other-oriented perspective by suggesting that people are reluctant to harm one party to benefit another party. The do-no-harm principle (Baron, 1995; 1996) was

originally demonstrated by asking participants to put themselves in the role of a dictator of a small island. The constituents of this island were two groups of people. Participants had to decide about accepting an offer of a business partner which would affect the income of both groups. Baron (1995) found that participants were reluctant to accept offers which would benefit one group at the expense of the other group.

Based on this more other-oriented perspective, allocators may be expected to want to honor the recipient's entitlements. Allocators in the taking UBG might be reluctant to take from the recipient to benefit themselves because they harm the others' entitlements by taking. Consequently, allocators should make higher offers to the recipient in the taking UBG than in the giving UBG. With respect to the splitting UBG, we hypothesize that offers will be in between the offers in the giving and taking UBG. The pie is located exactly in between the location of the pie in the giving and taking UBG. Therefore, the splitting UBG has elements of both types of games. We therefore expected a linear effect of game type: the offers to the recipient should be highest in the taking UBG, lower in the splitting UBG, and lowest in the giving UBG.

### **Experiment 1**

There are several versions of the UBG (see Handgraaf et al., 2004). In the classic ultimatum game, bargainers have to distribute a certain amount of money. In alternative versions of the UBG, bargainers have to distribute a certain number of chips that differ in value. For example, Van Dijk and Vermunt (2000, Experiment 1) designed an UBG in which bargainers had to divide 100 chips that were worth twice as much to the allocator than to the recipient. For our first study we used this asymmetric value version of the UBG. The reason for this is that in situations of ambiguity motivations will have a stronger effect on behavior (Loewenstein and Moore, 2004). Loewenstein and Moore (2004) also suggested that "one factor that can contribute to ambiguity [...] is asymmetry between parties" (p.42). By using a bargaining setting in which this asymmetry between allocator and recipient is present, we anticipated that this would create more leeway to reveal differences in motivated bargaining behavior.

As explained before, we hypothesized that offers to the recipient should be higher in the taking UBG, lower in the splitting UBG, and lowest in the taking UBG. Although it is not the main focus of the current study, we also added a traditional UBG condition, to give better insights on how the traditional UBG can

be compared to the three new game types. We hypothesized that the traditional UBG would be most similar to the splitting UBG.

### *Method*

#### *Design and Participants*

Participants were from Leiden University (23 males, 54 females; mean age 21.29,  $SD = 2.52$ ) and were randomly assigned to a 4 (game type: giving vs. splitting vs. taking vs. traditional UBG) between-subjects design.

#### *Procedure*

Participants were placed in separate cubicles. Instructions were presented on the computer-screen. Cubicles were numbered from 1 to 8, and participants were told that their cubicle number had randomly determined their role as allocator (Player A). They would remain anonymous to their opponent during and after the experiment. The participants then read that they had to divide 100 chips between themselves and their opponent (Player B).

Next, we manipulated the game type. In the giving condition, the chips were located at the allocator's side of the table, in the splitting in the middle of the table, and in the taking at the recipient's side of the table. In the *traditional UBG* condition participants did not receive any information of the ownership of the chips. Also, participants were not presented the picture with the table. The situation was illustrated graphically by a picture of two persons sitting at a table (see Figure 1). In the *giving* UBG, participants had to make an offer indicating how much chips they were willing to give B. In the *splitting* UBG, participants had to make an offer indicating how much of the 100 chips B would get. In the *taking* UBG, participants had to make an offer indicating how many chips they wanted to take from B.

All participants were informed that for each chip they would eventually receive 8 eurocents and the recipient 4 eurocents (cf., Van Dijk & Vermunt, 2000), and that the recipient was also aware of this. Participants learned that if the recipient accepted, the chips were divided in agreement with the offer. If the recipient rejected, both received nothing. Subsequently, participants wrote down their offer on a paper, put it in an envelope, and slid it under the door of their cubicle for the experimenter to give to the recipient. To analyze the offers, we used the number of chips participants had allocated to player B.

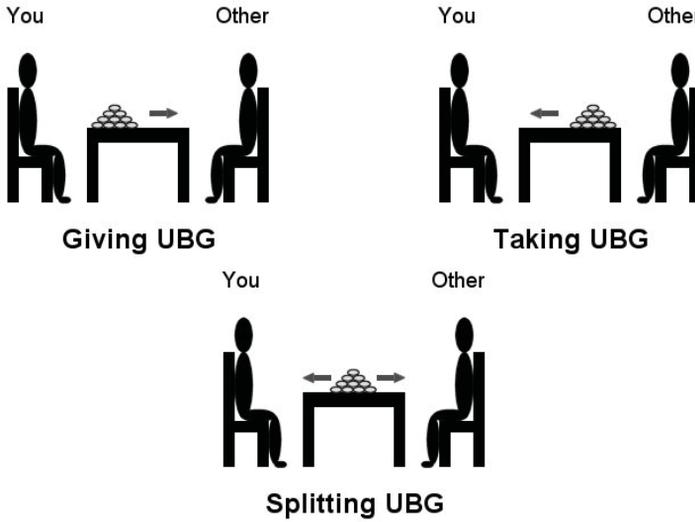


Figure 1. Graphical presentation of the three game type conditions.

To check the game type manipulation, we asked participants “At which side of the table were the chips depicted? (at your side, at B’s side, or in the middle of the table)”. Note that this question was not asked in the traditional UBG condition. To check whether the different game types affected perceived ownership, we asked participants two questions: “To what extent do you perceive the chips to be in your possession? (1 = absolutely not in my possession, 7 = absolutely in my possession)”; and “To what extent do you perceive the chips to be in Person B’s possession? (1 = absolutely not in B’s possession, 7 = absolutely in B’s possession)”. At the end of the experiment, participants were debriefed and paid €6.

## Results

### Manipulation checks

The initial ownership manipulation was successful. A 3 (game type: giving vs. splitting vs. taking) x 2 (ownership: Person A vs. Person B) ANOVA with the latter factor as within-subjects variable showed an interaction effect,  $F(2,51) = 24.62, p < .001, \eta^2 = .49$ . Participants in the giving UBG perceived the chips to be more owned by themselves ( $M = 4.71, SD = 1.80$ ) than owned by Person B ( $M = 2.71, SD = 1.65$ ),  $F(1,51) = 17.09, p < .001, \eta^2 = .25$ . Participants in the taking UBG perceived the chips to be more owned initially by

Person B ( $M = 5.05$ ,  $SD = 1.39$ ) than by themselves ( $M = 2.47$ ,  $SD = 1.35$ ),  $F(1,51) = 31.76$ ,  $p < .001$ ,  $\eta^2 = .38$ . In the splitting UBG participants did not perceive a difference in ownership of the chips by themselves ( $M = 3.06$ ,  $SD = 1.59$ ) or by Person B ( $M = 2.67$ ,  $SD = 1.41$ ),  $F(1,51) < 1$ , *ns*.

To compare the traditional UBG, we conducted a simple contrast analysis. A 4 BS (game type: giving vs. splitting vs. taking vs. traditional UBG)  $\times$  2 WS (ownership: Person A vs. Person B) ANOVA showed that the traditional UBG ( $M_{\text{ownership A}} = 5.87$ ,  $SD = 1.71$ ;  $M_{\text{ownership B}} = 1.96$ ,  $SD = 1.11$ ) differed from the taking ( $p < .005$ ) and giving UBG ( $p < .005$ ), but not from the splitting UBG ( $p = .239$ ),  $F(3,73) = 6.11$ ,  $p < .001$ ,  $\eta^2 = .20$ .

Additionally, 94.5% of the participants in the giving, splitting, and taking UBG correctly indicated the graphically represented location.

#### *Offers*

A one-way ANOVA yielded a game type effect,  $F(2,51) = 4.98$ ,  $p < .05$ ,  $\eta^2 = .16$ . Participants allocated more chips to the recipient in the taking UBG ( $M = 64.11$ ,  $SD = 12.31$ ) than in the splitting UBG ( $M = 59.56$ ,  $SD = 11.91$ ), and the latter allocated more chips than participants in the giving UBG ( $M = 49.00$ ,  $SD = 19.41$ ). Linear contrast analysis showed that this linear effect was significant,  $t(51) = 3.10$ ,  $p < .01$ .

Participants in the traditional UBG offered 60.17 chips ( $SD = 9.80$ ) to the recipient. Contrast analysis showed that this offer deviated ( $p < .05$ ) from the offer in the giving UBG ( $M = 49.00$ ), and not from the splitting UBG ( $M = 59.56$ ,  $p = .88$ ), and from the taking UBG offer ( $M = 64.11$ ,  $p = .35$ ).

#### *Discussion*

As expected, allocators made higher offers in a taking UBG than in a giving UBG. Moreover, we found that the traditional UBG resembled the splitting UBG. Yet, this does not answer *why* allocators behave differently. In the introduction we provided two possible explanations: A self-oriented perspective (based on the principle of loss aversion) and a more other-oriented perspective (based on the do-no-harm principle). The self-oriented perspective assumes that the effects would be mainly driven by people's concern about their own outcomes (i.e., the low offers in the give-some UBG reflect people's aversion to lose chips). The other-oriented perspective explains the findings in terms of people's reluctance to infringe on other's entitlements (i.e., allocators may feel that taking chips from the recipient may be considered as harmful). This latter explanation thus rests on the idea that the presentation of game type may

affect perceptions of entitlement. Feelings of entitlement may therefore be potentially crucial to explain the game type effect. In Experiment 2 and 3 we aimed to provide more conclusive evidence for the mechanism underlying the game type effect.

## **Experiment 2**

A first goal of Experiment 2 was to assess perceptions of entitlement. If these perceptions would mediate the game type effect on offers, this could provide first evidence for a do-no-harm explanation. Note, however, that by itself such mediation would not constitute conclusive evidence. To illustrate, suppose that one would observe that compared to the giving UBG (a) allocators report that recipients are entitled to higher outcomes in the taking UBG, and (b) allocators allocate more chips to the recipients in the taking UBG. What conclusion should be drawn? One tempting conclusion is that allocators allocate more chips to the recipient in the taking UBG because they want to honor the recipient's entitlements, suggesting that allocators truly care about entitlements. An alternative explanation of the same findings would be that allocators offer more in the taking UBG because they anticipate or fear that the recipient will indeed feel more entitled to the money, and thus will be more likely to reject low offers. If allocators do not take many chips away from the recipient in the taking UBG, it might also be that allocators merely reason that it is in their own interest to give in to the recipient's entitlements. Because of this alternative (and basically self-interested) explanation of the potential role of entitlement in the game type effect, we also asked participants questions about the role of self-interest to test whether the game type effect is mediated by self-interest.

The above suggests that it may be difficult to disentangle strategic honoring of entitlements from true caring about other's entitlements when both motives coincide, i.e., in situations where the same behavior (e.g., high offers) can have a self-interested or moral underpinning. Besides asking about entitlement and self-interest, we therefore created an opportunity to disregard the recipient's feelings of entitlement by providing allocators with the possibility to use deception. According to Lewicki and Stark (1996), "deception manipulates the opponent's logical and inferential processes, in order to lead the opponent to an incorrect conclusion or deduction" (p.78). In the current context deception means that allocators can deceive recipients by letting them think that low offers are not as low as they actually are.

We introduced the possibility of deception by varying the information the recipients had about the value of the chips (cf., Van Dijk & Vermunt, 2000). In the asymmetric information condition, participants learned that the recipient did not know that chips were worth twice as much to the allocator. In the symmetric information condition, participants learned that the recipient was also aware of this value difference. Previous research has shown that allocators allocate fewer chips to recipients in case of asymmetric information than in case of symmetric information (e.g., Kagel, et al., 1996; Van Dijk & Vermunt, 2000). We expected to replicate this information effect.

More interesting is whether or not information level will interact with the game type manipulation. If the game type effect has a more self-oriented motivation, we would expect information level to moderate the game type effect. As explained before, the game type effect might have a strategic underpinning in the sense that allocators might feel that if they infringe on the recipient's entitlements, the recipient will reject their offer. Moreover, if allocators feel that the recipient is especially likely to feel more entitled to the chips in the taking UBG, then allocators may be particularly likely to fear that in the taking UBG low offers will be rejected. Consequently, one might then expect that allocators would be especially likely to deceive in the taking UBG by misinforming the recipient about the value of their chips. Rather than correctly informing the recipient, allocators might be tempted to communicate a lower value. By deceiving the recipient, allocators may thus reduce the likelihood that the offer will be rejected. If so, the game type effect would weaken or even disappear. Of course, this would only hold for the asymmetric information condition. In the symmetric information condition, recipients have full information and deception is therefore not possible. If allocators do not truly care about entitlements, we would find an interaction effect. The game type effect should only emerge in the symmetric information condition and not (or less strongly) in the asymmetric information condition.

Alternatively, if the game type effect is motivated by the allocator's true concern to honor the recipients' entitlements, we expected to find no interaction effect. Allocators in the taking UBG would not use the possibility to deceive. By using deception, they would increase their own outcome, but harm the recipient's entitlement. According to the do-no-harm principle, people are reluctant to do this. If allocators truly care about the entitlements we therefore expected not to find an interaction effect, but a main effect of game type: offers should be highest in the taking UBG and lowest in the giving UBG.

## *Method*

### *Design and Participants*

Participants were from Leiden University (28 males, 83 females; mean age 21.34,  $SD = 3.41$ ) and assigned to a 3 (game type: giving vs. splitting vs. taking UBG)  $\times$  2 (information: asymmetric vs. symmetric) between-subjects factorial design.

### *Procedure*

The experimental outline was similar to Experiment 1. Participants were allocators and the manipulation of game type was induced by graphically showing, and verbally explaining the situation. Participants were informed that for each chip they would eventually receive 8 eurocents and the recipient 4 eurocents. Participants in the symmetric information conditions learned that both players knew about this value difference. Participants in the asymmetric information conditions were informed that only they knew about the value difference. The recipient allegedly only knew his or her own value of the chips. Next, regardless of condition, participants had to send a message in which they would inform the recipient about the value of their own chips. Immediately after the message, participants made the offer.

Next we assessed self-interest, entitlement and manipulations. Self-interest was assessed with the questions "my message was defined by me wanting to earn more eventually (1 = absolutely not true, 7 = absolutely true)" and "I want to earn more money than B (1 = absolutely not true, 7 = absolutely true)". Entitlement was assessed with the question "which of the two players was more entitled to earn a high payoff? (1 = A is more entitled, 7 = B is more entitled)". Perceived ownership was checked in a similar way as in Experiment 1. To check the manipulation of information, we asked whether Person B knew the value of the participant's chips. Finally, participants were debriefed and paid €6.

## *Results*

### *Manipulation Checks*

The manipulation of information level was successful. Ninety-three percent of the participants correctly indicated whether Person B knew the true value of the chips or not.

The manipulation of initial ownership was also successful. A 3 (game type: giving vs. splitting vs. taking UBG)  $\times$  2 (ownership: Person A vs. Person B) ANOVA with the latter factor as within-subjects variable showed a main

effect of ownership,  $F(1,108) = 10.89$ ,  $p < .001$ , which was qualified by a interaction effect,  $F(2,108) = 83.78$ ,  $p < .001$ ,  $\eta^2 = .61$ . Participants in the giving UBG perceived the chips to be more owned by themselves ( $M = 3.87$ ,  $SD = 2.22$ ) than owned by Person B ( $M = 2.13$ ,  $SD = 1.23$ ),  $F(1,108) = 33.34$ ,  $p < .001$ ,  $\eta^2 = .24$ . Participants in the taking UBG perceived the chips to be more owned initially by Person B ( $M = 5.76$ ,  $SD = 1.56$ ) than by themselves ( $M = 2.00$ ,  $SD = 1.26$ ),  $F(1,108) = 140.13$ ,  $p < .001$ ,  $\eta^2 = .57$ . In the splitting UBG participants did not perceive a difference in ownership of the chips by themselves ( $M = 2.69$ ,  $SD = 1.49$ ) or by Person B ( $M = 2.41$ ,  $SD = 1.21$ ),  $F(1,108) < 1$ , *ns*. Ninety-eight percent of the participants correctly indicated where the chips were graphically presented.

#### *Message*

To test whether initial ownership affected the use of active deception, we conducted a 3 x 2 ANOVA on the contents of the message (lowest possibility was 2 eurocents, highest was 10 eurocents). This analysis did not yield a game type effect,  $F(2,105) = .38$ , *ns*, but only a information effect,  $F(1,105) = 42.05$ ,  $p < .001$ ,  $\eta^2 = .29$ . Participants in the asymmetric information condition communicated a lower value of their chips ( $M = 5.95$ ) than did participants in the symmetric information condition ( $M = 7.86$ ).<sup>4</sup>

#### *Offers*

Consistent with our predictions based on the do-no-harm principle, a 3 x 2 ANOVA revealed no interaction effect,  $F(2,105) = .068$ ,  $p = .93$ ,  $\eta^2 = .001$  (see Table 1 for the cell and marginal means), and two main effects. The information effect showed that participants in the symmetric information condition allocated more chips to the recipient ( $M = 57.75$ ,  $SD = 13.47$ ) than did participants in the asymmetric information condition ( $M = 52.35$ ,  $SD = 12.49$ ),  $F(1,105) = 7.01$ ,  $p < .001$ ,  $\eta^2 = .05$ .

The game type effect was similar to Experiment 1,  $F(2,105) = 5.43$ ,  $p < .05$ ,  $\eta^2 = .12$ . A linear contrast analysis showed that participants in the taking UBG allocated more chips to the recipient ( $M = 61.38$ ,  $SD = 13.09$ ) than participants in the splitting UBG ( $M = 53.79$ ,  $SD = 11.40$ ), who allocated more than participants in the giving UBG ( $M = 50.74$ ,  $SD = 12.99$ ),  $F(1,105) = 13.34$ ,  $p < .001$ ,  $\eta^2 = .11$ .

Table 1. Number of chips allocated to the recipient as a function of game type and information level.

Information	Game type			Total
	Giving	Splitting	Taking	
Asymmetric	47.89 (12.62)	51.58 (8.98)	58.18 (13.88)	52.35 (12.49)
Symmetric	53.58 (13.07)	55.90 (13.19)	64.59 (11.59)	57.75 (13.47)
Total	50.74 (12.99)	53.79 (11.40)	61.38 (13.09)	

Note. Standard deviations are given in parentheses.

### Underlying Processes

We analyzed the importance of self-interest and the feelings of entitlement to assess the underlying process. A 3 x 2 ANOVA on the influence of self-interest on the message revealed only an information effect,  $F(1,105) = 3.95$ ,  $p < .05$ ,  $\eta^2 = .036$ . The motive of self-interest was more important in the asymmetric information condition ( $M = 4.31$ ) than in the symmetric information condition ( $M = 3.57$ ). No effect of game type was found,  $F(2,105) = .52$ , *ns*. A 3 x 2 ANOVA on the motivation to earn more than Person B revealed again only an information effect,  $F(1,105) = 8.85$ ,  $p < .005$ ,  $\eta^2 = .078$ . The motive of wanting to earn more than Person B was more important in the asymmetric information condition ( $M = 4.42$ ) than in the symmetric information condition ( $M = 3.25$ ). No effect of game type was found,  $F(2,105) = 1.41$ ,  $p = .25$ .

A 3 x 2 ANOVA on the entitlement perceptions yielded only a game type effect,  $F(2,105) = 17.97$ ,  $p < .001$ ,  $\eta^2 = .255$ . A linear contrast analysis showed that participants in the giving UBG perceived that they were more entitled than the recipient ( $M = 3.34$ ), while participants in the taking UBG felt the recipient was more entitled than themselves ( $M = 4.94$ ),  $F(1,105) = 34.19$ ,  $p < .001$ ,  $\eta^2 = .25$ . No information effect was found,  $F(1,105) = .14$ ,  $p = .71$ .

### Mediation analyses

The game type manipulation (and thus initial ownership) resulted in differences on perceived entitlement. This suggests that entitlement might mediate the game type effect. To investigate this, we conducted mediation analyses (cf., Baron & Kenny, 1986). Since our independent variables were

categorical, we employed dummy variables with 0 and 1 coding (Cohen, Cohen, West, & Aiken, 2003). As the effect of game type is linear, we chose one of the extremes as a reference group: the taking UBG. Note that changing the reference group will not change the results of the regression: the total explained variance of the regression, i.e., the between-group variance in ANOVA, is always the same (Cohen et al., 2003). Therefore the game type effect was decomposed into two comparisons: taking vs. splitting UBG (dummy 1) and taking vs. giving UBG (dummy 2). In the regression analyses, we used these two dummy variables and the dummy variable for information as independent variables. Since the interaction effect was found not to be significant in the ANOVA, we did not include the interaction variable in any of the regressions.

Results showed that perceptions of entitlement mediated the game type effect. First of all, game type had an effect on the offer, (dummy 1  $\beta = -.28$ ,  $t = -2.67$ ,  $p < .01$ ; dummy 2  $\beta = -.37$ ,  $t = -3.69$ ,  $p < .001$ ). Second, only game type had an effect on the feelings of entitlement (dummy 1  $\beta = -.42$ ,  $t = -4.24$ ,  $p < .001$ ; dummy 2  $\beta = -.58$ ,  $t = -5.87$ ,  $p < .01$ ). Finally, we regressed the offer on the independent variables and feelings of entitlement. This showed that entitlement affected the offer,  $\beta = .26$ ,  $t = 2.63$ ,  $p < .01$ , and showed that the game type effect disappeared (dummy 1  $\beta = -.17$ ,  $t = -1.54$ , *ns*; dummy 2  $\beta = -.23$ ,  $t = -1.99$ ,  $p = .048$ ). Sobel tests showed that these reductions were significant (dummy 1  $z = -2.40$ ,  $p < .02$ ; dummy 2  $z = -2.23$ ,  $p < .03$ ).

Because we did not find a game type effect on the motivation of self-interest, this could also not mediate the effect. We did find an information level effect on self-interest. A second mediation analysis was conducted to investigate the possible mediation of this effect by self-interest. Since the two questions of self-interest revealed a similar pattern, we combined these two questions into a self-interest scale ( $\alpha = .80$ ), with higher values indicating more motivations of self-interest. In the first step, we found an information effect on the offer,  $\beta = -.21$ ,  $t = -2.34$ ,  $p < .05$ . In the second step, we regressed the independent variables on self-interest and found only an effect of information,  $\beta = .25$ ,  $t = 2.73$ ,  $p < .01$ . Finally, when regressing the offer on the independent variables and self-interest, we found that self-interest affected the offer,  $\beta = -.31$ ,  $t = -3.55$ ,  $p < .001$ , and that the information effect disappeared,  $\beta = -.13$ ,  $t = -1.48$ , *ns*. A Sobel test showed that this reduction was significant,  $z = -2.16$ ,  $p < .04$ , yielding full mediation of the information effect by self-interest.

### *Discussion*

We replicated the game type effect of Experiment 1 by demonstrating that allocators make the highest offers in the taking UBG and the lowest in the giving UBG. Second, we showed that allocators perceived themselves to be more entitled in the giving UBG and the recipients to be more entitled in the taking UBG. These feelings of entitlements mediated the game type effect. We also showed that self-interest could not explain the game type effect. Third, the game type effect was not affected by the possibility to deceive. Taken together these findings suggest that allocators truly care about entitlement. This is in line with the do-no-harm principle (Baron, 1995; 1996).

Although these results corroborate the notion that allocators do not want to harm the recipient, one could still argue that the game type effect is motivated by strategic concerns. First of all, a critic might argue that (some) allocators did not use deception because it is considered to be an unethical strategy to increase one's outcomes (e.g., Anton, 1990). Deception might be too inappropriate to use. Another reason is that allocators feared that the recipient would not believe the message. If so, one could argue that allocators feared low offers to be more readily rejected in the taking UBG than in the giving UBG. To address these issues and to further assess whether initial ownership may be affected by strategic concerns, it may therefore be useful to consider a manipulation that is not based on deception, and one in which fear of rejection is less of an issue. In Experiment 3 we assessed the initial ownership in the unequal punishment game (Fellner & Güth, 2003).

### **Experiment 3**

Fellner and Güth (2003) designed a UBG with parameter  $\lambda$ , which alters the consequences of rejection. When recipients accept, the property will be divided according to the offer, similar to the traditional UBG. However, when the offer is rejected, recipients will receive their payoff suggested by the allocator multiplied by  $1 - \lambda$  whereas allocators will receive their payoff multiplied by  $\lambda$ . The consequences of rejection are thus different for allocators and recipients. When  $\lambda$  is for instance 0.1, a rejection will have more negative consequences for allocators than for recipients. In contrast, when  $\lambda$  is 0.9, a rejection will have more negative consequences for recipients than for allocators. Therefore, when  $\lambda$  is low, the allocator is highly dependent on the recipient's reaction, but when  $\lambda$  is high, the allocator is much less dependent.

Fellner and Güth (2003) found that low dependency led to lower offers than high dependency, an effect we expected to replicate in Experiment 3.

More important is that this dependency manipulation can help us to rule out the possible strategic explanation of the game type effect. If the game type effect has a strategic underpinning, we should observe that allocators are less influenced by game type when they are less dependent on the recipient's behavior than when they are more dependent. In other words, if self-interest explains the game type effect, we should find an interaction effect: the game type effect should be found in the normal, high dependency condition, but not (or to a lesser extent) in the low dependency condition. However, if the game type effect is based on a true care for entitlements and a reluctance to harm another person, dependency should not influence the game type effect. Regardless of the level of dependency, offers should be highest in the taking UBG and lowest in the giving UBG.

We also studied the underlying processes by asking allocators about their feelings of entitlement and whether they feared rejection. If strategic concerns explain the game type effect, we should find an effect of game type on fear of rejection and not on entitlement. If, however, the game type effect is based on a genuine concern for entitlement (as in Experiment 2) we should find a game type effect on entitlement and not on fear of rejection.

### *Method*

#### *Design and Participants*

Participants were from Leiden University (61 males, 58 females; mean age 21.19,  $SD = 4.20$ ) and were randomly assigned to a 3 (game type: giving vs. splitting vs. taking UBG) x 2 (dependency: low vs. high) design.

#### *Procedure*

Participants were told that they had to divide 100 chips between themselves and their opponent. In contrast to the previous two experiments, the chips in Experiment 3 had the *same* value for both allocators and recipients. Next, the manipulation of game type was induced in a similar vein as in Experiment 1 and 2. Subsequently, all participants were informed about the consequences of the recipient's behaviour. The consequence of acceptance was identical in all conditions: the chips would be divided in agreement with the offer. Participants in the *low dependency* condition learned that if their offer was rejected, they would earn 90% of their share of the given offer. The recipient would earn only 10%. Participants in the *high dependency* condition learned

that if the offer was rejected, they would earn only 10% of their share while the recipients would earn 90%.

Subsequently, participants made the offer. Next, they were asked questions on their feelings of entitlement to the chips (e.g., 'before bargaining started, who was more entitled to earn the chips?'). We computed difference scores for the questions where we measured the entitlement of one specific player (e.g., 'to what extent were you entitled to own the chips?' vs. 'to what extent was B entitled to own the chips?'). These new variables were combined with the other questions into an entitlement scale (9 items;  $\alpha = .93$ ). We asked three questions about the fear of rejection (e.g., "did you want to prevent that your offer would be rejected?"). These questions were combined into a fear of rejection scale ( $\alpha = .84$ ).

To check the manipulation of initial ownership, we assessed the perceived ownership of participants similar to Experiment 1 and 2. We asked 5 questions ( $\alpha = .91$ ) to check the manipulation of dependency (e.g., "how much influence will a rejection have on your final payoff?"). We also asked "What would happen if Person B rejected your offer?" to check the manipulation of dependency. Finally, participants were debriefed and paid €6.

## Results

### *Manipulation Checks*

The manipulation of initial ownership was successful. A 3 (game type: giving vs. splitting vs. taking UBG)  $\times$  2 (ownership: Person A vs. Person B) ANOVA with the latter factor as within-subjects variable yielded only a interaction effect,  $F(2,116) = 101.20, p < .001, \eta^2 = .64$ . Participants in the giving UBG perceived the chips to be more owned by themselves ( $M = 5.38, SD = 1.86$ ) than owned by Person B ( $M = 1.82, SD = 1.47$ ),  $F(1,116) = 93.21, p < .001, \eta^2 = .45$ . Participants in the taking UBG perceived the chips to be more owned initially by Person B ( $M = 5.88, SD = 1.67$ ) than by themselves ( $M = 2.10, SD = 1.66$ ),  $F(1,116) = 107.25, p < .001, \eta^2 = .48$ . In the splitting UBG participants did not perceive a difference in ownership of the chips by themselves ( $M = 2.75, SD = 1.65$ ) or by Person B ( $M = 2.23, SD = 1.58$ ),  $F(1,116) = 2.07, p = .15$ . In addition, 98% of the participants correctly indicated where the chips were graphically presented to them.

The manipulation of dependency was also successful. A 3  $\times$  2 ANOVA on the dependency scale revealed only a dependency effect,  $F(1,113) = 487.63, p < .001, \eta^2 = .81$ . Participants in the low dependence condition reported being

less dependent on the recipient ( $M = 2.37$ ) than participants in the high dependence condition ( $M = 5.76$ ). In addition, all but one participant correctly indicated the consequences of a rejection.

#### Offers

A 3 x 2 ANOVA revealed only main effects and no interaction effect (see Table 2 for cell and marginal means). The dependency effect indicated that participants in the low dependency condition allocated less chips to B ( $M = 35.76$ ,  $SD = 18.45$ ) than participants in the high dependency condition ( $M = 45.20$ ,  $SD = 22.39$ ),  $F(1,113) = 6.98$ ,  $p < .01$ ,  $\eta^2 = .06$ . The game type effect indicated that the offers differed between the game types,  $F(2,113) = 7.44$ ,  $p < .001$ ,  $\eta^2 = .12$ . A linear contrast analysis indicated that participants in the taking UBG allocated more chips to the recipient ( $M = 50.23$ ,  $SD = 22.88$ ) than participants in the splitting ( $M = 34.55$ ,  $SD = 18.85$ ) or giving UBG ( $M = 35.77$ ,  $SD = 17.78$ ),  $F(1,113) = 10.87$ ,  $p < .01$ ,  $\eta^2 = .09$ . The interaction effect between game type and dependency was not significant,  $F(2,113) = .363$ ,  $p = .70$ .

Table 2. Number of chips allocated to the recipient as a function of game type and dependency

	Game Type			Total
	Giving	Splitting	Taking	
High dependency	38.50 (19.46)	42.00 (19.01)	55.10 (25.60)	45.20 (22.39)
Low dependency	32.89 (15.84)	28.90 (16.67)	45.35 (19.20)	35.76 (18.45)
Total	35.77 (17.78)	34.55 (18.85)	50.23 (22.88)	

Note. Standard deviations are given in parentheses.

#### Underlying Processes

To investigate whether the effects are the result of different underlying processes, we studied these processes and their possible mediating role. A 3 x 2 ANOVA on the fear of rejection scale (1 = a very low fear of rejection, 7 = a

very high fear of rejection) revealed only a dependency effect,  $F(1,113) = 21.16$ ,  $p < .001$ ,  $\eta^2 = .16$ . Participants in the high dependence condition indicated that their offer was dictated more by fear of rejection ( $M = 4.96$ ) than participants in the low dependence condition ( $M = 3.54$ ). The game type effect was not significant,  $F(2,113) = 1.32$ ,  $p = .27$ .

A  $3 \times 2$  ANOVA on the entitlement scale (1 = A is entitled, 7 = B is entitled) revealed only a game type effect,  $F(2,113) = 64.88$ ,  $p < .001$ ,  $\eta^2 = .54$ . A linear contrast analysis showed that participants in the taking condition perceived B as more entitled to earn chips and thus money ( $M = 5.08$ ) than participants in the giving condition ( $M = 3.08$ ),  $F(1,113) = 128.03$ ,  $p < .001$ ,  $\eta^2 = .53$ . The dependency effect was not significant,  $F(1,113) = .03$ , *ns*.

#### *Mediation analyses*

To study the underlying processes we conducted mediation analyses, similar to Experiment 2. First of all, game type had an effect on the offer, (dummy 1  $\beta = -.33$ ,  $t = -3.39$ ,  $p < .001$ ; dummy 2  $\beta = -.33$ ,  $t = -3.33$ ,  $p < .001$ ). Second, only game type had an effect on the feelings of entitlement (dummy 1  $\beta = -.50$ ,  $t = -6.80$ ,  $p < .001$ ; dummy 2  $\beta = -.84$ ,  $t = -11.36$ ,  $p < .001$ ). Finally, we regressed the offer on the independent variables and feelings of entitlement. This showed that entitlement affected the offer,  $\beta = .34$ ,  $t = 2.84$ ,  $p < .01$ , and showed that the game type effect disappeared (dummy 1  $\beta = -.16$ ,  $t = -1.43$ , *ns*; dummy 2  $\beta = -.04$ ,  $t = -.29$ , *ns*). Sobel tests showed that these reductions were significant (dummy 1  $z = -2.62$ ,  $p < .01$ ; dummy 2  $z = -2.76$ ,  $p < .01$ ). These results showed that entitlement mediated the game type effect.

We did not find a game type effect on fear of rejection, which therefore could also not mediate the effect. To study whether fear of rejection mediated the dependency effect we conducted a second mediation analyses. In the first step we found a effect of dependency on the offer,  $\beta = -.23$ ,  $t = -2.67$ ,  $p < .01$ . In the second step we regressed fear of rejection on the independent variables, and found only a effect of dependency,  $\beta = .39$ ,  $t = 4.62$ ,  $p < .001$ . Finally, when regressing the offer on the independent variables and fear of rejection, we found that fear of rejection affected the offer,  $\beta = .64$ ,  $t = 8.67$ ,  $p < .001$ , and that the dependency effect disappeared,  $\beta = -.02$ ,  $t = -.29$ , *ns*. A Sobel test showed that this reduction was significant,  $z = -4.08$ ,  $p < .001$ , yielding full mediation of the information effect by self-interest.

### *Conclusion*

The results of Experiment 3 again supported our hypothesis based on the do-no-harm principle. The game type effect was not influenced by the dependency of the allocators upon the recipient's behavior. In both high and low dependency conditions, we found that the offers in the taking UBG were highest and offers in the giving UBG were lowest, i.e., the game type effect did not interact with the manipulation of dependency. In agreement with the findings of Experiment 2, we again showed that the effect of game type was mediated by perceptions of entitlement. Moreover, fear of rejection could not explain the game type effect.

### **General Discussion**

In three experiments we showed that our game type manipulation altered the behavior of allocators. Allocators in the giving UBG allocated the lowest number of chips to recipients, while allocators in the taking UBG allocated the highest number of chips to recipient. Moreover, both Experiment 2 and 3 supported the more other-oriented mechanism (i.e., based on the do-no-harm principle). First, in both Experiment 2 and 3, game type was fully mediated by feelings of entitlement and not by strategic concerns such as self-interest (Experiment 2) and fear of rejection (Experiment 3). Second, introducing a possibility to deceive the recipient (Experiment 2) and altering the consequences of rejection (Experiment 3) did not moderate our findings. We realize that one should be careful not to overinterpret null-effects. Note, however, that the interaction terms had *F*-values lower than 1. Moreover, the game type effect was replicated in three experiments, and combined with our mediation analyses, these results lend support for our reasoning that game type effects are driven by feelings of entitlement.

We provided two alternative principles to explain the initial ownership effect. Loss aversion resembled the self-oriented perspective, whereas the do-no-harm principle resembled an other-oriented perspective. As the strategic motivations did not mediate the game type effect, loss aversion does not seem to be a viable explanation of the initial ownership effect. Our results thus seem to support the reasoning based on the do-no-harm principle.

These data extend the literature on motivated bargaining behavior. Past research has suggested that in ultimatum bargaining people do not truly care about fairness, but primarily use fairness to maximize their own payoff (Camerer & Thaler, 1995; Croson, 1996; Güth & Van Damme, 1998; Pillutla &

Murnighan, 1995). Studies on ultimatum bargaining with possibilities to misrepresent showed that most allocators appeared fair rather than being truly fair, suggesting that it was only self-interest that motivated allocator's behavior (see Camerer & Thaler, 1995; Pillutla & Murnighan, 2003; Straub & Murnighan, 1995). By incorporating initial ownership, we show that allocators were also motivated to honor the recipient's entitlements. At the same time, we found independent information level and dependency effects, which were explained in terms of self-interest and fear of rejection. In other words, with this study we show that self-oriented and other-oriented concerns can simultaneously play a significant role in bargaining.

Interestingly, our data may provide an alternative interpretation of low offers. Previous theorizing has always been very clear on how low offers should be interpreted: the lower the offer, the more the bargainer was motivated by self-interest. In the current research we showed that the effects of game type were mediated and explained by perceived entitlements. On the one hand this indicates that high offers in the taking UBG can be explained based on the notion that allocators truly feel that the recipient is entitled to high outcomes. On the other hand this indicates that the low offers we observed in the giving UBG also reflect a concern about entitlements in the sense that allocators then truly feel that they themselves are entitled to higher outcomes. If so, this implies that, although self-interest has been considered a very unequivocal motive underlying low offers - if you make a low offer this means that you are motivated by self-interest - this interpretation is subject to discussion. If you make a low offer, you may do this because you truly feel that you are entitled to the outcomes.

On a more general level our results fit in the appropriateness framework of March (1995; Messick, 1999; Weber, Kopelman, & Messick, 2004). This model suggests that one of the basic concepts influencing decision making is appropriateness. Before a decision is made, the situation is evaluated in terms of appropriateness. What kind of situation is this? What do other people think of this situation? Although offers differed between giving, splitting, and taking UBG, we believe allocators did perceive these offers as equally appropriate. The different initial ownership conditions influenced the feelings of entitlement, which altered the perceptions of appropriateness of the behavior and therefore the allocations to recipients. Allocators answered the question "what kind of situation is this?" differently because of the different feelings of entitlement between game types.

### *Future research*

In the current research the distribution of initial ownership of property was very clear as we explained this verbally and graphically. For the purpose of this study, the UBG sufficed. However, if initial ownership is studied in other negotiation situations (e.g., integrative negotiations) ambiguity about initial ownership might arise. In these situations egocentric biases (e.g., Babcock, & Loewenstein, 1997; Bazerman, Curhan, Moore, & Valley, 2000) might play a role such that may overestimate their right to own the property. Also, people tend to overrate the extent to which they behaved ethically (Tenbrunsel, 1998), which might have an effect on the behavior. These egocentric biases were beyond the scope of the current research. Future research might address biased perceptions of entitlement in situations where ownership of the property is not as clear as in the UBG.

We created new game types to study the influence of initial ownership. Yet, there may also be other processes which can be studied with these games. For example, they may be used to study helping vs. not helping (giving UBG) and harming vs. not harming (taking UBG). This possibility to study helping independent of harming, might in the future contribute to the literature on prosocial behavior (e.g., Dovidio, Piliavin, Schroeder, & Penner, 2006; Eisenberg, 2000). According to a cost-reward analysis of helping, people want to maximize the rewards and minimize their costs (e.g., Epstein & Hornstein, 1969). Rewards and costs can be either material or symbolic (e.g., social reward, feelings of shame). Based on our results, one might argue that the costs for not helping are smaller than the costs for harming. That is, allocators in the giving chose more easily not to help the recipient and to keep most of the property themselves, than allocators in the taking UBG chose to harm the recipient and take most of the property. Future research is necessary to further investigate the decisions to help or harm.

### *Conclusion*

We started this study by observing strong self-interested behavior in the UBG, while other research showed a reluctance to harm other people (Baron, 1995; 1996; Van Beest, et al., 2003; 2005). By introducing initial ownership we were able to demonstrate this do-no-harm principle in the UBG. We showed that initial ownership strongly affects how the property is distributed after the negotiation. The distribution of ownership of property is not only the end of the negotiation; it really is where it all starts.

