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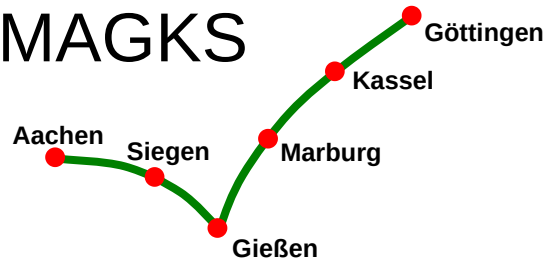

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Anyone up for helping the Fisherman's wife?

More solidarity with accidental misery than with man-made misery♦

by

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Abstract

We examine the willingness to donate depending on whether "misery" is random generated or self-inflicted by too high demands in bilateral negotiations. We find that randomness has a positive influence on the total amount of donation. In case of self-inflicted "misery" we observe that the subject who may have caused the unfavourable situation receives significantly less than the perceived innocent subject.

Keywords: altruism; bargaining experiment

JEL Classification: C91, D31, D64

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♦ The experiment described in this paper was performed during a doctoral seminar on experimental economics. All authors contributed equally to making up the experiment and to writing the first draft on the final days of the seminar. We are indebted to Sarah Kniel for organizational support, and to seminar participants in Rauischholzhausen and Kassel, especially Andreas Ernst, for helpful comments.

1. Introduction

People are willing to help others, in real life as well as in the laboratory. But would they also help if others' misery is self-inflicted? We perform an experiment in which people give up more of their resources in order to help others if the latter's misery is random rather than being self-inflicted. This result translates well into real-world circumstances, where people's willingness to contribute to fund-raising is higher for catastrophes which cannot be regarded as the outcome of individual interaction (e.g. East Asia Tsunami victims) than for perceivably self-inflicted miseries (e.g. victims of alcoholism). Likewise, many readers of the Brothers Grimm's fairy tales do not pity the fisherman's wife strongly: She could have had a life of a queen but due to her excess demands she lost everything. Nevertheless, some people might help even her. Our paper presents clean evidence on such these cases of altruism.

The fact that people are prepared to make sacrifices and thus improve the wellbeing of others is a well-known property in many kinds of experiment, the simplest case being the dictator game or variants thereof (e.g., Forsythe et al, 1994; see Camerer, 2003, pp.57-58, for a condensed overview). Altruistic giving depends not only on the donor's willingness to give, but also on who the receiver is. Eckel and Grossman (1996) found that allocators in the dictator game gave 2 to 3 times as much to the Red Cross than to some anonymous fellow participant. While in this case it is the receiver's reputation that is decisive, we aim at investigating the impact of receivers' actual, current behaviour.

Third party punishment games are motivated in a somewhat similar way. The behaviour of an allocator in a dictator game is observed by a third party, who can then, if s/he wishes, sacrifice own resources to punish perceived norm violation (e.g., Fehr and Fischbacher, 2004; Ottone, 2005; Marlowe et al., 2008). However, what is observed by the third party in these experiments always a zero sum game. A nonzero-sum game, that better reflects a situation where misery is due to real loss of resources, has recently been used by Sutter, Lindner and Platsch (2009). While these authors focus on the effect that a third party's presence has on subjects playing the prisoners' dilemma game, we use a different nonzero-sum game to investigate the determinants of the third party's decision.

We ask subjects to make their donation decisions in light of a breakdown in a bargaining game that has previously been carried out by two other players. The breakdown in the bargaining game can either be random or have been caused by disagreement. Does the cause for disagreement – own fault or fate – have any significant influence on the third party's

donation decision? Intuitively, one might suspect that the willingness to donate is greater if the inability to reach agreement is not self-inflicted.

A second question is whether a third party when allocating money to the players differentiates between them according to their perceived modesty, that is, their contribution to negotiation breakdown. I.e., does the third party behave more generously towards the party with the relatively low demand than that with the relatively high demand?

The remainder of the paper is organised as follows. We describe our experimental design and procedure as well as hypotheses in the next section. The results of our experiment are given in section 3. This is followed by tentative conclusions and an outlook on further research perspectives.

2. Design and Hypotheses

2.1 Design

Two players are asked to reach an agreement over the allocation of a fixed sum of money among them. Each player simultaneously states the share of the money s/he demands. If the sum of the demands exceeds the total amount of the money available both players receive a zero pay-off, otherwise they receive their respective shares. In the case of disagreement between the players the third player has the possibility to allocate a fraction of her initial endowment among the bargainers.

The experiment consists of a two-stage three-player game including decision makers A, B_1 and B_2.

In the first stage, B_1 and B_2 play a bargaining game about the distribution of 10 monetary units with 1 unit being equal to 1 euro. They simultaneously place demands b_1 and b_2, respectively, where $b_1, b_2 \in \{2.5, 3.75, 5, 6.25, 7.5\}$. If bargaining is successful with $b_1 + b_2 \leq 10$, the payoff is $\pi_{B1} = b_1$ and $\pi_{B2} = b_2$. If $b_1 + b_2 > 10$, bargaining failed and payoff equals zero for the time being. In the second step, player A is endowed with 20 units. If the players B agree, nothing happens, and A's payoff is $\pi_A = 20$. In contrast, in the case of disagreement between B_1 and B_2, A may opt to help out by donating amounts α_{B1} and α_{B2} to player B_1 and B_2, respectively, reducing her own payoff to $\pi_A = 20 - \alpha_{B1} - \alpha_{B2}$. This implies that B_1 and B_2 payoffs become $\pi_{B1} = \alpha_{B1}$ and $\pi_{B2} = \alpha_{B2}$.

Player A had to specify donations α_{B1} and α_{B2} for each of the four or six[1] hypothetical disagreement outcomes of the game (i.e., we employ the strategy method introduced by Selten, 1967).

In order to obtain insights into changes in A's behaviour two treatment variables, "random" and "rule out 50", are applied, leading to a 2x2 factorial design. Table 1 summarizes the design.

Table 1: Treatment variables

	50 included	50 ruled out
bargaining	bargaining breakdowns are self-inflicted, which would have been easy to avoid	bargaining breakdowns are self-inflicted, but understandable to a certain degree
random	Players have no control over "bargaining" outcome	Players have no control over "bargaining" outcome

First, we look at the differences in A's behaviour when comparing a setting in which the B-players' result is bargained by two participants versus a setting in which the demands, and hence the result, are randomly determined by a lottery. Player A knows whether the game is random or bargained in the way described above.

A first sight, this bears some similarity to research by Blount (1995), who finds responders' behaviour in the ultimatum game to depend on whether offers are randomly generated or actually decided on by proposers. However, here like in a number of further studies that identify the importance of intentions[2], intentions turn out to make a difference for those directly involved in the bargaining process. We study the preferences of people who are outsiders to the bargaining process and can change the payoffs after the other two players' game is completely played.

[1] The number of disagreement outcomes depends on the treatment ("50 included" has more possible disagreement constellations than "50 ruled out").
[2] E.g., Nelson (2002), Sutter (2007), Charness and Levine (2007), McCabe, Rigdon and Smith (2003).

Second, we consider a setting in which the B-players' choices are restricted to $b_1, b_2 \in \{2.5, 3.75, 6.25, 7.5\}$. Note that the option of claiming 50% of the pot is ruled out. This scenario is compared to one in which the full range of options is available. We introduce this variant to encourage disagreement and observe variance in player A's decision making.

Finally, to reduce unexplained variance due to unobserved altruism we conduct a dictator game yielding a further explanatory variable, a proxy for general level of altruism. In a separate experiment, player A is endowed with 20 of which she may donate any amount $\alpha_D \in \{0, ..., 20\}$ to a randomly selected player resulting in a payoff $\pi_A = 20 - \alpha_D$.

2.2 Procedure

Our subjects were mainly first year economics starters at the University of Kassel, without knowledge of experimental or theoretical economics.[3] The experiment took place in large classrooms; participation was voluntary. The sample includes only those 106 participants who had correctly answered a test question, intended to ensure that everyone understood the rules. In eight experimental sessions, two for each treatment, the sequence of the anonymous games was as follows:

1. All participants read the instructions and were asked to solve different exercises to ascertain that all understood the rules of the experiment.
2. All participants played the dictator game after having chosen an alias and a code number used for making the monetary payoff. Every participant was asked to play a dictator game and indicate whether she would like to donate to an anonymous person any of her 20 units of endowment, and if so, how many units she would be willing to donate.
3. Two players were randomly (but not publicly) assigned to the role of player B_1, two further players to the role of player B_2.
4. All other participants were put in the feet of player A. They were asked to choose generally whether they wanted to donate any of their initial endowment in the case of B_1 and B_2 disagreeing.

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[3] The freshman groups took part in an orientation week and were accompanied by more advanced students, who account for five percent of the sample. Excluding the more advanced students from the sample does not markedly change the results.

5. The game between two pairs of players representing B_1 and B_2 was conducted.
6. Each pair players of players B_1 and B_2 was randomly matched with one of the players A. In the case of agreement between B_1 and B_2, the latter were paid according to their demands and A kept 20 €. In the case of disagreement in the bargaining game, B_1 and B_2 were paid according to the decision player A had previously made for this case. If A donated, s/he kept the remainder of the initial endowment of 20 €.
7. Subjects had the choice between being paid by the experimenters after other subjects have left, or being paid later by a secretary in a separate room.

The duration of the experiment was 20 minutes per group. The average payoff for each participant summed up to about 10 €/h.

2.3 Hypotheses

Our statistical assessment is based on the following main hypotheses:

First, we expect that player A's willingness to donate and the extent of donations are influenced by whether the disagreement is random or self-inflicted. This leads to our first hypothesis:

H1: A donates more if bargaining breakdown is randomly caused rather than self-inflicted.

Moreover, in the bargaining case, does player A punish excessive demands? I.e., does she donate less to the person with the relatively higher demand? We expect that she sanctions the player who perceivably has caused the unfavourable situation by donating a higher amount to the innocent player, in other words:

H2: If B_1 and B_2 disagree, the player with the higher demand receives less than her counterpart.

3. Results

To test the first hypothesis, i.e., whether player A is more generous in the stochastic situation, we create the dependent variable *meandonation* as the average (over all combinations of b_1 and b_2) of all amounts donated to B_1 and B_2. We regress *meandonation* on the dummy variable *selfinflicted*, which is 1 if the harm is self-inflicted and 0 otherwise, on the treatment dummy *incl50*, which is 1 if the 50% option was available to negotiators, on the gender dummy "female" and on our proxy-variable for altruism. As *meandonation* is left-censored (36 of 114 observations take the value 0), Tobit analysis is used. Table 2 shows the results.

Table 2: Determinants of willingness to donate

Tobit regression of left-censored dependent variable *meandonation*

	coeff.	s.e.
constant	-3.111	(1.999)
selfinflicted	-1.966 *	(1.113)
female	1.351	(1.129)
altruism	0.907 ***	(0.177)
incl50	0.680	(1.126)

Number of observations = 114, Pseudo R^2 = 0.057 (not to be interpreted as the R^2 in OLS regressions); standard errors in parenthesis

***= 1% level of significance, **= 5% level of significance, *= 10% level of significance

We see that less is given if harm is self-inflicted (on average, 4.72 € in the latter case versus 6.41 € for random disagreements). The amount given to those whose negotiations failed is larger for donors who gave more in the dictator game. If a subject is willing to give one more Euro in the dictator game, she would donate about 0.91 Euro more of her own money to players B_1 and B_2. Women give more, but the gender dummy is not significant in the statistical sense. Neither is *incl50* significant; it does not seem to matter whether negotiator had the 50:50 option or not for the *total* amount given (adding an interaction term *selfinflicted*incl50* did not improve the results). But it matters for the distribution of the total amount given, as we will show next.

Hypothesis 2 presumed that player A (the donor) discriminates against the player B who caused the breakdown of the bargaining. Simple nonparametric tests lend support to this hypothesis in some constellations. The upper three rows shows what happens if one player demands more than 50%, while 50% would have been possible *and* the other player

demanded no more than 50%. In this case the greedy player is held accountable, and the modest player receives a markedly higher donation. The difference is not significant, however, if both demand more than 50%. This is obviously to be expected if both place the same demand (62.5% or 75%), these cases are left out in table 3. But also when one player demands less than the other, being "modest" in this sense, but still more than 50%, namely 62.5%, both receive approximately the same donation (row 4 of table 3). There is no significant impact of the "extent of greediness", so to say, on donations.

The two bottom rows of table 3 show donations for the case that a 50% demand was not possible. In one case, the sign of the difference between donations is unexpected, but the difference is significant in neither case, hence we refrain from interpreting the sign in differences and note that donators obviously realized that finding an agreement under our rules was evidently much more difficult if 50% of the cake cannot be demanded, hence on average they do not markedly punish the "greedy" negotiator.

Table 3: Donations to negotiators after self-inflicted negotiation breakdown

	50% possible	
Demands by modest/greedy negotiator	Given to actually modest negotiator	Given to actually greedy negotiator
37.5% / 75%	2.97	2.20 *
50% / 62.5%	2.97	2.11 ***
50% / 75%	3.26	1.79 ***
62.5% / 75%	2.17	2.06
	50% not possible	
37.5% / 75%	2.49	2.81
62.5% / 75%	2.68	2.40

*: difference to amount given to modest negotiator significant at 10% level
***: difference to amount given to modest negotiator significant at 1% level,
Wilcoxon Matched-Pairs Signed Ranks Test

Likewise, we can compare the amount given to the "accidental high demander" in the random demand treatment to the amount given to the actually greedy negotiator. We restrict this analysis to the case where 50% demands were possible (table 4).

Table 4: Donations after self-inflicted versus random bargaining breakdown

Demands by modest/greedy negotiator	Given to accidentally greedy negotiator	Given to actually greedy negotiator
37.5% / 75%	3.96	2.20 ***
50% / 62.5%	3.38	2.11 **
50% / 75%	3.52	1.79 **
62.5% / 75%	3.62	2.06 ***

	Given to actually modest negotiator	Given to accidentally modest negotiator
37.5% / 75%	2.97	2.59
50% / 62.5%	2.97	3.05
50% / 75%	3.26	3.06
62.5% / 75%	2.17	3.41 ◆

*: difference to amount given to accidentally greedy negotiator significant at 10% level

**: difference to amount given to accidentally greedy negotiator significant at 5% level

***: difference to amount given to accidentally greedy negotiator significant at 1% level, Mann-Whitney-U-test

◆ difference to amount given to actually modest negotiator significant at 1% level, Mann-Whitney-U-test

4. Conclusion

The experiment we conducted shows clearly that people are on average prepared to sacrifice more of their resources in order to help others if the failure to allocate the common resource is the result of a random event. While breakdown in the bargaining game resulting from disparity of demands also leads to donations, these are on average much lower with the difference being statistically highly significant.

One reason for such a differentiated behaviour might be the perception of the relatively high demand representing a form of greed. This goes in line with currently articulated resistance of taxpayers and politicians to bail out banks in distress. One common emotion is that the financial distress is self-inflected, grounded in greed and speculation of bank managers, who have undertaken risky bets to increase their bonus payments.

Our result that the player who is mainly responsible for the bargaining breakdown receives a smaller donation than his counterpart is intuitively appealing. However, the fact that the former player receives something at all seems to be surprising. Two particularities of our experiments might have caused generosity towards the "greedy" negotiator. First, we used a framing developed by Mehta, Starmer and Sudgen (1992), that sometimes assigns one player

a seemingly (i.e., game-theoretically irrelevant) higher value (three out of four aces), thus provoking a higher number of large demands than one would otherwise expect. The distribution of aces was not revealed to players A, who observed the bargaining game, but the complication might have raised some understanding for high demands. Second, almost all participants were freshmen; the experiment took part on the third day of their orientation week. This might have established some social ties.

Anyway, we were not mainly interested in the level of altruism, but in circumstances that contribute to increasing or decreasing it. Organizations campaigning for donations might make use of our findings by emphasizing, whenever this is reasonably possible, that prospective recipients suffered from bad luck and are not to be held accountable for their situation.

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