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I want YOU!
**An experiment studying motivational effects when
assigning distributive power**

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Abstract

Will the fact that a person is selected among others on the basis of personal information affect that person's behavior? In our experiment participants first answer a personality questionnaire. They then play a 3-person game: one of the three players decides, after inspecting the personality questionnaires, between an outside option and granting allocation power over a pie to one of the other two players. Treatments differ in the procedure by which distribution power is assigned: to a randomly determined or to a knowingly selected partner. Results show that knowingly selected allocators keep less for themselves than randomly selected ones. We also find evidence that knowingly selected allocators treat selectors more generously than the third player. However, these effects become weaker over time.

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1. INTRODUCTION AND MOTIVATION.

In many economic and social situations people let others freely distribute payoffs among several parties. This is because we live in a world in which contracts are incomplete and thus leave considerable discretion to those involved. Examples from economic life are labor markets with hidden effort and goods markets with variable quality. In these kinds of markets it is not possible to completely specify the features of the goods or services to be delivered. As a consequence, workers can, after being hired, often influence through their effort how much employers earn. In a similar manner the purchase of a good or service of uncontractable quality allows the seller to take advantage of her customers. The problem is also present within organizations and firms; the assignment of certain tasks to particular employees often entails giving them some degree of allocative power. Although reputation acts as a constraint on opportunistic behavior in many such situations, there typically remains substantial room for it.

In this kind of environment, issues related to cooperative behavior can play a prominent role. We know from previous experiments with a variety of sequential games that gift exchange is a reliable behavioral phenomenon. Those who act first frequently make – at own cost – choices which can be exploited by those who act second, and second movers then take – again at own cost – actions favoring first movers.

In the investment game (Berg, Dickhaut and McCabe, 1995), for instance, a truster can assign different degrees of distribution power to a trustee. Let k be the positive monetary endowment of the truster and m a multiplier with $m \geq 1$. For any investment x by the truster, with $0 \leq x \leq k$, the trustee receives mx of which she can send any share y , with $0 \leq y \leq mx$, back to the truster. The data from experiments with this game exhibit both considerable investment and

pay-back. Fehr, Kirchsteiger and Riedl (1993) find similar results for their related gift exchange game. Numerous other studies report evidence in the same line.

Such studies neglect whether the procedure by which the trustee has been selected matters. A relevant behavioral issue may, hence, have been left aside. In many instances individuals obtain discretionary power over others after having been consciously selected among several candidates. Selection is usually considered to have an allocative impact; a good selection procedure will presumably select the candidate with the most appropriate characteristics. The procedure may, however, also cause other effects; specifically, the selected party's motivation may in some way be affected by the selection. When selecting an employee, employers usually choose one person from a pool of several candidates after gathering considerable information about their characteristics; the person who gets the job usually knows that. If this very fact subsequently affected the employee's behavior in a way favorable to the selecting partner then there would be a purely psychological reason for following personalized selection processes. This possibility is the focus of our study.

The effects we investigate may have their origin in the beliefs people have about each other. People may have a tendency to prefer avoiding the guilt that results from disappointing the expectations of others (a theoretical approach along these lines is that of so-called psychological game theory, see Geanakoplos, Pearce, Stacchetti (1989)). In our case it may be that the fact that a person selects another person for a task leads the selected person to believe that the selecting person harbors certain hopes about the selected person's subsequent behavior. This may then induce the selected person to act in a way that does not disappoint the other party who has foregone other opportunities. The intuitive notion just posited is modeled in the marital equilibrium analysis presented in Dufwenberg (2002). There the stability

of marriage depends on people's beliefs about their spouses' beliefs about their commitment to the marriage. The assumption there is that the stronger the husband believes that his wife believes that he will stay, the more the disutility or guilt he experiences if he chooses to leave his wife. These kinds of belief-dependent guilt feelings may be at the root of many other phenomena, one of which we study in this paper.

Different aspects of job selection processes have been studied non-experimentally (see Hough and Oswald (2000) for an overview of current research on personnel selection). Gilliland (1993, p. 727) concludes that the perceived fairness of the selection process "will have an impact on the work behavior of a person who is hired, which is exhibited through work performance, organizational citizenship behaviors, his or her attitudes such as job satisfaction and organizational commitment, and the organizational climate". Some studies deal directly with applicants' reactions to positive selection outcomes. Bauer, Maertz, Dolen and Campion (1998) find that applicants passing a test for a clerical position rated organizational attractiveness, intentions to work for the organization and the fairness of the test higher than in their initial reactions. Ployhart, Ryan and Bennett (1999) report that fairness perceptions of cognitive and job knowledge tests increased with a positive selection outcome.

We are not aware of any earlier experiment that specifically addresses whether the employee's behavior will depend on the procedures by which she has been selected. However, the experiments presented in Dufwenberg and Gneezy (2000) and Charness and Dufwenberg (2003) do touch on some related issues. The environment investigated in the first of these papers is akin to a trust game with elicitation of beliefs. The truster is asked how much he expects that the trustee will give back and the trustee is asked how much the truster expects that the trustee will give back. The relevant result here is that the amount the trustee pays back

is positively related to the trustee's belief about the truster's belief. In a somewhat different context Charness and Dufwenberg (2003) find that non-binding promises have an impact on behavior that can be explained in terms of how they affect others' beliefs.

We assess experimentally whether people's behavior is affected by the very fact that they are selected on the basis of information about their personal characteristics. It would be difficult to carry out this type of analysis on the basis of field data alone, since in natural environments one will hardly find data with the desired variations in the selection procedure. In contrast, experiments make it possible to generate this kind of evidence in a systematic way.

Based on a simple sequential selection task we focus on three main hypotheses about the behavior of the selected party. The first states that selection in the light of personal information will make the selected party more generous towards others. This is what we will refer to as the *I-want-YOU effect*. The second hypothesis, which we will call the *gratitude effect*, posits that the selected party will favor the selecting party more than the third party involved. Thus the first hypothesis refers to a possible change in the goodwill towards others in general and the second to the relative disposition towards people in the different positions. Our third hypothesis concerns the relevance of outside options (i.e. what the selecting party can earn if she refuses to let the other party divide the pie). We also report on some other notable aspects of the interaction process between the selecting and the selected party.

2. DESIGN, PROCEDURES AND HYPOTHESES.

The experiment consists of two parts. In the first part participants provide personal information about themselves by filling out a personality questionnaire. At this point they do not receive any information about the second part of the experiment. In the second part a

sequential pie sharing game with an outside option is played in which the personal information contained in the questionnaires can be accessed by some of the participants.

2.1. The personality questionnaire.

As part of our experimental design, we needed to generate information about participants' personal characteristics. To provide this kind of information, at the beginning of the experiment all participants were asked to fill out the '16 PA-personality questionnaire'. An English translation of the personality questionnaire can be found in Appendix A.

This questionnaire was introduced by Brandstätter (1988) and serves as a German and reduced version of a more comprehensive self-rating of individual characteristics (see Cattell, Schneewind and Schroeder (1983)). We do not view this questionnaire necessarily as an appropriate tool for use in selection processes in natural settings. It is, however, a good way of obtaining some relevant personal information about subjects in our experimental setting.

In the questionnaire subjects had to rate themselves on a scale from 1 to 9, on 32 items related to 16 personality-related dimensions. When answering the questionnaire participants did not know about the actual decision task they would subsequently participate in.

2.2. The structure of the pie sharing game.

In the second part of the experiment, subjects were asked to make decisions in a three-person game in which they had the fixed role of party X, Y or Z. In the game, see figure 1, the three parties can share a total reward of 12 tokens. First, X decides whether she wants the whole pie to be distributed (D) by either Y or Z or take the outside option (O) which

yields X either $q=3$ or $q=6$ tokens – see below - and leaves the other two empty-handed. In case that X gives up her outside option, Y or Z becomes what we will call the *allocator*. The allocator's distribution of 12 among the three parties can be described by the vector (x,y,z) with x,y and z being non-negative integers and $x+y+z=12$.

For purely self-interested players the optimal behavior in these games is very straightforward. If either Y or Z has been assigned dictatorial power, she will keep the entire pie, 12, for herself regardless of how she has been selected. Anticipating this, a self-interested player X will always choose O, since q is positive.

Insert Figure 1 about here

Our main treatments differ only in what happens when X gives up her outside option. In the *selected allocator* (hereafter, SA) *treatment* party X can freely decide whether she gives up the outside option *and* whether she wants Y or Z to be the allocator. The SA treatment corresponds to the environment we are mainly interested in. Player X can be seen as an employer or personnel manager who has to hire one of the two employees or assign a task to one of them on the basis of available personal information about the candidates.

As a natural control for the SA treatment we conducted the *random allocator* (hereafter, RA) *treatment* in which, for the case that X gave up her outside option, the distribution power was randomly assigned to either Y and Z, with a probability of $\frac{1}{2}$ each. Note that this procedure provides an unbiased benchmark at which personal characteristics can not influence the choice between Y and Z.¹

In our experiments we used the strategy elicitation method, i.e. we asked both players Y and Z to decide for the case in which they were selected. The payoffs resulted from the path

¹ Personal characteristics of both Y and Z can affect X's decision to give up the outside option in RA.

of effective decisions. It is important to note that in the context of our experiment the use of this procedure is necessary for ensuring the soundness of our experimental design. If we had used the direct response method under which players Y and Z respond to X's choice only in case that they are effectively chosen, then the effects we are interested in would be confounded with the more standard effect that X players make sure to select people whose answers to the questionnaire gave them good reasons to think that they would be generous. In that case we would not be able to disentangle X's ability to select favorable allocators – a strategic issue – from allocators' purely motivational reactions to being selected.

The answers to the personality questionnaire were used in both treatments. Player X could consult the answers of the two participants who had the Y and Z roles in her group, *before* choosing between O and D and, in the SA treatment, also between (D, Y) and (D, Z).² She just had to enter into the computer the number corresponding to a certain question and instantly obtained the respective answers for the Y and Z players she was matched with. She was neither restricted in terms of time nor by the number of questions she was allowed to consult. Player X's information requests were recorded by the computer. This yields information about how much and which information X's decision for or against O and, in the SA treatment, for Y or for Z, is based on.

² X players in the RA treatment could consult the information about Y and Z players just as in the SA treatment, although they could not choose between Y and Z. The number of information items retrieved under the RA treatment turned out to be lower than in the SA treatment.

2.3 Hypotheses

In this section we present several hypotheses concerning the behavior of the allocator. Individualistic preferences and purely distributional social preferences – which can be summarized as pure consequentialism – yield the following null hypothesis:

H₀: The allocator's behavior is the same under SA than under RA and does not depend on the magnitude of the outside option.

The Dufwenberg (2002) model and more informal considerations related to notions of intentionality and let down aversion suggest that the allocator will behave differently in the two treatments, since he feels differently about letting the other players down. The fact that three players are involved introduces the issue of whether the allocator's behavior changes with respect to the other two equally or whether it changes more favorably vis-à-vis the X player. Our first research hypothesis corresponds to what we call the *I-want-YOU effect* which posits that selected allocators will be more generous towards others than random allocators, without distinguishing between the X player and the third player:

H₁: The allocator keeps less for himself in the SA than in the RA treatment.

Our second focus is the difference of the shares of the X and the third player. Our conjecture is that the allocator will favor the X player relatively to the third player and we refer to this as the *gratitude effect*. We formulate it in terms of two related hypotheses:

H_{2A}: The allocator gives more to the X player than to the third player.

and,

H_{2B}: The difference between what the allocator gives the X player and what he gives to the third party is higher in the SA treatment than in the RA treatment.

Hypothesis H_{2A} applies separately to the two treatments. Hypothesis H_{2B} is more demanding, since it not only requires the *gratitude effect* to be present in SA, but asks for additional or differential gratitude in the SA case compared to the RA case.

Our final hypothesis refers to how the magnitude of the outside option affects the allocator's behavior. Our design includes variations in this magnitude and this will allow us to study its effect. Our research hypothesis is again inspired by the Dufwenberg model as well as by intuition and some previous experimental results for give exchange games.³

H₃: The allocator will keep less for himself for the larger outside option ($q=6$) than for the smaller one ($q=3$).

Given that all our hypotheses are one-sided we always use one-tailed tests below.

2.4 Procedures.

We conducted three sessions for each of the treatments (between subject design). Each session extended over three rounds; players' roles remain fixed over all three rounds. The only difference between rounds was that q was equal to 3 tokens in rounds 1 and 2 and equal to 6 tokens in round 3, which allows us to study the influence of variations in outside options. We used a round-robin matching procedure and, hence, guaranteed that no participant was ever matched twice with the same partner in different rounds. In addition, subjects were not informed about the outcomes in rounds 1 and 2 until after the end of round 3. We used a procedure that avoided feedback effects so that changes in behavior over time can not be influenced by information on others' past behavior. Below we discuss some implications of this procedural choice.

³ It is intuitive to conjecture that the foregoing of a larger outside option will trigger higher levels of guilt feelings and more generous decisions by the allocator.

The experiment was conducted in the computer laboratory of the economics faculty of Humboldt-University in Berlin and participants were undergraduate students, mainly in economics, at that university.⁴ The software was written with the help of z-tree (Fischbacher, 1999). Each of the six sessions had 15 participants who were randomly assigned to one of the three roles X, Y and Z. We, therefore, have a total of $2(\text{treatments}) \times 3(\text{sessions}) \times 15(\text{participants per session}) = 90$ participants.⁵ This means that we have observations of 15 subjects, for each (X, Y or Z) role and in each of the treatments. Due to the use of the strategy method we can pool the observations of 30 subjects in either the Y or the Z role and analyze them together as second-mover data.

3. RESULTS.

The data file of each participant in the X role consists of her answers to the personality questionnaire and, for each of the three rounds, of her information requests about Y and Z's answers to the questionnaire and her decisions in the game. For participants in the role of Y or Z the data only include the first and third of the above three items. Although participants decide repeatedly, when comparing behavior in the same round each individual decision was treated as an independent observation, since no feedback on others' behavior was provided between rounds. Thus the only statistical drawback arises when, in one specific instance of our analysis below, we pool the data from rounds 1 and 2 with $q=3$, for the same subject. We next present the evidence related to the hypotheses we have formulated above.

⁴ Appendix B contains a translation of the instructions.

⁵ The minimum, average and maximum payoff were 10, 18.6 and 34 DM, including a show-up fee of 10 DM. 1 DM equals .5 Euro. A typical session needed around 45 minutes, 10 minutes for filling out the standard

3.1. The behavior of second movers (Y and Z).

Table 1 presents descriptive statistics of how the Y and Z players - in the table

Insert Table 1 about here

referred to as *allocators* – distribute the 12 units of the pie between the three participants. As mentioned above, the decisions of Y and Z are pooled, since these two roles are *ex ante* identical. The data shown in table 1 correspond to all the information we have about the behavior of Y and Z, i.e. it includes the decisions of both those allocators that were actually chosen and those who were avoided. Table 1, hence reflects Y's and Z's behavior without conditioning on first players' behavior. In section 3.2 below we will show related information for which the X players' behavior will be taken into account.⁶

We first focus on evidence pertaining to our first hypothesis, the *I-want-YOU effect*. In table 1 one can see that, in a descriptive sense, regularity 1 holds for rounds 1 and 2, but not for round 3: mean demands by allocators in rounds 1, 2 and 3 are 8.77, 9.7 and 9.13 for RA and only 7.33, 8.67 and 9.2 for SA.

Insert Figure 2 about here

Two other ways of looking at the data confirm this first impression. Figure 2 shows comparisons of the cumulative distributions of allocator shares in the three rounds. By inspection one sees that for round 1 the distribution for SA is to the left of that for RA. In round 2 this distance is still there but has shrunk, and in round 3 it has disappeared.

The data shown in table 2 give some additional information about second mover

Insert Table 2 about here

personal questionnaire, 10 minutes for reading the instructions and privately answering clarifying questions and about 10 minutes, 7 minutes, 7 minutes for the 1st, 2nd and 3rd round.

⁶ Note, in passing, the confirmation in both treatments of the well-known result that subjects give away considerable amounts in situations in which they have all the distribution power.

behavior. The table shows the number of players that kept more than half the pie ($\#>6$) and kept half the pie or less ($\#\leq 6$). The numbers for round 1 of SA seem to be different than those for the other instances.

The above impressions do have some statistical validity. The statistical backing for the *I-want-YOU effect* comes from the results of a Mann-Whitney U-test (one-tailed), which finds a significant difference in round 1, with a p-value of $p=.043$, and not in rounds 2 and 3 ($p=.089$ and $p=.48$). If, in spite of the repeated measurement issue, one pools the data from rounds 1 and 2, involving the same outside option, the p-value is $p=.023$.⁷ We summarize this as follows:

Regularity 1:

In round 1, knowingly selected allocators keep significantly less for themselves than randomly chosen ones. This result confirms our hypothesis H_1 for round 1.

Recall that we use a no-feedback design so that the difference between rounds can not be explained by learning from past outcomes. One possible interpretation of the fading away of the effect in rounds 2 and 3 is that round 1 behavior corresponds to a *hot* or more emotional reaction while behavior in rounds 2 and 3 is *colder* or more studied and reflects what people do on second thoughts. The data suggest that one can conceive of the *I-want-YOU effect* we find for round 1 as the expression of some initial goodwill which is present in the initial stages of the relation that starts with the selection process, but disappears due to a kind of satiation or familiarization effect. In terms of the notion of guilt aversion proposed by Dufwenberg (2000), one could say that guilt feelings are not eternal. These interpretations are perhaps somewhat speculative, but are consistent with common sense

We now move to the *gratitude effect*. Table 3 shows by treatment and round, the number of cases in which X obtained more, the same or less than the third party; it also reproduces the mean allocations for the X and the third player. On a descriptive level the data are consistent with our hypothesis H_{2A} . Mean allocations are higher for the X player in all six instances. Similarly the number of cases in which X obtained more is higher, again for all six instances shown in the table. A Wilcoxon signed-ranks test shows that the difference is significant for round 1 of the SA treatment ($p=.042$, one-tailed), but not for the other cases; in round 1 behavior is different in SA than in RA.

Insert Table 3 about here

Our hypothesis H_{2B} is, in a sense, more demanding, since it asks for a differential effect in the two treatments. Here a Mann-Whitney U-test finds no difference between the two treatments in any of the three rounds, the lowest p-value being $p=.17$ for round 1. The fact that in round 1 of RA the favoring of the X player was strongest prevents the differential effect from being significant. We summarize our results about the *gratitude effect* in the following regularity:

Regularity 2:

In round 1, knowingly selected allocators give significantly more to the X player than to the third player. This confirms our hypothesis H_{2A} for round 1 of the SA treatment. Our hypothesis H_{2B} finds some qualitative confirmation but no statistical support.

⁷ A Kolmogorov-Smirnov test rejects the normality of the distributions of the data. For this reason we prefer the Mann-Whitney U-test to a t-test. However, a t-test also finds a significant difference for round 1 with $p=.048$.

Our final observation concerning second mover behavior is about the influence of X's outside option on allocator's behavior. Inspection of the results contained in table 1 leads us directly to formulating our last regularity:

Regularity 3:

Higher outside options do not lead to lower allocator shares. Our hypothesis H_3 is not supported.

At first sight, regularity 3 may seem surprising since, as mentioned above, other studies have found that second movers' choices among outcomes depend on the alternatives available to first movers (see, for instance, Brandts and Solà (2001) and Charness and Rabin (2002)). Nevertheless, our result may be rationalized in the following way. In our game both outside options are very unfair, since they give everything to the X player. (In comparison, the actual mean allocations in round 2 assign shares of 17.1%, 70.4% and 12.5% to the three different players). In addition, the sum of outside option payoffs is in both cases considerably smaller than 12. Therefore, in both cases, player X's giving up of her outside option may be rather seen as a duty than as an act of generosity and, hence, does not affect the allocator's subsequent behavior. Such a sense of duty could be triggered by a feeling of obligation to increase efficiency. In contrast, Y and Z players do not have the possibility of increasing efficiency and can, hence, not be affected by that sense of duty.⁸

⁸ The fact that both the *I-want-YOU* and the *gratitude effects* weaken over time may be relevant for regularity 3. This tendency to weaker reactions could also affect the reaction to the outside option and could, hence, act against our H_3 . However, in a related game, the lost wallet game, Dufwenberg and Gneezy (2000) also find that the size of the outside option does not affect allocators' behavior.

3.2. Some other notable features of the data.

Table 4 gives some insight into the interplay between the decisions of X and of those of the allocators. It shows descriptive statistics for the amounts allocated by the allocator to the three players involved, distinguishing between actually *chosen*, c , and *avoided*, a .⁹ Although this information still shows *cold* conditional responses given by second players, the data for chosen allocators corresponds to that subset of conditional responses which player X has, through her choice, made relevant for payoff determination.

Insert Table 4 about here

Note first that the proportions of chosen and avoided allocators appears to be quite similar in the three rounds across the two treatments. The feature of this table, which we want to highlight at this point, is that in round 3 of both the SA and the RA treatments the X players obtain, from chosen allocators, on average more than half the total pie. In contrast the X players obtain much less from avoided allocators. For SA this is, however, based on very few observations, so that we can only say that we have a hint that, both in SA and RA, players in the X role learn to select allocators who favor them.¹⁰

We do not see the questionnaire we use as the best possible way of obtaining information about allocators' generosity. Our justification for using it is that it contains enough relevant information for our subjects to take it seriously. The subjects in the X role did not look up the items at random (a Chi-Square test for independence rejects this hypothesis;

⁹ In the SA-treatment the avoided dictators are all those that correspond to groups in which the X player chose the outside option plus those that, in groups in which the X player renounced the outside option, were not selected. For the RA treatment we included all the allocators for which the X players chose the outside option; since in the RA-treatment the selection by X is purely random we stated, for those cases where X decided to distribute the pie, the average amounts of players Y and Z.

¹⁰ Table 4 does not reveal how often X players chose the outside option in the different instances. The numbers – always out of 15 - are 5, 6 and 13 in the three rounds of SA and 4, 8 and 13 in the three rounds of RA. There is no indication of relevant differences across the treatments.

p=.000). We are quite confident that they were trying to use the information in a purposeful way.

Insert Table 5 about here

Table 5 gives information per treatment of those items in the questionnaire which at least in one of the treatments were among the top five of consulted items.¹¹ Item 23 was the most consulted item in both treatments and asks for self-assertiveness vs. readiness to subordinate.¹² In contrast item 17 (tense vs. cool) was consulted 14 times in SA and 6 times in RA and item 13 (holding on to the usual vs. open to changes) was consulted 6 times in SA and 0 times in RA. All we want to show here is that X players appear to have used the questionnaire in a thoughtful way consistent with its purpose in the experiment.

4. SUMMARY AND CONCLUSIONS

We have experimentally studied interdependent motivations in a three-person situation in which a player may assign power over the distribution of a pie to one of two other players. Our main findings are what we have called the *I-want-YOU* and *gratitude effects*. The results show that selection may have purely psychological effects, which, in our case, are not negative in any sense. Our results are related to those of other papers in which it is found that personalization of the interaction process does affect people's behavior. Bohnet and Frey (1999) report that just being able to see others increases cooperation in prisoner's dilemma and dictator games. They interpret this finding by arguing that others are no longer faceless entities and that that decreases social distance. Charness and Gneezy (forthcoming) report that in dictator games in which participants were informed about their counterparts' family names

¹¹ The total number of requests takes into account that each X player could look at an item repeatedly. Whenever a X player consulted an item in the questionnaire, she obtained the information corresponding to both the Y and the Z player she was paired with.

larger amounts were allocated to others. Other stylized facts of this kind may continue to arise and call for more encompassing models of motivation.

We feel that the effects we find are potentially important phenomena since selection situations are quite pervasive, especially in the labor market and in organizations, but also in more personal matters like the selection of a marriage partner. The type of regularities we observe may be interpreted as reflecting considerable emotional involvement of subjects. A selection situation is probably a highly interpersonal affair. In his discussion of selection as a social process, Herriott (1989, p.171) states: "Selection is not the gate through which applicants must pass before they can relate to the organization; it is itself part of the relationship". In the light of our evidence we might add: Selection determines how a relationship begins, but well begun is not half done.

¹² For the meaning of the other most frequently consulted items, please go to appendix A.

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Table 1: Amounts Assigned by Allocators to X, Herself and the Remaining Player.

Treatments		RA			SA		
Round	Shares Of the 12 tokens	X	Allocator	3 rd player	X	Allocator	3 rd player
1	Mean	1.73	8.77	1.5	2.87	7.33	1.8
	Median	1	8.5	1	3	6	2
	Min	0	4	0	0	0	0
	Max	4	12	4	12	12	4
2	Mean	1.43	9.7	.87	1.87	8.67	1.47
	Median	0	12	0	1	10	1
	Min	0	1	0	0	4	0
	Max	10	12	5	6	12	4
3	Mean	1.87	9.13	1	1.83	9.2	.97
	Median	0	12	0	0	12	0
	Min	0	0	0	0	3	0
	Max	12	12	12	8	12	6

Table 2: Frequency of Allocators that Keep More than Half the Pie and Less or Equal than Half.

Treatment	Round	# > 6	# ≤ 6
SA	1	17	13
	2	22	8
	3	24	6
RA	1	26	4
	2	23	7
	3	24	6

Table 3: Comparison between the Shares of X and Third Players.

	Round	X mean	3rd player mean	# 3rd < X	# 3rd > X	# 3rd = X
SA	1	1.73	1.5	6	4	20
	2	1.43	.87	3	2	25
	3	1.87	1	7	2	21
RA	1	2.87	1.8	8	2	20
	2	1.87	1.47	4	1	25
	3	1.83	.97	7	1	22

Table 4: Comparison of the Amounts Allocated by Chosen and Avoided Allocators.

Ro.	Stat.	Chosen			Avoided			Chosen			Avoided		
		SA/X	SA/A	SA/3	SA/X	SA/A	SA/3	RA/X	RA/A	RA/3	RA/X	RA/A	RA/3
1	N	11			19			11			19		
	Mea n	2.18	8	2	3.16	6.95	1.79	2.36	8.81	.81	1.68	8.73	1.57
	Med.	3	8	2	3	5	1	3	8	0	1	10	1
	Min.	0	4	0	0	0	0	0	6	0	0	4	0
	Max.	4	12	4	12	12	4	4	12	3	4	12	4
2	N	9			21			7			23		
	Mea n	3	7	2	1.38	9.28	1.33	1.71	8.57	1.71	1.34	10.04	.60
	Med.	4	6	2	0	12	0	0	12	0	0	12	0
	Min.	0	4	0	0	2	0	0	4	0	0	5	0
	Max.	6	12	4	6	12	4	4	12	4	10	12	4
3	N	2			28			2			28		
	Mea n	7	3.5	1.5	1.5	10.14	.57	7	5	0	1.5	9.85	.64
	Med.	7	3.5	1.5	0	12	0	7	5	0	0	12	0
	Min.	6	3	0	0	4	0	6	4	0	0	0	0
	Max.	8	4	3	6	12	4	8	6	0	12	12	4

Table 5: Most Frequently Consulted Items in the Personality Questionnaire.

Treatment		SA	RA
Question number	Total number of requests		
23	182	94	88
26	141	84	57
24	134	53	81
11	132	81	51
9	129	55	74
27	119	67	52
18	116	41	75
19	109	58	51
29	79	19	62

Figure 1: Experimental Game

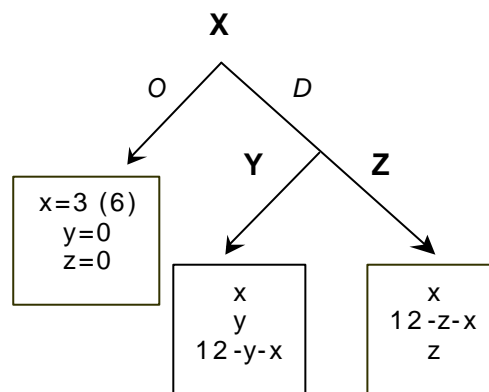
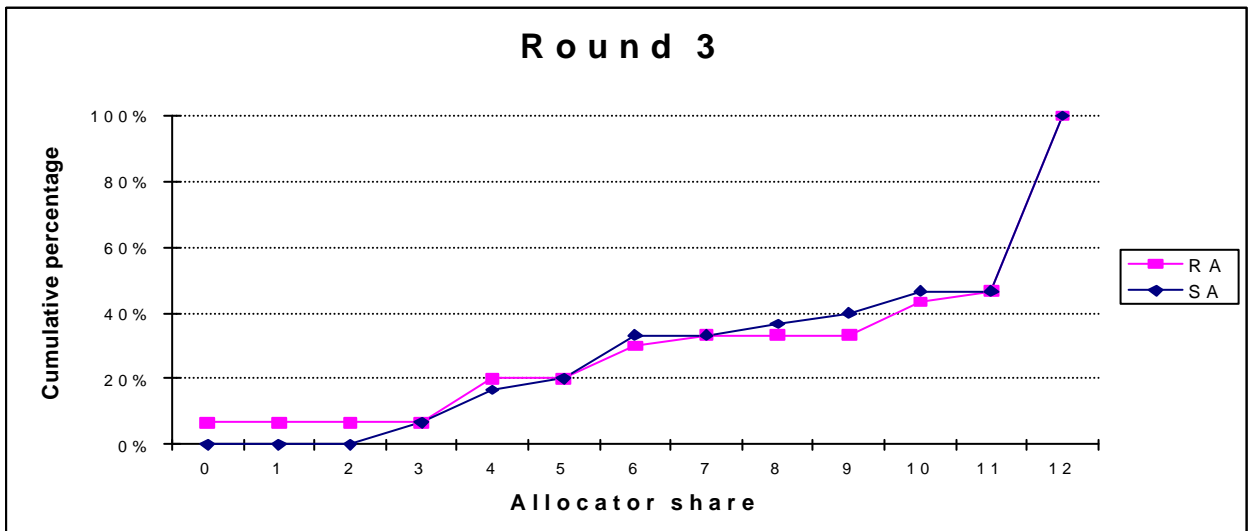
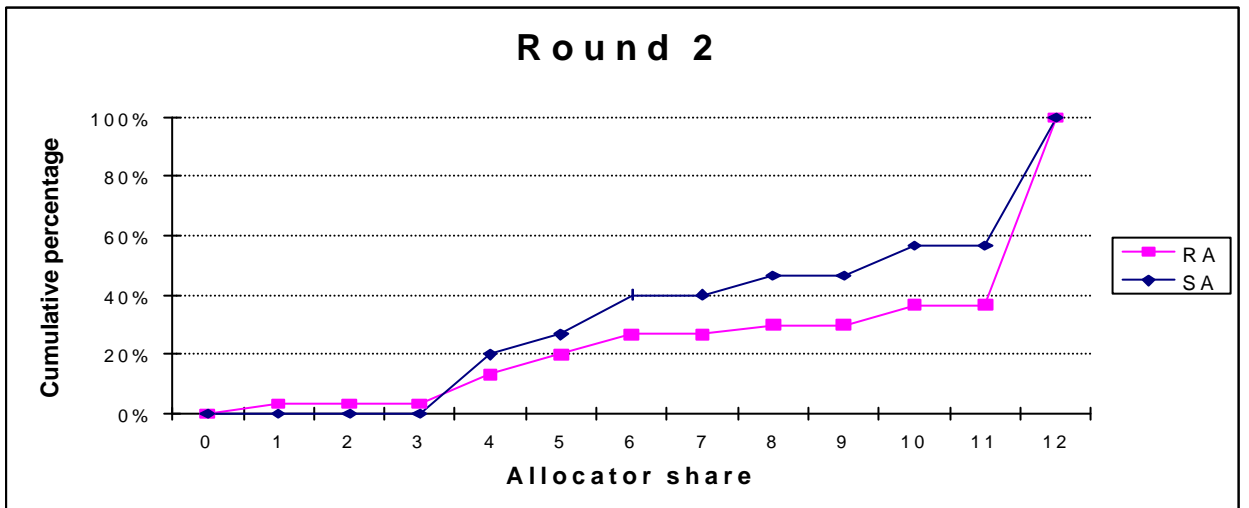
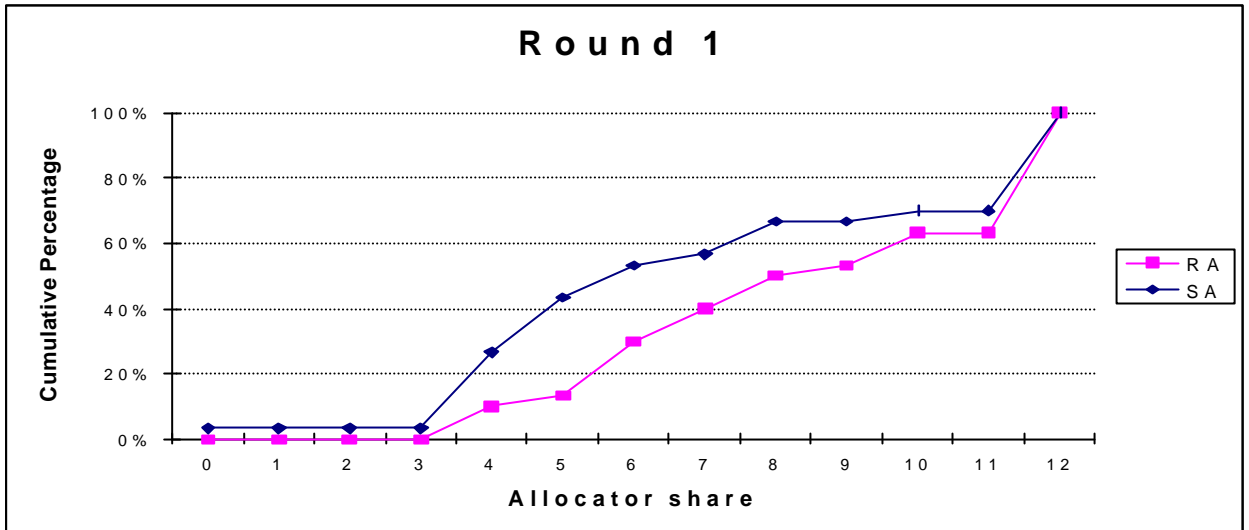


Figure 2



Appendix A: Translated Questionnaire.

(This is a literal translation from German).

In what follows you will find a list of personal qualities. Please describe yourself using this list by indicating in each row by means of a cross to what extent either the left or the right quality applies to you. Even if in some cases you would like to say, that depending on the circumstances both qualities apply or that the qualities do not constitute contradictions, you should only choose one of the values between 1 and 9 and, thereby, indicate which of the two qualities is more accurate. Since all responses are anonymous you can indicate without worrying what you really think of yourself. There is nobody on who you need to make a good impression. Only if you answer very honestly can the results be used.

1. Matter-of-fact	OOOOOOOOOO	Outgoing
2. Slow thinker	OOOOOOOOOO	Quick thinker
3. Easy to upset	OOOOOOOOOO	Emotionally stable
4. Ready to adapt	OOOOOOOOOO	Headstrong
5. Quiet	OOOOOOOOOO	Lively
6. Careless	OOOOOOOOOO	Conscientious
7. Timid	OOOOOOOOOO	Daring
8. Thick-skinned	OOOOOOOOOO	Sensitive
9. Trusting	OOOOOOOOOO	Distrustful
10. Realistic	OOOOOOOOOO	Dreamy
11. Direct	OOOOOOOOOO	Diplomatic
12. Self-satisfied	OOOOOOOOOO	Self-doubting
13. Holding on to the usual	OOOOOOOOOO	Open to changes
14. Needing support	OOOOOOOOOO	Self-reliant
15. Lacking self-control	OOOOOOOOOO	Disciplined
16. Balance	OOOOOOOOOO	Irritable
17. Tense	OOOOOOOOOO	Cool
18. Happy to experiment	OOOOOOOOOO	Oriented to what has been tried and tested
19. Trained in reflection	OOOOOOOOOO	Untrained in reflection
20. Sensitive	OOOOOOOOOO	Tough
21. Anxious	OOOOOOOOOO	Carefree
22. Full of fantasy	OOOOOOOOOO	Down-to-earth
23. Self-assertive	OOOOOOOOOO	Ready to subordinate
24. Warm-hearted	OOOOOOOOOO	Cold
25. Firm-principled	OOOOOOOOOO	Easygoing
26. Critical	OOOOOOOOOO	Lenient
27. Likes to be independent	OOOOOOOOOO	Likes to be with others
28. Cultivated	OOOOOOOOOO	Natural
29. Self-controlled	OOOOOOOOOO	Changeable
30. Self-assured	OOOOOOOOOO	Shy
31. Emotionally resistant	OOOOOOOOOO	Emotionally fragile
32. Hungry for experiences	OOOOOOOOOO	Needing quietness

Appendix B: Instructions.

(This is a literal translation from German).

Welcome and thank you very much for your disposition to participate in this experiment. Any contact to other participants in this room is from on not allowed any more. If you have questions, raise your hand and we will come to your seat.

First please fill out a questionnaire (see also the sample questionnaire). Please answer the questions from your personal perspective, by clicking on the scale to what degree the left or the right quality applies to you. Please answer all questions seriously. Your answers to the questionnaires as well as during the subsequent experiments will of course be treated anonymously. This means, nobody will learn about your identity just as you will not learn anything about the identity of the other participants.

You will receive more instructions after having filled out the questionnaire.

Thank you very much for filling out the questionnaires. The actual experiment starts now. Please continue to be quiet and avoid any communication with the other participants. If you have questions, please raise your hand.

The instructions for this experiment are identical for all participants.

The experiment consists of three rounds. In each round 3 participants interact with each other who will be called X, Y and Z. Whether you act as X, Y or Z will be randomly determined at the beginning of the experiment and communicated to you. Your role will be unchanged throughout the experiment. In each round two new participants will be randomly assigned to you. You will, however, not meet any participant more than once.

The first two rounds develop according to the following pattern.

A money amount of 12.00 DM kann be divided between X, Y and Z. Whether it gets to a division of the total amount, is initially decided by participant X. Prior to her decisions X can ask for and consult answers given by Y and Z to the questions.¹³ Naturally the anonymity of the different participants is kept. X knows only that the responses come from a Y or Z assigned to him.

Then X can choose between two variants:

¹³ To do this X just has to enter into the computer the numbers corresponding to the quality-pairs that he is interested in. (For the corresponding numbers see the sample questionnaire).

Variant 1: The total money amount of 12:00 DM is not split. Participant X receives an amount of $x=3.00$ DM. Participants Y and Z receive nothing.

Variant 2: The total money amount of 12:00 DM is split. In this case participant Y or participant Z decides what part of the total amount the three participants (X, Y and Z) receive. Whether Y Or Z decides about the split-up is determined by participant X. (*Whether X or Y decides about the split-up will be determined randomly (with equal chance)*).

This means: X decides between Variant 1 and Variant 2. In case he chooses Variant 2 X decides also whether Y or Z determines the split-up of the total amount. Participants Y and Z make their proposal for the split-up of the total amount without knowledge of the choice of X. Their decisions become effective if X chooses Variant 2 and the corresponding participant (Y or Z) is determined by X for the split-up of the total amount.

Round 3 develops according to a similar pattern. The only difference with the preceding rounds is that in case of choosing Variant 1 X obtains a money amount of $x = 6.00$ DM.

Please note that at the beginning of each round you will be assigned two new participants such that you never interact more than once with one of the assigned participants.

At the end of the experiment (after decisions for all 3 rounds will have been made) all participants will be informed for the different rounds about

- what Variant was chosen by X,
- in case Variant 2 was chosen, whose decision became effective (the one of Y or the one of Z),
- what payoff the participant earned in the different rounds and what total payoff resulted from that.

In addition to the payoff you obtain in the rounds, you will receive a participation fee of 10.00 DM, which will be part of your total payoff.