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Doing well by doing good – or doing better by delegating?

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or doing better by delegating?

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Abstract:

Machiavelli advises against delegating the distribution of favors. We test this claim in an experiment, in which an investor can directly transfer money to a trustee or delegate this decision to another investor. Varying the value of the transfers of the investor and the delegate, we find that the trustee's rewards follow a rather simple pattern. In all situations, both investors are rewarded, but the person who actually decides gets a higher reward. Delegation only pays off for the initial decision maker if the value of the delegate's transfer is much higher than the value of the investor's transfer.

Keywords: Delegation, trust, reciprocity, intentions, experiment

JEL Codes: C91, D63

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1 Introduction

Politicians, executives or celebrities often like to take leading position in charitable activities. Like many other donators they often hope that the supported people respond in kind and support the charity and its members (Bénabou and Tirole 2010). Relative to the size of her personal investment, a decision maker then may expect to benefit disproportionally from this 'gift exchange' as they decided in favor of the initial give-away. They hope to do particularly well by doing good. This ambition can imply a drawback. People in need of a good reputation or core supporters are not necessarily the best decision makers because they lack expertise or are busy elsewhere. The beneficiaries might get more value for money if a chairman delegated the decision to another member of the charity. If beneficiaries take this inefficiency into account it may affect their inclination to respond in kind. Hence, the delegation of a charity project to a more effective stakeholder implies a trade-off for the decision maker. In order to assess the profitability of delegation it is crucial to get clean evidence about people's reward and delegation decisions. This paper investigates this topic using an experiment since the analysis of relevant field data often implies serious identification problems (Bénabou and Tirole 2010).

In our experiment, people can make a beneficial transfer themselves or can delegate the decision to another person. We investigate how rewards are assigned if a person's delegation makes a higher transfer possible, but also whether people' reward is reduced if they do the transfer themselves, preventing an even higher transfer by the delegate. We use a variant of the trust game (Berg, Dickhaut and McCabe 1995) in which the decision to trust can be delegated from one investor to another. In our three person game, one player (investor) can choose between an equal distribution with low payoffs and a transfer of a relatively large payoff to another person, the trustee. This first investor can make the choice herself or delegate the decision to the second investor. If the decision is delegated, the second investor has to decide whether to transfer an amount of money to the trustee. Both investors bear the same cost of any investment decision, irrespective of who is the actual decision maker. The size of the benefit for the trustee depends on who, the first or the second investor, makes the transfer. After the decision of the investor, the trustee is informed about the decisions of the investors and has the possibility to transfer money to the investors.

The focus of our research is the reward pattern of the subjects who acted as trustee. We find two main results. When the trustees receive a transfer, they substantially reward both investors and this reward increases in the initial transfer to the trustee. The rewards for the investor who makes the transfer are higher than the rewards for the other investor but otherwise they do not reflect the intentions and responsibility of the transferring investor. In consequence, delegation only pays off for the investor if the delegate's potential transfer to the recipient is much larger than his own potential transfer. These results contradict pure inequity aversion theories (Fehr and Schmidt 1999; Bolton and Ockenfels 2000) because the two investors are treated differently. However, about one third of our subjects are inequity averse in the sense of these theories. The results also contradict pure reciprocity theories (Rabin 1993; Dufwenberg and Kirchsteiger 2004) because reciprocity alone cannot explain that people do not differentiate more between the situations and that they reward the investor who was not involved in the decision at all.

We are the first to explore the delegation of potentially beneficial decisions and the resulting reward. Our results provide an interesting contrast to studies on the delegation of harmful decisions (Bartling and Fischbacher 2008; Coffman 2009; Hamman, Loewenstein and Weber 2009). Similar to our results on rewards of kind decisions, punishment of harmful decisions is focused on the person who actually took the decision. However, the specific situation as a large impact on punishment, which means that the punishment pattern in these studies is more complex than the reward pattern in our study. So, Bartling and Fischbacher (2008) show that punishment for delegated harmful decisions reflects intentions, actual economic outcomes and responsibility attributions for a decision. This asymmetry has also been found in the literature on the motives for reciprocal behavior. While most studies find that in punishment decisions people take intentions into account (e.g. Brandts and Sola 2001; Charness and Levine 2003; Falk, Fehr and Fischbacher 2003; McCabe, Rigdon and Smith 2003; Falk and Fischbacher 2006; Falk, Fehr and Fischbacher 2008), the evidence is more mixed in the domain of rewarding behavior (Bolton, Brandts and Ockenfels 1998).

The paper is structured as follows. We present the design of the experiment in the following section. Section 3 captures our behavioral predictions and section 4 shows the results. Section 5 concludes the paper.

2 The Experiment

In the experiment, we randomly assigned subjects into groups of three. In each group, there was one subject in the role of player A, player B, and player C. The experiment consisted of 5 games with the same structure but with different parameters. In each game the players kept their type but were assigned to new groups. No player played more than once with any other player. We exchanged points into euros at the end of the experiment at a rate of 10 points to 1 euro. Participants received a show-up fee of 4 euros (1 euro exchanged into around 1.4 US-dollars at the time of the experiment in June and July 2008). Table 1 provides an overview of the experimental design.

In each game, first player A decided about an investment, then possibly B. The investment increased the payouts of player C who could reward A and B in return. Player A (the first investor or delegator) had to choose between three options. If player A chose option AN she decided against an investment and in favor of a uniform payout of 10 points to all three players. By choosing option AI the players A and B invested 10 Points each and C (the trustee) received an amount X instead. The amount of X differed between the games (see Table 1). The third option for player A was to delegate the decision to player B. If player A chose to delegate she could not alter the outcome of the experiment any further.

Player B (the second investor or delegate) had two options. Option BN implied the same payouts as player A's option AN, i.e., all players received 10 points. In option BI, the players A and B received nothing and C received an amount Y. Just like the amount X, the amount of Y differed between the games.

After the decision of player A and/or B, player C could transfer points to players A and B. Every transferred point was withdrawn from the account of player C, multiplied by the factor 5, and added to the account of the receiving player. We used the strategy method for player C. This means that player C decided how many points to transfer to A and to B for all four possible outcomes of a game. Subjects received information about actual decisions and payouts only at the end of the entire experiment.

As mentioned above, five games were played. The parameters of these games are listed in Table 1. The games are listed in the sequence of the first two sessions. This sequence was reversed in the latter two sessions. The games 10/50, 30/50, and 50/90 map the situation that we presented in the introduction, i.e. a potential efficiency gain from delegating. Player A can make her own investment, or delegate, which allows B to generate an even higher payout for C. The other games are added for theoretical reasons. We want to compare situations which are equal from the point of view of the outcome. For this reason, in all games, X or Y equals 50. In game 50/50, both X and Y equal 50; and in game 50/10, we add a situation in which Y is smaller than X.

Table 1: The Experimental Design

Step 1: Decision options of player A (1st investor / delegator)				
	AN (No Investment)	AI (Investment)	Delegation to B	
Step 2 (in case of delegation only): Decision options of Person B (2nd investor, delegate)				
			BN (No Investment)	BI (Investment)
Payout before Rewards	A: 10 B: 10 C: 10	A: 0 B: 0 C: X*	A: 10 B: 10 C: 10	A: 0 B: 0 C: Y*
Step 3: Reward Decision of Person C (Trustee)				
	Reward for A Reward for B	Reward for A Reward for B	Reward for A Reward for B	Reward for A Reward for B

***Specifications of the Payout of C**

	Game 10/50	Game 30/50	Game 50/50	Game 50/90	Game 50/10
X	10	30	50	50	50
Y	50	50	50	90	10

The 90 participating subjects (30 players A, 30 players B and 30 players C) were recruited with ORSEE (Greiner 2004) among the students of the University of Konstanz. The experiment was programmed with z-Tree (Fischbacher 2007) and conducted at *Lakelab*, the economics laboratory at the University of Konstanz. The experiment lasted about 90 minutes and participants earned around 14 euros on average.

3 Behavioral Predictions

Assuming selfishness, there are no transfers in the subgame perfect equilibrium. Selfish subjects in the role of C will never reward any decision. Anticipating this behavior, selfish subjects in the role of B will choose their no-investment option BN. Assuming that player B will choose this option, player A is indifferent between his option AN and delegation. In both cases the expected payout to each player equals 10 points.

However, there is abundant experimental evidence that not all people are always selfish. For this reason non-selfish motives have been incorporated into theoretical models. In particular, the motives of inequity aversion (Fehr and Schmidt 1999; Bolton and Ockenfels 2000) and reciprocity (Rabin 1993; Dufwenberg and Kirchsteiger 2004; Falk and Fischbacher 2006) have received great attention. Applied to our game, sufficiently inequity averse players C will reward if options AI or BI are chosen. Both A and B pay the cost, the payoff of A and B are the same, and inequity aversion models predict no difference in how A and B are rewarded.[1] Furthermore, these models do not take into account how the payout for C was achieved. In our game, there were 6 situations in which this payout was 50, three situations in which this option was chosen by A and three situations in which A delegated and B chose this option. These models predict the same reward in all these situations.

Hypothesis 1: If player C wants to reduce inequality in outcomes, then

[1] The Bolton and Ockenfels (2000) model predicts the same reward for A and B. In the Fehr and Schmidt (1999) model, either both players receive zero, both receive an equalizing payoff or C is indifferent between any amount to A and B that is lower than what C gets. This latter situation renders different rewards to A and B possible, but only for a very the parameter value $\beta=2/3$. Furthermore, even if different rewards for A and B are possible, no prediction is made about whether and how reward differs.

a) There are no rewards for options AN or BN.
b) Rewards increase with the amount received by C,
c) Rewards depend only on the amount received by C. In particular, rewards do not depend on who made the actual investment decision which implies that rewards do not differ between A and B.

As a second motive, the trustees may focus their reward on the kindness of the person who transferred the money to herself. In this case we should observe the following reward pattern: In reciprocity models in the spirit of Rabin (1993), the prediction depends on the players' beliefs and second order beliefs. The beliefs are necessary to assess the kindness of an action. Nevertheless, many predictions are independent of the beliefs. First, options AN is never kind since it is worse than or equal to the other options. For this reason, no reward is expected in these models either. If option AI is chosen, B did not affect the outcome and, therefore, B does not deserve a reward for a kind decision. How kind A's action is perceived depends on the game-specific parameters. In games 50/50 and 50/10, option AI was the kindest A could do. In game 30/50, the option AI is kinder than option AN and it depends on A's belief about B's behavior whether it is considered as less or more kind than delegation.

If A delegates, and B chooses BN, B does not deserve a reward but A would deserve reward (in all games except game 50/10), since A tried to be kind. If A delegated and B chooses BI, then B is maximally kind. In game 10/50, A's kindest move is also delegation. Thus, in this game, reciprocity models also predict the same reward for A and B. In game 50/50, delegation is kinder than option AN but less kind than option AI. The exact amount depends on the beliefs about B's behavior. In games 30/50 and 50/90 the kindness of A depends even qualitatively on beliefs. If A believes that B chooses the investment option BI with high probability, then delegating is the best A can do. If A believes that B chooses option BI with low probability, then AI is the kindest action for A.

If reciprocity in the sense of Rabin (1993) drives C's behavior, we should see the following reward pattern:

Hypothesis 2: If C is reciprocal then
a) There are no rewards if A chooses the no-investment option AN.
b) Only A is rewarded when A chooses the investment option AI.
c) Only A is rewarded when A delegates and B chooses option BN.

d) *If A delegates the decision and B chooses her option BI; then B receives at least as many points as A.*

e) *If A delegates in the games 10/50, 30/50 and 50/50 and option BI is chosen in each of these games, then the rewards for A are the highest in game 10/50 and the lowest in game 50/50.*

f) *If A chooses AI, then A receives a lower reward in game 50/90 than in the games 50/50 and 50/10.*

4 Results

The focus of our analysis is on the behavior of player C (N = 30) and addresses two main questions. First, what happens if player A delegates and player B actually invests? Second, how does player C react if A's generosity precludes player C from benefiting from an even higher generosity of player B? Table 2 indicates how many points a player C transfers on average to A and B.

Table 2: Mean rewards from C to A and B

(in points, investors receive 5 times the transferred amount, N = 30 in each cell).

Options	Game 10/50		Game 30/50		Game 50/50		Game 50/90		Game 50/10	
realized	To A	To B	To A	To B	To A	To B	To A	To B	To A	To B
AN	0.47	0.43	0.57	0.63	0.40	0.37	0.50	0.5	0.53	0.53
AI	1.13	0.73	3.27	2.37	4.90	2.93	4.57	3.47	4.57	3.10
BN	0.47	0.33	0.67	0.60	0.60	0.80	0.63	0.47	0.70	0.60
BI	3.97	4.67	3.90	4.40	3.63	4.40	6.10	6.67	1.27	1.53

We observe that rewards occur almost only if a transfer has been made. If option AN or BN are chosen, rewards are negligible compared to the rewards in the other situations. Thus, we find support for the first statements in both hypotheses, 1a) and 2a). We now discuss the motives that explain rewards after a choice of AI and BI, i.e. the second and fourth lines in table 2. The inequity based hypotheses state that rewards are larger than zero and increase in the amount C received and that they do not depend on who made the actual investment decision. First, we show that rewards increase in the amount C receives. The value of A's investment increases between games 10/50 and 30/50 and again between games 30/50 and 50.

B's potential investment value is always 50. In these games, we observe an increase in rewards to player A between games 10/50 and 30/50 ($p = .000$ according to the Wilcoxon signed-rank test) as well as between games 30/50 and 50/50 ($p = .001$). This pattern is also true for player B. Her reward is significantly higher in game 30/50 than in game 10/50 ($p = .000$). In the other three games (50/10, 50/50, 50/90) the rewards are again higher than in game 30/50 (all $p \leq .070$). Also if A has delegated and B makes the investment, the rewards depend on the amount received by C. So, rewards for A are similar in games 10/50, 30/50, 50/50 in which B's investment always implies a transfer of 50 points. The rewards for A increase in game 50/90 ($p = .001$) and decrease in game 50/10 ($p = .000$)[2]. In these two games, B's generosity endows C with 90 and 10 points respectively. Similar results are obtained for the rewards to player B.

Our results do not support the last statement of hypothesis 1. Players C give more rewards to the person who actually made the investment decision. In all five games, B receives significantly lower rewards than A if A had chosen her investment option AI (all relevant p-values < .05). In turn, a participant B typically receives more points than A if B made the actual investment decision BI after delegation by A. If B invests, she receives a higher reward than A in games 10/50, 30/50 and 50/50 (all p-values < .05). In game 50/90, the reward to B is higher than the reward to A but not significantly ($p = .151$).

Let us now discuss the reciprocity hypothesis. First, evidence contradicts hypothesis 2b) since even if A makes the investment player B get a substantial reward and as we have seen above, the rewards for B increase in A's transfer. Second, Player A does not receive a higher reward if she delegated and B did *not* make an investment, which contradicts hypothesis 2c). This holds both in comparisons to B's reward if B does invest and in comparison to A's rewards if A did not invest. Third, hypothesis 2d) is confirmed. In all games, player B's reward for choosing option BI is at least as high as A's reward.

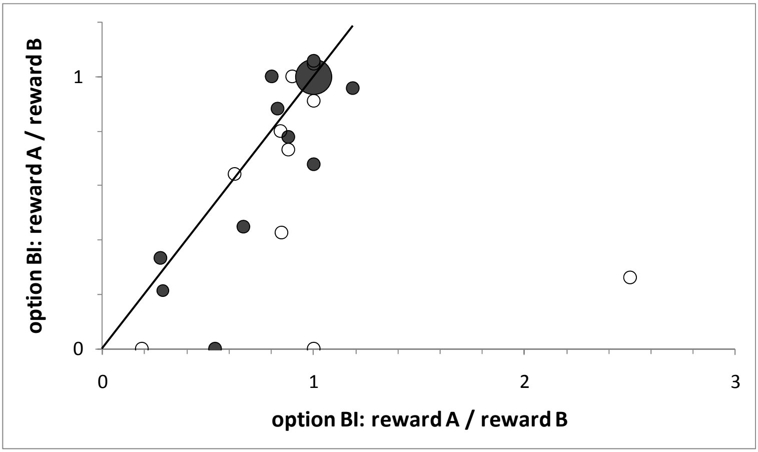
Fourth, more subtle effects of intentions cannot be shown and do not seem to determine the reciprocity of player C. More specifically, we can reject hypotheses 2e) and 2f). The rewards for A do not differ between games 10/50, 30/50 and 50/50 in case of delegation, even though one can attribute different intentions to A in the different games (hypothesis 2e). Likewise, the rewards for A do not differ between games 10/50, 50/50 and 50/90 if A herself decides about the investment. The consequences of non-delegation for C differ substantially

[2] These significance levels hold for any bilateral comparison between the relevant games.

across these three games, but they do not have an impact on C's rewards for A (hypothesis 2f).

Considering the heterogeneity of individual strategies, first note that only two subjects are completely selfish and transfer zero in all situations. We now study the relative importance of reciprocity and inequity aversion. First, we consider situation AI. Here, it is clear that if anybody deserves reward for kindness, it is player A. A purely reciprocal player C will not reward B at all. However, a purely inequity averse player C will reward B by the same amount as A. We use the quotient q_{AI} of the reward to B by the reward to A as a measure for inequity aversion. We use the reward to A as a benchmark for the strength of social preferences. Thus, this quotient measures the relative importance or inequity aversion and reciprocity, controlling for the strength of social preferences. Similarly, in situation BI, we use the reward to B as a benchmark and consider the quotient q_{BI} of the reward to A by the reward to B. Also in this situation, purely inequity averse players have quotient of 1. Different to the situation AI, player A is also responsible for the transfer in situation BI. Thus, for reciprocal players, this quotient is not zero but should be larger than the quotient q_{AI}. Figure 1 shows a scatter plot of the two quotients. The Y axis indicates q_{AI}, the reward to B relative to the reward to A in case that A has chosen the investment option AI. The X axis displays q_{BI}, the reward to A relative to the reward to B in case that B has chosen the investment option BI. For purely inequity averse players, both quotients equal 1. There are 8 subjects satisfying this condition. They also show pure inequity aversion in each of the five games. These subjects are represented in the larger bubble. Additionally 4 to 7 subjects are close to pure inequity aversion. There are 3 purely reciprocal player represented on the x-axis. 13 subjects are reciprocal in the sense that they reward A relatively more in situation BI than B in situation AI. Note that figure 1 does not show the two subjects who do not provide any reward at all.

Figure 1: The relationship between rewards for A and B after a choice of options AI or BI, aggregated for each player C across the five games



In order to estimate the relative importance of reciprocity and inequity aversion econometrically, we use OLS models that are based on the idea developed above. First, we consider situation AI and use the reward to player A as control for player C's strength of social preferences. In model 1 in Table 3, we predict the reward to player B with the size of the transfer and with the reward to A.[3] As explained above, if player C is inequity averse, B will get the same reward as A, thus, the coefficient of the reward to A should equal 1. If C is reciprocal, B will receive nothing and, therefore, the coefficient of the reward to A should equal 0. The results in Table 3 show that the reciprocity hypothesis can clearly be rejected since the coefficient equals 0.540, which is significantly higher than 0. The coefficient is also smaller than 1, which is evidence against inequity aversion as the only motive.

Model 2 estimates the rewards to A after a transfer from B to C using the transfer and the reward to B as independent variables. In this situation, reciprocity also predicts a positive reward to A, and as above, we use the reward to B as a measure of player C's strength of social preferences. In this situation reciprocal players might also reward A. Thus, we expect

[3] In Table 2, we use the terminology "reward to the person who did (or did not) make the transfer decision" in order to be able to compare model 1 and model 2.

player A’s reward to depend on player B’s reward. Further, a higher coefficient of B’s reward in model 2 than the coefficient of A’s reward in model 1 is evidence for reciprocity. Indeed, this coefficient equals 0.733 and is also significantly larger than 0 and significantly smaller than 1. In model 3 we test the difference between model 1 and model 2 using a regression in which we interact each variable with a dummy that captures who is the actual decision maker. This difference in rewards for the decision maker equals 0.193 and is significant at the 10% level.

Table 3: OLS estimations on the impact of inequity aversion and reciprocity on rewards if a transfer was made; dependent variable is the reward to the person who did not make the transfer decision.

	Model 1 A chooses investment option AI	Model 2 A delegates and B chooses investment option BI	Difference between models 1 and 2
Received transfer	.012 (.008)	.013* (.007)	.002 (.008)
Reward to the person who did make the transfer	.540*** (.129)	.733*** (.100)	.193* (.107)
Constant	.089 (.195)	-.072 (.183)	-.160 (.220)
Decisions	150	150	300
N	30	30	30
R^2	.417	.643	.578

All transfers and rewards are measured in points; Levels of significance: * <.1; ** < .05; *** < .001. The standard errors (in parentheses) are robust and clustered at the subject level.

We also observe interesting differences in reward patterns across subjects. The diagram in figure 1 shows the rewards of each subject across all 5 games. More specifically, the Y axis indicates the reward to B relative to the reward to A in case that A has chosen the investment option AI. The X axis displays the reward to A relative to the reward to B in case that B has chosen the investment option BI. On each axis, a value of 1 indicates equal rewards for A and B, i.e. perfect inequity aversion. We observe a clustering of observations around perfect inequity aversion in both decisions. Eight subjects chose equal rewards for A and B in both cases. In contrast only the 3 observations on the x-axis showed pure reciprocity. Most of the remaining subjects follow the simple heuristic that we observe in the aggregate data and just provide more rewards to the person who actually makes the investment decision. Note that figure does not show the two subjects who do not provide any reward at all.

Let us finally turn to the decisions of the players A and B. Table 4 shows the decisions of players A and B. If the players correctly anticipate the reward behavior that we observe, then player B should transfer in all games except game 50/10. Player A should directly invest in games 30/50, 50/50 and 50/10 and delegate in games 10/50 and 50/90. These are the modal choices except for the decision of A in game 30/50, in which a majority does not invest. It is also remarkable that the share of delegated decisions monotonously increases in the difference between the potential investment values of B and A.

Table 4: Choices of A und B (in percentages)

	Game 10/50	Game 30/50	Game 50/50	Game 50/90	Game 50/10
AN	43.3%	50%	23.3%	16.7%	26.7%
AI	3.3%	16.7%	53.3%	16.7%	63.3%
Delegation	53,3%	33.3%	23.3%	66.7%	10%
BN	33.3%	43.3%	43,3%	13.3%	100%
BI	66.7%	56.7%	56,7%	86.7%	0%

5 Conclusion

We reported results on the rewards for delegating beneficial decisions. Our results show a rather simplistic reward policy on the aggregate level. Rewarding behavior can largely be explained by the outcome and by who finally took the decision. Subjects seem not to bother about the more sophisticated intention or responsibility motives of the (potentially) delegating person that are observable in the punishment of delegated harmful decisions (Bartling and Fischbacher 2008). A potential explanation for this asymmetry between reward and punishment lies in the motives of kind and unkind behavior. While unkind behavior is definitely unkind, seemingly kind behavior can be motivated from selfish motives. Player A and B could be kind in the hope of getting reward. Such a behavior is inexistent in the case of punishment; it is implausible that people are unkind in the hope of getting punished. Based on player C’s behavior, we find that delegation only pays off for the investor if the delegate can transfer much more money than the investor herself. So, given the more moderate gains from delegating charitable actions that we expect in the real world, our results support Machiavelli’s (1995, p. 59) claim that ‘*Princes should delegate to others the enactment of unpopular measures and keep in their own hands the distribution of favours*.’

Appendix A Instructions for players C (translated from German

We cordially welcome you to this economic experiment.

If you read the following explanation carefully, you can, based on your decisions and other participants‘ decisions, earn money in addition to the 5 euros you receive as starting money for your participation. It is therefore very important that you read these explanations very carefully. If you have questions, please direct them to us before the beginning of the experiment.

During the experiment you are not allowed to speak with the other participants. Failure to adhere to this rule will result in expulsion from the experiment and all payments.

During the experiment we will not talk about euros, but about points. Your total income will therefore initially be calculated in points. The total points you attain in the experiment will then at the end be converted into euros, where

10 points = 1 euro.

At the end of today's experiment you will receive the points earned during the experiment plus 5 euros for showing up.

On the following pages we will explain the exact procedure of the experiment to you.

Experiment

Structure:

This experiment consists of five stages (or rounds). At the beginning of each round <u>two</u> other people who are also participating in this experiment will be randomly assigned to you. You will **<u>never</u>** go through the experiment twice with the same person; neither before nor after the experiment will you learn the identity of the person assigned to you. Likewise, the people assigned to you will learn nothing about your identity.

In this experiment there are three types of participants: Participant A, B, and C. **You are a Participant C.** The two people assigned to you are <u>one</u> Participant A and <u>one</u> Participant B. Each stage of the experiment is subdivided into up to three steps:

Step 1: Participant A can choose between the two predetermined Variants 1 and 2 in order to divide points between himself [no gender specified in original] and Participants B and C. He can also hand the decision over to Participant B.

Step 2 (optional)**:** If Participant A hands the decision over to Participant B, then Participant B must choose between the predetermined Variants 3 and 4. These alternatives do not necessarily match the variants available to him [Participant A]. Step 2 is omitted if Participant A does not hand the decision over. In this case Participant B cannot make a decision.

Step 3: After Participant A or Participant B has decided on a division of points, you, Participant C will be informed about the respective decisions. You can decide at this point if you want to give up to 10 points to each of the other participants. These points will be deducted from you. Each beneficiary participant is credited five times the number of points assigned to him.

In the individual rounds of the experiment the payments of Variants 2 and 4 will be varied. **All participants know at all times what possibilities A and B have or have had.** We will now explain the individual steps to you.

Step 1:
In each stage Participant A can decide how points between three participants will be divided. He has three alternatives for this decision.

- **Variant 1:** Participant A, Participant B, and Participant C each receive 10 points.
- **Variant 2:** Participant C receives between 10 and 50 points. Participants A and B receive no points. *Note that the value of the payment to Participant C can change from stage to stage. In each round the value will be specifically set before the beginning and will be communicated to all participants.*

Participant A can also hand the decision over to Participant B. If he/she does <u>not</u> hand the decision over, then Participant B does not make a decision in that round. If he/she does hand the decision over, then Participant A cannot make any more decisions in that round. In this case Participant B makes the decision.

Step 2:
If Participant A hands the decision over to Participant B, then these [the following] two decision alternatives are available to him from which he/she must choose. Participant B cannot hand the decision over further.

- **Variant 3:** Participant A, Participant B, and Participant C each receive 10 points.
- **Variant 4:** Participant C receives between 10 and 80 points. Participants A and B receive no points. *Note that here too the value of the payment to Participant C can change from stage to stage. In each round the value will be specifically set before the beginning and will be communicated to all participants.*

The following table gives you an overview once more of the two divisions, between which Participant A, or if he hands the decision over, Participant B must decide.

	Points for Participant A	Points for Participant B	Your points
Variant 1	10	10	10
Variant 2	0	0	10-50
If Participant A hands the decision over			
Variant 3	10	10	10
Variant 4	0	0	10-80

Step 3:

After Participant A or Participant B has made a decision, you will learn whether Participant A handed the decision over and what decision was made.

As Participant C, you have at this point the possibility to give Participant A and Participant B up to 10 points each. These points will be deducted from you. Participant A will then be credited five times the points assigned to him. Likewise Participant B will be credited five times the points assigned to him.

You can distribute more points than you has received in a round. The surplus points will then be removed from previous receipts or the starting money.

<u>Example 1</u>: Variant 2 is chosen by Participant A. Participant C receives 30 points from the choice of Variant 2 in this round. Participant C gives up 8 points in total in order to give Participant A <u>3 points</u> and Participant B <u>5 points</u>. The following payments result:

Points for Participant A	Points for Participant B	Your points
0+3×5 = 15	0+5×5 = 25	30-3-5 = 22

Example 2: Participant A delegated the decision to Participant B. Variant 3 is chosen by Participant B. All participants receive 10 points from the choice of Variant 3. Participant C gives up 11 points in order to give Participant A 10 points and Participant B 4 points.

Points for Participant A	Points for Participant B	Your points
$10+10\times5 = 60$	$10+4\times5 = 30$	$10-7-4 = -1$

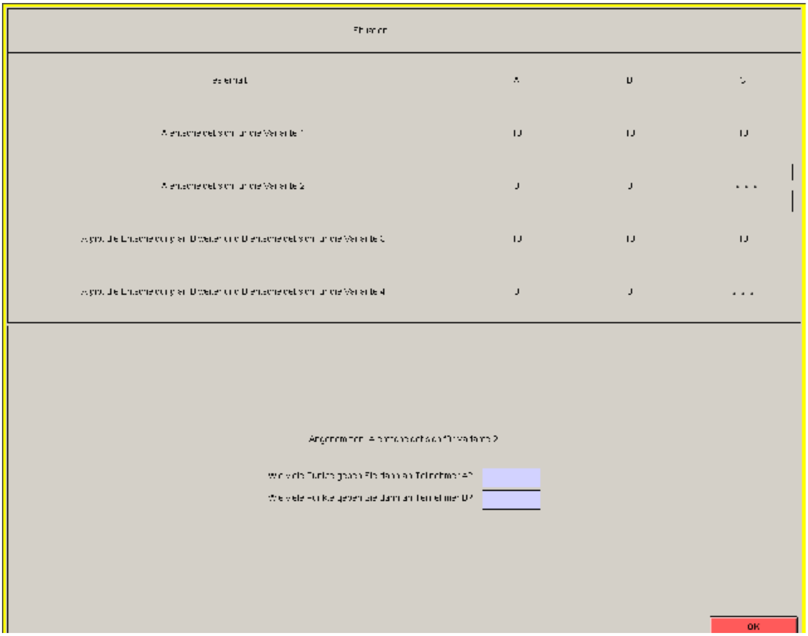
Example 3: Participant A gave the decision over and Participant B decided on Variant 4. Participant C receives 60 points from the choice of Variant 4 in this round. Participant C gives up no points in order to give points to the other participants.

Points for Participant A	Points for Participant B	Your points
0	0	60

Computer Procedure

You must specify for all situations, before A and B have actually decided, your decision of how many points you want to give to Participant A and how many to Participant B. Please indicate your preferred number of points for each of the four variants. Note that the resulting decision is binding. The situations appear one after another on one screen, which looks as follows:[4]

[4]



At the top you see the results of Participant A and B's possible decisions. The situation for which you are making your decision is specially framed. In the above example, the situation is the one in which A decides for Variant 2. At the bottom you make your decision. So in this case, that means how many points you want to give to A and how many points to B. When you've made your decisions, click the OK button on the bottom right. As long as this button has not been clicked, you can revise your decision.

When all participants have made their decisions, then at the end of the five stages the experiment is over, you learn the decisions of the other participants in your respective groups, and you receive your points converted into euros, as well the starting money paid out in cash.

Do you have any remaining questions?

Practice Problems

Please answer the following practice problems. Your answers have no influence on your payment at the end of the experiment.

1. Participant A handed the decision over to Participant B. Which decisions are relevant for payment at the end of the experiment?

2. Participant A did <u>not</u> hand the decision over to Participant B. Which decisions are now relevant for payment?

3. Participant A chose Variant 1. Participant C gives up no points to the other participants. Complete the table.

Variant 1	Participant A	Participant B	Participant C
Payments			

4. Participant A handed the decision over to Participant B. Participant B chose Variant 3. Upon the choice of Variant 3 Participant C gives the following points up: 3 to Participant A and 4 to Participant B. Complete the table and determine the payments for the participants.

	Participant A	Participant B	Participant C
Variant 3	10	10	10
Payments			

5. Participant A chose Variant 2. Upon the choice of Variant, Participant C receives 30 points in the ongoing stage. Participant C now gives up 7 points for Participant A and 0 points for Participant B. Complete the table and determine the payments for the participants.

	Participant A	Participant B	Participant C
Variant 2	0	0	30
Payment			

6. Participant A handed the decision over to Participant B. Participant B chose Variant 4. Upon the choice of variant 4, Participant C receives 50 points in the ongoing stage. Participant C gives up no points for the other participants. Complete the table and determine the payments for the participants.

	Participant A	Participant B	Participant C
Variant 4	0	0	50
Payments			

When you have solved all the problems, please give a sign. We will then come to you and check your answers.

Once we have checked the problems it will be useful for you to think once thoroughly through your decisions.

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