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Working Paper

Self-serving dictators

Memorandum, No. 2008,26

Provided in Cooperation with:

Department of Economics, University of Oslo

Suggested Citation: Asheim, Geir B.; Helland, Leif; Hovi, Jon; Hoyland, Bjorn (2008) : Self-serving dictators, Memorandum, No. 2008,26, University of Oslo, Department of Economics, Oslo

This Version is available at:

<https://hdl.handle.net/10419/47296>

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MEMORANDUM

No 26/2008

Self-Serving Dictators

The seal of the University of Oslo is a circular emblem. It features a central figure of a woman in classical attire, holding a lyre. The text 'UNIVERSITAS OSLOENSIS' is inscribed around the top inner edge, and 'MDCCCXXXIII' is at the bottom. The seal is rendered in a light gray tone.

**Geir B. Asheim
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ISSN: 0809-8786

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This series is published by the
University of Oslo
Department of Economics

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Self-serving dictators*

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October 14, 2008

*We thank Martin Dufwenberg and James Konow for many detailed and constructive suggestions, and Alexander Cappelen, Tore Ellingsen, Karine Nyborg, Bertil Tungodden and participants at the 2nd Nordic Workshop in Behavioral and Experimental Economics, Gothenburg, for useful comments. Steffen Kallbekken and Ylva Søvik contributed helpful comments on the experimental design. Funding from the Department of Political Science, University of Oslo, is gratefully acknowledged. Asheim's and Hoyland's research is part of the activities at the ESOP centre at the Department of Economics, University of Oslo. ESOP is supported by the Research Council of Norway.

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Abstract

We provide experimental evidence of self-serving fairness ideals in a dictator game design that includes treatments where funds can be transferred in two ways to the one player and in one way to the other. Two methods for transferring funds to the *recipient* produce the same results as the regular dictator game. However, two methods for transferring funds to the *dictator* reduce her generosity significantly. Hence, the fairness ideal adopted by dictators appears to be equal share per individual in the former case (as in the regular dictator game), and equal share per transfer method in the latter case.

Keywords: Self-serving Bias, Experimental Economics, Dictator Game

JEL Classification Numbers: C91, D63

1 Introduction

Self-serving bias in fairness judgements occurs when, in the words of Babcock and Loewenstein (1997, p. 110), subjects "...conflate what is fair with what benefits oneself". Or as defined by Dahl and Ransom (1999, p. 703): "A self-serving bias occurs when individuals subconsciously alter their fundamental views about what is fair or right in a way that benefits their interest."¹ Laboratory experiments (Messick and Sentis, 1979; Thompson and Loewenstein, 1992; Loewenstein et al., 1993; Camerer and Loewenstein, 1993; Babcock et al., 1995; Konow, 2000; Gächter and Riedl, 2005), video experiments (Hennig-Schmidt, 2002), field studies (Babcock et al., 1996), and survey studies (Dahl and Ransom, 1999; Lange et al., 2008) show how subjects may fall prey to a self-serving bias in their fairness perceptions.

Much of the literature has studied self-serving bias in negotiations; in this context Babcock and co-authors indicate how biased fairness judgements may impede settlements. Hence, subjects may understand that biasing their fairness ideals is costly in terms of foregone mutual gains. Using a dictator game design allows us to separate the self-serving choice of fairness ideals from the potential cost of disagreement that such a bias may lead to, since the recipient in a dictator game has no choice but to accept the division of the endowment that the dictator decides upon. The general point is that in a dictator game the dictator does not face strategic considerations, making this game particularly suitable for testing the impact of self-serving biases. In games with a richer strategic structure, testing for the presence of self-serving bias requires elaborate controls for beliefs (see Kaplan and Ruffle, 2002).

In the dictator game design we introduce, there are two methods for transferring funds from the experimenter to a subject: (1) by transferring funds to the subject's

¹In a comment to Babcock and Loewenstein (1997), Kaplan and Ruffle (1998) point out that the notion "self-serving bias" is used in a wider sense: "A self-serving bias exists where an individual's preferences affect his beliefs in an optimistic direction, one favoring his own payoff. Beliefs may be about one's own ability, the environment, another player's type, or about what is a fair outcome". This paper concerns only the latter type of self-serving bias, which relates to fairness judgements.

bank account, and (2) by giving the subject a voucher (valid in a local grocery store). One set of treatments (A treatments) provides two methods for transferring funds to the dictator and only one method for transferring funds to the recipient. In contrast, a second set of treatments (B treatments) provides only one method for the dictator and two methods for the recipient. The control (C) treatments replicate the regular dictator game, providing only one method for each player.

Dictator game results suggest that generosity depends heavily on the experimental design (Forsythe et al., 1994; Hoffman et al., 1994, 1996; Bolton et al., 1998; Konow, 2000). Exchange language² and entitlements³ that favor the dictator cause generosity to decrease significantly. Also, experimenter anonymity⁴ may lead to decreased generosity. In the present experimental design, the dictator game is played without exchange language, entitlements or experimenter anonymity, i.e., in a version that promotes behavior in accordance with a fairness ideal of equal split.

Using the regular dictator game as control, results are not affected by having two methods for transferring funds to the recipient. In the latter case, dictators give recipients on average 40.0% (with st.dev. .323) compared to 42.9% (.291) in the control. However, *having two methods for transferring funds to the dictator reduces her generosity substantially*; in this treatment, dictators give on average only 16.9% (.168). This suggests a self-serving bias in the dictator’s fairness ideal: It appears to be *equal share per individual* in the regular dictator game and in the version with two ways to transfer funds to the recipient, but *equal share per method* in the version with two ways to transfer funds to the dictator.

²Exchange language frames the experiment in terms of market exchange rather than in terms of dividing a fixed endowment. The motivation for introducing exchange language is that “typically experimenters want to infer some conclusion about markets when discussing their experimental results” (Forsythe et al., 1994, p. 351).

³With entitlements the experiment is designed such that dictators earn endowments through costly effort such as answering a quiz, rather than receive them as windfalls (Konow, 2000; Cherry et al., 2002; Cappelen et al., 2007).

⁴Guaranteeing subjects complete anonymity vis-a-vis the experimenter is achieved through a “double blind” procedure (as described by Hoffman et al., 1996, pp. 655–656).

To test whether the empirical distributions obtained in the three treatments support this suggestion, we model that self-interest enters into the dictator’s decision-making process in two ways:

- Through trading off the fairness ideal with her material self-interest, for a given fairness ideal (as proposed by Bolton and Ockenfels, 2000, and others).
- Through the dictator’s fairness ideal, depending on the treatment.

By showing how the dictator’s fairness ideal depends on the treatment, our paper contributes to the literature on self-serving bias in fairness judgements. A striking feature of our experiment is the apparent lack of intuitive appeal of the alternative fairness ideal adopted by some dictators in the A treatments: why split equally among transfer methods when this leads to an unequal split among individuals?⁵

Section 2 describes relevant theory. Section 3 presents the experimental design. Section 4 contains the experimental results. Section 5 offers concluding remarks.

2 Theory

Following the ERC model of Bolton and Ockenfels (2000) as well as the analysis of dictator games in Cappelen et al. (2007), we assume that the individuals are motivated by a desire for both income and fairness. In particular, we specify that each dictator i has a motivation function which depends on the treatment T :

$$v_i(y_i, \sigma_i; T) = (\gamma_i/c)y_i - \frac{1}{2}(\sigma_i - \varphi_i(T))^2, \quad (1)$$

where c is the amount to be divided, y_i is the absolute amount that i keeps for herself, $\sigma_i := y_i/c$ is the *share* that i keeps for herself, γ_i/c is the weight assigned to income, and $\varphi_i(T)$ is the fairness ideal that i adheres to in treatment T . This formulation is consistent with the assumptions of Bolton and Ockenfels’s (2000) ERC model, if

⁵Hence, referring to this as a “social reference point”, which is Bolton and Ockenfels’s (2000) terminology, might be more appropriate than using the term “fairness ideal”.

- $\gamma_i \geq 0$, so that non-negative weight is assigned to income, and
- $\varphi_i(\text{T}) = 1/2$ for $\text{T} = \text{A}, \text{B}, \text{C}$, so that the fairness ideal does not depend on treatment and is given by equal split.

A dictator i whose motivation is described by (1) chooses the following share for herself in treatment T :

$$r_i(\text{T}) = \arg \max_{\sigma_i} v_i(c\sigma_i, \sigma_i) = \varphi_i(\text{T}) + \gamma_i,$$

with $cr_i(\text{T})$ being the corresponding absolute amount that i keeps for herself in treatment T . Hence, if we assume that dictators are $\varphi_i(\text{T})$ homogeneous within treatment T , all with fairness ideal equal to $\varphi(\text{T})$, then we will be able to observe the empirical γ_i distribution for the dictators in treatment T :

$$\gamma_i = y_i/c - \varphi(\text{T}).$$

Since the ERC model allows dictators to be heterogeneous with respect to γ_i , but imposes homogeneity with respect to $\varphi_i(\text{T})$ by requiring all to adhere to equal split, this model yields the following prediction, provided that there are no systematic differences between the subject pools in the three treatments:

Hypothesis 1: The empirical distributions of $y_i/c - 1/2$ in treatments A, B and C are the same.

The existence of a self-serving bias leading to less generosity in treatment A — the treatment in which the dictator has two methods for transferring funds to herself — means that some dictators i adopt a fairness ideal that allows her to retain more than an equal share: $\varphi_i(\text{A}) > 1/2$. In particular, some dictators i may adhere to the ideal of equal share per transfer method, leading to $\varphi_i(\text{A}) = 2/3$. Now, there is little reason to believe that all dictators in treatment A are equally self-serving in their choice of fairness ideal. It is still of interest to test whether we can reject the hypothesis that dictators in treatment A are $\varphi_i(\text{A})$ homogeneous with $\varphi(\text{A}) = 2/3$, while — as before — dictators in treatments B and C are $\varphi_i(\text{T})$ homogeneous with $\varphi(\text{T}) = 1/2$ for $\text{T} = \text{B}, \text{C}$.

Hypothesis 2: The empirical distributions of $y_i/c - \varphi(T)$ in treatments A, B and C are the same, with $\varphi(A) = 2/3$ and $\varphi(B) = \varphi(C) = 1/2$.

A third possibility is that dictators are influenced by the number of methods for transferring funds, but not in a self-serving manner. A rather extreme assumption is that dictators in treatment B are $\varphi_i(B)$ homogeneous with $\varphi(B) = 1/3$, while – as for Hypothesis 2 – dictators in treatment A are $\varphi_i(A)$ homogeneous with $\varphi(A) = 2/3$ and dictators in treatments C are $\varphi_i(C)$ homogeneous with $\varphi(C) = 1/2$.

Hypothesis 3: The empirical distributions of $y_i/c - \varphi_i(T)$ in treatments A, B and C are the same, with $\varphi(A) = 2/3$, $\varphi(B) = 1/3$ and $\varphi(C) = 1/2$.

Experimental results leading to the rejection of Hypotheses 1 and 3, but not of Hypothesis 2, will be interpreted as support for the existence of a self-serving bias in the choice of fairness ideals.

3 Design

The experiment we consider is a dictator game where c , the amount to be divided, equals 350 Money Units (MUs).⁶

120 subjects were recruited by placing posters at the university campus and by e-mailing economics and political science students, 60 of which were randomly selected and told to show up. However, only 47 of these actually did. 46 of the other 60 were assigned the role as recipient without actively taking part in the experiment.⁷

Upon arrival, one of the 47 subjects seated in the experiment room was randomly assigned the role as monitor. The monitor administered the random matching of dictators with recipients,⁸ and monitored the allocation of earnings after the exper-

⁶One MU equals 1 NOK and was worth approximately 15 US cents.

⁷Each recipient was given a randomly chosen ID number between 47 and 92.

⁸Each dictator was given a randomly chosen id number between 1 and 46. The matching was conducted using an Excel sheet projected on a screen in the experiment room, so that the randomization was visible to all subjects present (i.e., the dictators).

iment. The remaining 46 subjects in the room were assigned the role of dictator.⁹

Each dictator and each recipient collected a participation fee of 150 MUs in addition to the amount allocated to her or him in the experiment. The monitor collected 350 MUs in addition to the participation fee of 150 MUs.

The instructions to the dictators (see Appendix A) replicated as closely as possible the wording in Forsythe et al. (1994). In particular, each dictator was told that she or he had been “provisionally allocated 350 MUs”, and was asked to “divide” this endowment between an anonymous recipient and her- or himself.

After the random pairing of dictators with recipients, the 46 dictators were randomly (but evenly) distributed on six different treatments. General instructions (not depending on treatment) were read aloud to ensure that they were public knowledge (see appendix A). Each dictator also received a pen and a form with specific written instructions (depending on treatment, see appendix B). Dictators had 10 minutes to fill in the form, stating how they wanted to divide the endowment. The forms were then collected and the dictators left the room.

In the two control (C) treatments dictators had one method for transferring funds to each player (as in standard dictator games). In the C1 treatment dictators divided the endowment between (1) the dictator’s bank account, and (2) the recipient’s bank account. In the C2 treatment dictators divided the endowment between (1) a voucher to the recipient (valid in a local grocery store) and (2) a voucher to the dictator.

In the second pair of treatments (A), dictators had two methods for transferring funds to themselves and only one method for transferring funds to the recipient. In the A1 treatment dictators divided the endowment between (1) the dictator’s bank account, (2) a voucher to the dictator, and (3) the recipient’s bank account. In the A2 treatment dictators divided the endowment between (1) the dictator’s bank account, (2) a voucher to the dictator, and (3) a voucher to the recipient.

In the third set of treatments (B), dictators had only one method for transferring

⁹An dictator’s ID number was known only to that dictator, to the experimenter, and to the monitor. A recipient’s ID number was known only to the experimenter and to the monitor.

funds to themselves and two methods for transferring funds to the recipient. In the B1 treatment dictators divided their endowment between (1) the dictator’s bank account, (2) the recipient’s bank account, and (3) a voucher to the recipient. In the B2 treatment dictators divided the endowment between (1) a voucher to the dictator, (2) the recipient’s bank account, and (3) a voucher to the recipient.

4 Results

The results of the experiment are given in Table 1. They are summarized by Figure 1, which plots the empirical distribution of the self-interest parameter, γ , under the different treatments, A, B and C. We test whether the groups are drawn from the same distribution, adjusting for the fact that the maximum value of γ differs between the distributions under Hypotheses 2 and 3. The formal test-statistic, the two-sided Wilcoxon rank-sum, evaluates whether it is probable that two groups are drawn from the same distribution. We perform pairwise comparisons between all groups under the three different hypothetical sets of values for $\varphi(T)$, $T = A, B, C$.

	0	150	175	200	250	300	340	348	349	350
A	0	0	1	1	4	3	1	0	0	5
B	2	1	4	2	2	0	0	0	0	4
C	2	0	6	3	2	0	0	1	1	1

Table 1: Frequencies of the amount kept by the dictator

Under Hypothesis 1, tested to the left in Figure 1, we assume that the fairness ideal $\varphi(T) = 1/2$ for all three treatments. The results show that there is a large difference between treatment A and the other treatments. The test-statistic supports this, rejecting that A is drawn from the same distribution as B and C for $p \leq .05$. For the pairwise comparison between treatments A and B, the two-sided Wilcoxon rank-sum statistic, W is 162, $p = .04$. For the pairwise comparison of treatment A

and C, $W = 192$, $p \approx .00$. For the pairwise comparison between treatment B and C, $W = 111$, $p = .73$. We must hence reject Hypothesis 1.

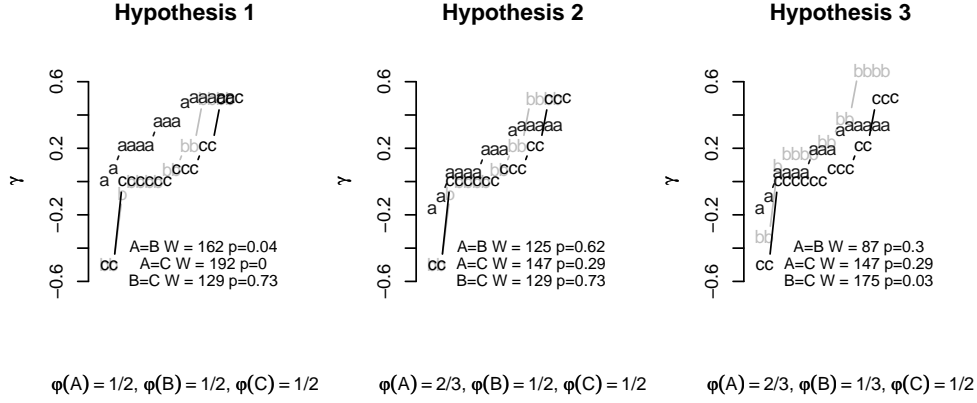


Figure 1: Test of the three hypotheses.

The parameter γ (divided by $c = 350$) is the weight assigned to income, and $\varphi(T)$ is the fairness ideal in treatment T. The empirical distribution of γ is sorted for each treatment. These distributions vary in their value of γ across the hypotheses due to different fairness ideals φ . The results of the two-sided Wilcoxon rank-sum test statistic for difference in the distributions under the different treatments for the given hypothesis are also reported. A low p-value indicates that the groups are not drawn from the same distribution.

The middle part of Figure 1 tests Hypothesis 2. Here we let the dictators entertain a self-serving bias, setting $\varphi(A) = 2/3$ and $\varphi(B) = \varphi(C) = 1/2$. There is little difference between the distributions in the three groups when adjusting for self-serving bias. For the pairwise comparison between treatments A and B, W is now only 125, $p = .62$. For the pairwise comparison of treatments A and C, $W = 147$, $p = .29$. For the pairwise comparison between treatments B and C, $W = 111$, $p = .73$, as before. This means that we can *not* reject Hypothesis 2.

Finally, the right hand side of Figure 1 tests Hypothesis 3. Under this hypothesis we assume that the dictators follow the fairness norm of splitting equally among methods, not entertaining a self-serving bias, so that $\varphi(A) = 2/3$, $\varphi(B) = 1/3$, and $\varphi(C) = 1/2$. Figure 1 shows that there is a large difference between treatments B

and C, as dictators in B have substantively higher γ than dictators in C for the whole distribution. This is confirmed in the test-statistic. For the pairwise comparison of treatments A and B, $W = 87$ and $p = .30$. For the pairwise comparison of treatments A and C, $W = 147$, $p = .29$. For the pairwise comparison of treatments B and C, $W = 65$, $p = .03$. We must hence reject Hypothesis 3.

In conclusion, the evidence enables us to reject Hypotheses 1 and 3, but does *not* allow us to reject Hypothesis 2.

5 Concluding remarks

Our paper contributes to the literature on self-serving bias in fairness judgements, by showing how the adopted fairness ideal depends on the treatment, in the parsimonious setting of a dictator game design with multiple methods for transferring funds to the players. The dictator game is particularly suitable for testing for the presence of self-serving bias since the dictators do not face strategic considerations. Our results suggest that dictators in dictator games adopt self-serving fairness ideals in the following manner: Dictators spread the endowment evenly across transfer methods – rather than evenly across the two individuals – only when this causes a higher share of the endowment to be allocated to themselves, not when this would have left them with a lower share of the endowment.

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A Instructions

[Dictators enter the lab, receive a lottery ticket from a book of tickets and choose a seat. Lists with ID numbers and names of the dictators are handed out. The experimenter starts to read aloud the instructions]

Welcome to this experiment in decision making. The experiment will take approximately 30 minutes. In front of you, you will find a pen, a blank piece of paper, the set of instructions that is now being read aloud, and a list of the participants present in the room. Your ID number is located to the left of your name on this list.

In this experiment each participant present in this room today will be randomly matched with another participant who was recruited to the experiment in the same way as you, but who is *not* present. None of you will be matched with the same participant. *We will not, at any time during or after the experiment, inform you about the identity of the participant you are matched with. Nor will we inform participants not present about who they were matched with in the experiment.*

The number of participants *not* present equals the number of participants present minus one. The reason for having an extra participant present will be explained shortly.

You will *not* be matched with any of the participants present. Decisions made by other participants present will not affect your gains, and decisions made by you will not affect the gains of other participants present.

All participants in the experiment, whether present or not, will receive a transfer of 150 money units (MUs) to their bank accounts. Each participant may also receive additional gains through decisions made in the experiment.

The experiment will be conducted as follows:

In a few minutes, each participant present will be randomly matched with a participant *not* present. Each participant present has been provisionally allocated an endowment of 350 money units. Participants that are not present have *not* been allocated such an endowment. You will decide how to divide your endowment between yourself and the other participant in your pair.

To divide the endowment you will fill in a proposal form to be handed out shortly. Your proposal becomes the final division, provided that you fill in the form correctly, so that the proposal sums to exactly 350 MUs.

If you fail to fill in the form correctly, so that the proposal does *not* sum to 350 MUs, no further gains will be awarded to any of the participants in your pair. Therefore, please make sure that you fill in the form correctly!

You are not permitted to communicate with other participants during the experiment, verbally or by other means.

We will now randomly select one person to be “monitor”. The monitor will be assigned three

tasks. First, the monitor will randomly match each participant present with a participant not present. Second, the monitor will ensure that the proposal forms are randomly distributed. Finally, the monitor will, after the experiment has been concluded, ensure that actual earnings correctly reflect your proposals and that all earnings go to the right participant. For this job the monitor will receive an amount in addition to the 150 MUs that every participant will receive. The reason why the group present includes one more person than the group not present is that we need a monitor.

Once the forms have been distributed, we will no longer answer questions. It is thus important that any questions be asked now.

[A monitor is randomly selected. The monitor matches dictator-recipient pairs, and shuffles and distributes envelopes containing proposal forms.]

[The matching of pairs is saved, printed and remains visible on the screen during the course of the experiment]

You have now received an envelope containing a proposal form. You will also find a list of participants in front of you. You are no longer permitted to ask questions.

Please find your ID-number in the list of participants. Write your ID-number on the line labeled “ID-number” in the proposal form.

Has anyone *not* found their ID-number?

You are now going to fill in the proposal form. Please read the text on the proposal form carefully.

To be valid, your proposal must add up to exactly 350 MUs. If valid, your proposal will be the final allocation. If not, each participant in your pair will receive only 150 MUs.

You may use the blank piece of paper to record your proposal.

When you have filled in the proposal form, please put it back into the envelope. The envelopes will be collected when the time is up. You now have 5 minutes to fill in the form.

[The envelopes are collected when the time is up]

B Proposal forms

A1 treatment [two methods for allocating funds to the dictator, transfer version]

You have been provisionally allocated 350 MUs. Please indicate how you wish to divide this amount between the three alternatives {3}, {4} and {5}, which are specified below.

- {1} Your ID number _____
- {2} Total amount: 350 MUs
- {3} The person I have been matched with shall receive _____ MUs as a transfer to his/her account
- {4} I shall receive _____ MUs as a voucher
- {5} I shall receive $\{2\} - \{3\} - \{4\} =$ _____ MUs as a transfer to my account

Please note: Transfers will reach bank accounts in approximately four weeks from today. Vouchers are valid from tomorrow. Vouchers are sent by ordinary mail and should reach addressees within a day or two.

B1 treatment [two methods for allocating funds to the recipient, transfer version]

You have been provisionally allocated 350 MUs. Please indicate how you wish to divide this amount between the three alternatives {3}, {4} and {5}, which are specified below.

- {1} Your ID number _____
- {2} Total amount: 350 MUs
- {3} The person I have been matched with shall receive _____MUs as a voucher
- {4} The person I have been matched with shall receive _____ MUs as a transfer to his/her account
- {5} I shall receive $\{2\} - \{3\} - \{4\} =$ _____MUs as a transfer to my account

Please note: Transfers will reach bank accounts in approximately four weeks from today. Vouchers are valid from tomorrow. Vouchers are sent by ordinary mail and should reach addressees within a day or two.

C1 treatment [one method for allocating funds to the dictator and one for the recipient, transfer version]

You have been provisionally allocated 350 MUs. Please indicate how you wish to divide this amount between the two alternatives {3} and {4}, which are specified below.

- {1} Your ID number _____
- {2} Total amount: 350 MUs
- {3} The person I have been matched with shall receive _____ MUs as a transfer to his/her account
- {4} I shall receive $\{2\} - \{3\} =$ _____ MUs as a transfer to my account

Please note: Transfers will reach bank accounts in approximately four weeks from today.

A2 treatment [two methods for allocating funds to the dictator, voucher version]

You have been provisionally allocated 350 MUs. Please indicate how you wish to divide this amount between the three alternatives {3}, {4} and {5}, which are specified below.

- {1} Your ID number _____
- {2} Total amount: 350 MUs
- {3} The person I have been matched with shall receive _____MUs as a voucher
- {4} I shall receive _____ MUs as a voucher
- {5} I shall receive $\{2\} - \{3\} - \{4\} =$ _____ MUs as a transfer to my account

Please note: Transfers will reach bank accounts in approximately four weeks from today. Vouchers are valid from tomorrow. Vouchers are sent by ordinary mail and should reach addressees within a day or two.

B2 treatment [two methods for allocating funds to the recipient, voucher version]

You have been provisionally allocated 350 MUs. Please indicate how you wish to divide this amount between the three alternatives {3}, {4} and {5}, which are specified below.

- {1} Your ID number _____
- {2} Total amount: 350 MUs
- {3} The person I have been matched with shall receive _____MUs as a voucher
- {4} The person I have been matched with shall receive _____MUs as a transfer to his/her account
- {5} I shall receive $\{2\} - \{3\} - \{4\} =$ _____ as a voucher

Please note: Transfers will reach bank accounts in approximately four weeks from today. Vouchers are valid from tomorrow. Vouchers are sent by ordinary mail and should reach addressees within a day or two.

C2 treatment [one method for allocating funds to the dictator and one for the recipient, voucher version]

You have been provisionally allocated 350 MUs. Please indicate how you wish to divide this amount between the two alternatives {3} and {4}, which are specified below.

- {1} Your ID number _____
- {2} Total amount: 350 MUs
- {3} The person I have been matched with shall receive _____MUs as a voucher
- {4} I shall receive $\{2\} - \{3\} =$ _____ MUs as a voucher

Please note: Vouchers are valid from tomorrow. Vouchers are sent by ordinary mail and should reach addressees within a day or two.