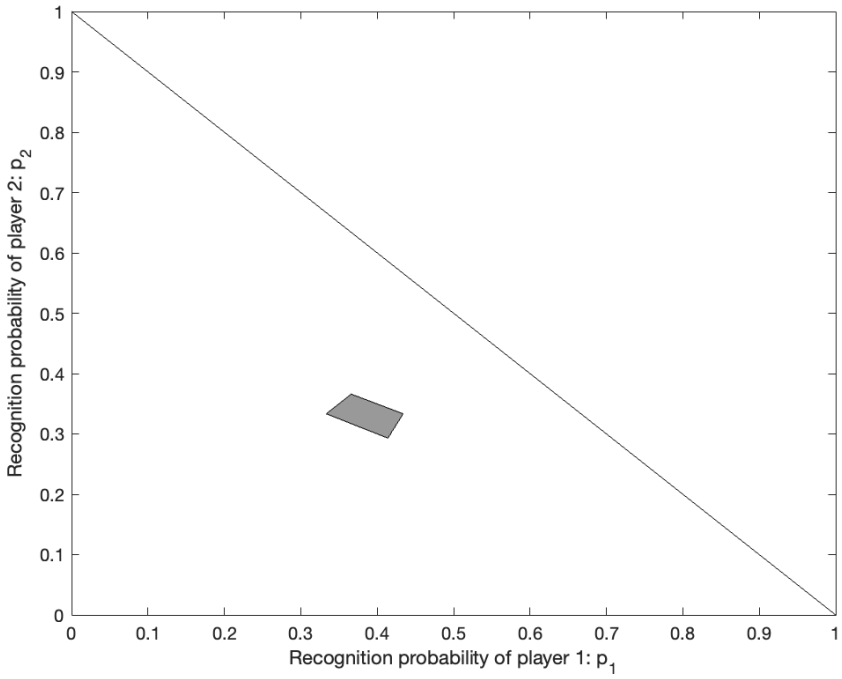
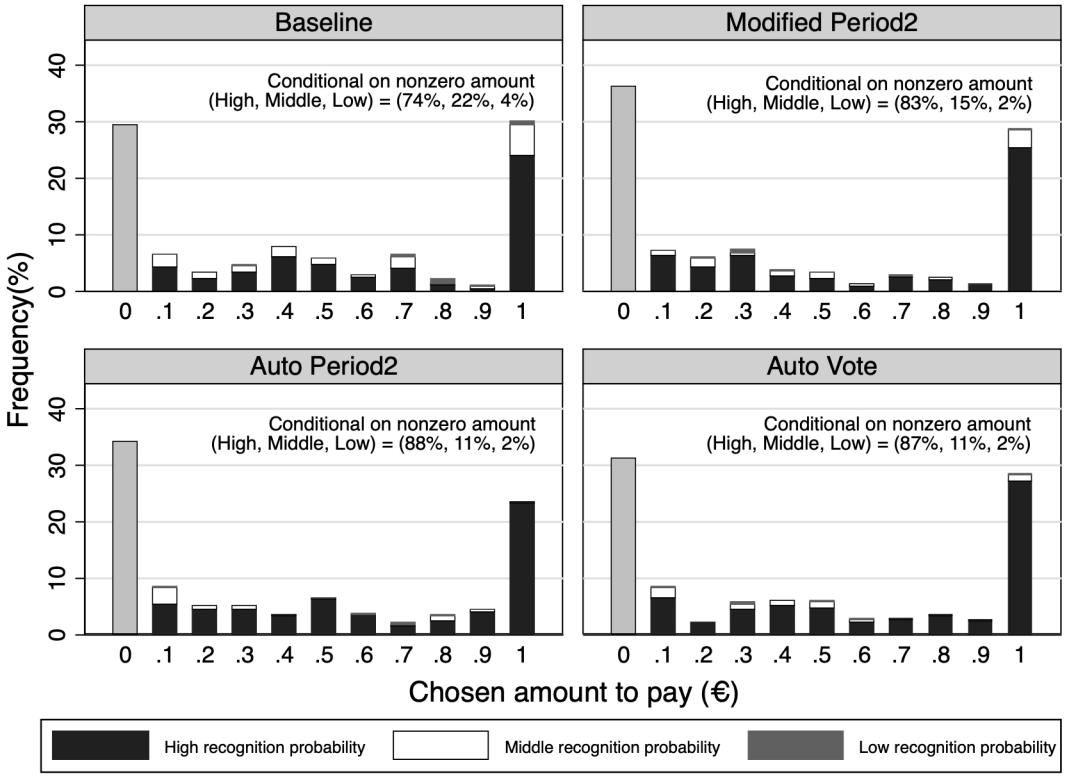
Appendix A Supplementary Figures

Figure 5: Region of negative returns to recognition probability



Note: The shaded area represents p_1 and p_2 such that $V_1(p) < V_2(p) < V_3(p)$ under the assumptions that $p_3 < p_2 < p_1$ and $p_1 + p_2 + p_3 = 1$.

Figure 6: Distribution of chosen amount to pay: all rounds



Appendix B Coalition Formation: Alternative Definitions

This section replicates Figures 3 and 4 in section 6.3 using two alternative definitions of minimal winning coalitions and grand coalitions.

First, we adopt the alternative definition by Fréchette & Vespa (2017), in which they define a coalition partner as a member who receives an offer of 10% of the budget (€6 in this experiment) or higher. Then, minimal winning coalition proposals and grand coalition proposals can be defined as those that result in one and two coalition partners respectively.

Figure 7 shows the distribution of coalition types according to this alternative definition. Under this definition, more proposals are categorized as MWC, although a substantial fraction of proposals is still categorized as grand coalitions. Figure 8 shows that the fraction of MWC proposals that are consistent with the BF prediction is similar under the alternative definition.

Next, similar to Kim & Kim (2022), we define a coalition partner as a member who receives an offer that is greater than or equal to her continuation value.[20] Figure 9 shows that this alternative definition categorizes a greater fraction (57-86%) of proposals as MWC proposals and only 3-5% of proposals as grand coalitions. Yet again, the alternative definition does not significantly improve the consistency of coalition partner selection with the BF prediction, as Figure 10 shows.

Appendix C Coalition Formation: Individual Analysis

Section 6.3 examined the pattern in which the subjects chose their MWC partners at the aggregate level. In this section, we examine the individual variation in the partner choice pattern.

First, those subjects who often propose MWC as predicted are also more likely to choose a coalition partner with the lower recognition probability as predicted. Figure 11 shows the distribution of individual subjects on scatter plots. The horizontal axis represents the number of MWC proposals a given subject makes, and the vertical axis represents the subject's frequency of choosing a coalition partner as predicted by the BF model conditional on proposing a MWC. The positive correlation shown in the best-fit lines is confirmed by the Pearson correlation test (r=0.2932, p=0.001).

Table 6 classifies the subjects by their frequencies of MWC proposal and MWC partner

[20] To be precise, Kim & Kim (2022) uses this definition only for MWCs. They further classify grand coalitions according to other criteria.

Figure 7: Distribution of coalition types proposed in period 1: alternative definition by 10% threshold

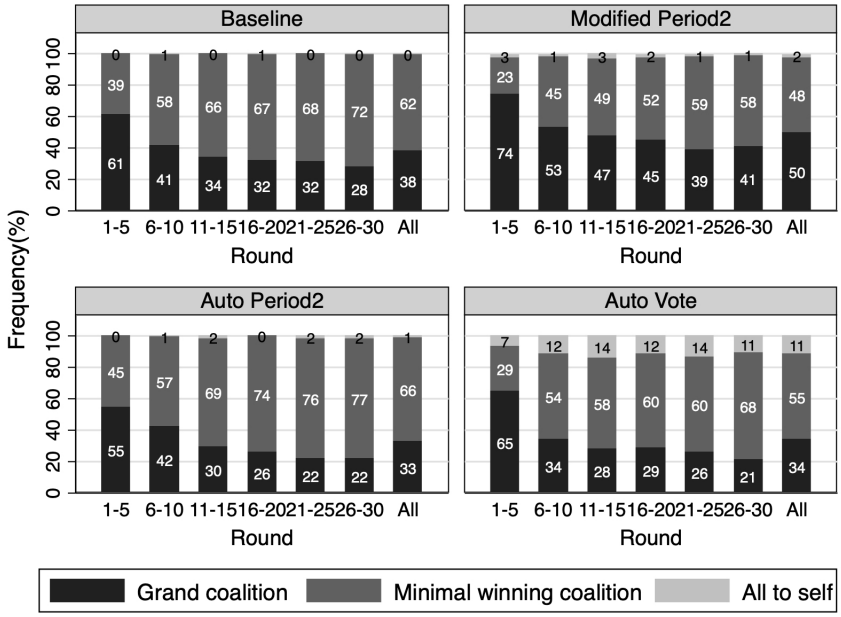


Figure 8: Fraction of MWC partner selections consistent with Baron & Ferejohn (1989): alternative definition by 10% threshold

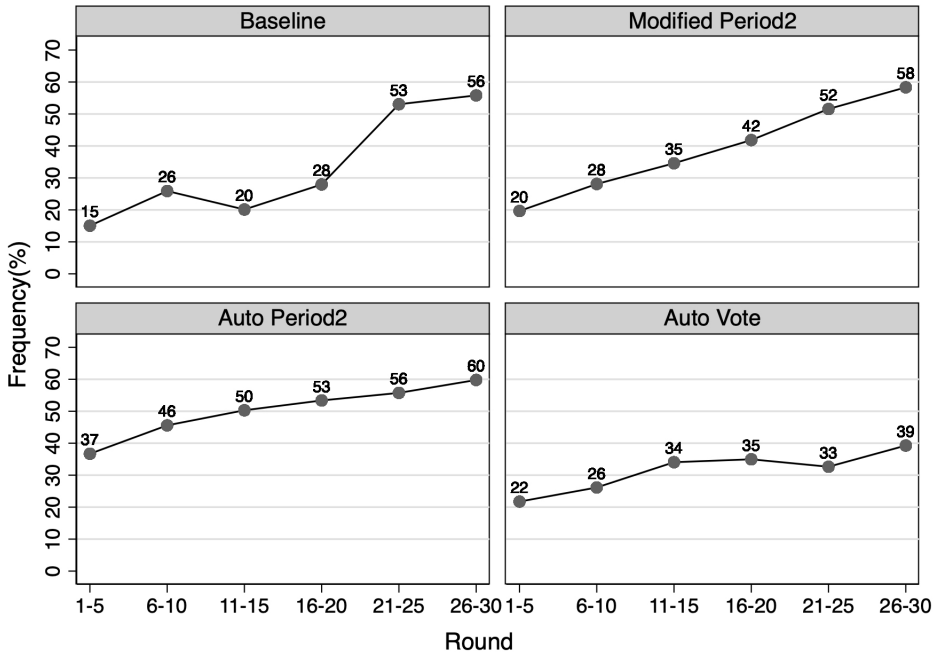


Figure 9: Distribution of coalition types proposed in period 1: alternative definition by continuation value criterion

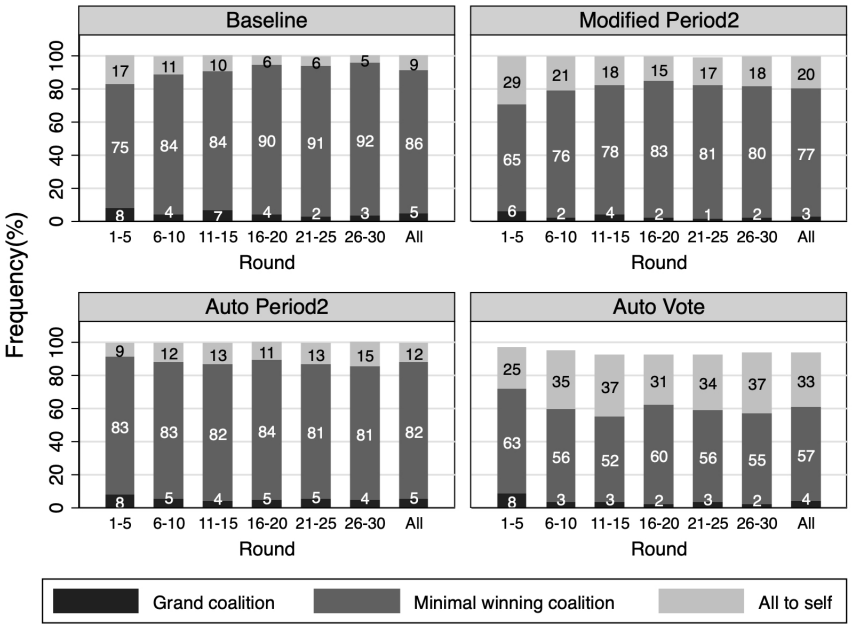


Figure 10: Fraction of MWC partner selections consistent with Baron & Ferejohn (1989): alternative definition by continuation value criterion

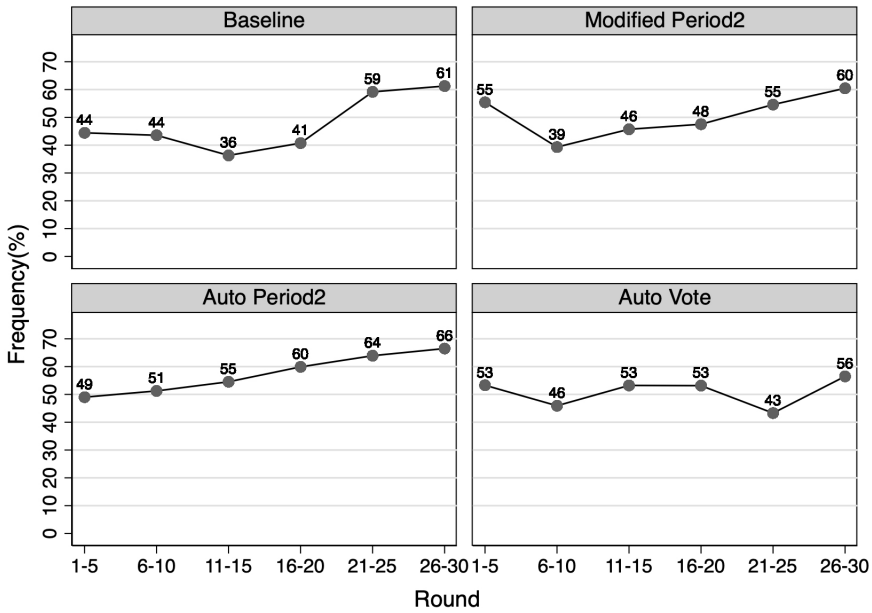


Figure 11: Distribution of frequencies: MWC and MWC partner selection consistent with BF prediction

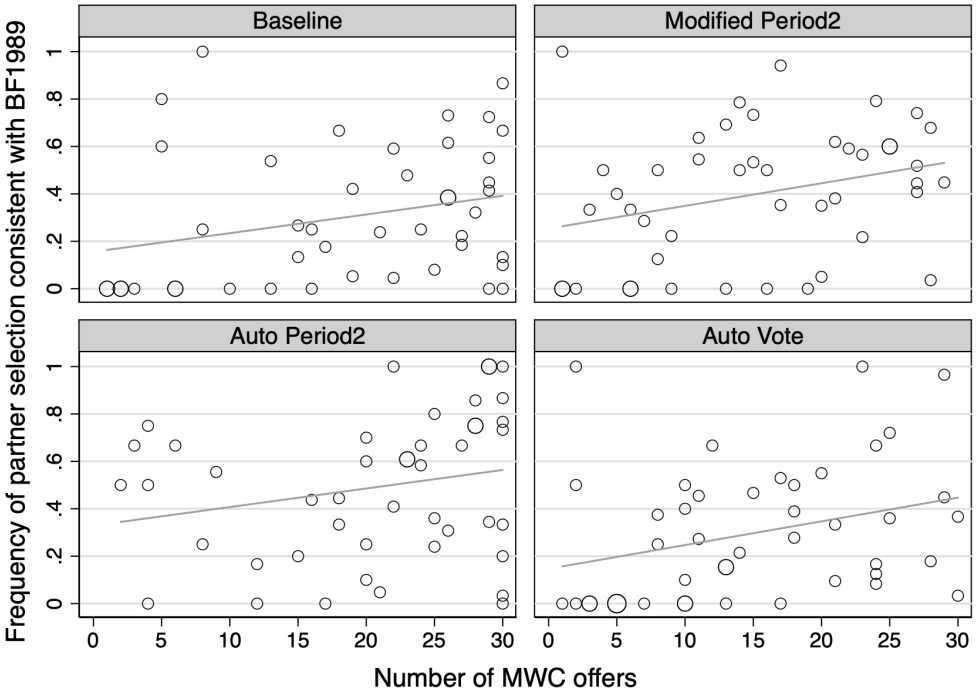


Table 6: Classification of subjects

	Baseline ($n = 48$)	Modified Period 2 ($n = 54$)	Automated Period 2 ($n = 48$)	Automated Vote ($n = 48$)	Total ($n = 198$)
Non-MWC proposer	14	27	12	20	73
MWC proposer	34	27	36	28	125
$q_i = 0, i \in \{H, M, L\}$	5	2	2	2	11
$q_i \leq 1/3$	4	2	4	5	15
$q_i \in (1/3, 2/3)$	0	0	2	0	2
$q_i \geq 2/3$	1	1	5	2	9
$q_i = 1$	0	0	4	1	5
$q_H < q_L; q_M \in [q_H, q_L]$	8	10	10	12	40
$q_H < q_L; q_M \notin [q_H, q_L]$	6	5	7	3	21
$q_H > q_L; q_M \in [q_L, q_H]$	5	5	0	1	11
$q_H > q_L; q_M \notin [q_L, q_H]$	5	2	2	1	10
unclassified	0	0	0	1	1

selection that is consistent with the BF prediction. First, MWC proposers are defined as the subjects who propose MWCs in 10 or more rounds out of 30 and also do so at least twice given each of the three recognition probabilities. 73 subjects do not meet these criteria and are classified as non-MWC proposers. Next, the MWC proposers are further categorized by the frequency with which they choose a MWC partner consistent with BF prediction. Let q_H, q_M, and q_L respectively denote the frequency with which the subject makes partner choices consistent with BF prediction when they face high, middle, and low recognition probability.

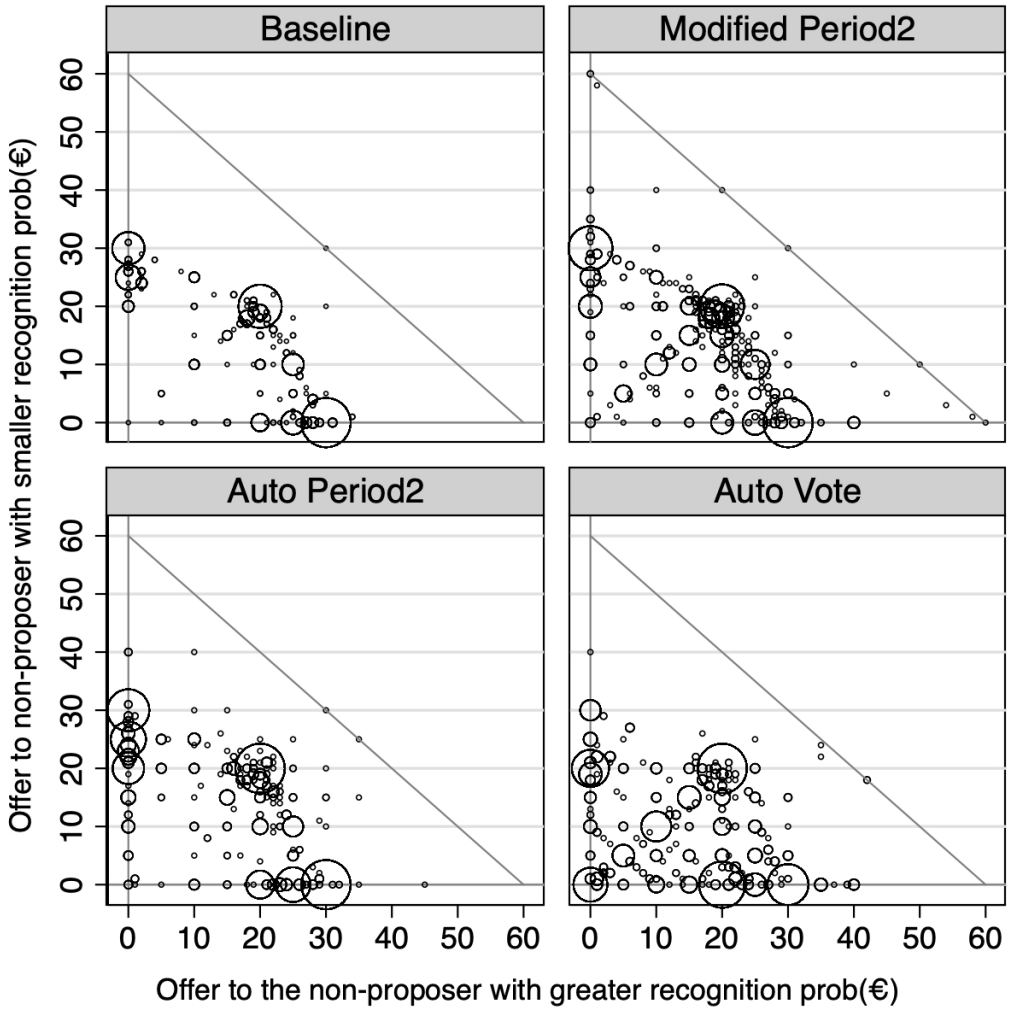
In the table, $q_i = 0[1]$ means that the subject never[always] makes a consistent choice regardless of the recognition probability. $q_i \leq 1/3$ means that the subject makes a consistent choice with a frequency smaller than or equal to $1/3$ regardless of the recognition probability, excluding the case of $q_i = 0$. $q_i \in (1/3, 2/3)$ and $q_i \geq 2/3$ are similarly defined. Lastly, among the remaining cases, we identify 61 subjects whose rate of consistency is strictly higher when they face a low recognition probability compared to when they face a high recognition probability ($q_H < q_L$). 40 out of those 61 subjects also show a rate of consistency that decreases with their own recognition probability ($q_H < q_L$; $q_M \in [q_H, q_L]$). On the other hand, 21 subjects show a strictly lower rate of consistency when they face a low recognition probability compared to when they face a high recognition probability ($q_H > q_L$).

Overall, we find that most MWC proposers vary their frequency of coalition partner choice consistent with the BF model depending on their own recognition probability. In particular, about half of MWC proposers are more likely to make consistent choices when they face the low recognition probability than the high recognition probability. On the other hand, a non-negligible share of subjects shows a low rate of consistency (less than or equal to $1/3$) regardless of their own recognition probability (26 subjects). A smaller share of subjects shows a high rate of consistency (higher than or equal to $2/3$) regardless of their own recognition probability (14 subjects).

Appendix D Additional results

This section examines other aspects of the bargaining behavior and outcome which largely confirm the common findings in the BF bargaining experiments (See Baranski & Morton (2022) for review).

Figure 12: Distribution of allocations proposed in period 1

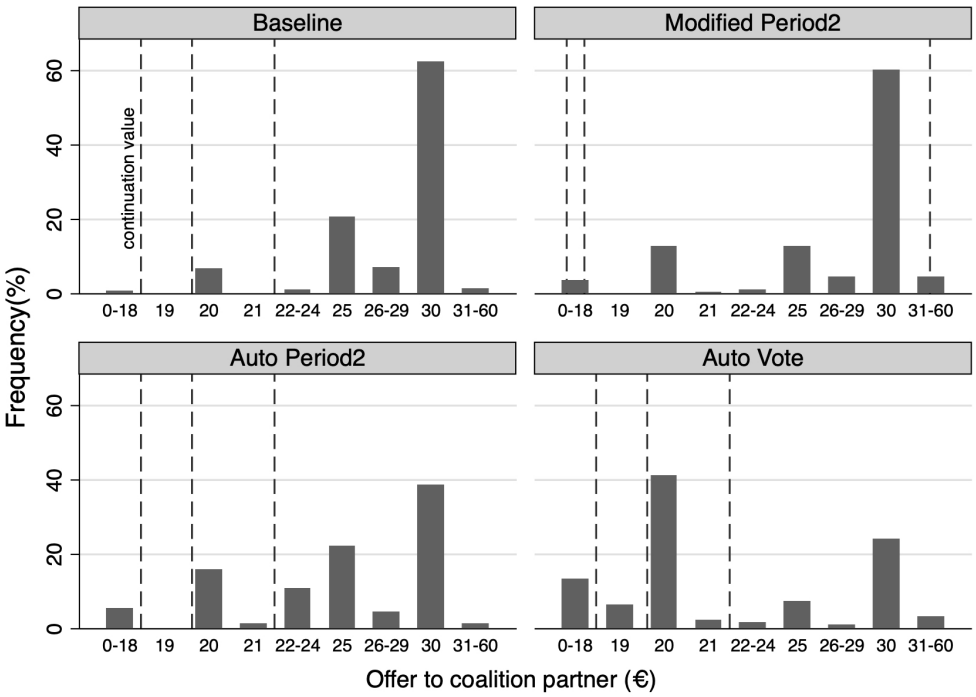


D.1 Within-coalition allocation

Result 4: Most proposed allocations – both grand and minimal winning coalitions – are more equal than the theoretical prediction.

The scatterplots in Figure 12 show the distributions of all allocations proposed in the first period. The horizontal[vertical] axis shows the offer a member makes to another member with the greater[smaller] recognition probability between the two other members. The origin represents an allocation in which the member offers the entire budget to herself. The vertical and horizontal axes represent MWCs. MWCs that are consistent with the BF model are on the vertical axis.

Figure 13: Distribution of offers to MWC partner



Three observations emerge from the figure. First, a substantial number of proposals are grand coalitions that split the budget almost equally among the three members (observations around (20, 20)). Second, another substantial number of proposals are MWC proposals that are consistent with the BF model (observations on the vertical axis), or inconsistent with the model (observations on the vertical axis). Lastly, in all treatments but Automated Vote, few proposers allocate more than €40 to self.

Focusing on the allocation within MWCs, Figure 13 shows the distribution of offers made to the coalitions partner in MWCs. The three dashed lines on each graph represent the theoretically predicted continuation values for the members with varying recognition probabilities. In the baseline treatment, most offers are higher than any continuation value. Such generous offers are less common in the Automated Period 2 treatment and the Automated Vote treatment.

D.2 Votes

Result 5: The voting behavior is largely consistent with the BF prediction but not as clearly differentiated by the recognition probability as the theory predicts.

In the baseline, Modified Period 2, and Automated Period 2 treatments, respectively 93%, 82%, and 95% of votes are consistent with the BF prediction that each member votes in favor of offers that are greater than or equal to her continuation value.[21] Figures 14, 15, and 16 show the number of votes for and against proposals conditional on the proposed allocation to the voter, for the baseline, Modified Period 2 and Automated Period 2 treatment, respectively. The dashed line indicates the continuation value of the MWC partner predicted by the BF model.

Two types of non-equilibrium behavior stand out. First, in the baseline treatment, the high-powered member accepts the offer of €20 most of the time, although this offer is below her continuation value. The second point concerns the modified period 2 treatment in which, by design, the model predicts vastly different voting behavior across the three members. The intended treatment effect on voting is visible: the high-powered member is more likely to reject offers that are greater than or equal to €20 than other members. Still, the high-powered member often accepts offers below her continuation value, whereas the low-powered member often rejects offers that are above her continuation value. As a result, the voting behaviors of the three members are more similar than the theory predicts.

D.3 Proposer Share

Result 6: The proposer share in accepted coalitions is smaller than the theoretical prediction, although it increases over time.

The accepted coalitions are similar to the proposed coalitions: grand coalitions are common, although MWCs become more common in later rounds. The within-coalition allocations are more equal than the theory predicts.

As a result, the proposer share in accepted coalitions is smaller than predicted by the BF model, although the share increases over time. Figures 17 and 18 trace the mean share of the proposer and the two non-proposers over time. Figure 17 shows the proposals accepted in period 1, and Figure 18 shows the proposals accepted in period 2. In both figures, the proposer share increases over time, whereas the share of the non-proposing member with the smallest allocation in the group decreases over time.[22] The proposer share falls short of the theoretically predicted level[23] even after 25 rounds of experience.

[21] The rate of consistency in our baseline treatment is higher than the 78% reported by Diermeier & Morton (2005) in their treatment of five-period bargaining with similar recognition probabilities. The rate is more similar to the 89% reported by Fréchette & Vespa (2017).

[22] OLS regressions of the shares on the round number with clustering at the individual subject level confirms these trends ($p \leq 0.001$).

[23] In all treatments but Modified Period 2, the proposer share in period 1 is €40.2 or €41.4 depending

Figure 14: Number of votes conditional on offer: Baseline treatment

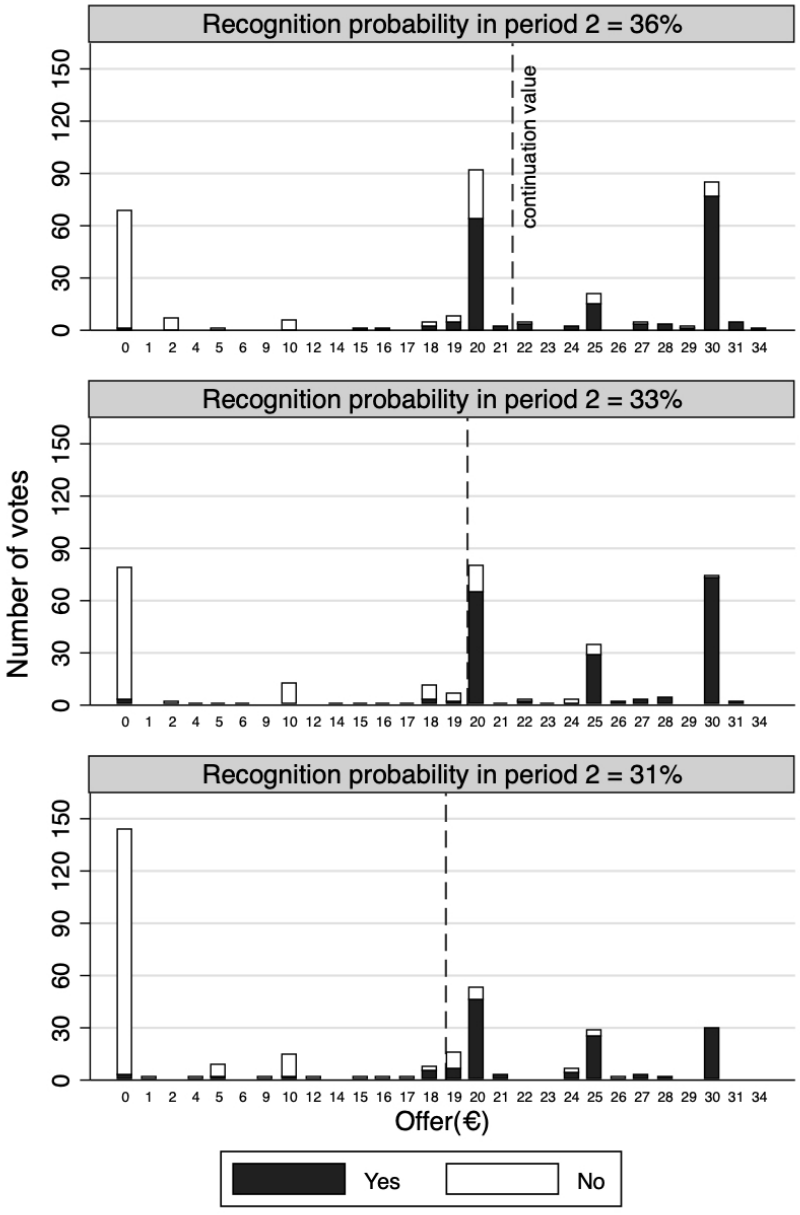


Figure 15: Number of votes conditional on offer: Modified Period2 treatment

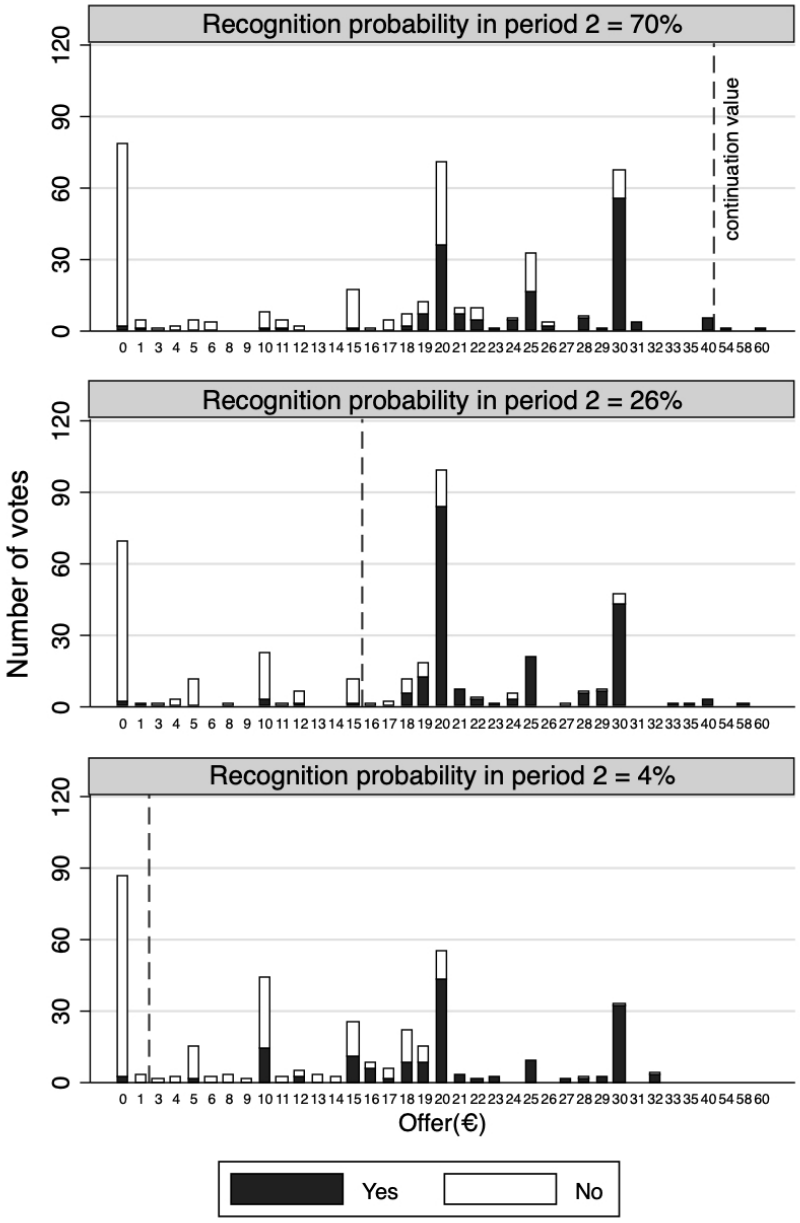


Figure 16: Number of votes conditional on offer: Automated Period 2 treatment

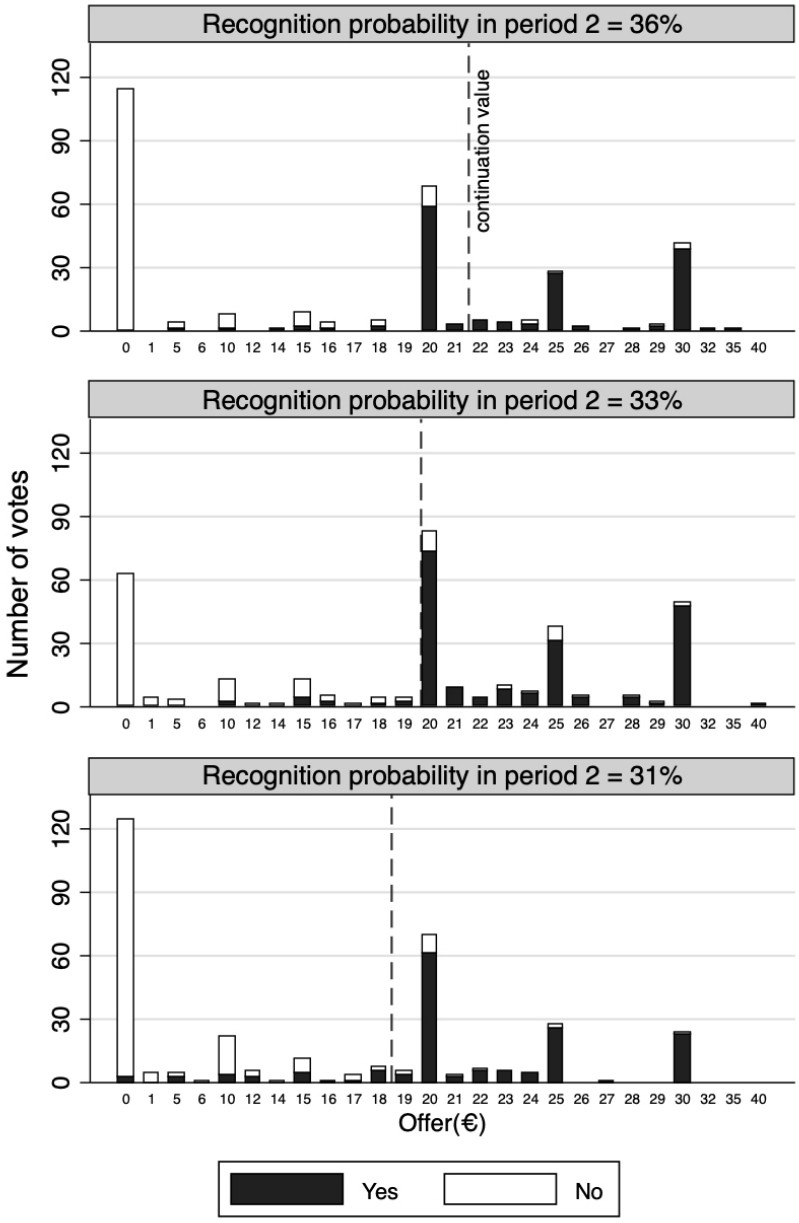


Figure 17: Evolution of mean allocation to proposers and non-proposers conditional on period 1 acceptance

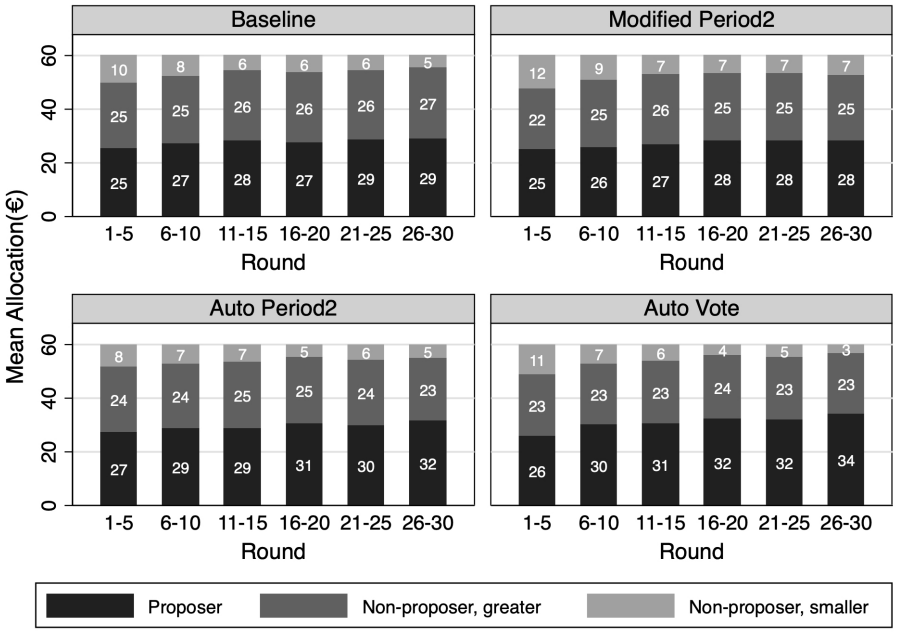


Figure 18: Evolution of mean allocation to proposers and non-proposers conditional on period 2 acceptance

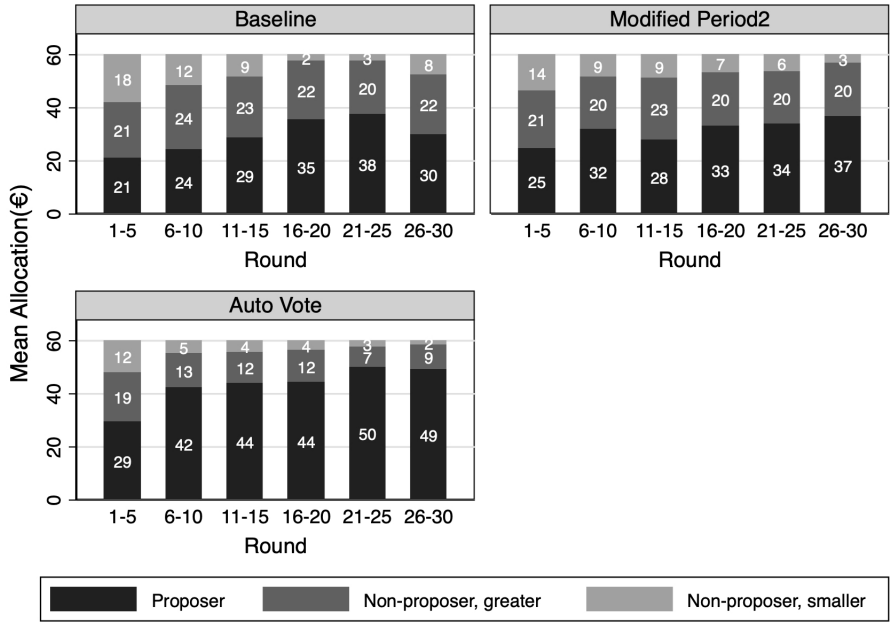


Figure 19: Evolution of mean allocation to proposers and non-proposers conditional on MWC

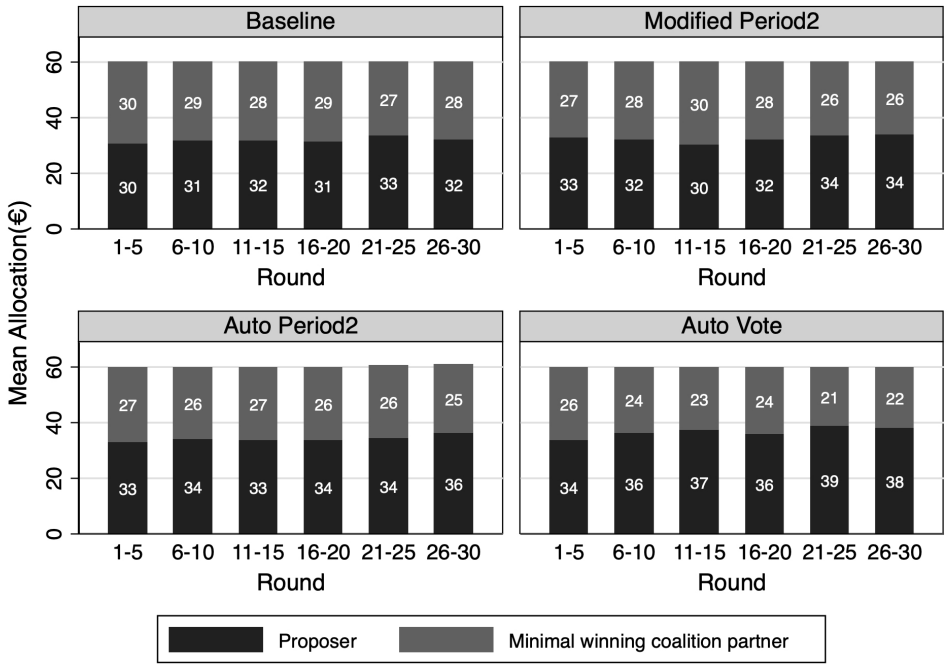


Figure 19 shows the proposer share conditional on MWC. In the baseline and Modified Period 2 treatments, the proposer share is slightly over half of the budget and remains relatively stable, consistent with the finding from the meta-analysis by Baranski & Morton (2022). On the other hand, in the Automated Period 2 and Automated Vote treatments, the proposer share increases over time.[24]

D.4 Delay and Failure in Reaching Agreement

Table 7 shows the number of proposals that are accepted in each period. In all treatments, a majority of groups accept the proposal in the first period, consistent with the BF model. However, in the Automated Vote treatment, about 40% of proposals are rejected in the first period. Few groups fail to reach an agreement by the end of the second period.

on the proposer's recognition probability. In Modified Period2 treatment, the proposer share in period 1 is €44.4 or €57.6 depending on the proposer's recognition probability. In all treatments, the proposer share in period 2 is the entire budget (€60).

[24]OLS regressions of the shares on the round number with clustering at the individual subject level; estimate = 0.11, p=0.013 for Automated Period 2; estimate = 0.14, p=0.020 for Automated Vote.

Table 7: Number of Proposals Accepted in Each Period

Treatment	Period 1	Period 2	Rejected in period 2
Baseline	418 (87%)	60 (13%)	2 (0%)
Modified Period 2	419 (78%)	112 (21%)	9 (2%)
Automated Period 2	414 (86%)	66(14%)	-
Automated Vote	290 (60%)	190 (40%)	-

Appendix E Experiment Instructions

E.1 Welcome Message (All Treatments)

Welcome

You are about to participate in an experiment on decision-making. You will be paid for your participation with cash, privately at the end of the session. The amount of your payment depends partly on your decisions, partly on the decisions of others, and partly on chance. There are three documents in front of you:

1. Instructions (this document)
2. Quiz
3. Payment Receipt

Participation in this experiment is completely voluntary. You will be assured the €10 participation fee. Throughout the experiment, all the decisions you make will be recorded without any identifying information. That is, there will be no way your decisions would be linked back to you. If you have any questions or concerns, you may contact me at h.lee@uva.nl.

During the experiment, you may not use mobile phones or other electronic devices, or communicate in any way with other participants. If you have any questions, please raise your hand. I will come and assist you in private. If the question is relevant for all participants, I will repeat it and answer it for everyone. First, please read the instructions for the experiment. After reading the instructions, you will take a quiz, to ensure that you understand how the experiment works. Once you complete the quiz, please raise your hand. I will come and check your answers. If you answer any question incorrectly, I will ask you to try again.

E.2 Instructions and Comprehension Quiz: Baseline Treatment

Instructions

Your payment

The experiment consists of a series of group decision-making rounds in which you will participate with others in deciding how to divide €60. The first part and the second part of the experiment consist of 15 decision rounds **each**. At the end of the experiment, the computer will select one of the 30 decision-making rounds at random, and you will be paid what you earned in that round plus the €10 participation fee.

That is, suppose that the experiment runs for 3 rounds. Suppose also, that in round 1 you earned €25, in round 2 you earned €60, and in round 3 you earned €0. One of these rounds will be randomly selected by the computer with equal probabilities as your payment round. If round 1 is selected, you will be paid €25 + €10 = €35. But if round 3 is selected, you will be paid €0 + €10 = €10.

As mentioned above, the experiment consists of two parts. Now we will read the instructions for the first part. You will receive the instructions for the second part once you have completed the first part.

Instructions: Part One

How the experiment works

This experiment is conducted using your computer terminals. As noted above, the experiment will take place in a series of decision-making rounds. Each decision-making round will have the following structure:

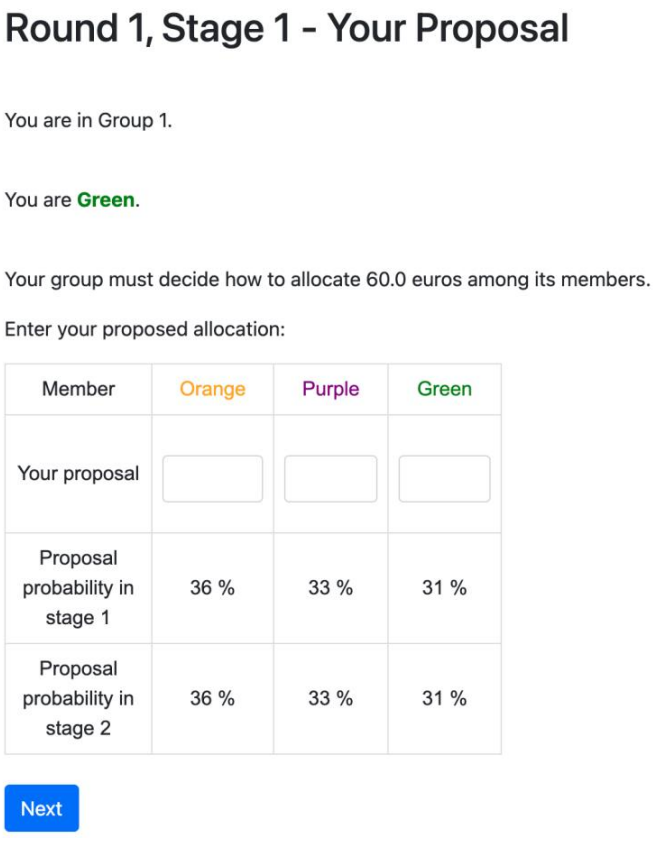
1. All subjects are randomly assigned to groups of three members. For example, if there are 24 subjects, there will be eight groups of three members.
2. Each group member in each group will be randomly assigned a color, either Orange, Green, or Purple. Note that only one member of each group will be assigned Orange, only one will be assigned Green, and only one will be assigned Purple. Each group member will also be randomly assigned a probability of proposal, either 36%, 33%, or 31%. Note that only one member of each group will have 36%, one will have 33%, and one will have 31%.
3. Each group will decide how to divide €60 among the three members.

In each new round, you will be randomly re-assigned to a new three-member group and again randomly assigned a color and a probability of proposal. Then all groups will decide again how to divide €60. We will continue this procedure for 15 rounds. That is the basic structure of the first part of the experiment. Now I will explain how each group decides in more detail.

How each group decides

Each decision-making round consists of a maximum of two proposal stages. In each proposal stage, all three members must enter a proposal – which is a division of the €60 among the three members. Then the computer will pick one group member to be the proposer, whose proposal will be voted on by all three members. The computer will pick the proposer randomly, based on the probability of proposal assigned to the members. For example, if you are assigned 36% in stage 1, then the probability that the computer will pick you will be 36% in stage 1.

Take a look at the example of a computer screenshot in Figure 1. This computer screen displays the color and the proposal probability of you and other members in your group. In this example, you are Green and have a 31% probability of proposal in both stage 1 and stage 2.



Round 1, Stage 1 - Your Proposal

You are in Group 1.

You are **Green**.

Your group must decide how to allocate 60.0 euros among its members.

Enter your proposed allocation:

Member	Orange	Purple	Green
Your proposal			
Proposal probability in stage 1	36 %	33 %	31 %
Proposal probability in stage 2	36 %	33 %	31 %

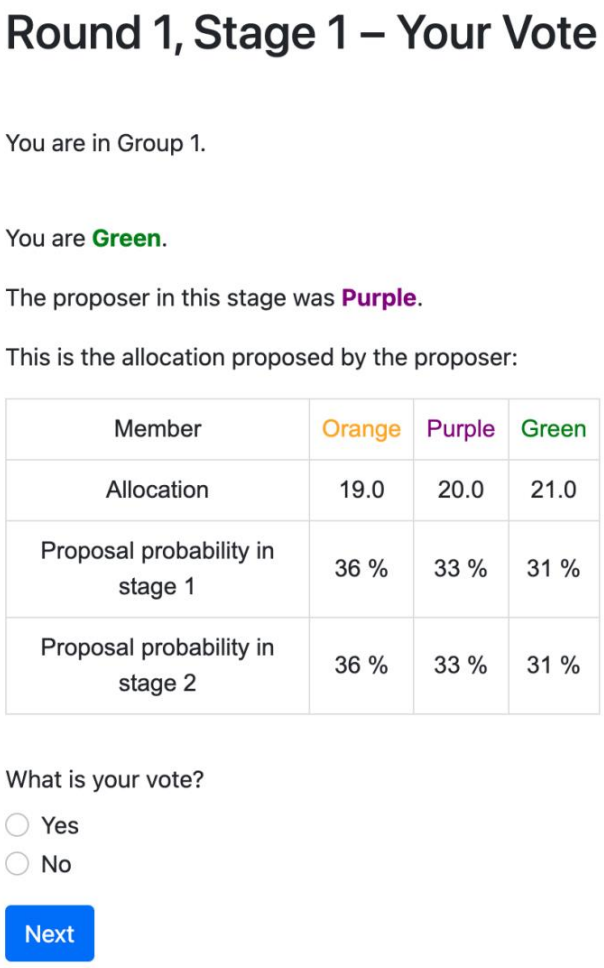
Next

Figure 1 Screenshot - Proposal

On the table shown in Figure 1, you will enter your proposed allocation of €60. In the left-most text box, enter the amount you wish to allocate to the member with the color Orange. In the middle and the right-

most text boxes, enter the amount you wish to allocate to the members with the colors Purple and Green (yourself in this example), respectively. You do not need to enter the euro sign (€). You must enter the amount in whole euros (e.g. either 10 or 11, not 10.xx). While you can enter any amount from 0 to 60 for each group member, the SUM of the amounts should be exactly 60. If you enter an invalid allocation, the computer will send you an error message. Once you are done, press "Next".

Once all members have submitted a proposal, the computer screen will show all the group members which member has been picked to be the proposer and show the proposal of that member. In the example shown in Figure 2, the Purple member proposed to allocate 19 euros to the Orange member, 20 euros to herself, and 21 euros to the Green member (you).



Round 1, Stage 1 – Your Vote

You are in Group 1.

You are **Green**.

The proposer in this stage was **Purple**.

This is the allocation proposed by the proposer:

Member	Orange	Purple	Green
Allocation	19.0	20.0	21.0
Proposal probability in stage 1	36 %	33 %	31 %
Proposal probability in stage 2	36 %	33 %	31 %

What is your vote?

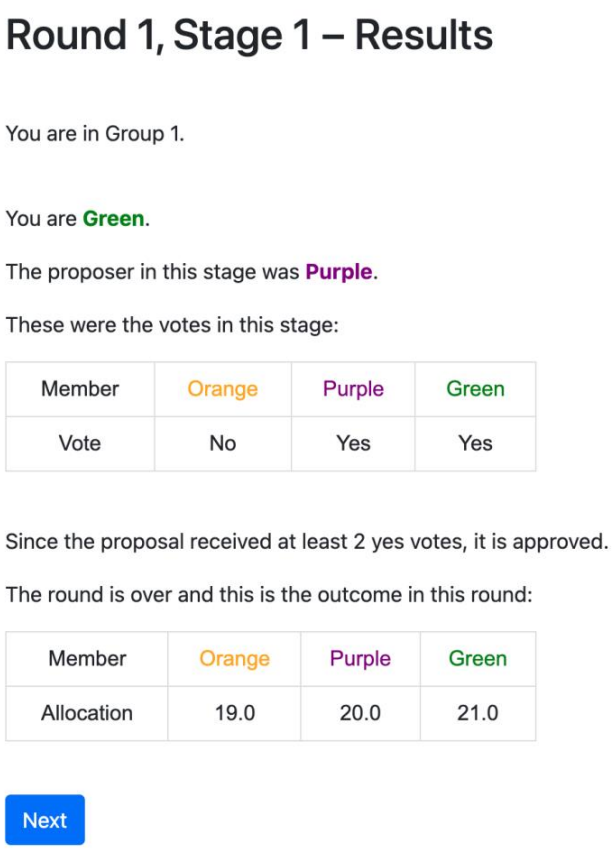
○ Yes
○ No

Next

Figure 2 Screenshot - Vote

All three group members (including the proposer) will be asked to vote on the proposal. You can click "Yes" to vote yes to accept the proposal or "No" to vote no to reject the proposal.

After everyone votes, the outcome will be reported to you on your computer screen, as in Figure 3. For a proposal to be accepted it must receive **two or more** yes votes. If a proposal receives at least two yes votes, the proposal will be considered accepted by the group and the proposed allocation will be your payoff for that round. The computer screen will show this allocation for the round:



Round 1, Stage 1 – Results

You are in Group 1.

You are **Green**.

The proposer in this stage was **Purple**.

These were the votes in this stage:

Member	Orange	Purple	Green
Vote	No	Yes	Yes

Since the proposal received at least 2 yes votes, it is approved.

The round is over and this is the outcome in this round:

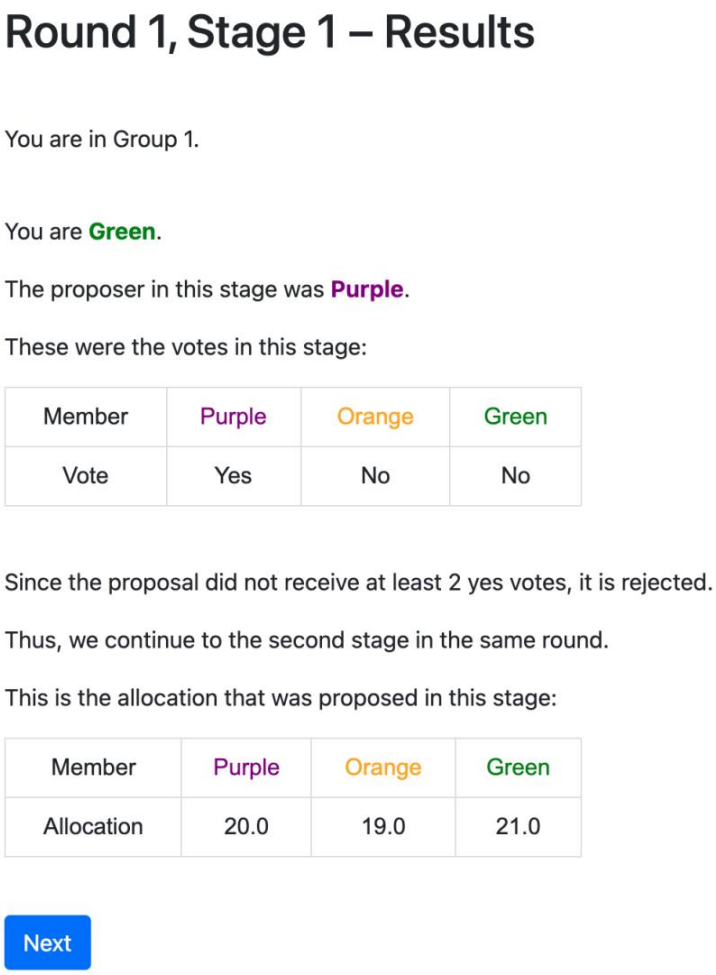
Member	Orange	Purple	Green
Allocation	19.0	20.0	21.0

Next

Figure 3 Screenshot – Results (Accepted)

Then you and the other members of your group are now ready to move on to the next round in the experiment. Once all groups finish the round, you will be randomly re-assigned to a new group. This can take up to a few minutes, and you will see a wait page in the meantime.

If the proposal does not receive at least 2 yes votes, it will be considered rejected by the group. For example, Figure 4 shows a case in which only the Purple member voted yes, whereas the Orange and the Green members voted no.



Round 1, Stage 1 – Results

You are in Group 1.

You are **Green**.

The proposer in this stage was **Purple**.

These were the votes in this stage:

Member	Purple	Orange	Green
Vote	Yes	No	No

Since the proposal did not receive at least 2 yes votes, it is rejected.

Thus, we continue to the second stage in the same round.

This is the allocation that was proposed in this stage:

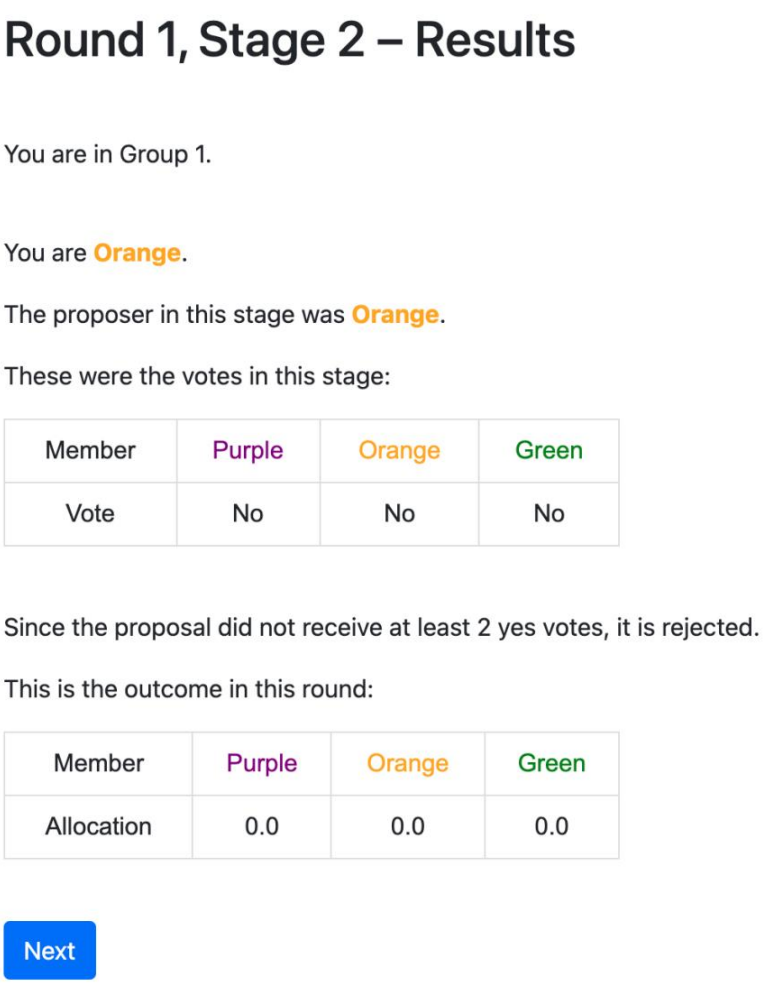
Member	Purple	Orange	Green
Allocation	20.0	19.0	21.0

Next

Figure 4 Screenshot – Results (Stage 1 Rejected)

In this case, your group will play another stage of proposing. The group members make new proposals, and the computer will again pick one member's proposal to be voted on, according to the probability of proposal in stage 2.

If the second proposal is accepted, then the proposed allocation will be your payoff for that round. If the second proposal is rejected, all members of your group will receive **ZERO** euros for that round. If your group has rejected a second and final proposal, the computer screen will look like Figure 5:



Round 1, Stage 2 – Results

You are in Group 1.

You are **Orange**.

The proposer in this stage was **Orange**.

These were the votes in this stage:

Member	Purple	Orange	Green
Vote	No	No	No

Since the proposal did not receive at least 2 yes votes, it is rejected.

This is the outcome in this round:

Member	Purple	Orange	Green
Allocation	0.0	0.0	0.0

Next

Figure 5 Screenshot – Results (Stage 2 Rejected)

Then you and the other members of your group will move on to the next round in the experiment. In the next round, you will be randomly re-assigned to a new group.

In summary, whenever a group accepts a proposal, the proposed allocation becomes the members' payoffs. After all groups have either accepted proposals or not accepted proposals but gone through two rejected proposals, you will be randomly re-assigned to a new three-member group and again randomly assigned a

color and a probability of proposal. Then all groups will again go through a decision-making round. We will continue this procedure for 15 rounds.

History Table

Throughout the experiment, on any screen that requires your decision, you can review the outcome of the past rounds in the history table. To see the history table, scroll down on the page you are viewing. As you can see in Figure 6, the history table shows Your Color, Proposer Color, Proposal, Votes, Group Allocation, and Your Allocation in all your past rounds and stages.

History

Round	Stage	Your Color	Proposer Color	Proposal	Votes	Group Allocation	Your Allocation
1	1	Purple	Purple	Purple: 20.0 Orange: 19.0 Green: 21.0	Purple: Yes Orange: No Green: No		
1	2	Purple	Orange	Purple: 19.0 Orange: 20.0 Green: 21.0	Purple: No Orange: No Green: No	Purple: 0.0 Orange: 0.0 Green: 0.0	0.0
2	1	Orange	Green	Purple: 19.0 Green: 20.0 Orange: 21.0	Purple: Yes Green: Yes Orange: Yes	Purple: 19.0 Green: 20.0 Orange: 21.0	21.0
3	1	Orange	Purple	Green: 19.0 Orange: 21.0 Purple: 20.0	Green: Yes Orange: No Purple: Yes	Green: 19.0 Orange: 21.0 Purple: 20.0	21.0

Figure 6 Screenshot – History

Reminder: Your Payment

At the end of the experiment, you will be paid the €10 participation fee. In addition, one of the 30 decision-making rounds is selected randomly by the computer and you will be paid the amount of money you earned in that round. Thus, **one (and only one)** of these 30 rounds will be used to determine your payment for the experiment. At the end of the experiment, your computer will tell you which round was used to calculate your payoff and how much your total payment is.

Final Note: Please remember to press the **NEXT button** once you have entered your decisions or checked the information on the screen so that we can move on to the next page.

Now, please complete the quiz.

Please raise your hand if you have completed the quiz or have any questions.

Instructions: Part Two

The second part of the experiment is similar to the first part. The only difference is that your probability of proposal is not entirely randomly assigned. At the beginning of each round, you will be given an endowment of €1. **You can pay any part of this endowment (in increments of €0.10) to increase the chance of being assigned your preferred probability of proposal**. At the beginning of each round, you will see the following screen:

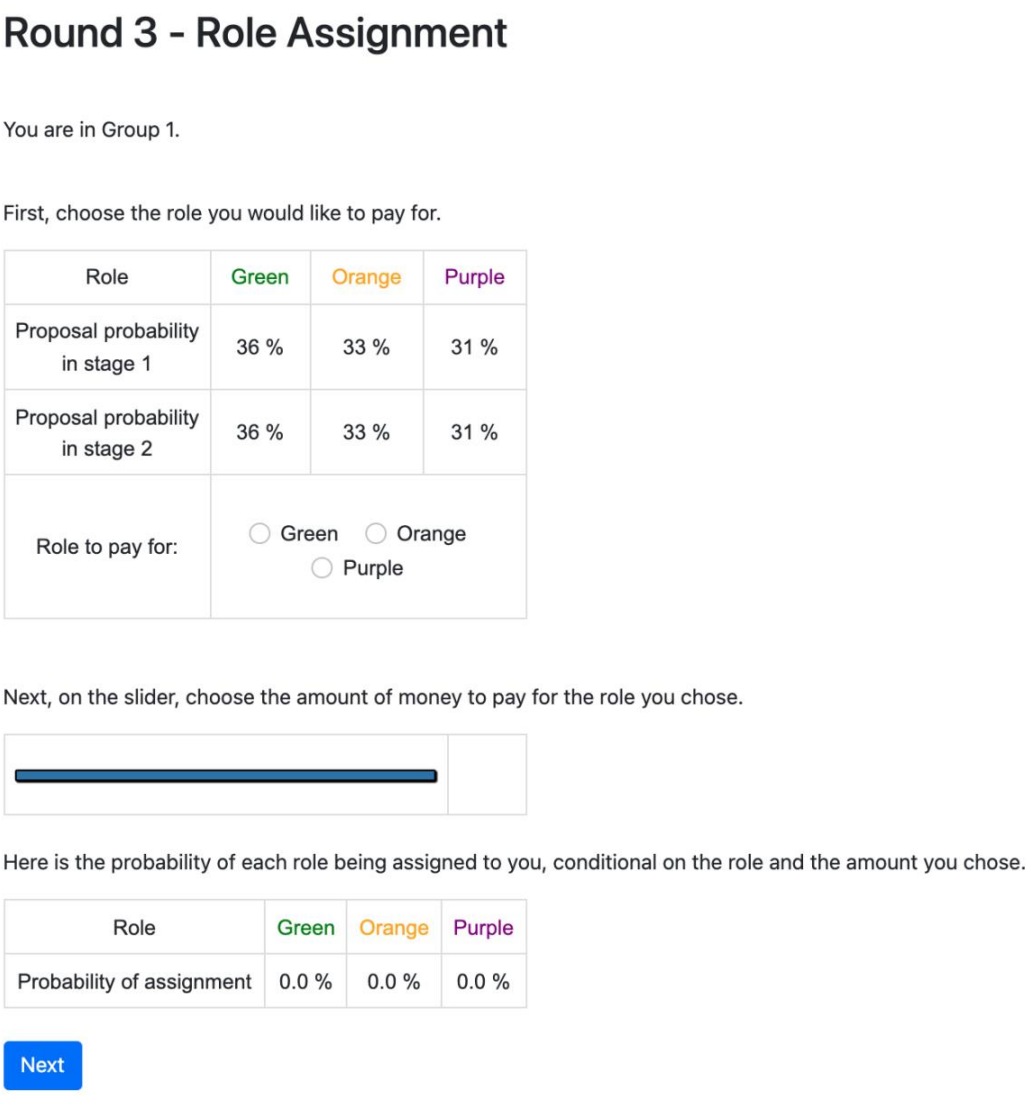


Figure 7 Screenshot – Role Assignment (before clicking slider)

Note that you have not been assigned any role (or color) yet. The table shows which probability of proposal corresponds to which role. For example, the Green role has a 36% probability of proposal in both stage 1 and stage 2. First, choose your preferred role on the table. Then use the slider to choose any amount between €0 and €1, you wish to pay to increase the chance of being assigned that role you just chose.

Once all three members in your group choose the amount and click NEXT, the computer will randomly select one member in your group. Each of the three members has an equal probability of being selected. The role and the amount the selected member chose will determine the probabilities with which the three

members are assigned each role. **To clarify, all three members choose their preferred roles and amounts to pay, but only one member will be selected.** This is similar to the proposal stages you have just participated in, where all three members enter their proposed allocations but only one member's proposal is selected to be voted on.

If you are selected, you will pay the amount you chose on the slider. If you chose to pay €0, the three roles – Green, Orange, and Purple – will be randomly assigned to you with equal probability, that is, 1/3 each. If you chose to pay €1, your preferred role (the role you chose) will be assigned to you for sure, that is, with probability 1. If you are selected, any additional cent you pay increases the chance of your preferred role being assigned to you by 2/300. For example, if you pay €0.50, you will be assigned your preferred role with a probability of 2/3. If you pay only a part of the €1 endowment, the remaining amount will be added to your payoff in that round.

If you are selected, but not assigned your preferred role, each of the other two roles will be assigned to you with equal probability. Once you are assigned any role, the remaining two roles will be randomly assigned to the other two (non-selected) members with equal probability.

If you are not selected, you will not pay anything. The endowment will be added to your payoff for the round. The selected member's choice of role and amount will determine your chance of being assigned each role, as described above.

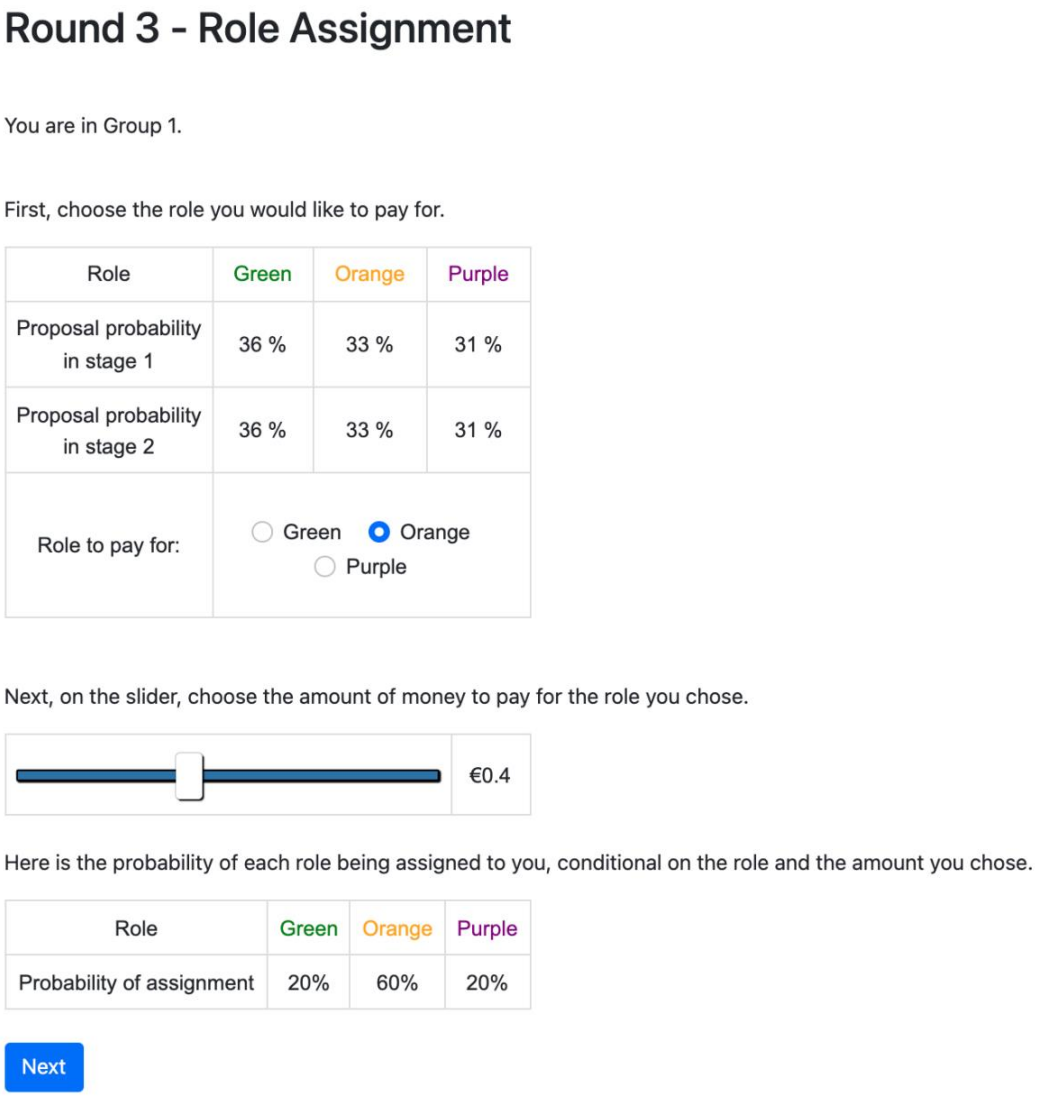


Figure 8 Screenshot – Role Assignment (after clicking slider)

Take a look at Figure 8 for an example. In this example, you chose the Orange role and chose to pay €0.40. If you are selected, you will pay €0.40 out of your €1 endowment. As you adjust the slider, the table in the bottom will show you the updated probability of each role being assigned to you, in case you are selected to pay. In this example, you will be assigned the Green role, the Orange role, and the Purple role with probabilities of 20%, 60%, and 20%, respectively.

The procedure described so far incentivizes you to report your preferred role truthfully and also pay the amount you truly believe is worth to pay, **regardless** of what other members do. Remember that your choices will be relevant only if you are selected to pay. If you want to maximize your expected payment at the end of the experiment, the best you can do is to choose your preferred role and pay the amount you believe is worth to pay.

Once all three members in your group choose the amount and click NEXT, a new screen will show you whether you have been selected or not, and which role you have been assigned:

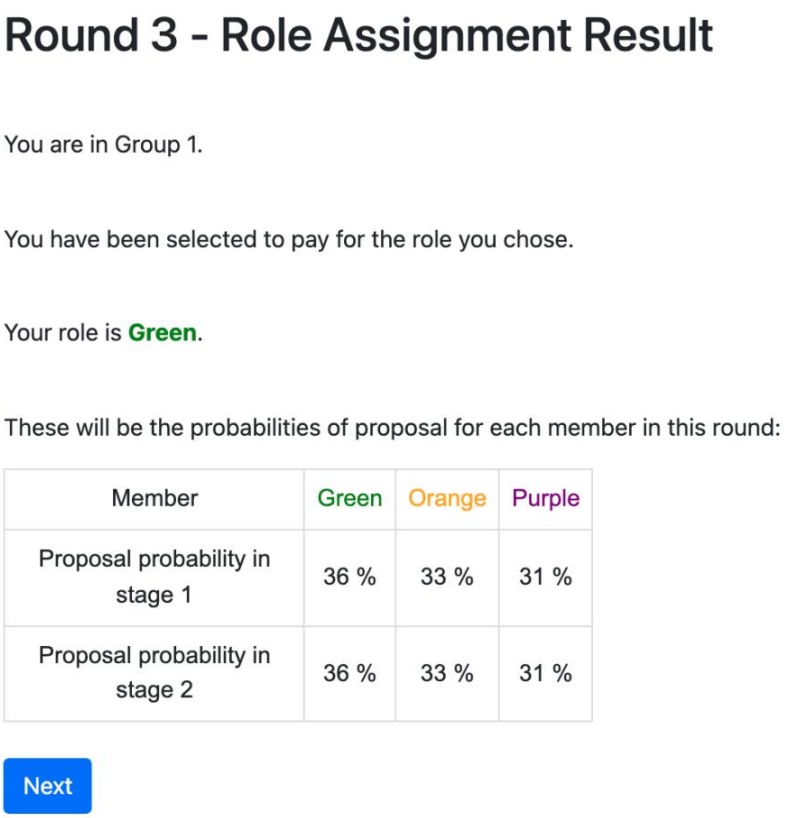


Figure 6 Screenshot – Role Assignment Results

In this example, you have been selected to pay and have been assigned the Green role, according to the rule described above. This means that in this round, you will be picked to be the proposer with a probability of 36% in stage 1 and with a probability of 36% in stage 2.

Once all members are assigned a probability of proposal, the group splits €60 following the same decision-making process as in the first part of the experiment. The same rule applies for proposal, voting, and allocation of the €60. We continue this procedure for 15 rounds.

Reminder: Your Payment

At the end of the experiment, one of the 30 rounds you participated in will be chosen at random by the computer. In addition to the €10 participation fee, you will be paid the allocation you earned in the chosen round, and if applicable, the endowment minus what you paid from the endowment in that round.

What to do at the end of the experiment

Your computer will tell you how much your total payment is. Please write down this amount on your receipt at the time. Please fill in all other fields on the receipt and sign it. You will be called one-by-one, starting from the front of the room to hand me your signed receipt and to receive your payment in cash. Please remain in your seat until you are called.

Please raise your hand if you have any questions.

Quiz

Circle your answers.

1. How does the computer determine whose proposal will be shown to the group and voted on?
    a. Randomly, according to the probability of proposal assigned to the members
    b. Randomly, with equal probabilities for all three members.
    c. The Orange member's proposal is always selected.
2. How many yes votes do you need to receive for your proposal to be **accepted** by the group?
    a. 1 or more
    b. 2 or more
    c. 3
3. In a round, if the proposal in the **first** stage is **accepted** in your group, what happens?
    a. All three members get the allocation according to the accepted proposal.
    b. The second stage of that round begins. You and the other members of your group make new proposals.
    c. All three members get a ZERO allocation for that round.
4. In a round, if the proposal in the **first** stage is **rejected** in your group, what happens?
    a. All three members get the allocation according to the rejected proposal.
    b. The second stage of that round begins. You and the other members of your group make new proposals.
    c. All three members get a ZERO allocation for that round.
5. In a round, if the proposal in the **second** stage is **rejected** in your group, what happens?
    a. All three members get the allocation according to the rejected proposal.
    b. The third stage of that round begins. You and the other members of your group make new proposals.
    c. All three members get a ZERO allocation for that round.

E.3 Instructions and Comprehension Quiz: Modified Period 2 Treatment

The instructions and the comprehension quiz for this treatment are identical to those of the baseline treatment, except for the different recognition probabilities in period 2.

E.4 Instructions and Comprehension Quiz: Automated Period 2 Treatment

Instructions

Your payment

The experiment consists of a series of group decision-making rounds in which you will participate with others in deciding how to divide €60. The first part and the second part of the experiment consist of 15 decision rounds **each**. At the end of the experiment, the computer will select one of the 30 decision-making rounds at random, and you will be paid what you earned in that round plus the €10 participation fee.

That is, suppose that the experiment runs for 3 rounds. Suppose also, that in round 1 you earned €25, in round 2 you earned €60, and in round 3 you earned €0. One of these rounds will be randomly selected by the computer with equal probabilities as your payment round. If round 1 is selected, you will be paid €25 + €10 = €35. But if round 3 is selected, you will be paid €0 + €10 = €10.

As mentioned above, the experiment consists of two parts. Now we will read the instructions for the first part. You will receive the instructions for the second part once you have completed the first part.

Instructions: Part One

How the experiment works

This experiment is conducted using your computer terminals. As noted above, the experiment will take place in a series of decision-making rounds. Each decision-making round will have the following structure:

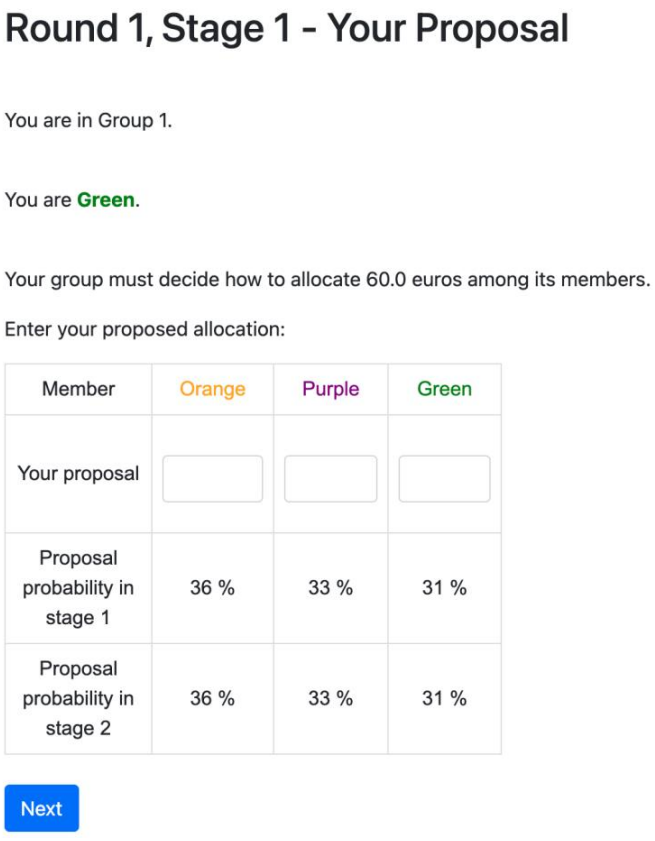
1. All subjects are randomly assigned to groups of three members. For example, if there are 24 subjects, there will be eight groups of three members.
2. Each group member in each group will be randomly assigned a color, either Orange, Green, or Purple. Note that only one member of each group will be assigned Orange, only one will be assigned Green, and only one will be assigned Purple. Each group member will also be randomly assigned a probability of proposal, either 36%, 33%, or 31%. Note that only one member of each group will have 36%, one will have 33%, and one will have 31%.
3. Each group will decide how to divide €60 among the three members.

In each new round, you will be randomly re-assigned to a new three-member group and again randomly assigned a color and a probability of proposal. Then all groups will decide again how to divide €60. We will continue this procedure for 15 rounds. That is the basic structure of the first part of the experiment. Now I will explain how each group decides in more detail.

How each group decides

Each decision-making round consists of a maximum of two stages. In stage 1, all three members must enter a proposal – which is a division of the €60 among the three members. Then the computer will pick one group member to be the proposer, whose proposal will be voted on by all three members. The computer will pick the proposer randomly, based on the probability of proposal assigned to the members. For example, if you are assigned 36% in stage 1, then the probability that the computer will pick you will be 36% in stage 1.

Take a look at the example of a computer screenshot in Figure 1. This computer screen displays the color and the proposal probability of you and other members in your group. In this example, you are Green and have a 31% probability of proposal in both stage 1 and stage 2.



Round 1, Stage 1 - Your Proposal

You are in Group 1.

You are **Green**.

Your group must decide how to allocate 60.0 euros among its members.

Enter your proposed allocation:

Member	Orange	Purple	Green
Your proposal			
Proposal probability in stage 1	36 %	33 %	31 %
Proposal probability in stage 2	36 %	33 %	31 %

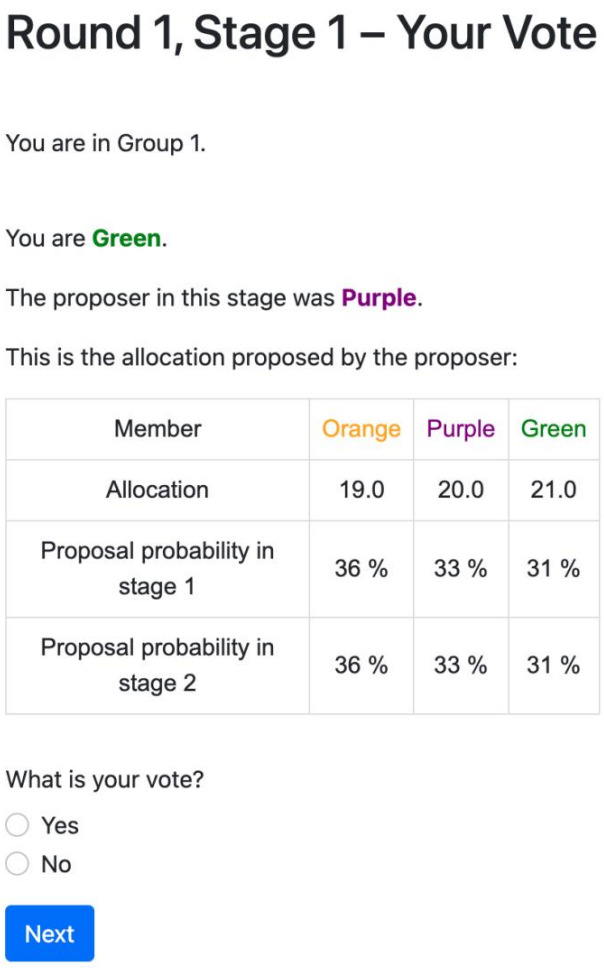
Next

Figure 1 Screenshot - Proposal

On the table shown in Figure 1, you will enter your proposed allocation of €60. In the left-most text box, enter the amount you wish to allocate to the member with the color Orange. In the middle and the right-

most text boxes, enter the amount you wish to allocate to the members with the colors Purple and Green (yourself in this example), respectively. You do not need to enter the euro sign (€). You must enter the amount in whole euros (e.g. either 10 or 11, not 10.xx). While you can enter any amount from 0 to 60 for each group member, the SUM of the amounts should be exactly 60. If you enter an invalid allocation, the computer will send you an error message. Once you are done, press "Next".

Once all members have submitted a proposal, the computer screen will show all the group members which member has been picked to be the proposer and show the proposal of that member. In the example shown in Figure 2, the Purple member proposed to allocate 19 euros to the Orange member, 20 euros to herself, and 21 euros to the Green member (you).



Round 1, Stage 1 – Your Vote

You are in Group 1.

You are **Green**.

The proposer in this stage was **Purple**.

This is the allocation proposed by the proposer:

Member	Orange	Purple	Green
Allocation	19.0	20.0	21.0
Proposal probability in stage 1	36 %	33 %	31 %
Proposal probability in stage 2	36 %	33 %	31 %

What is your vote?

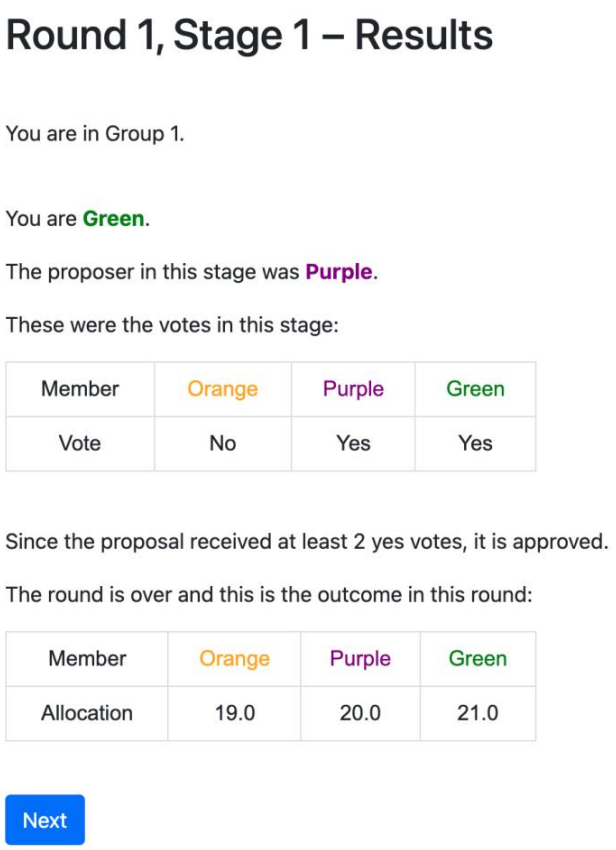
- ○ Yes
- ○ No

Next

Figure 2 Screenshot - Vote

All three group members (including the proposer) will be asked to vote on the proposal. You can click "Yes" to vote yes to accept the proposal or "No" to vote no to reject the proposal.

After everyone votes, the outcome will be reported to you on your computer screen, as in Figure 3. For a proposal to be accepted it must receive **two or more** yes votes. If a proposal receives at least two yes votes, the proposal will be considered accepted by the group and the proposed allocation will be your payoff for that round. The computer screen will show this allocation for the round:



Round 1, Stage 1 – Results

You are in Group 1.

You are **Green**.

The proposer in this stage was **Purple**.

These were the votes in this stage:

Member	Orange	Purple	Green
Vote	No	Yes	Yes

Since the proposal received at least 2 yes votes, it is approved.

The round is over and this is the outcome in this round:

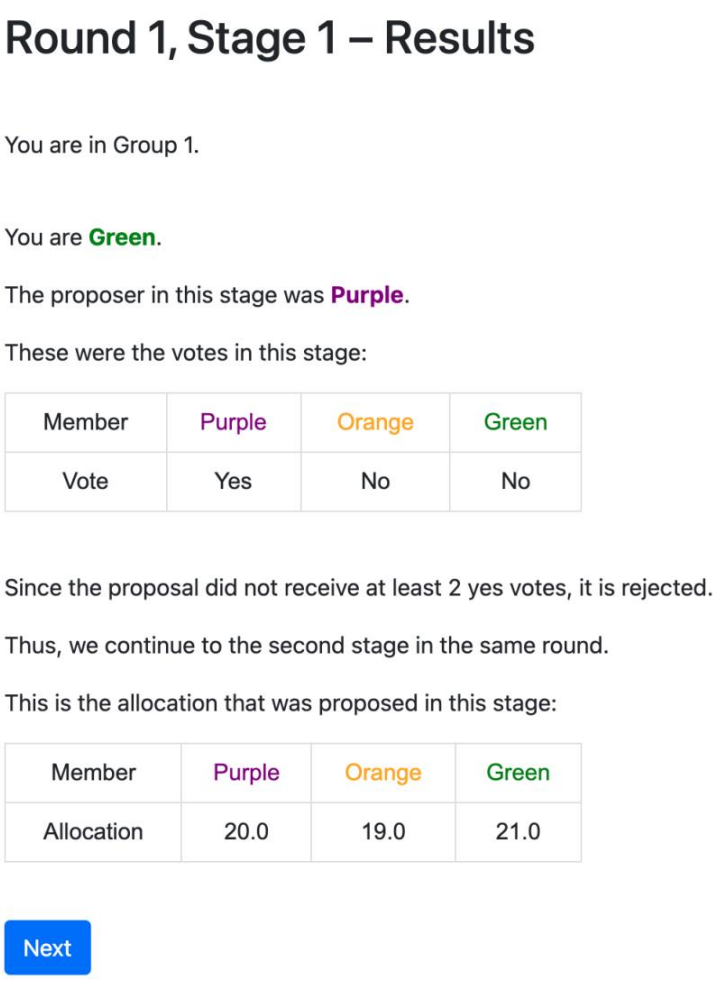
Member	Orange	Purple	Green
Allocation	19.0	20.0	21.0

Next

Figure 3 Screenshot – Results (Accepted)

Then you and the other members of your group are now ready to move on to the next round in the experiment. Once all groups finish the round, you will be randomly re-assigned to a new group. This can take up to a few minutes, and you will see a wait page in the meantime.

If the proposal does not receive at least 2 yes votes, it will be considered rejected by the group. For example, Figure 4 shows a case in which only the Purple member voted yes, whereas the Orange and the Green members voted no.



Round 1, Stage 1 – Results

You are in Group 1.

You are **Green**.

The proposer in this stage was **Purple**.

These were the votes in this stage:

Member	Purple	Orange	Green
Vote	Yes	No	No

Since the proposal did not receive at least 2 yes votes, it is rejected.

Thus, we continue to the second stage in the same round.

This is the allocation that was proposed in this stage:

Member	Purple	Orange	Green
Allocation	20.0	19.0	21.0

Next

Figure 4 Screenshot – Results (Stage 1 Rejected)

In this case, your group will enter stage 2. In stage 2, the group members do not make any proposals. However, the computer will randomly select one member to be the proposer, according to the probability of proposal in stage 2. **The member who is selected to be the proposer will get 60 euros for that round. The other two members who are not selected will get ZERO euros for that round.** In that case, the computer screen will look like Figure 5:

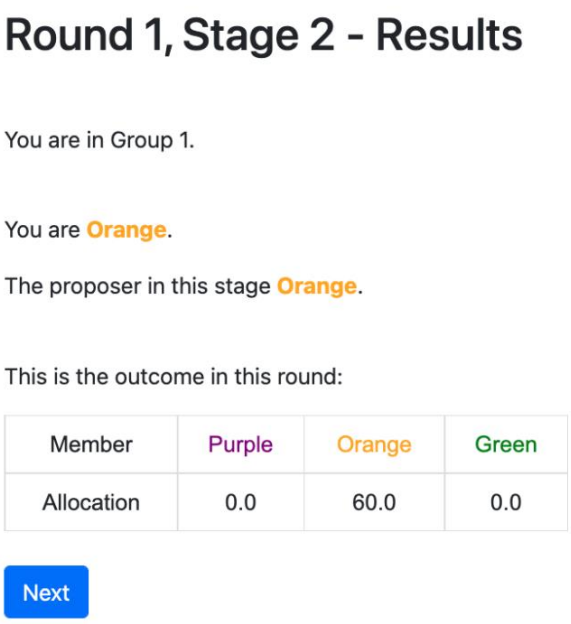


Figure 5 Screenshot – Results (Stage 2)

Then you and the other members of your group will move on to the next round in the experiment. In the next round, you will be randomly re-assigned to a new group.

In summary, if a group accepts a proposal in stage 1, the proposed allocation becomes the members' payoffs. If a group rejects a proposal in stage 1, one member is randomly selected by the computer in stage 2 to receive the entire 60 euros. After all groups have either accepted proposals or not accepted proposals but gone through stage 2, you will be randomly re-assigned to a new three-member group and again randomly assigned a color and a probability of proposal. Then all groups will again go through a decision-making round. We will continue this procedure for 15 rounds.

History Table

Throughout the experiment, on any screen that requires your decision, you can review the outcome of the past rounds in the history table. To see the history table, scroll down on the page you are viewing. As you can see in Figure 6, the history table shows Your Color, Proposer Color, Proposal, Votes, Group Allocation, and Your Allocation in all your past rounds and stages.

History

Round	Stage	Your Color	Proposer Color	Proposal	Votes	Group Allocation	Your Allocation
1	1	Purple	Purple	Purple: 20.0 Orange: 19.0 Green: 21.0	Purple: Yes Orange: No Green: No		
1	2	Purple	Orange	Purple: None Orange: None Green: None	Purple: None Orange: None Green: None	Purple: 0.0 Orange: 60.0 Green: 0.0	0.0
2	1	Purple	Purple	Purple: 20.0 Green: 19.0 Orange: 21.0	Purple: Yes Green: Yes Orange: Yes	Purple: 20.0 Green: 19.0 Orange: 21.0	20.0
3	1	Green	Green	Green: 20.0 Orange: 19.0 Purple: 21.0	Green: Yes Orange: No Purple: Yes	Green: 20.0 Orange: 19.0 Purple: 21.0	20.0

Figure 6 Screenshot – History

Reminder: Your Payment

At the end of the experiment, you will be paid the €10 participation fee. In addition, one of the 30 decision-making rounds is selected randomly by the computer and you will be paid the amount of money you earned in that round. Thus, **one (and only one)** of these 30 rounds will be used to determine your payment for the experiment. At the end of the experiment, your computer will tell you which round was used to calculate your payoff and how much your total payment is.

Final Note: Please remember to press the **NEXT button** once you have entered your decisions or checked the information on the screen so that we can move on to the next page.

Now, please complete the quiz.

Please raise your hand if you have completed the quiz or have any questions.

Quiz

Circle your answers.

1. How does the computer determine whose proposal will be shown to the group and voted on?
    a. Randomly, according to the probability of proposal assigned to the members
    b. Randomly, with equal probabilities for all three members.
    c. The Orange member's proposal is always selected.
2. How many yes votes do you need to receive for your proposal to be **accepted** by the group?
    a. 1 or more
    b. 2 or more
    c. 3
3. In a round, if the proposal in the **first** stage is **accepted** in your group, what happens?
    a. All three members get the allocation according to the accepted proposal.
    b. The second stage of that round begins. You and the other members of your group make new proposals.
    c. All three members get a ZERO allocation for that round.
4. In a round, if the proposal in the **first** stage is **rejected** in your group, what happens?
    a. All three members get the allocation according to the rejected proposal.
    b. The second stage of that round begins.
    c. All three members get a ZERO allocation for that round.
5. In a round, if your group reaches the **second** stage, what happens?
    a. You and the other members of your group make new proposals.
    b. The computer randomly selects one member to get 60 euros.
    c. All three members get a ZERO allocation for that round.

E.5 Instructions and Comprehension Quiz: Automated Vote Treatment

Instructions

Your payment

The experiment consists of a series of group decision-making rounds in which you will participate with others in deciding how to divide €60. The first part and the second part of the experiment consist of 15 decision rounds **each**. At the end of the experiment, the computer will select one of the 30 decision-making rounds at random, and you will be paid what you earned in that round plus the €10 participation fee.

That is, suppose that the experiment runs for 3 rounds. Suppose also, that in round 1 you earned €25, in round 2 you earned €60, and in round 3 you earned €0. One of these rounds will be randomly selected by the computer with equal probabilities as your payment round. If round 1 is selected, you will be paid €25 + €10 = €35. But if round 3 is selected, you will be paid €0 + €10 = €10.

As mentioned above, the experiment consists of two parts. Now we will read the instructions for the first part. You will receive the instructions for the second part once you have completed the first part.

Instructions: Part One

How the experiment works

This experiment is conducted using your computer terminals. As noted above, the experiment will take place in a series of decision-making rounds. Each decision-making round will have the following structure:

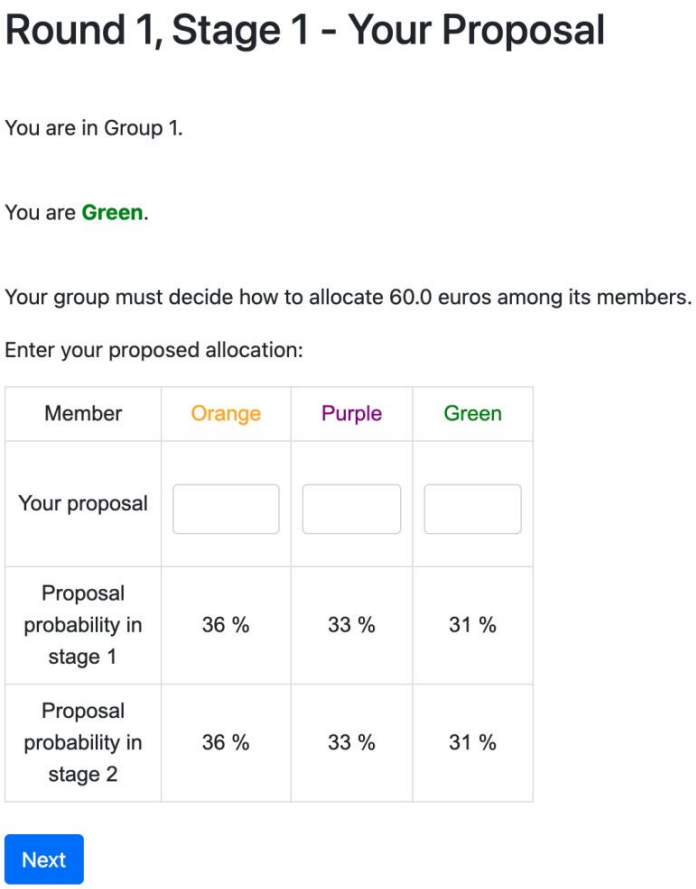
1. All subjects are randomly assigned to groups of three members. For example, if there are 24 subjects, there will be eight groups of three members.
2. Each group member in each group will be randomly assigned a color, either Orange, Green, or Purple. Note that only one member of each group will be assigned Orange, only one will be assigned Green, and only one will be assigned Purple. Each group member will also be randomly assigned a probability of proposal, either 36%, 33%, or 31%. Note that only one member of each group will have 36%, one will have 33%, and one will have 31%.
3. Each group will decide how to divide €60 among the three members.

In each new round, you will be randomly re-assigned to a new three-member group and again randomly assigned a color and a probability of proposal. Then all groups will decide again how to divide €60. We will continue this procedure for 15 rounds. That is the basic structure of the first part of the experiment. Now I will explain how each group decides in more detail.

How each group decides

Each decision-making round consists of a maximum of two proposal stages. In each proposal stage, all three members must enter a proposal – which is a division of the €60 among the three members. Then the computer will pick one group member to be the proposer, whose proposal will be voted on. The computer will pick the proposer randomly, based on the probability of proposal assigned to the members. For example, if you are assigned 36% in stage 1, then the probability that the computer will pick you will be 36% in stage 1.

Take a look at the example of a computer screenshot in Figure 1. This computer screen displays the color and the proposal probability of you and other members in your group. In this example, you are Green and have a 31% probability of proposal in both stage 1 and stage 2.



Round 1, Stage 1 - Your Proposal

You are in Group 1.

You are **Green**.

Your group must decide how to allocate 60.0 euros among its members.

Enter your proposed allocation:

Member	Orange	Purple	Green
Your proposal			
Proposal probability in stage 1	36 %	33 %	31 %
Proposal probability in stage 2	36 %	33 %	31 %

Next

Figure 1 Screenshot - Proposal

On the table shown in Figure 1, you will enter your proposed allocation of €60. In the left-most text box, enter the amount you wish to allocate to the member with the color Orange. In the middle and the right-most text boxes, enter the amount you wish to allocate to the members with the colors Purple and Green (yourself in this example), respectively. You do not need to enter the euro sign (€). You must enter the amount in whole euros (e.g. either 10 or 11, not 10.xx). While you can enter any amount from 0 to 60 for each group member, the SUM of the amounts should be exactly 60. If you enter an invalid allocation, the computer will send you an error message. Once you are done, press "Next".

Once all members have submitted a proposal, for each of the three group members (including the proposer), a computer will vote on the proposal on behalf of the member. Specifically, the computer is programmed to vote so as to maximize the expected amount of money that is allocated to the group member for whom it votes. The details of how the computer determines its vote will be fully explained later in this instruction.

After voting takes place, the outcome will be reported to you on your computer screen, as in Figure 2.. The computer screen will show all the group members which member has been picked to be the proposer and show the proposal of that member. In the example shown in Figure 2, the Purple member proposed to allocate 19 euros to the Orange member, 20 euros to herself, and 21 euros to the Green member (you). The Orange member voted no, and the Purple and the Green members voted yes.

For a proposal to be accepted it must receive **two or more** yes votes. If a proposal receives at least two yes votes, the proposal will be considered accepted by the group and the proposed allocation will be your payoff for that round.

Then, you and the other members of your group are now ready to move on to the next round in the experiment. Once all groups finish the round, you will be randomly re-assigned to a new group. This can take up to a few minutes, and you will see a wait page in the meantime.

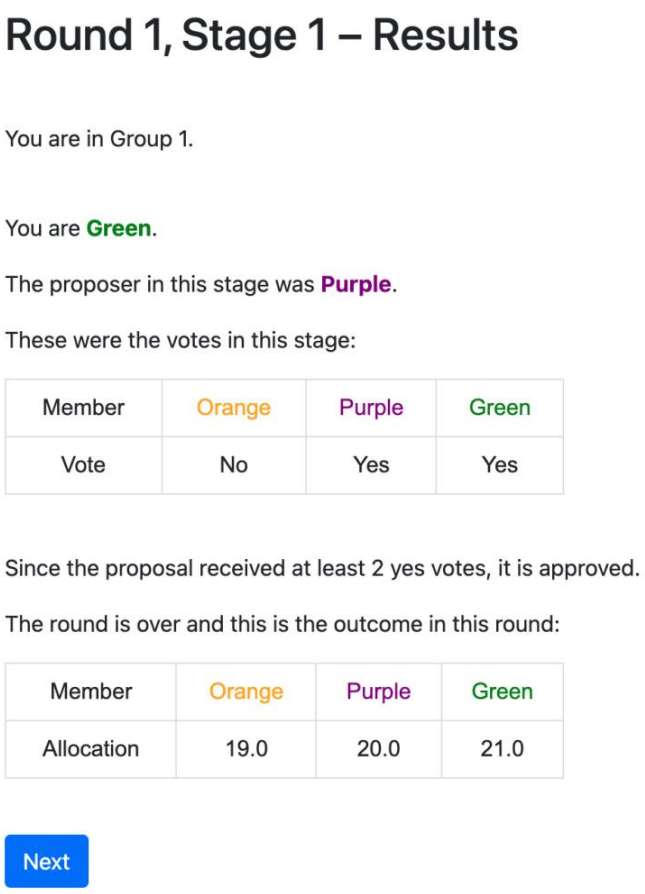


Figure 2 Screenshot – Results (Stage 1 Accepted)

If the proposal does not receive at least 2 yes votes, it will be considered rejected by the group. For example, Figure 3 shows a case in which only the Orange member's computer voted yes, whereas the Purple and the Green members' computers voted no.

In this case, your group will play another stage of proposing. The group members make new proposals, and the computer will again pick one member's proposal to be voted on, according to the probability of proposal in stage 2.

If the second proposal is accepted, then the proposed allocation will be your payoff for that round. If the second proposal is rejected, all members of your group will receive **ZERO** euros for that round.

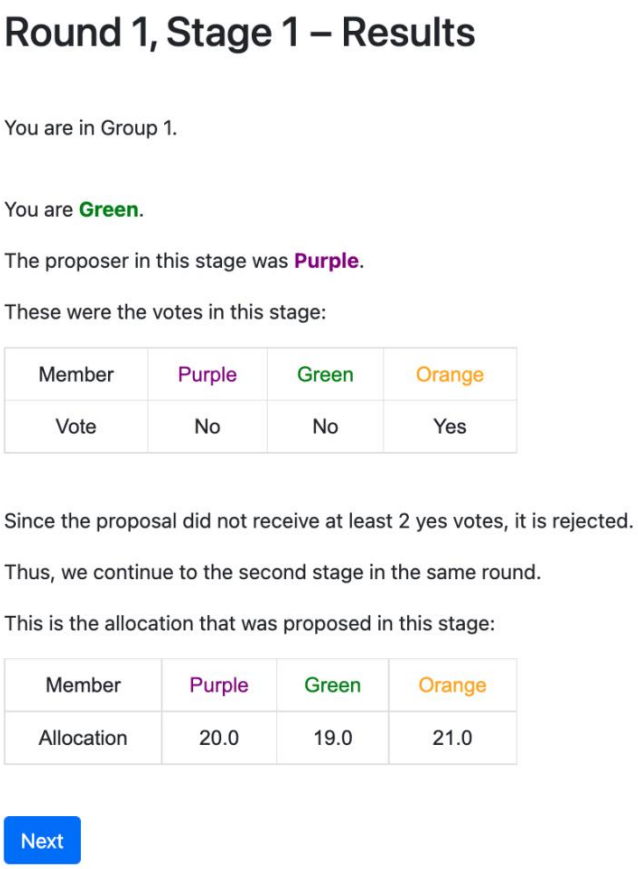


Figure 3 Screenshot – Results (Stage 1 Rejected)

In both stages, a computer will vote on the proposal on behalf of each group member, according to the following rules:

(1) The computer is programmed to maximize the expected amount of money that is allocated to the group member whom it votes on behalf of in each round. If the computer expects the same amount of money from voting yes and voting no, it votes yes. The computer does not care how much money the other members earn.

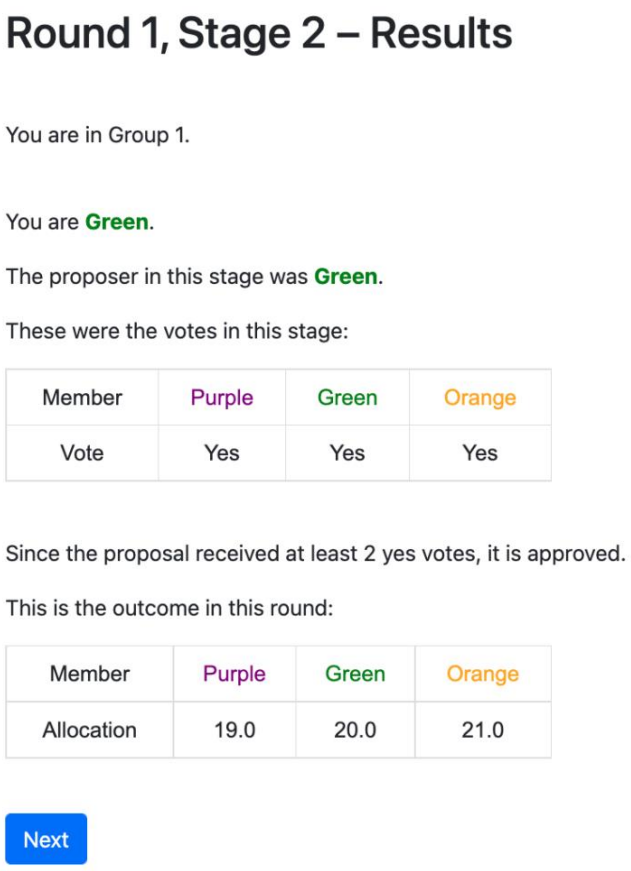
(2) The computer expects that each group member makes proposals to maximize the expected amount of money allocated to him/herself.

(3) The computer expects that each group member has been told, in instruction (1) above, that a computer tries to maximize the expected amount of money for the group member it represents.

(4) The rounds are independent of each other, i.e. The computer program does not store information about the previous rounds; it uses the same program in each round.

Note that rule (1) implies that once a group reaches stage 2, all computers vote yes for ANY allocation proposed in stage 2. In other words, in stage 2, any proposal will be accepted.

If your group has accepted a second and final proposal, the computer screen will look like Figure 4:



Round 1, Stage 2 – Results

You are in Group 1.

You are **Green**.

The proposer in this stage was **Green**.

These were the votes in this stage:

Member	Purple	Green	Orange
Vote	Yes	Yes	Yes

Since the proposal received at least 2 yes votes, it is approved.

This is the outcome in this round:

Member	Purple	Green	Orange
Allocation	19.0	20.0	21.0

Next

Figure 4 Screenshot – Results (Stage 2)

Then you and the other members of your group will move on to the next round in the experiment. In the next round, you will be randomly re-assigned to a new group.

In summary, whenever a group accepts a proposal, the proposed allocation becomes the members' payoffs. After all groups have accepted a proposal in either stage, you will be randomly re-assigned to a new three-member group and again randomly assigned a color and a probability of proposal. Then all groups will again go through a decision-making round. We will continue this procedure for 15 rounds.

History Table

Throughout the experiment, on any screen that requires your decision, you can review the outcome of the past rounds in the history table. To see the history table, scroll down on the page you are viewing. As you can see in Figure 6, the history table shows Your Color, Proposer Color, Proposal, Votes, Group Allocation, and Your Allocation in all your past rounds and stages.

History

Round	Stage	Your Color	Proposer Color	Proposal	Votes	Group Allocation	Your Allocation
1	1	Green	Purple	Purple: 20.0 Green: 19.0 Orange: 21.0	Purple: No Green: No Orange: Yes		
1	2	Green	Green	Purple: 19.0 Green: 20.0 Orange: 21.0	Purple: Yes Green: Yes Orange: Yes	Purple: 19.0 Green: 20.0 Orange: 21.0	20.0
2	1	Purple	Purple	Orange: 21.0 Purple: 20.0 Green: 19.0	Orange: No Purple: Yes Green: Yes	Orange: 21.0 Purple: 20.0 Green: 19.0	20.0
3	1	Purple	Orange	Orange: 21.0 Green: 20.0 Purple: 19.0	Orange: No Green: Yes Purple: Yes	Orange: 21.0 Green: 20.0 Purple: 19.0	19.0

Figure 5 Screenshot – History

Reminder: Your Payment

At the end of the experiment, you will be paid the €10 participation fee. In addition, one of the 30 decision-making rounds is selected randomly by the computer and you will be paid the amount of money you earned in that round. Thus, **one (and only one)** of these 30 rounds will be used to determine your payment for the experiment. At the end of the experiment, your computer will tell you which round was used to calculate your payoff and how much your total payment is.

Final Note: Please remember to press the **NEXT button** once you have entered your decisions or checked the information on the screen so that we can move on to the next page.

Now, please complete the quiz.

Please raise your hand if you have completed the quiz or have any questions.

Quiz

Circle your answers.

1. How does the computer determine whose proposal will be shown to the group and voted on?
    a. Randomly, according to the probability of proposal assigned to the members
    b. Randomly, with equal probabilities for all three members.
    c. The Orange member's proposal is always selected.
2. How many yes votes do you need to receive for your proposal to be **accepted** by the group?
    a. 1 or more
    b. 2 or more
    c. 3
3. In a round, if the proposal in the **first** stage is **accepted** in your group, what happens?
    a. All three members get the allocation according to the accepted proposal.
    b. The second stage of that round begins. You and the other members of your group make new proposals.
    c. All three members get a ZERO allocation for that round.
4. In a round, if the proposal in the **first** stage is **rejected** in your group, what happens?
    a. All three members get the allocation according to the rejected proposal.
    b. The second stage of that round begins. You and the other members of your group make new proposals.
    c. All three members get a ZERO allocation for that round.
5. How does a computer vote on a proposal on behalf of each group member ?
    a. Randomly, according to the pre-specified probability
    b. The computer votes yes only if accepting the proposal maximizes the expected amount of the money allocated to the group member whom it votes on behalf of.
    c. The computer votes yes only if the proposal allocates €60 to the group member whom it votes on behalf of.

Appendix F Response to reporting standards recommended by the APSA Organized Section on Experimental Research

A.Hypotheses

- Specific objectives or hypotheses.

- What question(s) was (were) the experiment designed to address?

  Can recognition probability have a negative value in multilateral legislative bargaining? If so, are people willing to pay for the optimal recognition probability?

- What are the specific hypotheses to be tested?

  See Section 5.

B. Subjects and Context

- Eligibility and exclusion criteria for participants.

- Why was this subject pool selected? Who was eligible to participate in the study? What would result in the exclusion of a participant? Were any aspects of recruitment changed (such as the exclusion criteria) after recruitment began?

  The subject pool included the current students at the University of Amsterdam who voluntarily signed up for the recruitment system of the lab. There were no other inclusion/exclusion criteria. There was no change in the criteria after the recruitment began. The student subject pool was used for the convenience of recruitment and payment.

- Procedures used to recruit and select participants.

- If there is a survey: Identify the survey firm used and describe how they recruit respondents.

  Not applicable

- Recruitment dates defining the periods of recruitment and when the experiments were conducted.

  The period of recruitment was February 9 to 15, 2022. The experimental sessions took place on February 10, 11, 14, and 15, 2022.

- Also list dates of any repeated measurements as part of a follow-up.

  Not applicable

• Settings and locations where the data were collected.

- In the field, lab, classroom, or some other specialized setting?

  Lab

- Other relevant specifics of the population: e.g., large public university vs. small private university; geographic location; etc.

  A large public university located in Amsterdam, Netherlands

• If there is a survey: Provide response rate and how it was calculated.

  Not applicable

C. Allocation Method

• Details of the procedure used to generate the assignment sequence (e.g., randomization procedures).

- If random assignment used, then details of procedure (e.g., any restrictions, blocking).

  All randomization was automated by Python codes such as random.random() and random.randint(). There was no restrictions or blocking.

- Note the unit of randomization (individuals, groups, households, etc). Pay careful attention to report clustered random assignment if subjects were assigned at some level other than the individual subject.

  The unit of randomization was individuals, unless necessary: The randomization to determine group-level variables (e.g.the subject whose proposal is recognized in the group) was performed at the group level. The randomization to determine session-level variables (e.g. the round for which the payoffs are relevant to the payment) was performed at the session level.

• If random assignment used, provide evidence of random assignment.

- If demographic or other pretreatment variables were collected, a table (in text or appendix) showing baseline means and standard deviations for demographic characteristics and other pre-treatment measures by experimental group.

  No demographic or other pretreatment variables were collected.

- If blocking was used, and group assignment proportions were not equal across blocks, provide table for each of the blocks. If there are too many blocks for this to be practical, combine blocks to present weighted averages of covariates using inverse probability weighting.

  Not applicable

- Blinding: Were participants, those administering the interventions, and those assessing the outcomes unaware of condition assignments? If blinding took place, include a statement regarding how it was accomplished and how the success of blinding was evaluated.

  Each participant faced only one experimental condition (i.e. treatment). The participants were aware of the experimental condition they were under in the session, but unaware of the experimental conditions faced by other subjects in other sessions. The author (experimenter) was fully aware of the condition assignments.

D. Treatments

- Description of the interventions in each treatment condition, as well as a description of the control group.

- Descriptions should be sufficient to allow replication: Summary or paraphrasing of experimental instructions in the article text; verbatim instructions and/or other treatment materials provided in an appendix.

  See Section 4 and Appendix E.

- How and when manipulations or interventions were administered.

- Method of delivery: Pen-and-paper vs. computer or internet vs. face-to-face communication vs. over the telephone.

  The instructions were delivered on paper. The experimenter answered all questions verbally. All decisions were made on the computer (otree).

- If computerized, the software should be described and cited. (If possible, programs should be included in appendix so as to be available for purposes of replication.)

  Otree has been cited(Chen et al., 2016).

- For lab experiments (and other experiments, when relevant):

- Report the number of repetitions of the experimental task and the group rotation protocol. Report the ordering of treatments for within-subject designs.

  See Section 4.

- Any piggybacking of other protocols should be reported. Report any use of experienced subjects or subjects used in more than one session or treatment.

  No piggybacking. No use of subjects used in more than one session or treatment. Some subjects have experience in other experiments at the same lab, which was not taken into account during the recruitment process. Given that only a few experiments took place between March 2019 and January 2022 at this lab (due to COVID), most subjects probably did not have extensive experience in laboratory experiments in the last two years.

- Time span: How long did each experiment last? How many sessions were subjects expected to attend? If there were multiple sessions, how much time passed between them?

  Each experimental session lasted between 90 and 120 minutes. Each subject was expected to attend only one session.

- Total number of sessions conducted and number of subjects used in each session.

  8 sessions in total; See Table 1.

- Was deception used?

  No

- Treatment fidelity: Evidence on whether the treatment was delivered as intended.

  The subjects were given quizzes that asked about the key features of the experimental treatment. A majority of subjects answered all quizzes correctly on the first attempt. All subjects answered them correctly by the second attempt.

- Report any instructional anomalies or inaccuracies.

  None

- Were subjects given quizzes on the experimental instructions?

  Yes, see Appendix E.

- Were there practice rounds? If so, how many and what were the results?

  No

- Did subjects complete a post-experiment debriefing, interview, or questionnaire? If so, is there evidence that subjects understood the instructions and treatments?

  No

- Did the experimental team observe aspects of the intervention?

  Not applicable; The experimenter directly implemented the intervention via pre-programmed software (python and otree)

- Provide description of manipulation checks, if any.

  None

- Were incentives given? If so, what were they and how were they administered.

  Yes, cash payments were made. See Section 4 and Appendix E.

E. Results

1. Outcome Measures and Covariates

- Provide precise definition of all primary and secondary measures and covariates.

  See Section 6.

- For indices, provide exact description of how they are formed. For survey items provide exact question wording in an appendix. Please provide a copy of the complete survey questionnaire (in an on-line appendix if it is long).

  Not applicable

- Clearly state which of the outcomes and subgroup analyses were specified prior to the experiment and which were the result from exploratory analyses.

  The study was not pre-registered. All analyses in the main text were planned prior to the experiment. Appendix B, C, and D contain results of exploratory analyses.

2. Complete CONSORT Participant Flow Diagram

- An example of a CONSORT flow diagram is attached. The flow diagram records the initial number of subjects deemed eligible for the experiment and all losses of subjects during the course of the experiment. The flow chart follows the subjects from initial recruitment to the sample used in the main analyses, providing readers clear information on the amount of attrition and exclusions. The chart also reports the portion of each treatment group that received the allocated intervention and if

not, why this was not accomplished. Naturally, in the event that there is zero or very trivial non-compliance with group assignment or zero or very trivial attrition, researchers may decide it is more convenient to report the information that would otherwise be shown in the CONSORT diagram in the text and omit the diagram. Note that the CONSORT flow chart entries include:

- Number of subjects initially assessed for eligibility for the study.

- Exclusions prior to random assignment and reasons for the exclusions.

- Number of subjects initially assigned to each experimental group.

- The proportion of each group that received its allocated intervention and the reasons why subjects did not receive the intended intervention.

- The number of subjects in each group that dropped out or for other reasons do not have outcome data.

- The number of subjects in each group that are included in the statistical analysis, and the reasons for any exclusions.

  All current students at the University of Amsterdam who are signed up for the email list for recruitment were eligible for participation. There were 2201 eligible subjects. Email invitations were sent to 1695 random eligible subjects until all eight sessions were fully booked. 198 subjects signed up for the eight sessions on a first-come-first-served basis. All 198 subjects were included in the analyzed data.

3. Statistical Analysis

• Researchers will conduct statistical analysis and report their results in the manner they deem appropriate. We recommend that this reporting include the following:

- Report sample means and standard deviations for the outcome variables using intent-to treat (ITT) analysis (means for the entire collection of subjects assigned to a group, whether the treatment is successfully delivered or not).

  Section 6 and Appendices report means and confidence intervals for the outcome variables whenever relevant. All statistical tests report p-values.

- If the experiment uses block randomization with unequal assignment rates, present ITT analysis by block or present overall means using inverse probability weighting.

  Not applicable

- Note if level of analysis differs from level of randomization and estimate appropriate standard errors.

  Not applicable; Estimated appropriate standard errors.

- If there is attrition, discuss reasons for attrition and examine if attrition is related to pretreatment variables.

  Not applicable

- Report for other missing data (not outcome variables)

  None

- Frequency or percentages of missing data by group.

  None

- Methods for addressing missing data (e.g., listwise deletion, imputation methods).

  Not applicable

- For each primary and secondary outcome and for each subgroup, provide a summary of the number of cases deleted from each analysis and rationale for dropping the cases.

  Not applicable

- For survey experiments: Describe in detail any weighting procedures that are used.

  Not applicable

F. Other Information

- Was the experiment reviewed and approved by an IRB?

  Yes, see Section 10.

- If the experimental protocol was registered, where and how can the filing be accessed?

  No.

- What was the source of funding? What was the role of the funders in the analysis of the experiment?

  See Section 8. The funder played no role in the analysis of the experiment.

- Were there any restrictions or arrangements regarding what findings could be published?

  No.

- Any funding sources where conflict of interest might reasonably be an issue?

  No, see Section 9.

- If a replication data set is available, provide the URL.

  See Section 8.

Appendix G Adherence to APSA's Principles and Guidance for Human Subjects Research

This study adheres to APSA's Principles and Guidance for Human Subjects Research without any departures from them. The research did not use any deception and there was no need for debriefing. The subjects voluntarily signed up and participated in the experiment. Given that the research posed minimal risks and no potential harm, no written consent was acquired. The subjects were paid a minimum of €10 for participation, and an additional payment ranging between €0 and €60 depending on the outcome of the experiment. In total, an average subject was paid €30 for the experimental session that lasted up to two hours. The average payment is higher than the local minimum wage (€10-11 per hour) and comparable to the payments for other experiments conducted at the same laboratory. The research does not have any issue that is pertinent to the principles of respect of persons, beneficence, and justice as outlined by the Belmont Report.