Online Appendix to:
Pork Versus Public Goods: An Experimental Study of Public Good Provision Within a Legislative Bargaining Framework

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Appendix B

BF PG n5 $\delta = .8$ $q = 7/10$ $\alpha = .55$
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Instructions

This is an experiment in the economics of decision making. Funding for this research has been provided by the Ohio State University and the National Science Foundation. The instructions are simple, and if you follow them carefully and make good decisions you may earn a CONSIDERABLE AMOUNT OF MONEY which will be PAID TO YOU IN CASH at the end of the experiment.

1. In this experiment you will act as voters that distribute funds between yourself and others in a series of elections. In each election you must decide on how to split a sum of money between yourself and four others. Proposals will be voted up or down (accepted or rejected) by majority rule; i.e., for proposals to pass they must get 3 or more votes.
2. In each election you will have to decide how to divide 50 "francs." You can make one of two types of allocations: (i) allocations to individual voters or (ii) allocations to the group of voters as a whole (called the group allocation). The details of this allocation process and the value of the allocations will be discussed later. For now we will just go through the voting mechanics. We will also explain how francs will be converted into dollars later as well.
3. After you have all made your allocations, one of the proposed allocations will be selected at random to be voted on. Proposals will be posted on your computer screens with the proposed allocation to you and the other voters clearly indicated. You will then have to decide whether to accept or reject the proposed allocation.

   If the proposal passes (gets 3 or more votes) – the proposed allocation is binding and we will move on to the next election.

   If the proposal is defeated (gets less than 3 votes), there will be a call for new proposals and the process will repeat itself. However, the francs available will shrink by 20%; i.e., if the first proposal is rejected there will be 40 francs available to split in round 2. This process will repeat itself until a proposed allocation is passed (gets 3 or more votes).
4. Francs allocated to the group as a whole – the group allocation – will yield .7 francs to everyone in the group for each franc allocated. For example, if you allocate 10 francs to the group everyone (including yourself) would get 7 francs. And if you allocated 40

francs to the group everyone would get 28 francs. And if you allocated 50 francs to the group everyone would get 35 francs. Note the computer will help to calculate how much may francs each member of the group will get from the group allocation.

5. You can also allocate francs to individual voters. Any francs allocated to an individual will yield 1 franc for each franc allocated. You are free to allocate the francs in any way you see fit between individual voters and the group allocation. The only restriction is that you cannot allocate more or less than the 50 francs.
6. Payoffs from francs to dollars will be a weighted function of the number of francs allocated to you as an individual as well your share of the group allocation. That is, each individual's payoff will be equal to

   Payoff = .55 (your individual allocation) + .45 (your share of the group allocation).

   So for example, if your individual allocation is 10 francs and the group allocation is 20 francs you payoff would be $14.50 = (.55*10 + .45*20)

   (Here too the computer will make these calculations to assist you in deciding whether to vote for or against a proposed allocation and to help you to see the financial implications of your allocations.)
7. There will be a total of 13 rounds, one (1) practice round and twelve (12) rounds played for cash.
8. At the conclusion of the experiment, one of the 12 rounds played for cash will be randomly selected by computer, and the money distributed according to the proposal that passed in that round. Thus, in each round, you should treat it as the round that you will be paid off on. All payments will be in CASH. In addition, each of you will receive the $8 participation fee promised.
9. There are a total of ___ voters in the room. In each round you will be assigned to one of ___ groups of five voters. Assignments to voting groups will vary randomly from round to round. Note also that your subject numbers vary randomly from round to round also.

Some examples might help clarify the voting and allocation process. The examples are not necessarily intended to be realistic, just to give you an idea how the process works. In all cases we will assume that there are 70 francs to be allocated.

Example 1:

Subject 1's proposal is selected. He proposes 0 francs for the group allocation and 68.01, 0.99, 1.00, 0, 0 francs respectively for subjects 1, 2, 3, 4 and 5 in his group. This would yield payoffs of $37.41 (68.01*.55), $0.54 (0.99*.55), $0.55 (1*.55), $0, $0 for subjects 1-5, respectively. Now the votes could be accept, accept, accept, reject, reject – once again ordered by subject number – in which case the proposal would pass as it has a majority (3 of 5) votes. As such, if this round were paid off on each subject would get the dollar payoffs noted above.

Alternatively

The votes could be accept, reject, accept, reject, reject so the proposal does not receive a majority, and the election would go to the next round. There would be 56 francs to distribute (70*.2 = 14 francs subtracted from 70). A new set of proposals would be called for, one of which would be selected at random to be voted on and the voting process repeats itself.

Example 2:

Subject 2's proposal is selected, he proposes 70 francs for the group allocation. This would yield 49 francs (70*.7) for everyone or $22.05 (49*.45) for everyone. Now the votes could be reject, accept, accept, accept, accept in which case the proposal would pass as it has a majority of votes (4 of 5). As such if this round were paid off on subjects 1, 2, 3, 4, and 5 would each get the dollar payoffs noted above.

Alternatively

Subject 2 might propose 20 francs for the group allocation and for subjects 1-5 individual allocations of 0, 40, 10, 0, 0, respectively. Now the votes could be accept, accept, accept, reject, reject in which case the proposal would pass as it has a majority of votes (3 of 5). As such if this round were paid off on subjects 1, 4 and 5 would each get $6.30 (20*.7*.45) and subjects 2 and 3 would get $28.30 ($6.30 from the group allocation + 40*.55 from the individual allocation) and $10.80 ($6.30 from the group allocation + 10*.55 from the individual allocation), respectively.

Alternatively

Both these proposals could fail to receive the necessary 3 votes in which case the round would go to the next stage.

As you can see there are many possibilities here. What should you do? If we knew the answer to this question we would not have to conduct the experiment. You should do what you think is best.

Review

Let's summarize the main points:

- The experiment will consist of 13 elections, 1 practice and 12 for real. There may be several stages to each election.
- In each election there are five voters each controlling 1 vote. For a proposal to pass it requires 3 or more votes.
- At the start of each election you will propose a split of 50 francs between (i) a group allocation and (ii) individual allocations. Group allocations yield a payoff of .7 francs to every member of the group for each franc allocated. Individual allocations yield a payoff of 1 franc to the individual in question. You are free to divide the 50 francs in any way your want between group and individual allocations. The only restriction is that your allocation must equal the number francs available to be allocated in that round.
- Everyone will make a proposed allocation, one of which will be selected at random to be voted on. That is, each proposal in your group has an equally likely chance of being selected to be voted on at the beginning of a round.
- If the proposal receives 3 or more votes (a simple majority of the votes) it passes, the proposed allocation is binding, and the election ends.
- If the proposal gets less than 3 votes, it's rejected, the number of francs to be allocated shrinks by 20%, we will solicit new proposals, and the process repeats itself. This will continue until an allocation passes.
- Payoffs will be converted into dollars as follows
  Payoff = .55 (your individual allocation) + .45 (your share of the group allocation)
- At the end of the 12 cash rounds, one round, selected at random will be paid off on. Your earnings will be equal to your payment for that round (in dollars) plus the $8 participation fee.
- In each election you will be randomly re-matched, so that the people in your group will change randomly from one election to the next. Subject numbers will vary randomly between elections as well.

Are there any questions?

Sample of dry run for PG game:

To be read by the experimenter

A. PUT THE FIRST TRANSPARANCY ON THE PROJECTOR. START THE DRY RUN. We will now conduct a practice election. This does not count for money. *Please do not do type anything in until we tell you to. This way we can keep everyone on the same page.*

B. This is the first screen you will see. Each one of you has been assigned a subject ID (1, 2, 3, …) which you can see in the top left hand side of your screens. Your subject ID will remain the same throughout the experiment. Please write down your subject ID on your record sheet. In each election, you will be randomly assigned a subject number (1, 2, 3, 4, 5) which you can see under General information on the left had side of your screen. Be careful not to confuse this with your ID number. Subject numbers will be randomly assigned prior to the start of each election, so that all the voters are likely to have their subject numbers change from one election to the next. You record sheets have space for your subject number in each election. Please write this on your record sheet now. Write Practice for this election.

C. Now you can enter your proposed division of the 50 francs. There is a place to put the group allocation – *E points to this* - as well as places to put the each individual allocation (*E points to these as well*). By clicking the *show payment* button *(E points to this)* the computer will automatically multiply the group allocation by .7 and enter that amount for each individual in the group (*E points to this as well).* Clicking the show payment button will also automatically calculate the amount of francs (if any) left over to allocate (*E points to this)* as well as the dollar Payoffs (*E points to the Payoff column*). Neither of these last two calculations will show up unless you hit the Show payment button. To enter your proposal click on the OK button (*E points to this*). Note, once you have clicked the OK button your allocation is binding – as long as you have fully allocated the number of francs at your disposal.

   Please make an allocation now. In doing so make sure you make at least one individual allocation and some allocation to the Group so you will be sure to see how all of this works. *Once we play for cash it will be strictly up to you to decide what to do. For right now we want you to see how the software works and what options are open to you.* [**Note you can change your allocation at any time prior to clicking on the OK box – E**

points to this. To change your allocation, just put your curser in the relevant box and write over the proposed allocation. Note that anytime you have entered an allocation you must put some number in its place if you change it (this number can, of course, be zero). Otherwise the computer will think its got your old allocation in that box is still in place.

D. PUT THE SECOND TRANSPARANCY ON THE PROJECTOR. This is similar to your second screen. Please wait for my instructions before voting. As you can see in this example subject X's proposal was selected in group A and he proposed allocations of A, B, C, D, E for the individuals and F for the group allocation. I am using letters, but when you play these will be dollar amounts. The dollar amount each voter gets in this proposal is listed under the Payoff column. (*E points to this.)* Remember this is the proposal that was selected in your group. It may not be your proposal. If it is not your proposal it means you were not selected to be the proposer for this round. The bottom right hand side of your screen tells you if your proposal is the one being voted on or someone else's is being voted on.

E. Now please reject this proposal. **(Remember, this is just a dry run to get you used to seeing the screen layouts**.) When we play for cash it is strictly up to you to decide what to do.) Remember you must always click either the reject or accept box for you vote to be recorded. *You also have record sheets to fill in as you go along. We strongly recommend that you fill these in after each round to keep track of what is going on.(Pause here to give Ss a chance to fill out their record sheets.)*

F. PUT THE THIRD TRANSPARANCY ON THE PROJECTOR. This is what your third screen looks like. You can see who accepted or rejected the proposal and the total number of votes in favor of that proposal.

G. PUT THE FOURTH TRANSPARANCY ON THE PROJECTOR. The process now starts over again since the proposal was rejected. You can see in the results from the previous round is posted in the bottom left hand portion of your screen under Round information. Weights are the weight each individual places on their individual allocation in converting francs into dollars. These are the same ____ for everyone. You can identify yourself here as there is a * by your subject number. The top row of results shows the allocation of francs (*E points to this on overhead.)*. This is a little complicated. The group allocation shown is the number of francs allocated to the group. The numbers under each individual subject are the individual allocations to that subject (not counting their share of the group allocation). Next to these allocations are how each subject voted

– Y = voted in favor; N = voted against the proposal. On the second row, just below this with the same round number, are the dollar payoffs for each subject in that round (*E points to this.*). Please make a new proposed allocation.

H. PUT THE FIFTH TRANSPARANCY ON THE PROJECTOR. Now please accept this proposal. **(Remember, this is just a dry run to get you used to seeing the screen layouts**. When we play for cash it is strictly up to you to decide what to do.)

I. PUT THE SIXTH TRANSPARANCY ON THE PROJECTOR. This is similar to your screen with the exception that you are now in round 2 and the proposal was accepted, so that the proposed allocation is binding. Results from previous elections are shown under Election information. These show the allocation of francs for the proposal that passed in that election along with the votes (Y for accept, N for reject). You can identify yourself here as there is an * next to your allocation for the election in question.

J. After a few seconds, a new election will start. The voters assigned to your group in this election can, and likely will, differ from those in the previous election, since the voters in each group are randomly determined prior to each election. Your subject number (but **not** your ID number) could also change. That too is randomly determined at the start of each election.

K. You are not to reveal your (potential) earnings, nor are you to speak to any other subject while the experiment is in progress. This is important to the validity of the study and will not be tolerated.

L. Finally note that we have ____ groups/different elections going on at once. Although there are ____ people in the room, the only ones who count for this election are those that are your group. Further, the software is setup so that we cannot move onto a new election until all the groups have finished with their elections. This means that it will be quite normal to wait between elections while the other groups finish up. We have to wait for all the groups to finish before we can go on since we rematch everyone in the room following each election.

Are there any questions? We will now play for money!

x-Ovr/.45-.55

Change in weights instructions:

OK we are going to play another 8 bargaining rounds. The only difference from before will be the weights converting francs to dollars. The new weights will be as follows:

Payoff = .55 (your individual allocation) + .45 (your share of the group allocation).

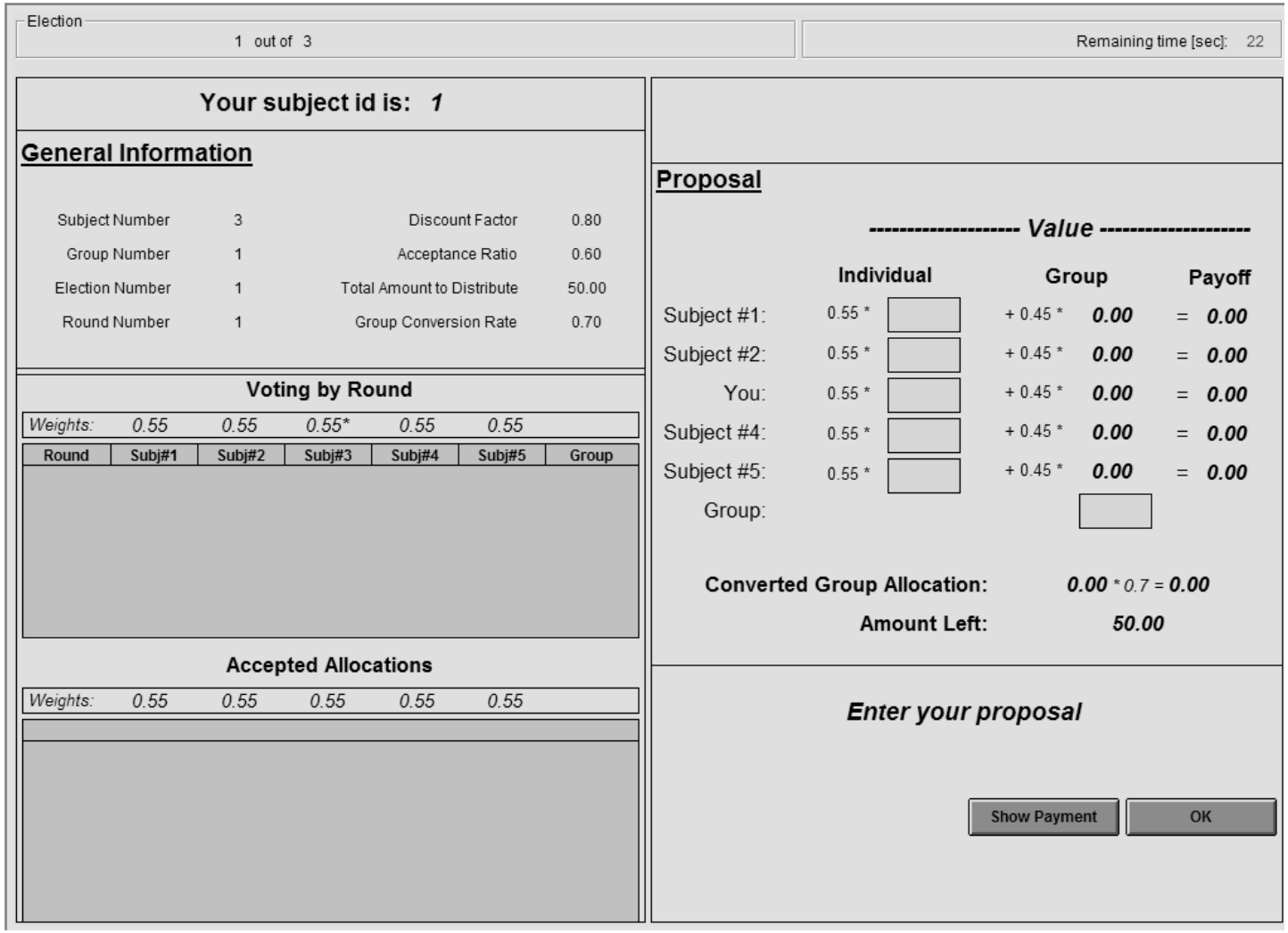
So for example, if your individual allocation is 10 francs and the group allocation is 20 francs you payoff would be $14.50 = (.45*10 + .55*20).

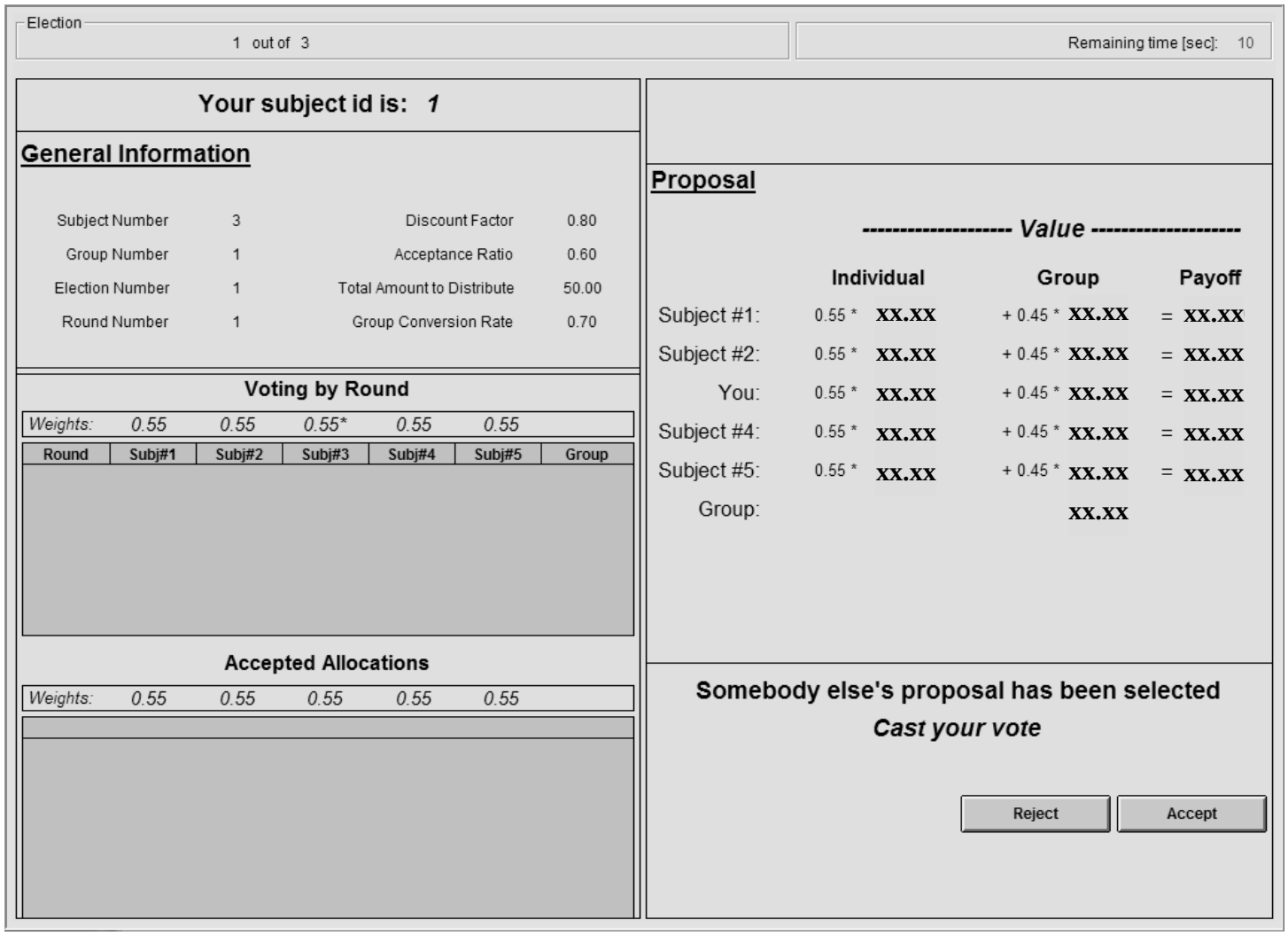
As compared to the old payoffs of
Payoff = .45 (your individual allocation) + .55 (your share of the group allocation).

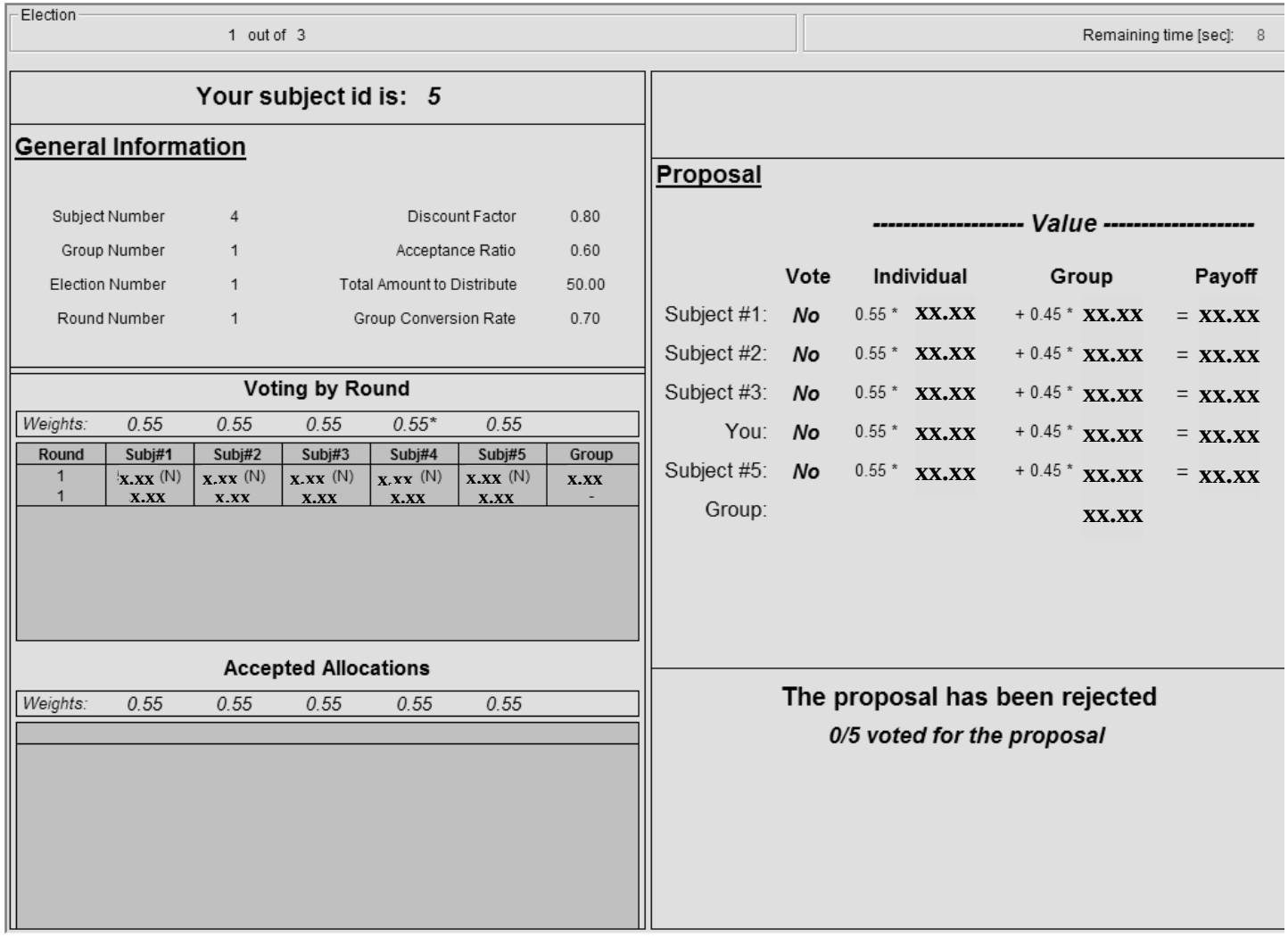
As before the computer will make these calculations to assist you in deciding whether to vote for or against a proposed allocation and to help you to see the financial implications of your allocations.

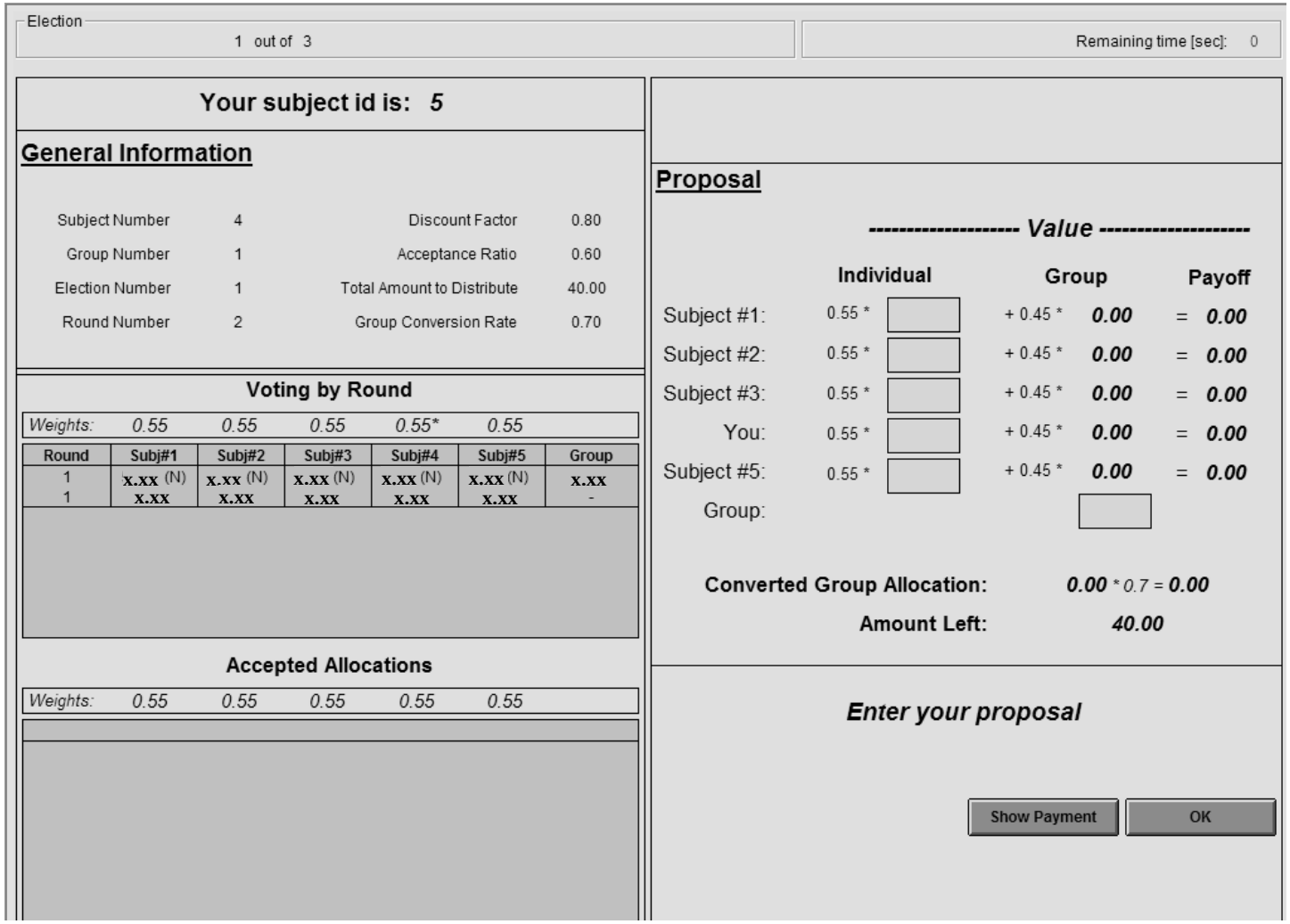
At the end of these 8 rounds one of the first 12 rounds will selected to be paid off on as well as one of the 8 rounds with new weights. As promised everyone will also receive an $8 participation fee.

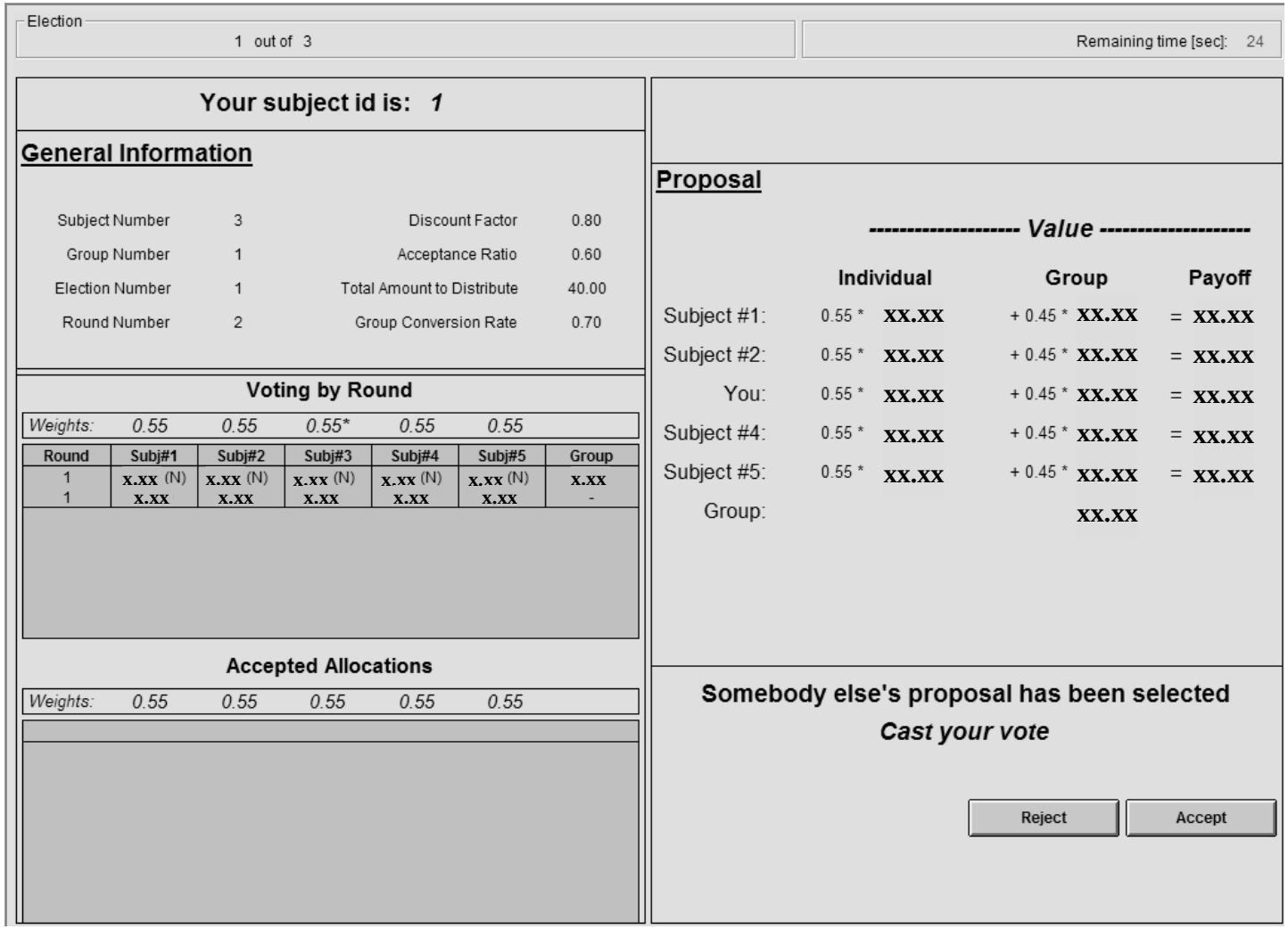
Are there any questions?

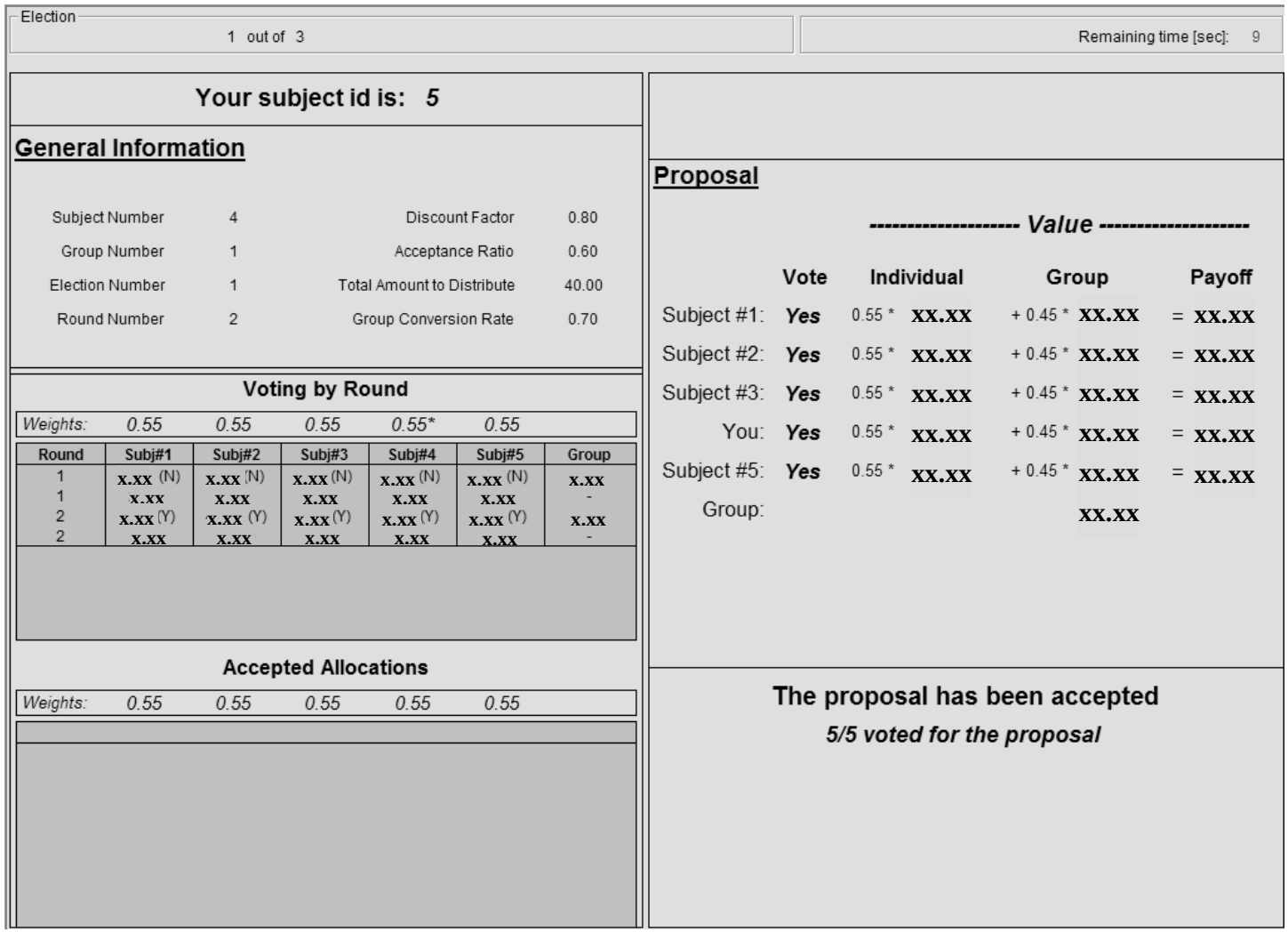

Election
1 out of 3
Remaining time [sec]: 22
Your subject id is: 1
General Information
Subject Number 3
Group Number 1
Election Number 1
Round Number 1
Discount Factor 0.80
Acceptance Ratio 0.60
Total Amount to Distribute 50.00
Group Conversion Rate 0.70
Voting by Round
Weights: 0.55 0.55 0.55* 0.55 0.55
Round Subj#1 Subj#2 Subj#3 Subj#4 Subj#5 Group
Accepted Allocations
Weights: 0.55 0.55 0.55 0.55 0.55
Proposal
Value
Individual Group Payoff
Subject #1: 0.55 * + 0.45 * 0.00 = 0.00
Subject #2: 0.55 * + 0.45 * 0.00 = 0.00
You: 0.55 * + 0.45 * 0.00 = 0.00
Subject #4: 0.55 * + 0.45 * 0.00 = 0.00
Subject #5: 0.55 * + 0.45 * 0.00 = 0.00
Group:
Converted Group Allocation: 0.00 * 0.7 = 0.00
Amount Left: 50.00
Enter your proposal
Show Payment
OK

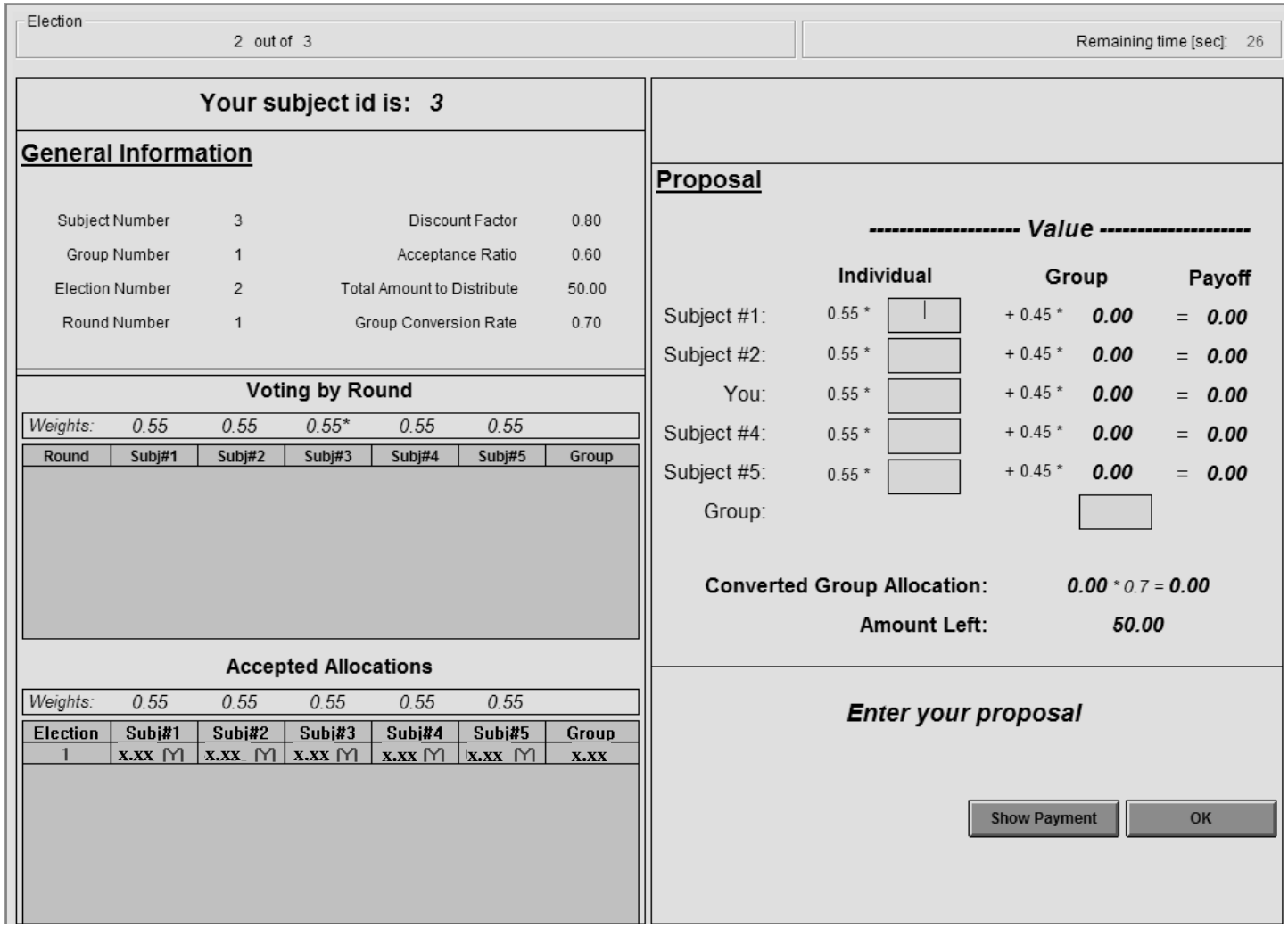

Election
1 out of 3
Remaining time [sec]: 10
Your subject id is: 1
General Information
Subject Number 3
Group Number 1
Election Number 1
Round Number 1
Discount Factor 0.80
Acceptance Ratio 0.60
Total Amount to Distribute 50.00
Group Conversion Rate 0.70
Voting by Round
Weights: 0.55 0.55 0.55* 0.55 0.55
Round Subj#1 Subj#2 Subj#3 Subj#4 Subj#5 Group
Accepted Allocations
Weights: 0.55 0.55 0.55 0.55 0.55
Proposal
---------- Value ----------
Individual Group Payoff
Subject #1: 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #2: 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
You: 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #4: 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #5: 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Group: xx.xx
Somebody else's proposal has been selected
Cast your vote
Reject
Accept


Election
1 out of 3
Remaining time [sec]: 8
Your subject id is: 5
General Information
Subject Number 4
Group Number 1
Election Number 1
Round Number 1
Discount Factor 0.80
Acceptance Ratio 0.60
Total Amount to Distribute 50.00
Group Conversion Rate 0.70
Voting by Round
Weights: 0.55 0.55 0.55 0.55* 0.55
Round Subj#1 Subj#2 Subj#3 Subj#4 Subj#5 Group
1 x.xx (N) x.xx (N) x.xx (N) x.xx (N) x.xx (N) x.xx
1 x.xx x.xx x.xx x.xx x.xx -
Accepted Allocations
Weights: 0.55 0.55 0.55 0.55 0.55
Proposal
Value
Vote Individual Group Payoff
Subject #1: No 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #2: No 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #3: No 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
You: No 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #5: No 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Group: xx.xx
The proposal has been rejected
0/5 voted for the proposal


Election
1 out of 3
Remaining time [sec]: 0
Your subject id is: 5
General Information
Subject Number 4
Group Number 1
Election Number 1
Round Number 2
Discount Factor 0.80
Acceptance Ratio 0.60
Total Amount to Distribute 40.00
Group Conversion Rate 0.70
Voting by Round
Weights: 0.55 0.55 0.55 0.55* 0.55
Round Subj#1 Subj#2 Subj#3 Subj#4 Subj#5 Group
1 x.xx (N) x.xx (N) x.xx (N) x.xx (N) x.xx (N) x.xx
1 x.xx x.xx x.xx x.xx x.xx -
Accepted Allocations
Weights: 0.55 0.55 0.55 0.55 0.55
Proposal
Value
Individual
Group
Payoff
Subject #1: 0.55 * + 0.45 * 0.00 = 0.00
Subject #2: 0.55 * + 0.45 * 0.00 = 0.00
Subject #3: 0.55 * + 0.45 * 0.00 = 0.00
You: 0.55 * + 0.45 * 0.00 = 0.00
Subject #5: 0.55 * + 0.45 * 0.00 = 0.00
Group:
Converted Group Allocation: 0.00 * 0.7 = 0.00
Amount Left: 40.00
Enter your proposal
Show Payment
OK


Election
1 out of 3
Remaining time [sec]: 24
Your subject id is: 1
General Information
Subject Number 3
Group Number 1
Election Number 1
Round Number 2
Discount Factor 0.80
Acceptance Ratio 0.60
Total Amount to Distribute 40.00
Group Conversion Rate 0.70
Voting by Round
Weights: 0.55 0.55 0.55* 0.55 0.55
Round Subj#1 Subj#2 Subj#3 Subj#4 Subj#5 Group
1 x.xx (N) x.xx (N) x.xx (N) x.xx (N) x.xx (N) x.xx
1 x.xx x.xx x.xx x.xx x.xx -
Accepted Allocations
Weights: 0.55 0.55 0.55 0.55 0.55
Proposal
---------- Value ----------
Individual Group Payoff
Subject #1: 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #2: 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
You: 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #4: 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #5: 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Group: xx.xx
Somebody else's proposal has been selected
Cast your vote
Reject
Accept


Election
1 out of 3
Remaining time [sec]: 9
Your subject id is: 5
General Information
Subject Number 4
Group Number 1
Election Number 1
Round Number 2
Discount Factor 0.80
Acceptance Ratio 0.60
Total Amount to Distribute 40.00
Group Conversion Rate 0.70
Voting by Round
Weights: 0.55 0.55 0.55 0.55* 0.55
Round Subj#1 Subj#2 Subj#3 Subj#4 Subj#5 Group
1 x.xx (N) x.xx (N) x.xx (N) x.xx (N) x.xx (N) x.xx
1 x.xx x.xx x.xx x.xx x.xx -
2 x.xx (Y) x.xx (Y) x.xx (Y) x.xx (Y) x.xx (Y) x.xx
2 x.xx x.xx x.xx x.xx x.xx -
Accepted Allocations
Weights: 0.55 0.55 0.55 0.55 0.55
Proposal
Value
Vote Individual Group Payoff
Subject #1: Yes 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #2: Yes 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #3: Yes 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
You: Yes 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Subject #5: Yes 0.55 * xx.xx + 0.45 * xx.xx = xx.xx
Group: xx.xx
The proposal has been accepted
5/5 voted for the proposal


Election
2 out of 3
Remaining time [sec]: 26
Your subject id is: 3
General Information
Subject Number 3
Group Number 1
Election Number 2
Round Number 1
Discount Factor 0.80
Acceptance Ratio 0.60
Total Amount to Distribute 50.00
Group Conversion Rate 0.70
Voting by Round
Weights: 0.55 0.55 0.55* 0.55 0.55
Round Subj#1 Subj#2 Subj#3 Subj#4 Subj#5 Group
Accepted Allocations
Weights: 0.55 0.55 0.55 0.55 0.55
Election Subj#1 Subj#2 Subj#3 Subj#4 Subj#5 Group
1 x.xx x.xx x.xx x.xx x.xx x.xx
Proposal
Value
Individual
Group
Payoff
Subject #1: 0.55 * + 0.45 * 0.00 = 0.00
Subject #2: 0.55 * + 0.45 * 0.00 = 0.00
You: 0.55 * + 0.45 * 0.00 = 0.00
Subject #4: 0.55 * + 0.45 * 0.00 = 0.00
Subject #5: 0.55 * + 0.45 * 0.00 = 0.00
Group:
Converted Group Allocation: 0.00 * 0.7 = 0.00
Amount Left: 50.00
Enter your proposal
Show Payment
OK