Experimental Instruction

This is an experiment in the economics of decision making. The instructions are simple, and if you follow them carefully and make good decisions, you might earn a considerable amount of money. In this experiment, we simulate a procedure to allocate participants to spaces. The procedure, payment rules, and participant allocation method are described below. Do not communicate with each other during the experiment. If you have questions at any point during the experiment, raise your hand and the experimenter will help you.

Procedure

There are 22 rounds in this experiment. The first 2 rounds are for practice and we will randomly pick a round from Round 3 to Round 22 and pay you with the payoff you earn in that round. In each round, you are matched into groups randomly and anonymously with other participants. Each group has X participants. The groups change every round.

In each round, X space slots are available. Each space slot has two terms: a "+" term and a "-" term. Each space slot will be allocated to one participant, with the + term or the - term. The allocation depends on the matching algorithm defined by the computer, and the participants' decisions in the same group. Your payoff amount depends on the space slot you hold and the term of the space slot at the end of the experiment.

Decision

Time left to complete this page: **0:54**

Round: 1
Group size: 4
Your player ID: 1

Your Preference Sheet

Space ID	Term	Payoff
3	+	8
1	+	7
2	+	6
4	-	5
1	-	4
3	-	3
4	+	2
2	-	1

Your Decision Sheet

Space	Term	Payoff
3	+	8
1	+	7
2	+	6
4	-	5
1	-	4
3	-	3
4	+	2
2	-	1

Send

The figure above shows an example of the decision page user interface. The information on the top of the page shows you the round number, the number of participants in your group, and your player ID in the group. For instance, the example figure shows that you are in round 1 with a group size of 4, and your player ID is 1.

On the bottom left is your preference sheet. In your preference sheet, you can find the payoff you will earn from each combination of space slots and terms. For instance, the example figure shows that you earn 8 points if you hold space 3 with the + term, but you only earn 3 if you hold space 3 with the - term. Note that different participants might have different preference sheets. That is, payoff by space slot & term combinations might be different for different participants.

On the bottom right is your decision sheet that you can interact with. In your decision sheet, you can reorder your preference sheet by dragging and moving the rows. When you finish reordering the row, press the "send" button and the game will move forward. Please remember to send your decision before the time runs out. Note that you need to rank all the spaces & terms combinations in order to indicate your decision.

After all participants have completed their decision sheets, the computer collects the sheets and starts the allocation process. The possible allocation process will be explained in detail in the next section.

Once the allocations are determined, the computer informs each participant of their allocation space slot and respective payoff. The experiment then moves to the next round. The figure below shows an example of the result page and you can observe the final space allocation of the group and your round payoff on the result page.

Round Results

Time left to complete this page: **0:20**

Round : 1
Your player ID: 1
Your payoff is: 8
Please press next to move to the next round.

Your Final Choice

Space ID	Term	Payoff
3	+	8
1	+	7
2	+	6
4	-	5
1	-	4
3	-	3
4	+	2
2	-	1

Group Final Allocation

Player ID	Space ID	Term
4	1	-
3	2	-
1	3	+
2	4	+

Next

Allocation Method

As is mentioned above, X spaces are available, each with two types of terms. For each space, a separate priority order of the participant & term combinations will be generated. Below is an example. You can find how the space 3 ranks each participant & term combinations from the table, with the most preferred combination on top. Note that the tables are randomly generated at the beginning of each round and are unobservable to the participants.

Space original preferences

Player ID	Term	Space ID
2	+	3
1	+	3
2	-	3
1	-	3
4	-	3
4	+	3
3	+	3
3	-	3

Once the priorities are determined and the participants have submitted their decisions, space slots are allocated with the following algorithm.

Algorithm DA:

At the beginning of each round, the participants in each group are randomly assigned a player ID, from 1 to X (the group size). The space slots are also assigned a space ID, from 1 to X. The IDs do not affect the allocation in the algorithm DA.

1. Each participant proposes to her first choice (the top row in their decision sheet) to the corresponding space slots. Each space slot rejects the lowest priority participant & term combination in excess of 1 and keeps the remaining participants on hold;
2. Each participant who has been rejected in the previous step proposes to her next choice. Each space slot considers the participants it has been holding together with its new proposers; it rejects the lowest priority participant & term combination and keeps the remaining participants on hold;
3. The algorithm repeats step 2 and terminates when no proposal is rejected and each participant is assigned a space slot at her final tentative assignment.

Algorithm BE

At the beginning of each round, the participants in each group are randomly assigned a player ID, from 1 to X (the group size). The space slots are also assigned a space ID, from 1 to X. The priority order of space 1 and 2 prioritize player 1 and 2, respectively. For instance, space slot 1 will always put the + term and - term of player 1 as its top priorities. In addition, the + term from players 3 to X are removed from the space 1 and 2. Thus they can never be selected. Based on these rules, the algorithm works as follows.

1. Each participant proposes to her first choice (the top row in their decision sheet) to the corresponding space slots. Each space slot rejects the lowest priority participant & term combination in excess of 1 and keeps the remaining participants on hold;
2. Each participant who has been rejected in the previous step proposes to her next choice. Each space slot considers the participants it has been holding together with its new proposers; it rejects the lowest priority participant & term combination and keeps the remaining participants on hold;
3. The algorithm repeats step 2 and terminates when no proposal is rejected and each participant is assigned a space slot at her final tentative assignment.

Algorithm CO

At the beginning of each round, the participants in each group are randomly assigned a player ID, from 1 to X (the group size). The space slots are also assigned a space ID, from 1 to X. The priority order of space 1 and 2 prioritize player 1 and 2, respectively. For instance, space slot 1 will always put the + term and - term of player 1 as its top priorities. Based on this rule, the algorithm works as follows.

1. One random participant without any accepted space slot proposes her most preferred choice among the ones that have not been previously rejected. The corresponding space slot holds her choice;
2. If the choice is not the most prioritized choice in the corresponding space, the algorithm returns to step 1;
3. If the choice is the most prioritized choice in the corresponding space, the space slot replaces its accepted choice with the new choice;
4. If the new accepted choice is a - term from player 1 or 2 but the space does not have the same ID, the space 1 or 2 blocks its all + term except the one from the same player ID. The blocked choices can not be selected. If the current accepted choice from space 1 or 2 is blocked in this way, the space accepts its second most prioritized choice;
5. Any participant who has two or more accepted choices only keeps her most preferred one and permanently removes the rest.
6. The algorithm goes back to step 1 and terminates when every participant has an accepted choice or when all the possible choices are rejected.

Alogrithm SM

At the beginning of each round, the participants in each group are randomly assigned a player ID, from 1 to X (the group size). The space slots are also assigned a space ID, from 1

to X. The priority order of space 1 and 2 prioritize player 1 and 2, respectively. For instance, space slot 1 will always put the + term and - term of player 1 as its top priorities. The player 1 and 2 can only interact with space 1 and 2, while the player 3 to X can only interact with space 3 to X. Based on these rules, the algorithm works as follows.

1. One random participant without any accepted space slot proposes her most preferred choice among the ones that have not been previously rejected. The corresponding space slot holds her choice;
2. If the choice is not the most prioritized choice in the corresponding space, the algorithm returns to step 1;
3. If the choice is the most prioritized choice in the corresponding space, the space slot replaces its accepted choice with the new choice;
4. If the new accepted choice is a - term from player 1 or 2 but the space does not have the same ID, the space 1 or 2 blocks its all + term except the one from the same player ID. The blocked choices can not be selected. If the current accepted choice from space 1 or 2 is blocked in this way, the space accepts its second most prioritized choice;
5. Any participant who has two or more accepted choices only keeps her most preferred one and permanently removes the rest.
6. The algorithm goes back to step 1 and terminates when every participant has an accepted choice or when all the possible choices are rejected.