

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 20 rounds in this experiment. The first 4 rounds are for practice and your payoff will be the total payoff from Round 5 to Round 20, converted to US dollars, then plus your \$4 show-up fee. In each round, you are matched into groups randomly and anonymously with other participants. Each group has 5 participants. The groups change every round.

In each round, 5 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 round.

Decision

Time left to complete this page: 1:25

Round: 1
Group size: 5
Your player ID: 5
Matching algorithm: DA

Your Preference Sheet

Space ID	Term	Payoff
1	-	6
1	+	9
2	-	21
2	+	12
3	-	3
3	+	18
4	-	30
4	+	24
5	-	27
5	+	15

Space Priority Sheet

Space ID	Term	Priority
1	+	6
1	-	9
Space ID	Term	Priority
2	+	8
2	-	10
Space ID	Term	Priority
3	+	1
3	-	7
Space ID	Term	Priority
4	-	1
4	+	6
Space ID	Term	Priority
5	-	2
5	+	3

Your Decision Sheet

Space ID	Term	Payoff
3	+	18
2	+	12
4	+	24
4	-	30
2	-	21
5	-	27
3	-	3
5	+	15
1	+	9
1	-	6

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,

your player ID in the group, and the current matching algorithm. For instance, the example figure shows that you are in round 1 with a group of 5, and your player ID is 5.

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 9 points if you hold space 1 with the + term, but you only earn 6 if you hold space 1 with the - term. Note that different participants have different preference sheets. That is, payoff by space slot & term combinations might be different for different participants.

Next to the preference sheet is the space priority sheet related to you. Here you can observe how each space ranks you. The lower the priority number, the more likely you will be selected by the space. For instance, it looks like you are favored by Space 3 if you submit a + term, but your ranking decreases if you submit a - term. The space priority will be discussed later in detail.

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 allocation process will be explained in detail later. 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: 0:26

Round : 1
Your player ID: 5
Your payoff is: 30
Matching algorithm: DA
Please press next to the next round.

Your Final Choice

Space ID	Term	Payoff
4	-	30
5	-	27
4	+	24
3	+	18
2	+	12
2	-	21
5	+	15
3	-	3
1	+	9
1	-	6

Next

Group Final Allocation

Player ID	Space ID	Term
1	1	+
2	2	-
4	3	-
5	4	-
3	5	+

Allocation Method

As is mentioned above, 5 spaces are available, each with two types of terms. For each space, a separate priority order of the participant & term combinations will be generated. Note that the tables are randomly generated at the beginning of each round and you can only observe the priority that is related to you on your decision page.

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

At the beginning of each round, the participants in each group are randomly assigned a player ID, from 1 to 5. The space slots are also assigned a space ID, from 1 to 5. The priority order of space 1 and 2 prioritize player 1 and 2, respectively. That is, space slot 1(2) will always put the + term and - term of player 1(2) 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.
2. The corresponding space holds the most prioritized choice among all the choices proposed so far;
3. If the new accepted choice is a - term from player 1 or 2 but the space ID is not the corresponding player ID, the space 1 or 2 blocks its all + term except the one from the corresponding 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;
4. Any participant who has two or more accepted choices only keeps her most preferred one and permanently removes the rest.
5. if there is at least one participant who does not have a choice on hold by some space, the algorithm returns to step 1;
6. The algorithm terminates when every participant has one choice held by some space, or there are no choices left that have not been rejected.

Let us check a simplified example with 3 players, player No.1, 2 and 3. Since there are 3 players, there are also three space slots, labeled also as 1, 2 and 3, waiting to be allocated. In this case, there are 3 (spaces) x 2 (terms) = 6 combinations for each player to rank.

Suppose player 3 has the chance to propose first with her most preferred (space 1 with + term). Since it is the first step, space 1 holds the choice. Then suppose player 1 gets the chance to propose with her most preferred (space 2 with term -). Space 2 also holds the choice as it is its first submitted choice. Since player 1 is not at her own space 1 but has a - term, the space 1 starts to block all the + terms for players 2 and 3. Then the space 1 becomes empty as its first choice is blocked.

Suppose player 2 moves next and proposes her most preferred space 3 with + term. The space 3 holds the choice as it is its first submitted choice. Now we have player 1 at space 2 and player 2 at space 3. The player 3 submits her second most preferred choice but can no longer choose (space 1 with + term). If the player 3's next choice is to space 2 or 3, that space will have multiple choices and will only hold the top one based on the priority order of the space. The game continues until all the players find a space or all the possible choices have been rejected.