Instructions

Welcome to the Economic Research Laboratory. This is an experiment in decision making. Texas A&M University has provided funds for this research. During the course of the experiment, you will be called upon to make a series of decisions. If you follow the instructions carefully and make good decisions, you can earn a considerable amount of money which will be paid to you in cash at the end of the experiment.

It is important that you remain silent and do not look at other people's work. If you have any questions, or need assistance of any kind, please raise your hand and an experimenter will come to you. If you talk, laugh, exclaim out loud, etc., you will be asked to leave and you will not be paid. We expect and appreciate your cooperation.

We will first jointly go over the instructions. All figures have been reproduced on the screens in front of the room. After we have read the instructions, you will have time to ask clarifying questions. Please do not touch the computer or its mouse until you are instructed to do so. Thank you.

Participants

There are two groups of 9 people who participate in today's experiment. Each of you has been randomly assigned to a group and to a role which could be either a so-called **B** or **E** participant. You will remain in the same group and same role throughout the entire duration of the experiment. After we have completed reading the instructions you will be informed about your role on your computer screen.

Timing and Pairing

Participants only interact with members of their group throughout the experiment. A group has 9 human participants and 3 computerized participants. In particular, in each group there will be 6 human participants assigned to a B role, 3 human participants assigned to an E role and 3 computerized participants assigned to a "computerized E" or cE role.

The experiment is divided into 10 "**sequences**" of six "**rounds**" each. In each round of a sequence, each B participant will be paired with an E participant of their group. The E participant may be human or computerized. The B participants will not be informed who they have been paired with and, in particular, they will not know whether they are paired with a human E participant or a computer program (cE participant). The order in which B participants meet E participants within a sequence has been randomly determined in advance in such a manner that each B participant meets each E participant exactly once during one sequence. This order changes from sequence to sequence.

Within a Sequence

As mentioned earlier, a sequence will consist of six rounds. Each round will proceed as follows: Each B participant is either paired with a human E participant or with a computer (cE participant). Each B participant begins the round by choosing one of two alternatives. These alternatives are labeled $b1$ and $b2$. The choices of the B participants are transmitted to the E participants. Figure 1 illustrates this decision in the case where a B participant is paired with a human E participant and Figure 2 illustrates the case when B is paired with a computerized participant, cE. As you can see, if B's choice is $b1$ there is no decision to be made by the E participant. If the choice of B is $b2$, then a human E participant can decide between choosing $e1$ or $e2$. cE participants are programmed to always choose $e2$ after a choice of $b2$.

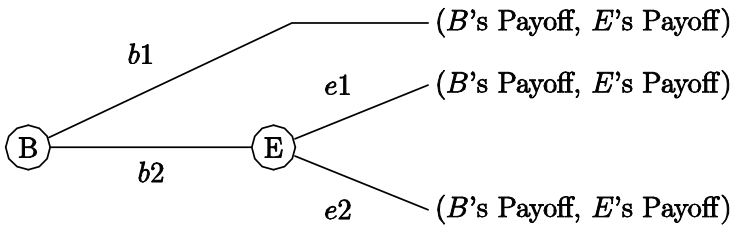


Figure 1: Sequencing of choices (B is paired with human E).

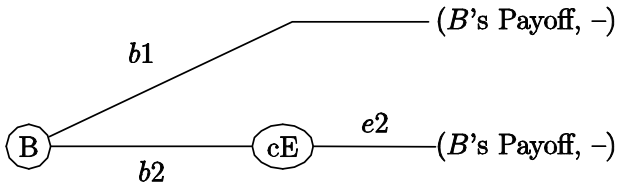


Figure 2: Sequencing of choices (B is paired with cE).

Choices are made by selecting the corresponding alternative on the computer screen and clicking the "OK" button using the mouse (see Figures 3 and 4).

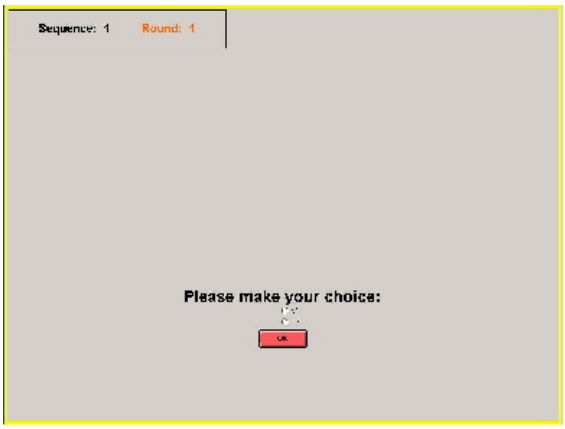


Figure 3: Decision screen of B participants. (The top left-hand side of each computer screen will keep track of the sequence number and the round number within each sequence.)



Figure 4: Decision screen of human E participants (after B has chosen $b2$). We will explain the state of the world in a second.

Information

At the beginning of each round (before any choices are made) a computer program will randomly determine whether the state of the world is **N** or **P** with both states being equally likely, i.e. on average 50% of the time the state of the world is N and 50% of the time the state is P. This state of the world is determined for each E separately and can therefore be different for different E or cE participants. Only E participants will be informed about the state of the world (see Figure 4). B participants will not be informed.

After each round, all participants will be informed about their own payoff. Nobody will be informed about the identity or the payoff of the participant they are paired with.

However, at the beginning of each round (starting with round 2 in each sequence) and before B participants make their decisions, each B participant will be informed about **all previous rounds' choices** of the E participant they are paired with in the current round (see Figure 5). They will not be informed about whether the E participant is a human or a computer program. After six rounds have been completed, a new sequence of six rounds will start. No information will be given about choices and payoffs from previous sequences.

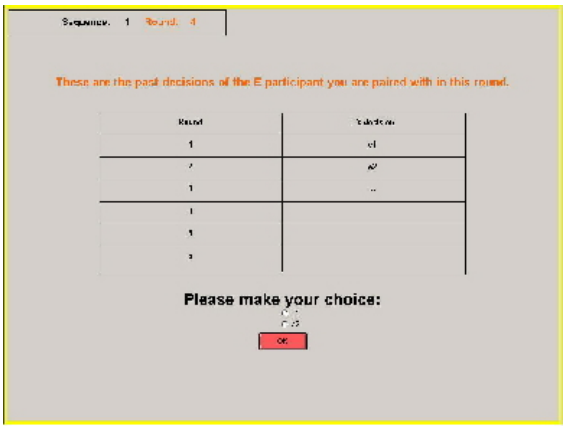


Figure 5: Information to B participants (beginning with round 2 of each sequence)

Determination of your Earnings

In each round, your earnings depend on your choice, the choice of the participant with whom you are paired and the state of the world. Figure 6 describes how your earnings are related to these choices. All earnings are expressed in points. Points will be converted to dollars at the following rate, (1 point $\equiv$ \$0.12). At the end of the experiment, your total points from all rounds in all sequences will be converted into dollars at the rate specified above, and will privately be paid to you in cash.

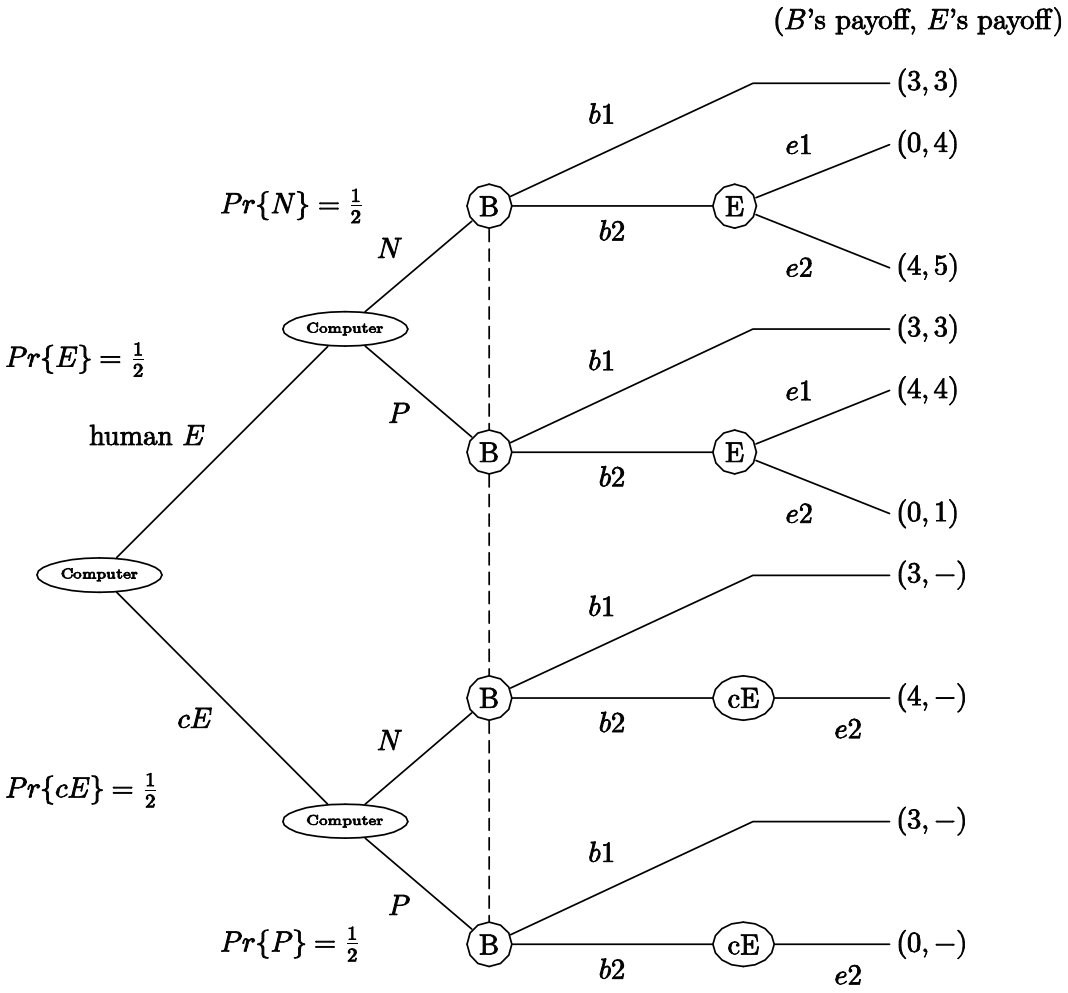


Figure 6: Sequencing of decisions and payoffs within a round

Let's slowly go over Figure 6. The figure is to be read from the left to the right. The first node indicates a random draw of the computer program that decides whether a B participant will be paired with a human E participant or a computer program, cE, in a given round.

Also, at the beginning of each round there will be another random draw that determines whether the state of the world is N or P for each E participant separately. Each state of the world is equally likely, i.e. the probability that the state of the world is N is 50%. E participants will be informed about the state of the world, but B participants will not.

After the state of the world is determined, B participants are asked to make their choice. B participants will not know whether they are paired with a human E participant or a computer program. This is indicated by the dashed lines linking the choice nodes of the B

participants. However, B participants will know the past choices of the E participants they are currently paired with. The payoffs that result from the different choice combinations are written at the right hand side of Figure 6 in the following form: (B's payoff, E's payoff).

B always chooses first, selecting either $b1$ or $b2$. If B chooses $b1$, then E has no choice, and B and E each earn 3 points. If B chooses $b2$, then a human E participant has a choice between $e1$ and $e2$. The payoff that the participants earn will depend on the state of the world. For example, if the state of the world is N, then when B chooses $b2$ and the human E chooses $e1$, B will receive 0 points and E will receive 4 points. If instead E chooses $e2$ in the same state, then B will receive 4 points and E will receive 5 points. If the state of the world is P, then when B chooses $b2$ and the human E chooses $e1$, B will receive 4 points and E will receive 4 points. If instead E chooses $e2$ in the same state, then B will receive 0 points and E will receive 1 point.

A computerized E participant will always choose $e2$ regardless of the state of the world. However, B's payoff in this case depends on the state of the world. If the state of the world is N and B chooses $b2$, B will receive 4 points (computerized participants don't earn any payoff). If the state of the world is P, then B will receive 0 points.

Summary

1. The experiment consists of 10 sequences.

2. There are two groups of twelve (12) participants each. Each group has six (6) B participants and six (6) E participants. Of the six (6) E participants, three (3) will be human participants and three (3) will be represented by computer programs.

3. Within a sequence:

    (a) There are six (6) rounds.

    (b) Within a round:

        i. Each B participant is paired with a E participant.

        ii. State of the world is determined (separately for each E) and only the E participant is informed about it.

        iii. B participants choose after observing **all** previous choices that the E participant they are currently paired with has made so far within the sequence.

        iv. E participants choose.

        v. Payoffs are determined.

    (c) New pairings of B and E participants.

(d) Go back to step (b) until each B participant has met six different E participants, and each E participant has met six different B participants.

4. New sequence begins (until 10 sequences are completed).

Please remember not to discuss your role, choices or your results with any other participant between rounds or at any other time during the experiment.

Are there any questions? Please raise your hand and an experimenter will come to you. Do not ask a question out loud. Thank you.

Before we start the experiment, we would like you to answer a few question that are meant to review the rules of today's experiment. Please raise your hand once you are done and an experimenter will attend to you.

1. In which roles can participants in this experiment be?_____
2. Who chooses first? _____
3. How many rounds are in each sequence?_____
4. How often is the state of the world determined in a sequence?_____
5. Suppose you are a B participant and it is your turn to make a choice in round 6. Do you know all the choices that the E participant you are currently paired with has made in rounds 1 through 5? _____ Do you know whether it is a human participant or a computer program? _____
6. What are the possible payoffs (in points) a B participant can receive if she has chosen $b2$ and the E participant she is matched with has chosen $e1$?_____Which one of these will be realized if the state of the world is P?_____
7. If a B participant is paired with a computer program, what choice does the computer program make after B chooses $b2$?_____
8. What are the payoffs to the B and E participants if the B participant chooses $b1$?_____