

Welcome. This is an experiment in decision making. Various research foundations and institutions have provided funding for this experiment and you will have the opportunity to make a considerable amount of money which will be paid to you at the end. We will go through the instructions together. Make sure you pay close attention because the decisions you make will influence the amount of money you will take home with you today. Please ask questions if any instructions are unclear as we read through them.

### **Experimental Task**

Today you will participate in two experiments. You will get instructions for the second experiment after we complete the first, but let us start with the instructions for the first experiment.

Each period, of which there are 30 in this experiment, you will engage in the following task. First, you will be assigned into a group of 5 subjects. There are three types of roles for subjects which we shall call A1, A2, and B. The group of 5 will consist of 1 A1 subject, 1 A2 subject, and 3 B subjects. The period begins with the A1 and A2 subjects simultaneously choosing a number, which we will call their OFFER. A1's OFFER must be between 0 and an upper bound  $Y_1$ , a value to be specified momentarily. Similarly, A2's OFFER must be between 0 and an upper bound  $Y_2$ , also to be specified momentarily. The two OFFERS are then shown to all 3 B subjects who will respond to one of the two.

The B subjects need not choose to respond to A1's OFFER for sure or to A2's OFFER for sure. Instead, their choice, made simultaneously by all 3 B subjects, is to choose two numbers, one for A1 and one for A2, that sum to 100 which we will call their RESPONSE PROBABILITIES. For each B subject, the computer then randomly selects the OFFER to which they respond with these probabilities. For example, if a given B subject chooses 23 for their RESPONSE PROBABILITY to A1 and  $77=100-23$  for their RESPONSE PROBABILITY to A2 then the computer will perform a randomization that results in that B subject responding to A1 23 percent of the time and to A2 77 percent of the time. Note that if a B subject wants to respond to a given A subject's OFFER for sure they can select 100 for their RESPONSE PROBABILITY to that A subject and 0 for the other.

Once, the computer has selected an OFFER for each B subject to respond to, pairs are formed as follows. If only one B subject responds to a given A subject's OFFER then these two subjects will be paired together. If two or three B subjects respond to a given A subject's OFFER then one of the B subjects will be chosen randomly, with equal chance for each, to pair with that A subject. Note that an A subject is unpaired if all three B subjects respond to the other A subject's OFFER and a B subject is unpaired if they are not the one selected randomly when more than one B subject responds to the same OFFER as them.

For each pair, an amount of points equal to the upper bound for the A subject's OFFER are divided between the two subjects with the B subject getting an amount of points equal to the A subject's OFFER and the A subject getting the rest. For example, if A1 is in the pair and A1's OFFER is  $X_1$ , then A1 gets  $Y_1-X_1$  points and the B subject in the pair gets  $X_1$  points. Any unpaired subjects get 0 points.

In summary, each period consists of five parts that proceed as follows.

- First, A subjects choose their OFFERS between 0 and their upper bounds.
- Second, B subjects observe both OFFERS and choose their RESPONSE PROBABILITIES.
- Third, the computer, using the RESPONSE PROBABILITIES, randomly selects responses for each B subject.
- Fourth, responses, and some chance, form pairs between A subjects and B subjects.
- Fifth, points are awarded to subjects in pairs.

### **A Few More Procedures**

When the experiment starts you will be assigned a role; A1, A2, or B, and you will remain that role for the entire experiment. However, after every period you will randomly be assigned to a new group of 5 for the next period. So while you will remain the same role for the entire experiment, the members of your group will change every period.

The upper bound Y1 is 50 and the upper bound Y2 is also 50 for all 30 periods of the experiment.

At the end of a period you will be told if you have been paired or not, both OFFERS, the number of B subjects the computer selected to respond to each of the A's OFFERS (but not the B subject's RESPONSE PROBABILITIES), and your points for that period. Additionally, if you are a B subject you will be told which OFFER the computer selected for you to respond to.

As you complete the 30 periods in the experiment some information from earlier periods will remain on your screen for your convenience. Specifically, for each completed period you will have the two OFFERS, the number of B subjects who the computer selected to respond to each, and your individual points.

Two of the first 15 periods and two of the last 15 periods have been selected randomly for payment. The sum of the points you earned in these four periods will be converted into dollars at a rate that depends on the role you are assigned to. The rates are

| Role | Conversion Rate       |
|------|-----------------------|
| A1   | 1 point = 7.86 cents  |
| A2   | 1 point = 7.86 cents  |
| B    | 1 point = 31.45 cents |

The dollars you earn will be rounded up to the nearest cent. In addition to the dollars earned in both experiments you will get a show-up payment of 5 dollars.

As a final request, please remember to push the red buttons on your screen when you have read the information or made a choice for that screen. Do not rush, but please keep in mind that the experiment cannot continue until you actually push the button.

**Experiment 2:**

Experiment 2 is exactly the same as Experiment 1 except for two differences. First, the value of Y1 is 85 and the value of Y2 is 15 for all 30 periods of the experiment. Second, the conversion rates are different. They are given by

| Role | Conversion Rate       |
|------|-----------------------|
| A1   | 1 point = 3.55 cents  |
| A2   | 1 point = 45.79 cents |
| B    | 1 point = 49.70 cents |

You will be the same role as in Experiment 1 and you will again make the same decisions with the same consequences for 30 periods and will be paid for 2 of the first 15 rounds and 2 of the last 15 rounds that have been chosen randomly.