

## Appendix: Instructions for *Baseline* treatment

This is an experiment in the economics of market decision-making. The National Science Foundation has provided funds for conducting this research.

This experiment consists of two parts and is expected to last 90 min.

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.

You will receive a \$5 show-up fee which is yours to keep. In addition, you will receive 10 experimental currency units (ECU) starting cash balances for the experiment. You will also have the opportunity to earn ECU in each of the two parts of the experiment. ECU will be converted into dollars at a rate of \$0.5 per ECU (i.e. 2 ECU are worth \$1). Your total dollar earnings will equal:

$\$5 \text{ show-up fee} + 0.5 * (10 \text{ ECU starting cash balances} + \text{ECU earned in part I and part II})$

Note that your earnings in part I and part II could be negative (i.e. you could incur a loss) in which case they will be subtracted from your 10 ECU starting cash balances. However, you will receive your \$5 show-up fee no matter what.

Caution: This is a serious experiment and talking, looking at others' screens, or exclaiming aloud are not allowed. Should you have any questions please raise your hand and an experimenter will come to you.

## Part I

1. In part I of this experiment, we will create a series of auctions in which you will act as bidders for a fictitious item. In each auction, you will be paired randomly with another bidder. A single item will be auctioned off with the two of you as bidders. Your pairings will vary from auction to auction and will remain anonymous.

2. In each auction, you will receive a signal (call it X) and the bidder that you are paired with will also receive a signal (call it Y). X and Y are determined randomly and will lie between 0 and 10. Each whole number within this interval (i.e. 0,1,2,...,9,10) has an equal chance of being drawn. In addition, the value of X has no bearing on the value of Y: no matter what the value of X, each whole number between 0 and 10 is equally likely to be the value of Y. The value of the item that is auctioned (call it V) is determined as THE LARGER of the two signals, X and Y.

Prior to bidding in each auction, you will learn X (but not Y); the bidder you are paired with will learn Y (but not X).

Example 1: Suppose you learn that X=6 and the bidder you are paired with learns that Y=4. Then the value of the item is  $V = 6$  ECU.

Example 2: Suppose you learn that X=1 and the bidder you are paired with learns that Y=9. Then the value of the item is  $V = 9$  ECU.

### 3. Market organization:

In each auction you will submit a bid for the item. The high bidder gets the item and makes a profit equal to the difference between the value of the item and the second highest bid. That is, for the high bidder:

$$\text{PROFITS} = V - (\text{SECOND HIGHEST BID})$$

If the difference is negative, it represents a loss.

If you do not make the high bid, you will earn zero profits. In this case, you neither gain nor lose money from bidding on the item.

4. Your earnings for part I of the experiment will equal the sum of the profits you made in each auction in part I. (Because your profits in any auction could be negative, your earnings for part I could also be negative.)

5. Even though the computer will keep track of your earnings in each auction, you will not be given any feedback about the outcome of the individual auctions during the experiment.

6. No one may bid less than 0.00 ECU for the item, and bids must be rounded to two digits after the decimal point. You will have 1 minute to place your bid in each auction.

In case of a tie for the high bid, the winner is chosen randomly (50-50 chance). The price the winner pays will be the second highest bid (which is the same as the high bid in case of a tie).

Let us summarize the main points:

1. High bidder gets the item and earns:  $V - \text{SECOND HIGHEST BID}$ .
2. The value of the item  $V$  equals THE LARGER of two signals,  $X$  and  $Y$ . You learn  $X$ ; the bidder you are paired with learns  $Y$ . The signals are randomly and independently drawn from  $\{0, 1, 2, 9, 10\}$ .
3. Your earnings for part I equal the sum of the profits you made in each auction in part I. Any questions?

## **PRACTICE QUIZ**

Suppose that Chris and Pat are paired for a given auction. Suppose that Chris has signal  $X = 7$  and Pat has signal  $Y = 4$ . Suppose that Chris bids some number  $B_{Chris}$  and Pat bids some number  $B_{Pat}$ . In addition, suppose for now that Chris' bid is higher than Pat's bid (i.e.  $B_{Chris} > B_{Pat}$ ). Then:

1. The item is obtained by: a) Chris b) Pat
2. The value of the item is  $V =$

3. The second highest bid is: a)  $B_{Chris}$  b)  $B_{Pat}$
  4. Chris' Profits are: a)  $7 - B_{Chris}$  b)  $4 - B_{Chris}$  c)  $7 - B_{Pat}$  d)  $4 - B_{Pat}$  e) 0
  5. Pat's Profits are: a)  $7 - B_{Chris}$  b)  $4 - B_{Chris}$  c)  $7 - B_{Pat}$  d)  $4 - B_{Pat}$  e) 0
- Now suppose that Pat's bid is higher than Chris' bid (i.e.  $B_{Pat} > B_{Chris}$ ). Then:
6. The item is obtained by: a) Chris b) Pat
  7. The value of the item is  $V =$
  8. The second highest bid is: a)  $B_{Chris}$  b)  $B_{Pat}$
  9. Chris' Profits are: a)  $7 - B_{Chris}$  b)  $4 - B_{Chris}$  c)  $7 - B_{Pat}$  d)  $4 - B_{Pat}$  e) 0
  10. Pat's Profits are: a)  $7 - B_{Chris}$  b)  $4 - B_{Chris}$  c)  $7 - B_{Pat}$  d)  $4 - B_{Pat}$  e) 0

## PART II

1. We will again create a series of auctions in which a fictitious item is sold. Just like in part I, the value of the item ( $V$ ) in each auction is determined as THE LARGER of two signals,  $X$  and  $Y$ .  $X$  and  $Y$  are determined randomly and will lie between 0 and 10. Each whole number within this interval (i.e. 0,1,2,..9,10) has an equal chance of being drawn. In addition, the value of  $X$  has no bearing on the value of  $Y$ : no matter what the value of  $X$ , each whole number between 0 and 10 is equally likely to be the value of  $Y$ .

2. In this part of the experiment, instead of bidding for the item against another person, you will be bidding for the item against the computer. The computer will bid by mimicking your bidding behavior from part I of the experiment (as explained below).

Prior to bidding in each auction, you will observe one of the two signals ( $X$ ). The computer 'observes' the other signal ( $Y$ ). Then it checks how you bid in part I when you observed that same signal and it makes the same bid.

Example 3: Suppose that the computer observes  $Y=4$ . Then the computer checks your bid in part I when you observed signal equal to 4 and it makes the same bid.

### 3. Market organization:

In each auction, you and the computer will each submit a bid for the item. If you are the high bidder you get the item and make a profit equal to the difference between the value of the item and the second highest bid. That is, if you are the high bidder, you earn:

$$\text{PROFITS} = V - (\text{SECOND HIGHEST BID})$$

If the difference is negative, it represents a loss.

If you do not make the high bid, you will earn zero profits. In this case, you neither gain nor lose money from bidding on the item.

4. Your earnings for part II of the experiment will equal the sum of the profits you made in each auction in part II. (Because your profits in any auction could be negative, your earnings for part II could also be negative.)

5. Even though the computer will keep track of your earnings in each auction, you will not be given any feedback about the outcome of the individual auctions during the experiment.

6. No one may bid less than 0.00 ECU for the item, and bids must be rounded to two digits after the decimal point. You will have 1 minute to place your bid in each auction.

In case you tie with the computer for the high bid, you win the item with 50% chance. If you win the item, you pay a price equal to the second highest bid (which is the same as the high bid in case of a tie).

We can summarize by saying that the rules for part II are similar to those for part I. The difference is that now you are bidding not against another participant but against the computer which mimics your bidding behavior from part I.

Any questions?