

## **Appendix A: Experiment Instructions**

### **General Instructions and Introduction**

Thank you for participating in today's experiment. In this experiment you will make two decisions by filling out two one-page forms. One-half of you will be randomly assigned to a seller role, and the remaining one-half of you will be randomly assigned to a buyer role. If you are selected to be a seller then the decisions you indicate on the forms will determine the payment you earn today. If you are a seller then your decisions also determine the payment to one randomly-selected buyer today. All payments will be given to you in cash (U.S. currency) immediately at the end of the experiment.

We will now randomly assign identification numbers to you by having you each draw a numbered index card. At the end of the experiment this number will determine if you are a buyer or a seller, based on a random draw of a numbered ball from a bingo cage. You will never learn the identity of the buyer or seller you are paired with in today's experiment.

### Instructions

In this experiment you will be grouped anonymously with three other participants. At the end of the experiment two of you will be randomly selected as sellers and the other two of you will be randomly selected as buyers. The sellers choose the selling PRICE, and the buyer paired with that seller must buy from that seller at that price. This determines the payments to both the seller and the buyer. In the following table each cell shows the possible payment, in dollars, in the upper right corner for the seller, and in the lower left corner for the buyer. For example, if the seller chooses PRICE = \$32, the seller will be paid \$32 and the buyer will be paid \$8. If the seller chooses PRICE = \$4, the seller receives \$4, and the buyer receives \$36.

**Table 1**

Seller Chooses  
PRICE

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	
\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	Payment to seller
\$40	\$38	\$36	\$34	\$32	\$30	\$28	\$26	\$24	\$22	\$20	Payment to buyer

**Table 1 (continued)**

Seller Chooses  
PRICE

\$22	\$24	\$26	\$28	\$30	\$32	\$34	\$36	\$38	\$40	
\$22	\$24	\$26	\$28	\$30	\$32	\$34	\$36	\$38	\$40	Payment to seller
\$18	\$16	\$14	\$12	\$10	\$8	\$6	\$4	\$2	\$0	Payment to buyer

Notice that in general, if the seller chooses a price  $P$ , then the seller will be paid  $P$  dollars and the buyer will be paid  $40 - P$  dollars. Also, throughout the experiment sellers must choose prices in two-dollar increments; that is, a price of either \$0, \$2, \$4, \$6, \$8, \$10, \$12, \$14, \$16, \$18, \$20, \$22, \$24, \$26, \$28, \$30, \$32, \$34, \$36, \$38 or \$40.

The four participants in each group will be randomly assigned to buyer and seller roles using randomly drawn balls from a bingo cage. [The numbers on the balls correspond to your identification numbers.] The first ball drawn will determine who is SELLER 1, the second ball will determine who is SELLER 2, the third ball drawn will determine who is BUYER 1, and the fourth ball drawn will determine who is BUYER 2.

The subjects selected to be sellers will "play out" the decisions indicated on their forms. SELLER 1 is the first seller in the group, and SELLER 1's **Choice 1** (see the Choice 1 decision form) determines her payment and the payment to BUYER 1. SELLER 2 is the second seller in the group, and SELLER 2's **Choice 2** (see the Choice 2 decision form) determines his payment and the payment to BUYER 2.

Before making your decisions you will not learn if you are a buyer or a seller. Therefore, everyone will fill out seller Choice 1 and Choice 2 forms without knowing which (if any) of these two forms determines their payment. Since one-half of you will end up being selected as buyers, there is a 50 percent chance that you will be a buyer; and **if you are a buyer, then what you indicate on your forms will have no influence on the payment you receive today.** There is also a 50 percent chance that you will be a seller. If you are a seller, then your Choice 1 decision and your Choice 2 decision are equally likely to determine your payment.

To summarize: There is a 50 percent (one-half) chance that you will be a buyer, in which case your decisions will not be used to determine your payment. There is a 25 percent (one-quarter) chance that you will be the first seller, in which case your payment (and the payment to BUYER 1) is determined by your Choice 1 decision. And there is a 25 percent (one-quarter) chance that you will be the second seller, in which case your payment (and the payment to BUYER 2) is determined by your Choice 2 decision. Remember that everyone always has an equal chance to be BUYER 1, BUYER 2, SELLER 1 and SELLER 2.

Everyone will always learn the Choice 1 and Choice 2 prices selected by the other three participants in their four-person group after everyone's decisions are completed and their payments determined, but (as mentioned in the introduction) no one will ever learn the identity of the buyer and seller roles or other participants in their group. Also, I will draw the bingo balls from the cage twice. I will draw the balls while you make your Choice 1 decision in order to determine who might be the SELLER 1 of your group in the event that you turn out to be SELLER 2. Everyone still has an equal chance to be in any of the four roles, however, until I draw the balls the second time to determine who has which role. The following example should make this procedure clear.

### An Example

Call the participants in this example group ID 21, ID 27, ID 39 and ID 46. Remember that everyone (including the eventual buyers) fills out decision forms, but only the sellers' forms are used to determine payments. So let's start by randomly selecting **Choice 1** decisions for all four participants of our example. After all forms are submitted and turned in, one of the four participants in this group will be randomly selected to be SELLER 1, and his payment (and the payment to the randomly selected BUYER 1) is determined by this decision.

#### Choice 1 Decision Form

There is a 25 percent chance that you will be SELLER 1, the first seller in your group. In this case, your payment and the payment to BUYER 1 is determined by this Choice 1 decision.

**Table 1**  
Seller Chooses  
PRICE

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	
\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	Payment to seller
\$40	\$38	\$36	\$34	\$32	\$30	\$28	\$26	\$24	\$22	\$20	Payment to buyer

**Table 1 (continued)**  
Seller Chooses  
PRICE

\$22	\$24	\$26	\$28	\$30	\$32	\$34	\$36	\$38	\$40	
\$22	\$24	\$26	\$28	\$30	\$32	\$34	\$36	\$38	\$40	Payment to seller
\$18	\$16	\$14	\$12	\$10	\$8	\$6	\$4	\$2	\$0	Payment to buyer

Please indicate your price  $P$  here. Remember that you will receive  $P$  dollars if you choose the price  $P$ , and the buyer you are paired with receives  $40-P$  dollars. And remember to choose a price in two-dollar increments (that is, an even number).

**Choice 1:** Price Selection: \$ \_\_\_\_\_ (for ID 21) [ID 21 will be paired with ID \_\_\_\_ ]

**Choice 1:** Price Selection: \$ \_\_\_\_\_ (for ID 27) [ID 27 will be paired with ID \_\_\_\_ ]

**Choice 1:** Price Selection: \$ \_\_\_\_\_ (for ID 39) [ID 39 will be paired with ID \_\_\_\_ ]

**Choice 1:** Price Selection: \$ \_\_\_\_\_ (for ID 46) [ID 46 will be paired with ID \_\_\_\_ ]

While you fill out this Choice 1 form, I will draw pairs of bingo balls in order to determine who would be the SELLER 1 in your group if you turn out to be SELLER 2. I will do this now, using four bingo balls numbered 21, 27, 39 and 46. Please write down above on the right the pairings I announce. Notice that I still have not determined who is SELLER 1, who is SELLER 2, who is BUYER 1 and who is BUYER 2. I will determine that with another round of ball draws momentarily. All four participants still have an equal chance to be in each role.

### An Example (Part 2) [Strategy Method]

Now consider the **Choice 2** forms. Again, all four participants of the group fill out this form, but only one of the four participants in this group will be randomly selected to be SELLER 2, and her payment (and the payment to the randomly selected BUYER 2) is determined by this decision. For this example, I will again determine choices randomly using a ten-sided die and a coin flip. To speed up this example, I have already filled out most of the choices on the four forms. Again, I determined these numbers randomly using the same ten-sided die and coin.

<fill out the attached example Choice 2 forms now.>

At this point in the experiment, I would collect the Choice 2 forms from all of you.

I will now put all four bingo balls back into the cage and draw them to determine the buyer and seller roles for the group. Suppose that ID \_\_\_\_ is drawn first, so this participant is SELLER 1 for this group. Looking back at the pairings I drew during the first decision, this means that ID \_\_\_\_ is SELLER 2 for this group. Since this was already determined by the earlier draw, I will now remove that numbered bingo ball from the cage. Now I will draw from the cage again, and determine that ID \_\_\_\_ is BUYER 1 for this group. Finally, I remove the last ball, which indicates that ID \_\_\_\_ is BUYER 2 for this group.

In the experiment I will not announce the ID numbers on the drawn balls so that the buyer and seller identities remain anonymous. However, at the end of the experiment when I pay you, I will show you all the choice forms filled out by the three other members of your group, and I will indicate on these forms who is chosen to be SELLER 1, SELLER 2, BUYER 1 and BUYER 2. I will fold the top of each of these forms so the ID numbers will not be visible.

Now let's determine the monetary payments for this example. Since ID \_\_\_\_ is the first seller, her payment is determined by her **Choice 1** decision. Therefore, she earns \$\_\_\_\_\_, and ID \_\_\_\_ (who is BUYER 1) earns  $\$40 - \$\_\_\_ = \$\_\_\_\_\_\_.$

Since ID \_\_\_\_ is the second seller, his payment is determined by his **Choice 2** decision. Look at the Choice 2 example form we filled out for ID \_\_\_\_\_. As you can see, based on the first seller ID \_\_\_\_ Choice 1 of \$\_\_\_\_\_, we pick the Choice 2 of \$\_\_\_\_\_ from this form. Therefore, ID \_\_\_\_ earns \$\_\_\_\_\_, and ID \_\_\_\_ (who is BUYER 2) earns  $\$40 - \$\_\_\_ = \$\_\_\_\_\_\_.$

After these earnings are determined, I will call all the participants individually to the front of the room to privately inform them if they are the first seller (SELLER 1), the second seller (SELLER 2), BUYER 1 or BUYER 2, and show them the forms filled out by the other 3 members of their group. I will then also pay them (privately), in cash. Are there any questions before we begin?

### An Example (Part 2) [Non-Strategy Method]

Now consider the **Choice 2** forms. Again, all four participants of the group fill out this form, but only one of the four participants in this group will be randomly selected to be **SELLER 2**, and her payment (and the payment to the randomly selected **BUYER 2**) is determined by this decision. For this example, I will again determine choices randomly using a ten-sided die and a coin flip. Before we select these prices, let's fill in the **Choice 1** prices of the paired participants from the random draws that I just completed. You will learn the **Choice 1** decision of the person you are paired with before you make your **Choice 2** decision.

<fill out the attached example **Choice 2** forms now.>

At this point in the experiment, I would collect the **Choice 2** forms from all of you.

I will now put all four bingo balls back into the cage and draw them to determine the buyer and seller roles for the group. Suppose that ID \_\_\_\_ is drawn first, so this participant is **SELLER 1** for this group. Looking back at the pairings I drew during the first decision, this means that ID \_\_\_\_ is **SELLER 2** for this group. Since this was already determined by the earlier draw, I will now remove that numbered bingo ball from the cage. Now I will draw from the cage again, and determine that ID \_\_\_\_ is **BUYER 1** for this group. Finally, I remove the last ball, which indicates that ID \_\_\_\_ is **BUYER 2** for this group.

In the experiment I will not announce the ID numbers on the drawn balls so that the buyer and seller identities remain anonymous. However, at the end of the experiment when I pay you, I will show you all the choice forms filled out by the three other members of your group, and I will indicate on these forms who is chosen to be **SELLER 1**, **SELLER 2**, **BUYER 1** and **BUYER 2**. I will fold the top of each of these forms so the ID numbers will not be visible.

Now let's determine the monetary payments for this example. Since ID \_\_\_\_ is the first seller, her payment is determined by her **Choice 1** decision. Therefore, she earns \$ \_\_\_\_\_, and ID \_\_\_\_ (who is **BUYER 1**) earns  $\$40 - \$\_\_\_\_\_\_ = \$\_\_\_\_\_\_$ .

Since ID \_\_\_\_ is the second seller, his payment is determined by his **Choice 2** decision. Therefore, he earns \$ \_\_\_\_\_, and ID \_\_\_\_ (who is **BUYER 2**) earns  $\$40 - \$\_\_\_\_\_\_ = \$\_\_\_\_\_\_$ .

After these earnings are determined, I will call all the participants individually to the front of the room to privately inform them if they are the first seller (**SELLER 1**), the second seller (**SELLER 2**), **BUYER 1** or **BUYER 2**, and show them the forms filled out by the other 3 members of their group. I will then also pay them (privately), in cash. Are there any questions before we begin?

**Choice 1 Decision Form**

There is a 25 percent chance that you will be SELLER 1, the first seller in your group. In this case, your payment and the payment to BUYER 1 is determined by this Choice 1 decision.

**Table 1**  
Seller Chooses  
PRICE

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	
\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	Payment to seller
\$40	\$38	\$36	\$34	\$32	\$30	\$28	\$26	\$24	\$22	\$20	Payment to buyer

**Table 1 (continued)**  
Seller Chooses  
PRICE

\$22	\$24	\$26	\$28	\$30	\$32	\$34	\$36	\$38	\$40	
\$22	\$24	\$26	\$28	\$30	\$32	\$34	\$36	\$38	\$40	Payment to seller
\$18	\$16	\$14	\$12	\$10	\$8	\$6	\$4	\$2	\$0	Payment to buyer

Please indicate your price  $P$  here. Remember that you will receive  $P$  dollars if you choose the price  $P$ , and BUYER 1 will receive  $40-P$  dollars. And remember to choose a price in two-dollar increments (that is, an even number ranging between 0 and 40).

**Choice 1:** Price Selection: \$ \_\_\_\_\_

**Choice 2 Decision Form [Strategy Method]**

There is a 25 percent chance that you will be SELLER 2, the second seller in your group. In this case, your payment and the payment to BUYER 2 is determined by this Choice 2 decision. The Choice 1 decision of the other seller in your group determines the payment to some other buyer (namely, BUYER 1).

Please indicate 21 prices in the table below. If you are the second seller, then one of the 21 prices will determine your payment, depending on the price Choice 1 made by the first seller in your group. In particular, I will select the one price that determines your payment that corresponds to the choice made by the first seller. Remember to choose a price in two-dollar increments (that is, an even number ranging between 0 and 40).

**Table 1**

Seller Chooses  
PRICE

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	
\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	Payment to seller
\$40	\$38	\$36	\$34	\$32	\$30	\$28	\$26	\$24	\$22	\$20	Payment to buyer

**Table 1 (continued)**

Seller Chooses  
PRICE

\$22	\$24	\$26	\$28	\$30	\$32	\$34	\$36	\$38	\$40	
\$22	\$24	\$26	\$28	\$30	\$32	\$34	\$36	\$38	\$40	Payment to seller
\$18	\$16	\$14	\$12	\$10	\$8	\$6	\$4	\$2	\$0	Payment to buyer

If the first seller makes a <b>Choice 1</b> price selection of	Then I will choose a <b>Choice 2</b> price of
\$0	\$
\$2	\$
\$4	\$
\$6	\$
\$8	\$
\$10	\$
\$12	\$
\$14	\$
\$16	\$
\$18	\$
\$20	\$

If the first seller makes a <b>Choice 1</b> price selection of	Then I will choose a <b>Choice 2</b> price of
\$22	\$
\$24	\$
\$26	\$
\$28	\$
\$30	\$
\$32	\$
\$34	\$
\$36	\$
\$38	\$
\$40	\$



**Choice 2 Decision Form [Non-Strategy Method]**

There is a 25 percent chance that you will be SELLER 2, the second seller in your group. In this case, your payment and the payment to BUYER 2 is determined by this Choice 2 decision. The Choice 1 decision of the other seller in your two-person group determines the payment for some other buyer (namely, BUYER 1).

The Choice 1 price decision made by the person you are paired with is \$ \_\_\_\_\_. If you turn out to be SELLER 2, this person will be SELLER 1.

**Table 1**  
Seller Chooses  
PRICE

\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	
\$0	\$2	\$4	\$6	\$8	\$10	\$12	\$14	\$16	\$18	\$20	Payment to seller
\$40	\$38	\$36	\$34	\$32	\$30	\$28	\$26	\$24	\$22	\$20	Payment to buyer

**Table 1 (continued)**  
Seller Chooses  
PRICE

\$22	\$24	\$26	\$28	\$30	\$32	\$34	\$36	\$38	\$40	
\$22	\$24	\$26	\$28	\$30	\$32	\$34	\$36	\$38	\$40	Payment to seller
\$18	\$16	\$14	\$12	\$10	\$8	\$6	\$4	\$2	\$0	Payment to buyer

Please indicate your price  $P$  here. Remember that you will receive  $P$  dollars if you choose the price  $P$ , and BUYER 2 will receive  $40 - P$  dollars. And remember to choose a price in two-dollar increments (that is, an even number ranging between 0 and 40).

**Choice 2:** Price Selection: \$ \_\_\_\_\_