Experimental Instructions for

Fairness Has Less Impact When Agents Are Less Informed

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Experimental Instructions

Prior to participating in the study, subjects consent to participate. The study consisted of four parts. In part 1, subjects played a take-it-or-leave-it offer game for 30 rounds. After that, subjects answered additional questions that depended on their treatment and role. Table 1 shows these additional questions.

Table 1: Additional Experimental Questions

		Buyer				Seller			
		II	**SK**	**BK**	**CI**	**II**	**SK**	**BK**	**CI**
Part 1	Offer Game (30 Rounds)	✓	✓	✓	✓	✓	✓	✓	✓
Part 2	Given available information, report the probability offers got accepted. (10 Rounds)	✓	✓	✓	✓				
	For each cost and offer, report the probability that the buyer had $V = 70$. (10 Rounds)					✓		✓	
	Questions to assess seller's perception of a fair offer. (10 Questions)						✓		✓
	Given 50% probability of being assigned a risky payoff (X-30 with 50% and X-10 with 50%) versus non-risky payoff (70-X), what is your ideal X? (1 Round)						✓		✓
	Choose between your ideal X and another option with a different X. (Some options contain additional pay.) (4 Rounds)						✓		✓
Part 3	Buyer (seller) will choose between seeing or not seeing the cost of the seller (value of the buyer) in each of the last 10 rounds of the bargaining game. (Some options contain additional pay.) (10 Rounds)	✓	✓			✓		✓	
	Buyer (seller) will choose between letting their partner see or not see their value (cost) in each of the last 10 rounds of the bargaining game. (Some options contain additional pay.) (10 Rounds)			✓			✓		
Part 4	Show results and reveal payment	✓	✓	✓	✓	✓	✓	✓	✓

Notes: Table 1 shows the additional questions that each type of subject answered after the offer game (part 1). Only data from part 1 and buyer's data from part 2, in which all subjects in the role of buyer performed the same task, are used in this paper.

Participants in all four treatments were provided the following instructions about the game:

This is a study of individual decision-making and behavior. Money earned will be paid to you in cash at the end of this study.

In addition to your $5 show up fee, you will be paid a $10.50 completion fee when you finish the study, and you will be paid in cash your earnings from one randomly selected round of the trading game, which is described below.

TRADING GAME

In this study, you will play a trading game 30 times. The trading game involves buyers and sellers. You will either be a seller or a buyer and will be in that role for the entire study. In each round of the trading game, you will be randomly paired with a buyer (if you are a seller) or a seller (if you are a buyer) and will only be able to trade with that person in that round.

In each round of the trading game, you will be randomly paired with a new buyer or seller.

In each round of the trading game, the buyer has the opportunity to buy a good from the seller. In each round, the good has a value to the buyer and a cost to the seller to produce. These values and costs are denoted in experimental units.

Each experimental unit is worth $0.50.

If the good is not bought, both the buyer and the seller earn 0 experimental units in that round of the trading game.

If the good is bought, the buyer earns the buyer's value of good in that round minus the price paid to the seller in that round in experimental units, and the seller earns the price paid to the seller in that round minus the cost of producing the good in that round in experimental units.

COSTS AND VALUES

At the start of each round of the trading game, the computer randomly selects the seller's cost of producing the good and the buyer's value of the good.

The seller's cost of producing the good in each round will be either 10 experimental units or 30 experimental units, each with a 50% probability of being randomly selected in each round of the trading game.

The buyer's value of the good in each round will be either 70 experimental units or 90 experimental units, each with a 50% probability of being randomly selected in each round of the trading game.

EACH ROUND OF THE TRADING GAME

At the start of each round of the trading game, buyers and sellers will be paired for the opportunity to trade.

Each seller will be told his or her randomly selected cost of producing the good for the round, and each buyer will be told his or her randomly selected value of the good for the round.

[***Complete Information*** **Treatment Only:**] Each seller will be told the buyer's value of the good and each buyer will be told the seller's cost of producing the good.

[***Seller Knows*** **Treatment Only:**] Each seller will be told the buyer's value of the good. Buyers will not be told the seller's cost of producing the good.

[***Buyer Knows*** **Treatment Only:**] Each buyer will be told the seller's cost of producing the good. Sellers will not be told the buyer's value of the good.

[***Neither Knows*** **Treatment Only:**] Sellers will not be told the buyer's value of the good. Buyers will not be told the seller's cost of producing the good.

Then, the buyer will offer a price in experimental units for the good. This is the only offer the buyer can make. This offer price must be less than or equal to the buyer's value of the good.

Then, the seller can accept or reject the price offered by the buyer. An offer price that is less than the seller's cost of producing the good must be rejected.

If the seller rejects the price, that round of the game is over and each player earns 0 experimental units in that round.

If the seller accepts the price, then the good is traded at that price. The buyer earns the buyer's value of the good in that round minus the price. The seller earns the price minus the seller's cost of producing the good in that round.

After the seller decides whether to accept or reject the price, the round ends. You will be shown your experimental earnings for that round.

As noted above, in each round, the buyer can only offer one price and the seller can only accept or reject the offer.

The identity of all buyers and sellers will remain anonymous. No other participant will ever know what decisions you have made or how much money you earned in the study.

SUMMARY

Once again:

- You will play a trading game 30 times.
- You are a seller or buyer and will remain in that role for all 30 rounds.
- In each round you will be randomly paired with a new buyer or seller.
- In each round the seller will have a cost of producing the good, C, which is either 10 or 30 experimental units, each with a 50% probability of being randomly selected in each round.
- In each round the buyer will have a value of the good, V, which is either 70 or 90 experimental units, each with a 50% probability of being randomly selected in each round.
- Sellers will not be told the buyer's value of the good. Buyers will not be told the seller's cost of producing the good.
- In each round, the buyer can offer a price for the good, P.
- In each round, the seller can accept or reject that price.
- If the price is rejected, then in that round the buyer and the seller each earn 0 experimental units.
- If the price is accepted, then in that round the buyer earns the buyer's value of the good minus the price, V–P, and the seller earns the price minus the seller's cost of producing the good, P–C.
- One randomly selected round of the trading game will be chosen for payment and each experimental unit earned in that round is worth $0.50.

- Earnings will be paid in cash at the end of the study.
- The identity of all buyers and sellers will remain anonymous. No other participant will ever know what decisions you have made or how much money you earned in the study.

During the experiment, please do not use your phone or take out any reading material.

When we start the study, you will find out whether you are a buyer or a seller. Half of you will be buyers and half of you will be sellers. During each round, you will see a waiting screen while other participants make their decisions. Specifically, when we start the experiment, the sellers will see a waiting screen while the buyers make their decisions. Then, the buyers will see a waiting screen while the sellers make their decisions.

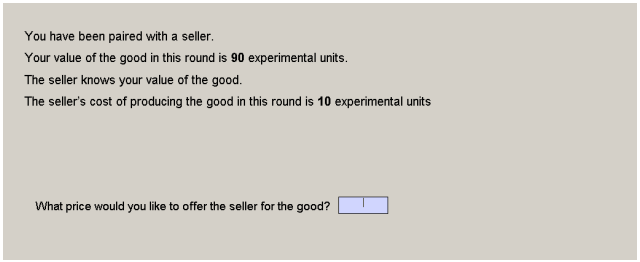
The experiment proceeds at the pace of the slowest participant. Therefore, after you have made your decision, please make sure to click any button on the screen promptly.

Figure 1 presents the buyer's offer decision screen in panel (a) and the seller's decision screen to accept or reject the offer in panel (b) for the *Complete Information* treatment. Figure 3 presents the respective buyer and seller's decision screens for the *Neither Knows* treatment. After the seller's decision is made, payoff outcomes were revealed. Figure 2 presents the buyer's and seller's outcome screens in the *Complete Information* treatment and Figure 4 presents the outcome screens in the *Neither Knows* treatment.

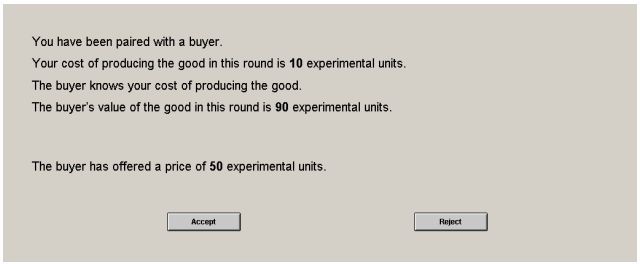
After participants finished the game, they proceeded to part 2 of the study where buyers were asked, using a Becker-DeGroot-Marschak (BDM) method, to report the probability that an offer was accepted. Buyers were provided the following instructions:

You will now be asked a series of questions about one of the last 10 rounds of the trading game and you will earn money based on your answers.

For one of the last 10 rounds of the trading game, you will be shown, one at a time, the value of each buyer, the cost of the seller, and the price the buyer offered for this session of the study.

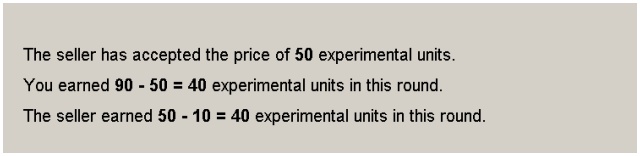


(a) Buyer's Offer Decision Screen

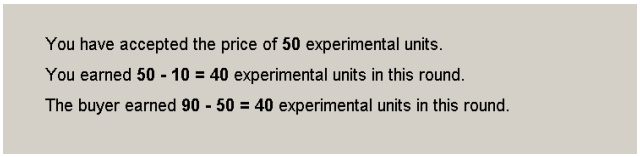


(b) Seller's Acceptance Decision Screen

Figure 1: Complete Information Treatment Decision Screens

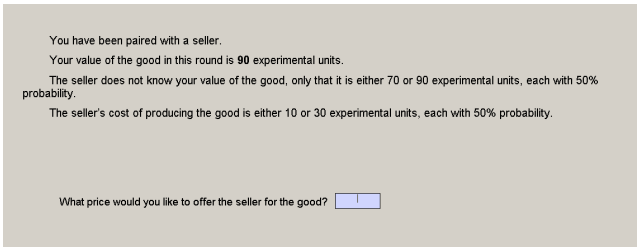


(a) Buyer's Outcome Screen

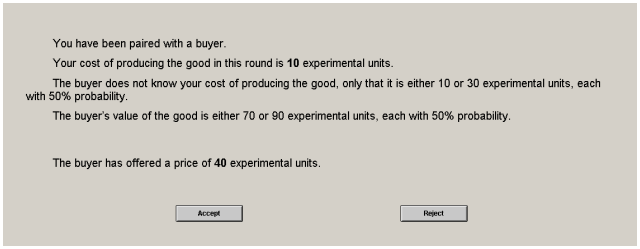


(b) Seller's Outcome Screen

Figure 2: Complete Information Treatment Outcome Screens

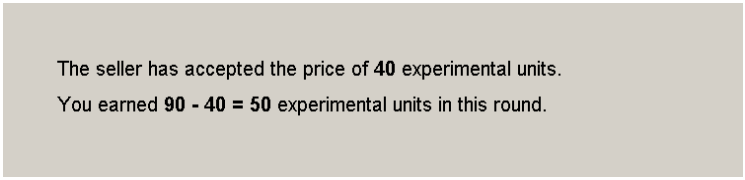


(a) Buyer's Offer Decision Screen

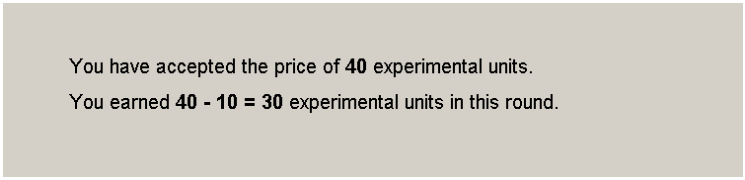


(b) Seller's Acceptance Decision Screen

Figure 3: Neither Knows Treatment Decision Screens



(a) Buyer's Outcome Screen



(b) Seller's Outcome Screen

Figure 4: Neither Knows Treatment Outcome Screens

For each value, cost, and offer, you will be asked to report the probability this offer got accepted.

This probability will be a percentage that can be from 0 to 100.

You will be paid based on the accuracy of your answer.

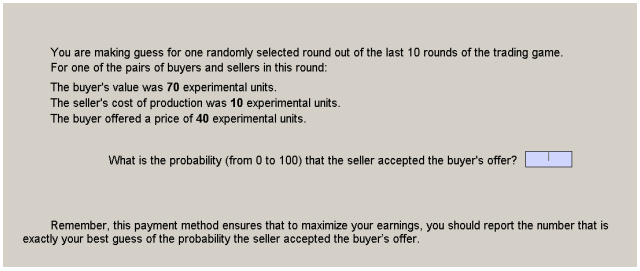
For one randomly selected choice, you will have the opportunity to earn $5. You will either be paid $5 if the seller accepted the buyer's offer or you will be paid $5 with the probability of a random number between 0 and 100.

You must decide how high the random number needs to be for you to be indifferent between getting paid by the random number of by the seller accepting the offer.

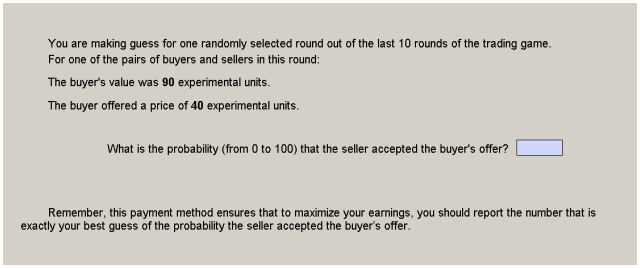
For each guess, the computer will pick a random number between 1 and 100. If the random number the computer picks is above the number you have chose, then you will earn $5 with the probability of the random selected number. If the random number is equal to or below the number you have selected, you will earn $5 if the seller accepted the offer.

This payment method ensures that to maximize your earnings, you would report the number that is exactly your best guess of the probability the seller accepted the buyer's offer.

Figure 5 presents the buyer's belief reporting screen for the *Complete Information treatment* in panel (a) and for the *Neither Knows* treatment in panel (b).



(a) Buyer's Belief Reporting Screen in the *Complete Information* treatment



(b) Buyer's Belief Reporting Screen in the *Neither Knows* treatment

Figure 5: Buyer's Belief Reporting Screens