An Experimental Investigation of Trust and Sequential Trade

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Abstract: This paper reports two variations of the trust game, which can be viewed as a model of trade. The experiments extend what is known about behavior in this game by framing the task as a buyer-seller interaction, maintaining payoff privacy, and allowing the cooperative outcome to be endogenously determined through price negotiation. The two game variants differ by the order of moves, which previous research suggests is an important factor in the likelihood of observing cooperation. However, this behavioral pattern is not replicated. While considerable trust is observed, there is little cooperation. Further, the results indicate that the negotiated price does not impact the likelihood of reaching the cooperative outcome.

Keywords: trust, reciprocity, sequential trade, payoff privacy, bilateral negotiations

JEL Classifications: C7, C9, L1

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Trade can be mutually welfare improving, but it requires each party to forgo something of value. Thus, a trader often risks a loss if the trade is not successfully completed. A sequential trade is characterized as follows. Person 1 gives item A to person 2. Upon receipt of item A, person 2 gives item B to person 1. When agents consider a trade, they weigh the gain from a successful trade against the loss from an unsuccessful one. The risk for person 1 is that upon receipt of item A, person 2 does not provide item B. It is the price (or relative amounts to be traded) that determines the size of the potential gain and loss. Ultimately, this price may also affect the likelihood that a trade is successful. In cases where there is no external enforcement, the first party must trust the second party or else there will not be trade and a socially sub-optimal outcome will be realized. Disappointingly, the standard self-interested model suggests that the second mover would not complete the trade and, anticipating this, the first mover should not attempt to trade. Fortunately, casual observation of both the naturally occurring world and controlled laboratory experiments does not support that conclusion.

The trust game introduced by McCabe and Smith (2000) has the structure of a sequential trade as described by Coricelli, McCabe and Smith (2000) and Deck (2007). In the original trust game, the first mover can decide to either end the game with both parities receiving $10 or continue the game with the total payoff increased to $40. If the first mover does not end the game, the second mover can decide to either keep the entire $40 or keep $25 and return $15 to the first mover. Behavior in the trust game is fairly robust; Cox and Deck (2005) replicated the results of McCabe and Smith (2000). Approximately half of the first movers trust and about two-thirds of the second movers cooperate. However, second mover behavior is impacted by the level of social distance. Cox and

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1 Various institutions have evolved to protect against such risks. These institutions include the court system, escrow accounts, and reputation mechanisms. However, there are many (potential) trading situations in which these institutions are not available or practical.

2 Items A and B could be goods, services, or monies. If item A is money and item B is not then person 1 is termed the buyer and person 2 is termed the seller. If item B is money and item A is not then the roles are reversed.

3 The trust game is a two stage centipede game. It can also be viewed as a simplified version of the investment game of Berg, Dickhaut, McCabe (1995) where the first mover can pass the entire endowment which is tripled and then allocated by the second mover.

4 This behavior by second mover was initially identified as reciprocity, a hypothesis rejected by Cox and Deck (2005).
Deck (2005) report a reversal of player 2 behavior when the experimenter could not identify who took what action.

As detailed in Deck (2007), the first mover in the trust game is a stylized seller who incurs a $10 cost to provide an item valued by the buyer at $30 in exchange for a $15 payment. This ordering of moves is important. In the standard version of the trust game, the second mover buyer providing payment makes a one for one transfer to the first mover seller. If the order was reversed so that the buyer initiated the trade, then the second mover is making a one for three transfer to the first mover. The difference is that surplus is generated when the good is exchanged, but not when the payment is made. Work by Andreoni and Vesterlund (2001) and Andreoni and Miller (2002) suggests that this change in the relative cost of giving should lead relatively greater cooperation in the reversed trust game, a result verified by Deck (2007). This may explain why buyers move first in many trades, a pattern denoted by the common expression “sorry, no CODs.”

The trust game as studied previously is only a partial representation of naturally occurring sequential trade. The surplus division (i.e. the price) is fixed and the participants are given complete information regarding payoffs as all endowments, values, and costs are public information. Further, previous experiments typically have been intentionally neutral and have presented the task via an abstract decision tree. This paper moves towards a more complete story of sequential trade by imbedding endogenously determined variations of the trust game into a richer experimental design. The next section details that experimental design and a separate section presents the behavioral results. A final section concludes.

**Experimental Design and Procedures**

The experiments involve a variation of the trust game and a related game where the order of play is reversed. Figure 1 describes the seller first trust game (left panel) and the buyer

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5 See and McCabe, Rigdon, and Smith (2003) for a variation of the trust game in which the transaction can be thought to involve two goods with surplus generated at both stages.
first modified trust game (right panel) in terms of endowments of the buyer and seller ($E_B$ and $E_S$, respectively), value to the buyer ($V$), cost to the seller ($C$), and the price ($P$). In the experiments, the induced value of the good was $V = $15 and the induced cost of producing and “shipping” the good was $V = $5. The buyer was endowed with $E_B = $15 and the seller was endowed with $E_S = $10.\(^6\) As was explained to the subjects, all amounts are in $US.

Based upon the previous findings of Andreoni and Vesterlund (2001), Andreoni and Miller (2002), and Deck (2007), the difference in order is expected to affect second mover behavior. By making the payment, a second mover buyer increases the sellers payoff by $P$, exactly the amount that the buyer forgoes. On the other hand, second mover sellers give up $C$ to transfer $V$ to the buyer. As long as trade is mutually beneficial it must be that $V \geq P \geq C$. Hence a seller knows that each forgone dollar generates more than one dollar for the buyer. This anticipated pattern is formally stated as the second mover role hypothesis (SMRH).

**SMRH - H\(_0\):** The probability that second movers complete an initiated trade is not dependent upon the role of the second mover.

\(^6\) In the original trust game of McCabe and Smith (2000) the seller moved first and the parameters were $E_B = E_S = $10, $V = $30, $C = $10, and $P = $15. See Deck (2007) for a discussion of the impact on behavior of changes to these parameters including asymmetric endowments.
Second mover sellers are more likely to complete initiated trades than are second mover buyers.

Previous trust game experiments have assumed a fixed price. In the current experiments prices were determined through a bargaining process. Subjects were randomly matched with someone in the opposing role and had 5 minutes to negotiate a price. There was no imposed order of offers nor was there an improvement rule. However, prices were required to be whole dollar amounts and a bankruptcy condition was imposed. Sellers could not post or agree to a price below $C = $5 and buyers could not post or accept a price above $V = $15. A contract was only reached when one party accepted the price put forward by the other party. If time expired without a contract being reached, both subjects received their respective endowments.

Given that first movers have to either propose or accept the price before playing the extensive form game, it is reasonable to expect greater “trust” than what is typically observed. That is, first movers will be more likely to initiate trade by either shipping the good or sending payment relative to the reported level of trust in previous experiments. This pattern is written formally as the first mover hypothesis (FMH).

**FMH - H₀**: The probability that the first mover will trust the second mover will be the same as what was reported in Deck (2007) for the role appropriate trust game.

**FMH - H₁**: The probability that the first mover will trust the second mover will be greater than what was reported in Deck (2007) for the role appropriate trust game.

The endogenous price may also affect the likelihood that second movers actually complete a trade. Consider a second mover buyer’s decision to make a payment. A buyer may be more likely to send a $6 payment than a $14 payment even though both are one for one transfers. Similarly, a second mover seller may be more willing to forgo $C the larger the payment that has been received. This forms the basis of the second mover price hypothesis (SMPH).

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7 Sellers could not suggest a price below the current price proposed by the buyer nor could a buyer suggest a price above the current price proposed by the seller.

8 These limits were private information.
SMPH - Ho: *The probability that a second mover will complete a trade does not depend upon price.*

SMPH - Ha: *Second movers will be more likely to complete a trade the more favorable the price is to the second mover.*

Whether or not the likelihood that second movers complete an initiated trade depends on the agreed upon price, a price agreement depends upon the first mover’s beliefs that the trade will be completed at that price as well as the potential payoffs associated with the price. Hence, a first mover’s risk attitude is an important determinant of the price. If first movers anticipate that second movers are more likely to complete trades where the price favors the second mover, then first movers find themselves in a situation similar to a first price auction; one could ask for a larger but less likely payoff or one that is smaller and more likely. Such a belief is commonly expressed by the old adage that “if a deal looks too good to be true, then it probably is.” At the same time, the second mover must be agreeable to the negotiated price as well, and thus the price reflects the second mover’s distributive preferences and intended action. A second mover that plans to defect would be willing to agree to any price, but would want to act like a well intentioned second mover so as not to arise the suspicion of the first mover. Given the intricacies of the problem, no specific price predictions are made.

This experiment differs from previous studies in three additional ways. First, the experiment was framed as an opportunity for a buyer and seller to trade. The directions, included in the appendix, used the terms buyer, seller, value, cost, price, etc. The trust game was presented in extensive form with the branches labeled “Pay” and “Not Pay” for the buyer and “Ship” or “Not Ship” for the seller. Figure 2, shows an example screen for a buyer who is moving second. A market frame has been used for the ultimatum game. In the ultimatum game, the proposer is a seller who picks a price and the responder can accept the price and purchase the good resulting in a split of the gain from trade or can reject the offer in which case both parties gain nothing. The results from this market framing of the ultimatum game are mixed. Hoffman, McCabe, Shachat, and Smith
(1994) report that it leads to more self-interested behavior for both parties; Cox and Deck (2005) fail to replicate that result.

Figure 2. Example Screen for Second Mover Buyer

A second novel feature of the experiment is that information was private. That is, a buyer knew her own endowment and value but not the endowment or cost of the seller. Similarly, a seller knew his cost and endowment but not the buyer’s value and endowment. As shown in Figure 2, buyers literally observed $E$ and $C$ to denote the seller’s endowment and cost. The buyer knew that her failure to pay resulted in the seller earning $E - C$ while payment resulted in the seller receiving $E - C +$ the amount of the price. Previous work by McCabe, Rassenti, and Smith (1998) found behavior more consistent with self interest when payoffs in abstract extensive form games were private. The third distinction is that the subjects did not receive a separate participation payment; this amount was included in their endowment as was made explicit in the directions (see appendix)

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9 McCabe, Rassenti, and Smith (1998) observed that with repeated play behavior converged to the self interested predictions.
During the bargaining process, subjects could adjust the game displayed on their screen to reflect any price between 0 and 25. Figure 2, shows the decision tree for a price of $P = 5$. If and when a contract price was reached, the trust game reflected the contract price and could not be adjusted. Subjects then made decisions by clicking on the branches of the extensive form game as in previous studies. Play in the game proceeded sequentially. The first mover could end the game by not trading, which resulted in both parties receiving their endowments. If the first mover initiated trade, the second mover could either complete the trade or not. Subjects went through this process once, in only one role and one order. Failure to trade did not result in another opportunity to trade with the same or another party.

The experiments were conducted at a state university and subjects were drawn from the population of business school undergraduates. For each of the 12 sessions, groups of between 8 and 12 subjects entered the laboratory and were allowed to sit at any active computer station. Subjects participated in a single session and had not participated in any related experiments. The computer stations were separated by privacy dividers so that no one could see any other subject or any other active computer screen. Subjects read role and order specific directions that were placed at the workstations prior to subjects arriving for the experiment.\textsuperscript{10} After all subjects had completed the directions and were given the opportunity to ask questions, additional directions explaining the double blind payoff procedures were distributed.\textsuperscript{11} The subjects drew sealed envelopes containing mailbox keys with which they would anonymously collect their cash earning at the conclusion of the experiment. Once the experimenters left the room, subjects opened their envelopes and entered the identification code on the mailbox key in their computer. After all codes were entered, the experiment began. When the payoffs were determined, money was placed in envelopes, which were in turn placed in the mailboxes. Subjects were allowed to collect their earnings outside the view of the experimenter and leave.

\textsuperscript{10} The experimenters (and not the other subjects) knew the role assigned for each workstation, but there were multiple people in each role in each session. Thus, decision makers were able to maintain their anonymity from the experimenter.

\textsuperscript{11} The procedures follow exactly those of Cox and Deck (2005) and Deck (2007).
Sessions lasted approximately 20 minutes, although subjects were recruited for half an hour.

**Experimental Results**

A total of 62 subject pairs completed the experiment; 31 pairs per trading order. Of these 62 pairs, 23 percent resulted in a successful mutually beneficial trade. While this number is substantially lower than the original results of McCabe and Smith (2000), the study introduces at least three design features that might be expected to weakly lower cooperation: market framing, private payoff information, and the double blind procedure. The observed cooperation rate is similar to the 29 percent rate reported by Cox and Deck (2005) for the double blind trust game. The overall rate of trade success did not differ by order based upon a two sample proportions test with a null hypothesis of equality against the two sided alternative (p-value = 0.224).

In this experiment, a subject pair could fail to make a successful trade for three reasons; the second mover may not complete an initiated trade, the first mover may decide to not initiate a trade, and the parties may not be able to agree upon a price. This third reason is not present in the typical trust game, but was not a primary reason for trade failure here. Only 16% of the total pairs could not reach an agreement regarding price in the allotted time; this includes 4 pairs when the seller moved first and 6 pairs when the buyer moved first, a difference that is not significant based upon a two sample proportions test of equal proportions against the two sided null (p-value = 0.490).

First movers were considerably more likely to trust their counterpart and initiate a trade as compared to previously reported results. Of the first mover sellers who reached a price agreement, 89 percent shipped the item. Of the first mover buyers who reached a price agreement, 68 percent sent the payment. For comparison, these numbers were 56 percent and 35 percent in Deck (2007). In a formal test of FMH, the differences from previous results are significant (p-values of 0.004 and 0.002, respectively). However, as in Deck (2007), order has a significant impact on trust; sellers were more likely to initiate trade (p-value = 0.065). Given that the price could not be less than $C = 5$, first mover sellers
risked a smaller loss than did first mover buyers, which could explain this result. The results do not substantively change if the first movers in pairs that did not reach a price agreement are combined with the first movers who do not initiate trade.

Surprisingly, second mover behavior did not vary with trading order (p-value = 0.591 for test of equal proportions against the two sided alternative as stated in SMRH). Of the second mover buyers who received the item, only 38 percent subsequently sent payment. For second mover sellers who received payment, only 29 percent went ahead and shipped the item. The lack of a trading order effect contradicts Deck (2007) and nominally the comparison runs in the opposite direction from what is predicted by Andreoni and Vesterlund (2001) and Andreoni and Miller (2002).

Figure 3 shows the behavior observed during the experiment for both orderings. There is no discernable pattern. The average agreed upon price is $10.78 when the seller moves first and it is $11.36 when the buyer moves first. This difference is not significant (t statistic = 0.656). For comparison, the original trust game provides 75 percent of the gain to the second mover buyer, which translates to a price of $7.50 in this context. A price of $10 would split the gains evenly regardless of order. While prices were relatively higher than the equal split level in both conditions, the difference is not dramatic. For first mover buyers who actually sent their payment, the average agreed upon price was $10.41 and for first mover sellers who actually shipped the good it was $11.29. This difference remains insignificant (t statistic = -0.940). Evident from Figure 3 is the fact that for most of the instances in which a trade was not initiated at the agreed upon price, the first mover had no opportunity for gain. One possible explanation is that these subjects reached the agreement with no intention of following through with the deal, but simply did not wish to bargain any longer or did not want to fail to reach a price in the allotted time.

The price does not appear to impact the likelihood that a trade is completed, a test of SMPH. The average price second mover buyers paid for received goods was $11.11 while the average price for which second mover buyers did not send payment upon receipt of the good was $10.40. This difference is not significant (U = 122, p-value =
The average price received by second mover sellers for goods that were subsequently delivered was $10.80 and the average payment for orders left unfilled was $10.25. Again, this difference is not significant (U = 47, p-value = 0.4165). Thus, the expression that “if a deal looks too good to be true then it probably is” holds, technically. Such deals are unlikely to be true, but less favorable deals are unlikely to be true as well.

The data indicate that price has no strategic value for the first mover as it does not impact the likelihood of a successful trade. Even so, it seems reasonable that first movers would be relatively more concerned about the price given that all of the risk is borne by the first mover. There is some evidence that this is the case. Overwhelmingly, price agreements occurred as the result of a second mover accepting the price a first mover had proposed. 73% of first mover buyers set the price and 89% of first mover sellers set the price.13

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12 The comparison of first mover behavior is based upon a t-test. Given the relatively small number of observations, comparisons of second mover behavior are based upon the nonparametric Mann-Whitney test. In both cases, the null hypothesis is no effect and the alternative is two sided.

13 These percentages are based upon price agreements for which the first mover actually initiated trade, although they are similar if all price agreements are included. Due to a error in the computer program, the negotiation data were lost for some sessions.
Conclusion

Laboratory experiments are intended to inform researchers about behavior in the naturally occurring world. The trust game and the related investment game have received considerable attention from experimental economists. While previous work has discussed the trust game as a model of sequential trade, this paper reports experiments that explore this interpretation more directly. Here the game is framed to the subjects as the interaction of a buyer and a seller. Costs and values that would normally be private information in a naturally occurring trade are kept private. The price which determines how the potential gains from trade are to be shared is determined endogenously in practice and in the experiment.14

As compared to previous studies, first movers were far more likely to trust regardless of role. This is likely due to the endogenously determined price. Almost all accepted prices were initially proposed by the first mover and then accepted by the second mover, suggesting that first movers were quite concerned about the risk and rewards that were determined by the price.

Second movers were unlikely to complete a trade or in more typical trust game lingo second movers were unlikely to cooperate. This is similar to previous results from experiments with double blind payoff procedure. The role of the second mover did not impact the probability that an initiated trade was completed. This contradicts previous results. Surprisingly, price did not impact the likelihood that a trade was successfully completed.

14 There are some features of the experiment that are distinct from naturally occurring trades. One is the order of moves, which serves as a treatment in this study. Others include the double blind payoff procedure, the use of induced values, and the total inability of first movers to retaliate.
References


Appendix: Subject Directions - First Mover Seller

You are going to participate in an experiment like the one pictured below in which a “buyer” and “seller” have the opportunity to trade a fictitious good. In the experiment, you will have to make decisions that will have a direct impact on your cash payoff. The numbers represent the $US amounts that you and your randomly selected counterpart will be paid at the end of the experiment, including the $5 show-up fee that each of you is receiving for participating in this experiment.

You have been assigned the role of seller and your counterpart has been assigned the role of buyer. Your role will be clearly indicated on the top of your screen. To assist you, items on your screen that refer to you are highlighted in yellow, while information regarding your counterpart is in blue.

The seller (you) is endowed with $10 and the buyer (your counterpart) is endowed with $E. By incurring a cost of $5, you can produce and ship a good which the buyer values at $V. This information is contained in the tables at the top of the screen. Your counterpart does not know your endowment or cost and since no one knows their counterpart’s identity, “CP” is displayed on the buyer’s table.

As the seller, you will first have to decide to “Ship” or “Not Ship” the fictitious good. If you decide to “Not Ship” you will receive $10 and the buyer will receive $E. If you decide to “Ship” you will incur the $5 cost and the buyer will receive $V. At this point, the buyer would have to decide to “Pay” or “Not Pay.” If the buyer decides to “Pay”, you will receive $10 endowment - $5 cost = $5 and the buyer will receive $E + $V. If the buyer decides to “Not Pay”, you will receive $10 endowment - $5 cost + price = price + $5 and the buyer will receive $E + $V - price. If the buyer proposes any price, you can accept it by clicking on the “Accept Price of” button. If either of you accepts the price the other person proposed, the decision tree will reflect the agreed upon price and the experiment will proceed as described above.

The decision tree on the bottom portion of your screen contains all of this payoff information. The seller has the first decision and thus is at the first node of the decision tree. If the seller chooses to “Ship”, this leads to the second node at which the buyer will have to make a decision. If and when you need to make a decision “???” will appear beside each of your choices on decision tree. To make a decision, you click on the desired branch in the decision tree, which will highlight your selection in green. To confirm your decision you must click the green “Confirm” button that will appear on your screen.

So how is the price determined? It is determined by you and the buyer. To suggest a price, you can type it in the blue box at the top of the screen and press the “Propose Price of” button. After you do this, the price you proposed will be displayed as your proposed price and the buyer will be able to accept it. Any price the buyer proposes will be displayed in the purple box at the top of your screen and you can accept it by clicking on the “Accept Price of” button. If either of you accepts the price the other person proposed, the decision tree will reflect the agreed upon price and the experiment will proceed as described above.

While determining a price, you can see the decision tree for any price by using the dropdown tool just above the decision tree. The example screen image shown above has a price of $15. If neither of you accept a price within 5 minutes, you will receive $10, your counterpart will receive $E and neither of you will have any further decisions to make in this experiment. A clock counts down the remaining seconds.

You will only go through this process only once during this experiment. After all participants’ earnings have been determined as described above, you will receive your money and be dismissed from the experiment. If you have any questions, please raise your hand; otherwise please wait quietly.
Subject Directions – Second Mover Buyer

You are going to participate in an experiment like the one pictured below in which a “buyer” and “seller” have the opportunity to trade a fictitious good. In the experiment, you will have to make decisions that will have a direct impact on your cash payoff. The numbers represent the $US amounts that you and your randomly selected counterpart will be paid at the end of the experiment, including the $5 show-up fee that each of you is receiving for participating in this experiment.

You have been assigned the role of buyer and your counterpart has been assigned the role of seller. Your role will be clearly indicated on the top of your screen. To assist you, items on your screen that refer to you are highlighted in yellow, while information regarding your counterpart is in blue.

Buyer’s Screen

The seller (your counterpart) is endowed with $E and the buyer (you) is endowed with $15. By incurring a cost of $C, the seller can produce and ship a good which you value at $15. This information is contained in the tables at the top of the screen. Your counterpart does not know your endowment or value and since no one knows their counterpart’s identity, “CP” is displayed on the seller’s table.

The seller will first have to decide to “Ship” or “Not Ship” the fictitious good. If the seller decides to “Not Ship” you will receive $15 and the seller will receive $E. If the seller decides to “Ship” you will receive $15 value and the seller will incur the $C cost. At this point you would have to decide to “Pay” or “Not Pay.” If you decide to “Pay”, you will receive $15 endowment + $15 value - price = $30 - price and the seller will receive $E - $C + price. If you decide to “Not Pay”, you will receive $15 endowment + $15 value = $30 and the seller will receive $E - $C.

The decision tree on the bottom portion of your screen contains all of this payoff information. The seller has the first decision and thus is at the first node of the decision tree. If the seller chooses to “Ship”, this leads to the second node at which the buyer will have to make a decision. If and when you need to make a decision “???” will appear beside each of your choices on decision tree. To make a decision, you click on the desired branch in the decision tree, which will highlight your selection in green. To confirm your decision you must click the green “Confirm” button that will appear on your screen.

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You will only go through this process only once during this experiment. After all participants’ earnings have been determined as described above, you will receive your money and be dismissed from the experiment. If you have any questions, please raise your hand; otherwise please wait quietly.
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The seller (your counterpart) is endowed with SE and the buyer (you) is endowed with $15. By incurring a cost of $C, the seller can produce and ship a good which you value at $15. This information is contained in the tables at the top of the screen. Your counterpart does not know your endowment or value and since no one knows their counterpart’s identity, “CP” is displayed on the seller’s table.

As the buyer, you will first have to decide to “Pay” or “Not Pay” for the fictitious good. If you decide to “Not Pay” you will receive $15 and the seller will receive $E. If you decide to “Pay” you will forgo the price and the seller will receive that amount. At this point, the seller would have to decide to “Ship” or “Not Ship.” If the seller decides to “Ship”, you will receive $15 endowment + $15 value - price = $30 - price and the seller will receive $E - $C + price. If the seller decides to “Not Ship”, you will receive $15 endowment - price and the seller will receive $E + price.

The seller (your counterpart) is endowed with SE and the buyer (you) is endowed with $15. By incurring a cost of $C, the seller can produce and ship a good which you value at $15. This information is contained in the tables at the top of the screen. Your counterpart does not know your endowment or value and since no one knows their counterpart’s identity, “CP” is displayed on the seller’s table.

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You have been assigned the role of seller and your counterpart has been assigned the role of buyer. Your role will be clearly indicated on the top of your screen. To assist you, items on your screen that refer to you are highlighted in yellow, while information regarding your counterpart is in blue.

Seller’s Screen

The seller (you) is endowed with $10 and the buyer (your counterpart) is endowed with $E. By incurring a cost of $5, you can produce and ship a good which the buyer values at $V. This information is contained in the tables at the top of the screen. Your counterpart does not know your endowment or cost and since no one knows their counterpart’s identity, “CP” is displayed on the buyer’s table.

The buyer will first have to decide to “Pay” or “Not Pay” for the fictitious good. If the buyer decides to “Not Pay” you will receive $10 and the buyer will receive $E. If the buyer decides to “Pay” you will receive the price and the buyer will forgo that amount. At this point, you would have to decide to “Ship” or “Not Ship.” If you decide to “Ship”, you will receive $10 endowment - $5 cost + price = price + $5 and the buyer will receive $E+$V- price. If you decide to “Not Ship”, you will receive $10 endowment + price and the buyer will receive $E - price.

The decision tree on the bottom portion of your screen contains all of this payoff information. The buyer has the first decision and thus is at the first node of the decision tree. If the buyer chooses to “Pay”, this leads to the second node at which the seller will have to make a decision. If and when you need to make a decision “???” will appear beside each of your choices on decision tree. To make a decision, you click on the desired branch in the decision tree, which will highlight your selection in green. To confirm your decision you must click the green “Confirm” button that will appear on your screen.

So how is the price determined? It is determined by you and the buyer. To suggest a price, you can type it in the blue box at the top of the screen and press the “Propose Price of” button. After you do this, the price you proposed will be displayed as your proposed price and the buyer will be able to accept it. Any price the buyer proposes will be displayed in the purple box at the top of your screen and you can accept it by clicking on the “Accept Price of” button. If either of you accepts the price the other person proposed, the decision tree will reflect the agreed upon price and the experiment will proceed as described above. While determining a price, you can see the decision tree for any price by using the dropdown tool just above the decision tree. The example screen image shown above has a price of $15. If neither of you accept a price within 5 minutes, you will receive $10, your counterpart will receive $E and neither of you will have any further decisions to make in this experiment. A clock counts down the remaining seconds.

You will only go through this process only once during this experiment. After all participants’ earnings have been determined as described above, you will receive your money and be dismissed from the experiment. If you have any questions, please raise your hand; otherwise please wait quietly.