Supplementary Materials for: Putting Relational Contract Theory to the Test: Experimental Evidence

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1 Introduction

This document contains information about protocols, forms, experimental instructions, screen shots, comments about the experimental data along with documentation of variables to facilitate replication of results, and comments about the z-Tree source code used to conduct the experiments.

2 Protocols, Experimental Instructions, Permission Forms, and Record Sheets

The general experimental protocol is described in the main article. Additional details can be gleaned from the experimental instructions for Treatment E and Treatment PE0.80, which are attached below. We did not attach instructions for PE0.50 because they are identical to PE0.80 except for the change in continuation probability from 0.80 to 0.50. Additional details about the experiments are contained in the screen shots and comments before each screen shot in the screen shots section of this document.

We did not use slides and/or transparencies to present the instructions. The experimenter read the instructions aloud and each subject was provided with an individual hard copy enabling him/her to follow along.

Approved Consent Form

Research Project Number _____

For IRB Office Use Only

APPROVED
JUN 21 2013
EXPIRES 6-20-14
PURDUE UNIVERSITY
INSTITUTIONAL REVIEW BOARD

RESEARCH PARTICIPANT CONSENT FORM

Project Title: Agricultural Market Structure and Conduct, and Robust Contract Design

Investigator: Steven Wu, Dept. of Agricultural Economics, Purdue University

Purpose of Research: This is research to help understand how people make economic decisions, using human subjects as participants.

Specific Procedures to be Used: As a participant in the experiment, you will be asked to make economic decisions using a computer and complete a demographic questionnaire.

Duration of Participation: The entire experiment (including instructions) is expected to last less than 2 hours.

Risks to the Individual: You are advised that risks are minimal and are no greater than those encountered in everyday activities. There is risk of breach of confidentiality. Breach of confidentiality is a risk common to almost all research. Safeguards are in place to minimize this risk. For instance, your social security number or other identification numbers are not collected or stored. You will be assigned identification numbers which will have no value or meaning outside the laboratory. You will interact with other participants through these identification numbers rather than through your actual name. Moreover, your name will not be stored or linked to the dataset that contains the decisions made by participants.

Benefits to the Individual or Others: There is no direct benefit to you.

Compensation: If your earnings are less than $50, you will be paid in cash at the end of the experiment. For earnings greater than $50, business office policy specifies that a check will be issued through accounts payable. The amount of money you earn depends in part upon your decisions and decisions of other subjects in the experiment. The amount usually ranges between $12 and $45 per person with a maximum of $75. If you arrived on time, you are guaranteed to receive a show-up fee $5. You will receive the show-up fee even if you choose to withdraw from the experiment. In addition, you will start with a $5 account balance at the beginning of the experiment.

Confidentiality: Data from the experiment are recorded using randomly assigned identification numbers, so your decisions will not be stored in the analysis dataset. The data will be stored indefinitely on a secure location on campus in one of the researcher's computers and will be accessed only by them. The data may be used in future research. Your name, student identification number and address may be provided to the business office of Purdue University for the purpose of facilitating your payment for participating in this study. If you earn more than $50, business department policy also requires you to provide a social security number or tax ID number. You will need to complete a Participant Payment Disclosure Form in order to be paid. Because the experiment is in a group, other subjects will know that you participated, and in some cases may learn some of the choices you make. The project's research records may be reviewed by United States Department of Agriculture (USDA/NIFA) and Purdue University, which have funded this project. Research records may also be reviewed by departments at Purdue University responsible for regulatory and research oversight.

Voluntary Nature of Participation: You do not have to participate in this research project. If you do agree to participate you can withdraw your participation at any time without penalty.

Contact Information: If you have any questions about this research project, you can contact Dr. Steven Wu (Phone 494-4299). If you have concerns about the treatment of research participants, you can contact the Institutional Review Board (IRB) at Purdue University, Ernest C. Young Hall, 10th Floor- Room 1032, 155 S. Grant Street, West Lafayette, IN 47907-2114. The IRB's phone number is (765) 494-5942. The email address is irb@purdue.edu.

Documentation of Informed Consent
I have had the opportunity to read this consent form and have the research study explained. I have had the opportunity to ask questions about the research project and my questions have been answered. I am prepared to participate in the research project described above. I may request a copy of this consent form after I sign it.

_____ _____
Participant's Signature Date

_____
Participant's Name

_____ _____
Researcher's Signature Date

Instructions (0.80 E)

You can earn money during this experiment, with the exact amount depending on the decisions you make during the experiment. Your experimental income is calculated in points, which will be converted into cash at the rate of: $1 = 30 points. We will start you off with a balance of 150 points ($5).

All written information you received from us is for your private use only. You are not allowed to pass over any information to other participants in the experiment. Talking during the experiment is not permitted. Violations of these rules may force us to stop the experiment.

General Information

This experiment is about how people buy and sell goods for which quality matters. Participants are divided into two groups: half will be buyers and the other half sellers. And then a trading period will start in which a buyer and seller will trade one unit of a good that can vary in quality. The price agreed upon between the buyer and seller and the quality of the good traded will determine how much money each party makes in that period. There will many trading periods throughout the course of this experiment.

Who will you trade with? At the beginning of the experiment, the computer will randomly match each participant in the room with another participant to form a buyer-seller pairing. You will be informed whether you are the buyer or seller in your pairing. You will trade with your pair-member. You will *not* be informed of the actual identity of the other person (and s/he will not be informed of your identity). *All sellers and buyers are assigned a numeric ID which is not associated with their real identity.* You will also retain your ID and role (e.g. buyer or seller) through the entire experiment.

For how many periods will you trade with the same person? All participants will remain matched with their pair-member for a random number of periods. **How is this determined?** At the end of each period, the computer will determine randomly whether the same pairings will continue for the next period or whether new pairings will be formed. In any given period, there is an **80% chance** that the same pairings will continue for the next period. In other words, in any given period, there is a 80% chance that you will continue to trade with the same person in the next period. To help you understand this, imagine that the computer has been programmed to spin a roulette wheel. If it lands on 1,2,3,4, 5, 6, 7, or 8 then you will continue to trade with the same person the next period. But if it lands on 9 or 10 the current pairings are immediately terminated. And then for the next period, the computer will randomly match you with a different person in the room to form a new pairing. This process will repeat for every new pairing. *At the beginning of each period, you will be notified on-screen whether the random matching process has kept you with the same person or matched you with a new person.*

When does the entire experiment end? If one of two conditions hold: (1) The experiment will end if all participants have already been matched with all possible trading partners. *This is because no participant will be matched with the same person more than once during this experiment.* For example, if there are 10 buyers and 10 sellers, then no buyer or seller will have more than 10 unique pairings. After 10 unique pairings, the experiment ends. (2) Even if all unique pairings have not been exhausted, the last pairing will occur once the experiment has lasted at least 18 periods. In other words, if you have traded at least 18 periods for the experiment, then your current pairing is your last one. **This does not mean the experiment stops at 18 rounds exactly;** it only means that when your last pairing **randomly** ends, you will not be paired with a new partner.

To summarize, if you have had less than 10 different trading partners during the experiment, but the experiment has not lasted at least 18 total periods, then when your current match is randomly terminated, the computer will match you with a new person and the experiment would continue. However, if the experiment has lasted at least 18 total periods, then the experiment will end once your current pairing is randomly terminated.

CONDUCTING TRADES

Each trade occurs within a trading period. Each trading period is then divided into a *proposal phase* followed by *a quality determination phase* and then followed by a *payment determination phase*.

a) During the *proposal phase*, the buyer can make a proposal on the terms of trade to the seller. The seller can either accept or reject the proposal.
b) If the seller accepts the proposal, then during the *quality determination phase*, the seller chooses the actual quality level to supply.
c) After quality is observed, comes the *payment determination phase*. During this phase, the buyer can make final adjustments in payment depending on the initial terms of the proposal.

During each phase, you can take as much time as you need to make a good decision, but the faster you make your decision, the faster the experiment will move.

Specific details of each phase are given below:

1. The Proposal Phase

Each period starts with a proposal phase. A proposal allows the parties to agree to the terms of trade by including a list of promises and obligations of both parties (see below for details). *The buyer can submit a single proposal during the proposal phase. Once a proposal is submitted, the seller will decide to accept or reject the proposal.*

How does a buyer make a proposal? A proposal screen will appear that will require the buyer to enter values for the following terms: *desired quality*, *price*, and a *performance bonus*. These terms are described below.

a) **Desired quality** – The buyer must (1) ask the seller to deliver a specific quality level and (2) specify whether the quality level is binding or discretionary (if binding, the computer enforces the quality level).

   Regarding (1), possible quality levels can range from 1 to 15, where higher numbers indicate higher quality (whole numbers only). Buyers earn more when they get higher quality. The buyer should enter a number between 1 to 15 in the "Desired quality" field.

   Regarding (2), The buyer also specifies whether s/he wants desired quality to be **binding** or **discretionary** by clicking the appropriate checkbox. **Binding** is similar to a legally binding obligation – once the seller agrees to the proposal, the computer will ensure that the seller supplies the desired quality level. **Discretionary** means that the obligation is informal rather than legal – i.e. the seller's quality choice will not be enforced by the computer. Thus, nothing restricts the seller from choosing a quality level that is different from the desired quality during the quality determination phase.

b) **Price** – This allows the buyer to state the price she will pay for the good. The buyer enters a price in the "*Price*" field. The price ranges from 0 to 200 (whole numbers).

   The price the buyer specifies will be *binding*. It is similar to a legally binding obligation – once the proposal is agreed upon, the computer will ensure that the price is paid to the seller.

c) **Performance bonus**– For the case when desired quality is discretionary, the buyer can state that s/he will pay a bonus that might be linked to quality. *To enter a bonus, click on the "yes"*

box next to "would you like to offer a bonus?" Then enter a number in in the "*Bonus*" field to specify the size of the bonus (enter a whole number from 0 to 200). *If the buyer does not wish to offer a bonus, simply click "no" next to "would you like to offer a bonus?"* The total payment is *price* plus *bonus*.

Important: The stated bonus is *not binding*. During the payment determination phase to come later, the buyer can choose any bonus level s/he wishes. Thus, this is a discretionary bonus. However, if the buyer clicked "no" to offering bonus, then there will be no payment determination phase for the buyer in this period. The **Price** then becomes the final payment.

After the buyer has specified desired quality, whether quality is binding or not, price, and performance Bonus (if quality is discretionary), s/he needs to click "OK" to submit the offer. Next comes the quality determination phase.

2. Quality Determination Phase

Following the proposal phase, all sellers who accepted an agreement that did not have a binding *Desired quality* will determine the level of quality that they will supply to their buyers. A seller can choose any quality s/he wants to from 1 to 15. The *Quality Determination* Screen will appear and a seller can enter his/her quality choice in the "*Actual Quality"* field. Nothing restricts the seller from choosing a quality level that is different from the "desired quality" level specified in the proposal. **Note:** If the buyer chose a binding quality, then there is no quality determination phase for the seller.

3. Payment Determination Phase

Following the quality determination phase, all buyers who offered a bonus will determine the level of actual bonus that s/he will pay to the seller. During this phase, **after discretionary actual quality is observed by the buyer**, the buyer will choose actual bonus to be paid to the seller. The *Payment Determination* screen will appear and the buyer will enter his/her bonus choice in the "*Actual Bonus"* field. **Nothing restricts the buyer from choosing a bonus level that is different from the bonus that was specified in the proposal**. The actual bonus can range from 0 to 200 at the buyer's discretion.

Note: If the buyer chose a binding quality or did not offer a bonus, then there is no payment determination phase for the buyer.

How Are Points (Income) Calculated?

How do Buyers Make Money?

- If the **buyer does not make an offer or the seller rejects the offer**, the **buyer will receive 15** points for that period.
- If the buyer's proposal is accepted, the buyer's points for the period depend on the actual quality, the price and the actual bonus paid. That is,

Buyer Points = 12*Actual Quality – Price –Actual Bonus

- As you can see, the higher the actual quality, the more points the buyer earns. At the same time, the lower total payments (price plus actual bonus), the more points the buyer earns.
- **In summary, higher quality at lower payments means more points for the buyer.**

How do Sellers Make Money?

- If the **seller rejects the proposal or the buyer does not make an offer**, the **seller will receive 15** points for that period.

- If the seller has accepted an offer, then the seller's points depends on the price, actual bonus, and production costs s/he incurs. The points of a seller is determined as follows:

Seller Points = Price +Actual Bonus– Production Costs

- As you can see, **the higher the actual payments, the more points a seller earns. At the same time, the higher the quality, the higher the production costs, which reduces points.**
- **How are production costs calculated**? The higher the quality the seller supplies, the higher the costs. Roughly speaking, the cost is determined by the following formula: $Cost = \frac{q^2}{2}$. We say "roughly speaking" because we will round the cost number to the nearest whole number. The following table gives you the exact cost in whole numbers of producing each quality level.

Quality	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Cost	**1**	**2**	**5**	**8**	**13**	**18**	**25**	**32**	**41**	**50**	**61**	**72**	**85**	**98**	**113**

Points for all buyers and sellers are determined in the same way. **Each buyer can therefore calculate the income of his/her seller and each seller can calculate the income of his/her buyer.** Note that buyers and sellers can incur losses in each period. These losses are subtracted from your points balance.

At the end of each period, the buyer and seller will be shown an "**income screen**." The following information is displayed on this screen:

- the ID number of your trading partner.
- the **Price** the buyer offered.
- the **Proposed Bonus**
- the **Actual bonus** granted
- the buyer's **Desired Quality and whether it was binding or not.**
- the **Actual quality** delivered by the seller.
- the points earned (lost) by both parties in this period.

Please enter all the information on the screen in the documentation sheet supplied to you. This will help you keep track of your performance across periods so that you can learn from your past results.

At the beginning of the next period, the computer will inform you if you have been randomly matched with the same trading partner or with a different partner.

Before we begin the experiment, we ask all participants to complete a questionnaire which will test familiarity with the procedures. The experiment will not begin until all participants are completely familiar with all procedures. In addition, we will conduct **2 trial periods of the proposal phase** so that you can get accustomed to the computer. During the trial periods, no money can be earned. Your ID numbers will also be suppressed on the screen during the trial periods.

Treatment E Subject Questionnaire

Control Questionnaire

Please solve the following exercises completely. If you have questions, ask one of the experimenters. After all participants have answered the questions correctly, the experiment begins.

1. Suppose that you are a buyer and you did not make an offer during the trading phase. How many points do you earn for this period?

2. Suppose that you are a buyer and you offered a price of 30, a desired bonus of 20, and indicated a non-binding desired quality of 9. A seller accepts your offer and actually chooses a quality of 8. You pay an actual bonus of 10. How many points did you earn for this period?

3. Suppose that you are a buyer and you offered a price of 70, a desired bonus of 10, and indicated a non-binding desired quality of 10. A seller accepts your offer and chooses actual quality of 10. If you choose to pay an actual bonus of 10, how many points did you earn for this period?

4. Suppose that you are a seller and you just finished trading with buyer no. 3. What is the probability that you will not trade with buyer no. 3 the next period?

5. Suppose that you are a seller and you did not accept an offer during the trading phase. How many points do you earn for this period?

6. (True or false) Suppose that you are a buyer and you have already finished 19 trading periods for the experiment across four different sellers. Once your relationship with your current trading partner is terminated, will you be paired with another seller.

7. Suppose that you are a seller and that you accepted an offer with a price of 40, a non-binding desired quality of 2, and a desired bonus of 5. You choose to supply an actual quality of 5. If your buyer pays you an actual bonus of 10, how many points did you earn for this period?

8. Suppose that you are a buyer and you offered a proposal with a binding desired quality of 5. The actual quality chosen by the seller must be what?

9. Suppose that you are a seller and you accepted a proposal with a binding Desired quality of 10 and a Price of 50. How many points did you earn this period?

Answers

1. 15
2. 56
3. 40
4. 20%
5. 15
6. False. The experiment will end.
7. 37
8. 5 The seller cannot deviate from 5 when quality is binding.
9. 0.

Treatment E Record Sheet Page 1

Record of Trades – E   You can record each trade in a separate row

Your ID Number #_________   Are you a Buyer or Seller? (Circle one)

Which Buyer/Seller did you trade with? (ID no.)	Accepted Offer? (Write Y or N)	Price Offered (Write number)	**Desired quality (Write number) and circle B for binding or D for discretionary)**	*Offered Bonus (write number)*	Actual Price (Write number)	Actual Quality (Write number)	Actual Bonus (Write number)	Points earned by buyer	Points earned by seller	Running Total
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Treatment E Record Sheet Page 2

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Total for experiment: $___________

Instructions (0.80 PE)

You can earn money during this experiment, with the exact amount depending on the decisions you make during the experiment. Your experimental income is calculated in points, which will be converted into cash at the rate of: $1 = 30 points. We will start you off with a balance of 150 points ($5).

All written information you received from us is for your private use only. You are not allowed to pass over any information to other participants in the experiment. Talking during the experiment is not permitted. Violations of these rules may force us to stop the experiment.

General Information

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Who will you trade with? At the beginning of the experiment, the computer will randomly match each participant in the room with another participant to form a buyer-seller pairing. You will be informed whether you are the buyer or seller in your pairing. You will trade with your pair-member. You will *not* be informed of the actual identity of the other person (and s/he will not be informed of your identity). *All sellers and buyers are assigned a numeric ID which is not associated with their real identity.* You will also retain your ID and role (e.g. buyer or seller) through the entire experiment.

For how many periods will you trade with the same person? All participants will remain matched with their pair-member for a random number of periods. **How is this determined?** At the end of each period, the computer will determine randomly whether the same pairings will continue for the next period or whether new pairings will be formed. In any given period, there is an **80% chance** that the same pairings will continue for the next period. In other words, in any given period, there is a 80% chance that you will continue to trade with the same person in the next period. To help you understand this, imagine that the computer has been programmed to spin a roulette wheel. If it lands on 1,2,3,4, 5, 6, 7, or 8 then you will continue to trade with the same person the next period. But if it lands on 9 or 10 the current pairings are immediately terminated. And then for the next period, the computer will randomly match you with a different person in the room to form a new pairing. This process will repeat for every new pairing. *At the beginning of each period, you will be notified on-screen whether the random matching process has kept you with the same person or matched you with a new person.*

When does the entire experiment end? If one of two conditions hold: (1) The experiment will end if all participants have already been matched with all possible trading partners. *This is because no participant will be matched with the same person more than once during this experiment.* For example, if there are 10 buyers and 10 sellers, then no buyer or seller will have more than 10 unique pairings. After 10 unique pairings, the experiment ends. (2) Even if all unique pairings have not been exhausted, the last pairing will occur once the experiment has lasted at least 18 periods. In other words, if you have traded at least 18 periods for the experiment, then your current pairing is your last one. **This does not mean the experiment stops at 18 rounds exactly;** it only means that when your last pairing **randomly** ends, you will not be paired with a new partner.

To summarize, if you have had less than 10 different trading partners during the experiment, but the experiment has not lasted at least 18 total periods, then when your current match is randomly terminated, the computer will match you with a new person and the experiment would continue. However, if the experiment has lasted at least 18 total periods, then the experiment will end once your current pairing is randomly terminated.

CONDUCTING TRADES

Each trade occurs within a trading period. Each trading period is then divided into a *proposal phase* followed by *a quality determination phase* and then followed by a *payment determination phase*.

a) During the *proposal phase*, the buyer can make a proposal on the terms of trade to the seller. The seller can either accept or reject the proposal.
b) If the seller accepts the proposal, then during the *quality determination phase*, the seller chooses the actual quality level to supply.
c) After quality is observed, comes the *payment determination phase*. During this phase, the buyer can make final adjustments in payment depending on the initial terms of the proposal.

During each phase, you can take as much time as you need to make a good decision, but the faster you make your decision, the faster the experiment will move.

Specific details of each phase are given below:

1. The Proposal Phase

Each period starts with a proposal phase. A proposal allows the parties to agree to the terms of trade by including a list of promises and obligations of both parties (see below for details). *The buyer can submit a single proposal during the proposal phase. Once a proposal is submitted, the seller will decide to accept or reject the proposal.*

How does a buyer make a proposal? A proposal screen will appear that will require the buyer to enter values for the following terms: *desired quality*, *price*, and a *performance bonus*. These terms are described below.

a) **Desired quality** – The buyer must (1) ask the seller to deliver a specific quality level and (2) specify whether the quality level is binding or discretionary (if binding, the computer enforces the quality level).

   Regarding (1), possible quality levels can range from 1 to 15, where higher numbers indicate higher quality (whole numbers only). Buyers earn more when they get higher quality.

   Regarding (2), The buyer also specifies whether s/he wants desired quality to be **binding** or **discretionary** by clicking the appropriate checkbox. **Binding** is similar to a legally binding obligation – once the seller agrees to the proposal, the computer will ensure that the seller supplies the desired quality level. **Discretionary** means that the obligation is informal rather than legal – i.e. the seller's quality choice will not be enforced by the computer. Thus, nothing restricts the seller from choosing a quality level that is different from the desired quality during the quality determination phase. **However, not all quality levels can be made binding. Only quality levels "1" and "5" can be made binding.**

   Therefore, if the buyer clicks "*binding*", then s/he must also click "1" or "5" in *Desired quality* checkbox right next to the "binding" checkbox.

   If the buyer clicks "*discretionary*", then s/he must enter a number between 1 to 15 in the field next to the *discretionary* checkbox.

b) **Price** – This allows the buyer to state the price she will pay for the good. The buyer enters a price in the "*Price*" field. The price ranges from 0 to 200 (whole numbers).

The price the buyer specifies will be *binding*. It is similar to a legally binding obligation – once the proposal is agreed upon, the computer will ensure that the price is paid to the seller.

c) **Performance bonus**– For the case when desired quality is discretionary, the buyer can state that s/he will pay a bonus that might be linked to quality. *To enter a bonus, click on the "yes" box next to "would you like to offer a bonus?"* Then enter a number in in the "*Bonus*" field to specify the size of the bonus (enter a whole number from 0 to 200). *If the buyer does not wish to offer a bonus, simply click "no" next to "would you like to offer a bonus?"* The total payment is *price* plus *bonus*.

Important: The stated bonus is *not binding*. During the payment determination phase to come later, the buyer can choose any bonus level s/he wishes. Thus, this is a discretionary bonus. However, if the buyer clicked "no" to offering bonus, then there will be no payment determination phase for the buyer in this period. The **Price** then becomes the final payment.

After the buyer has specified desired quality, price and performance bonus, s/he needs to click "OK" to submit it. Next comes the quality determination phase.

2. Quality Determination Phase

Following the proposal phase, all sellers who accepted an agreement that did not have a binding *Desired quality* level of "1" or "5" will determine the level of quality that they will supply to their buyers. A seller can choose any quality s/he wants to from 1 to 15. The *Quality Determination* Screen will appear and a seller can enter his/her quality choice in the "*Actual Quality"* field. Nothing restricts the seller from choosing a quality level that is different from the "desired quality" level specified in the proposal.

Note: If the buyer chose a binding quality of "1" or "5", then there is no quality determination phase for the seller.

3. Payment Determination Phase

Following the quality determination phase, all buyers who offered a bonus will determine the level of actual bonus that s/he will pay to the seller. During this phase, **after quality is observed by the buyer**, the buyer will choose actual bonus to be paid to the seller. The *Payment Determination* screen will appear and the buyer will enter his/her bonus choice in the "*Actual Bonus"* field. **Nothing restricts the buyer from choosing a bonus level that is different from the bonus that was specified in the proposal**. The actual bonus can range from 0 to 200 at the buyer's discretion.

How Are Points (Income) Calculated?

How do Buyers Make Money?

- If the **buyer does not make an offer or the seller rejects the offer**, the **buyer will receive 15** points for that period.
- If the buyer's proposal is accepted, the buyer's points for the period depend on the actual quality, the price and the actual bonus paid. That is,

Buyer Points = 12*Actual Quality – Price –Actual Bonus

- As you can see, the higher the actual quality, the more points the buyer earns. At the same time, the lower total payments (price plus actual bonus), the more points the buyer earns.
- **In summary, higher quality at lower payments means more points for the buyer.**

How do Sellers Make Money?

- If the **seller rejects the proposal or the buyer does not make an offer**, the **seller will receive 15** points for that period.
- If the seller has accepted an offer, then the seller's points depends on the price, actual bonus, and production costs s/he incurs. The points of a seller is determined as follows:

Seller Points = Price +Actual Bonus– Production Costs

- As you can see, **the higher the actual payments, the more points a seller earns. At the same time, the higher the quality, the higher the production costs, which reduces points.**
- **How are production costs calculated**? The higher the quality the seller supplies, the higher the costs. Roughly speaking, the cost is determined by the following formula: $Cost = \frac{q^2}{2}$. We say "roughly speaking" because we will round the cost number to the nearest whole number. The following table gives you the exact cost in whole numbers of producing each quality level.

Quality	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Cost	**1**	**2**	**5**	**8**	**13**	**18**	**25**	**32**	**41**	**50**	**61**	**72**	**85**	**98**	**113**

Points for all buyers and sellers are determined in the same way. **Each buyer can therefore calculate the income of his/her seller and each seller can calculate the income of his/her buyer.** Note that buyers and sellers can incur losses in each period. These losses are subtracted from your points balance.

At the end of each period, the buyer and seller will be shown an "**income screen**." The following information is displayed on this screen:

- the ID number of your trading partner.
- the **Price** the buyer offered.
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- the **Actual bonus** granted
- the buyer's **Desired Quality and whether it was binding or not.**
- the **Actual quality** delivered by the seller.
- the points earned (lost) by both parties in this period.

Please enter all the information on the screen in the documentation sheet supplied to you. This will help you keep track of your performance across periods so that you can learn from your past results.

At the beginning of the next period, the computer will inform you if you have been randomly matched with the same trading partner or with a different partner.

Before we begin the experiment, we ask all participants to complete a questionnaire which will test familiarity with the procedures. The experiment will not begin until all participants are completely familiar with all procedures. In addition, we will conduct **2 trial periods of the proposal phase** so that you can get accustomed to the computer. During the trial periods, no money can be earned. Your ID numbers will also be suppressed on the screen during the trial periods.

PE0.80 Subject Questionnaire

Instructions (0.80 PE)

Control Questionnaire

Please solve the following exercises completely. If you have questions, ask one of the experimenters. After all participants have answered the questions correctly, the experiment begins.

1. Suppose that you are a buyer and you did not make an offer during the trading phase. How many points do you earn for this period?

2. Suppose that you are a buyer and you offered a price of 30, a desired bonus of 20, and indicated a desired quality of 9. A seller accepts your offer and actually chooses a quality of 8. You pay an actual bonus of 10. How many points did you earn for this period?

3. Suppose that you are a buyer and you offered a price of 70, a desired bonus of 10, and indicated a desired quality of 10. A seller accepts your offer and chooses actual quality of 10. If you choose to pay an actual bonus of 10, how many points did you earn for this period?

4. Suppose that you are a seller and you just finished trading with buyer no. 3. What is the probability that you will not trade with buyer no. 3 the next period?

5. Suppose that you are a seller and you did not accept an offer during the trading phase. How many points do you earn for this period?

6. (True or false) Suppose that you are a buyer and you have already finished 19 trading periods for the experiment across four different sellers. Once your relationship with your current trading partner is terminated, will you be paired with another seller.

7. Suppose that you are a seller and that you accepted an offer with a price of 40, a desired quality of 2, and a desired bonus of 5. You choose to supply an actual quality of 5. If your buyer pays you an actual bonus of 10, how many points did you earn for this period?

8. Suppose that you are a buyer and you offered a proposal with a binding desired quality of 5. The actual quality chosen by the seller must be what?

9. Suppose that you are a seller and you accepted a proposal with a Desired quality of 4. Can you deviate from 4 in the quality determination phase?

Answers

1. 15
2. 56
3. 40
4. 20%
5. 15
6. False. The experiment will end.
7. 37
8. 5 The seller cannot deviate from 5 when 5 is binding. Remember that the buyer can make quality levels of 1 or 5 binding.
9. Yes. The only quality levels that can be made binding are 1 and 5.

PE0.80 Record Sheet Page 1

Record of Trades – PE   You can record each trade in a separate row

Your ID Number # ________   Are you a Buyer or Seller? (Circle one)

Which Buyer/Seller did you trade with? (ID no.)	Accepted Offer? (Write Y or N)	Price Offered (Write number)	Desired quality (Write number) and circle B for binding or D for discretionary)	*Offered Bonus (write number)*	Actual Price (Write number)	Actual Quality (Write number)	Actual Bonus (Write number)	Points earned by buyer	Points earned by seller	Running Total
			B D							
			B D							
			B D							
			B D							
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Turn page over for more rows on back if needed…..

PE0.80 Record Sheet Page 2

			B D							
			B D							
			B D							
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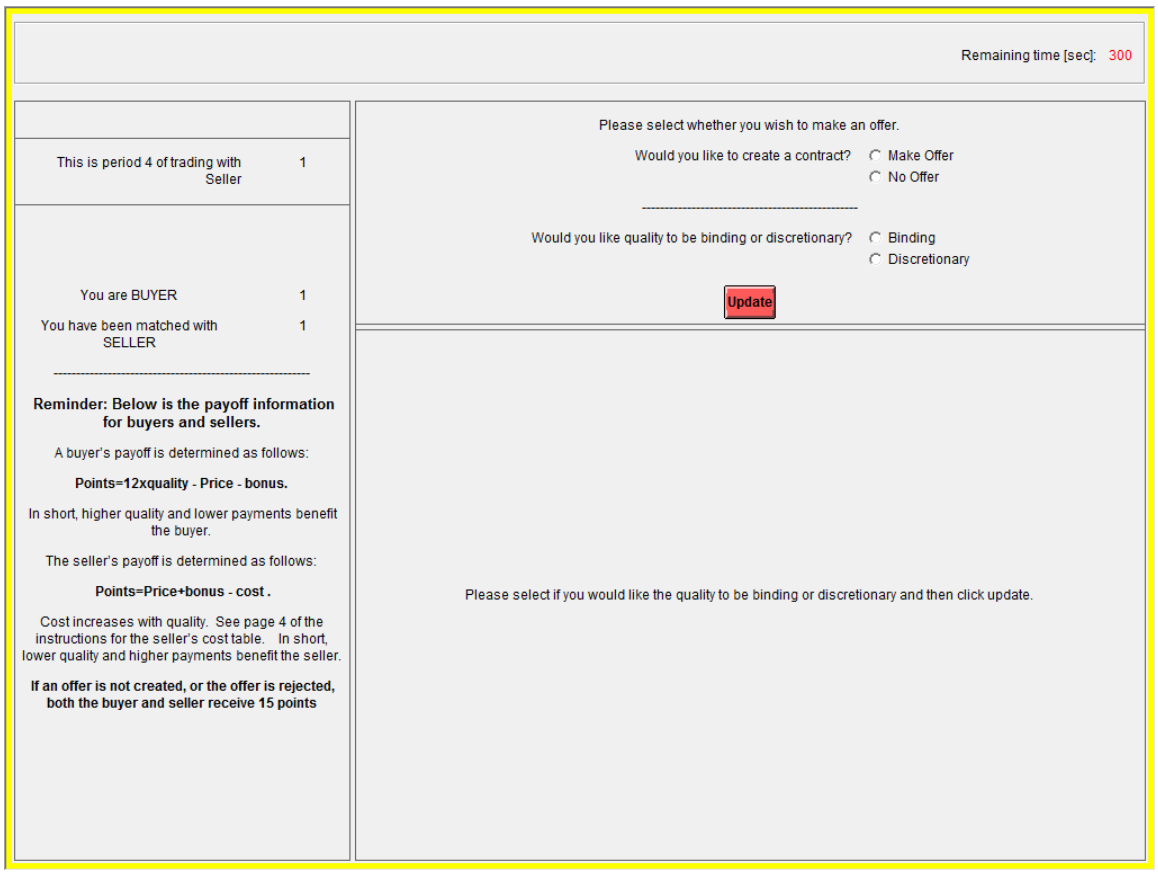
			B D							

Total for experiment: $___________

Period starts with buyer offer screen



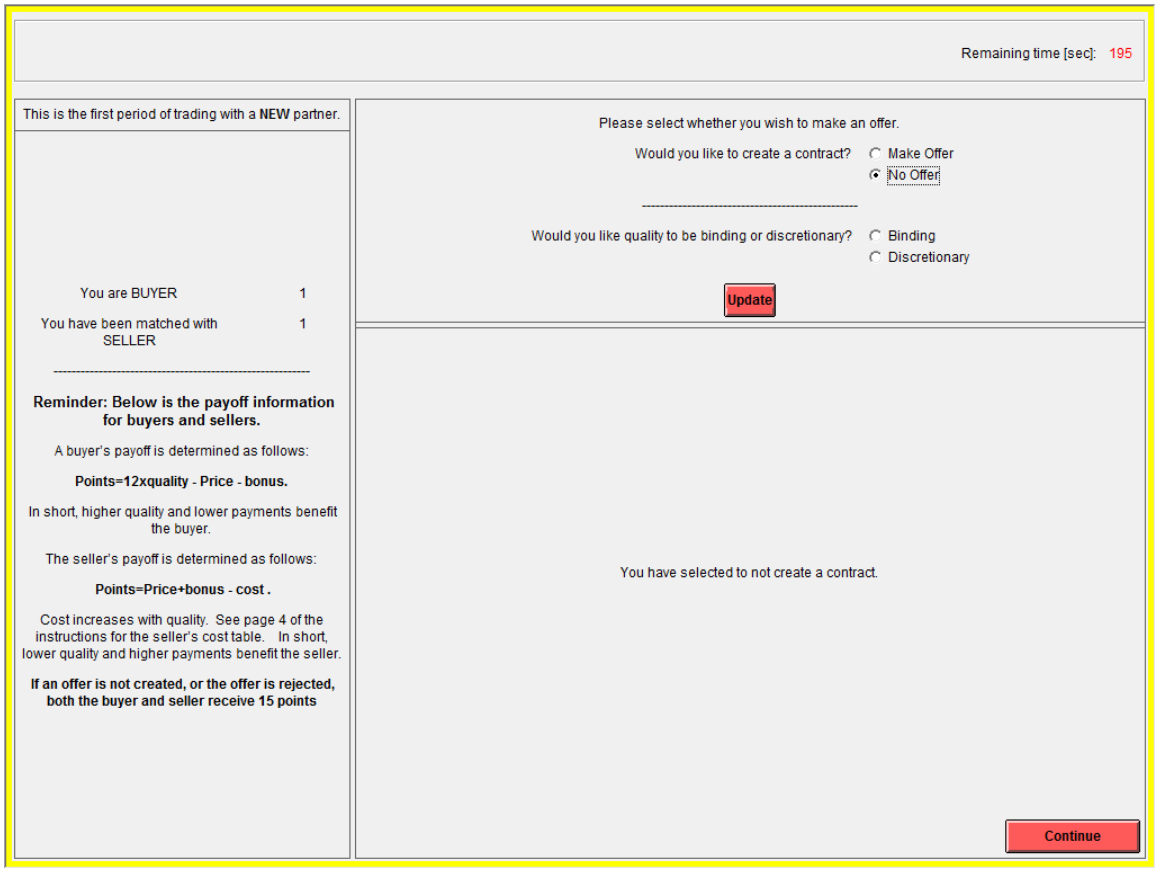
3 Screenshots for E Treatment

This section contains the screenshots for the E treatment.

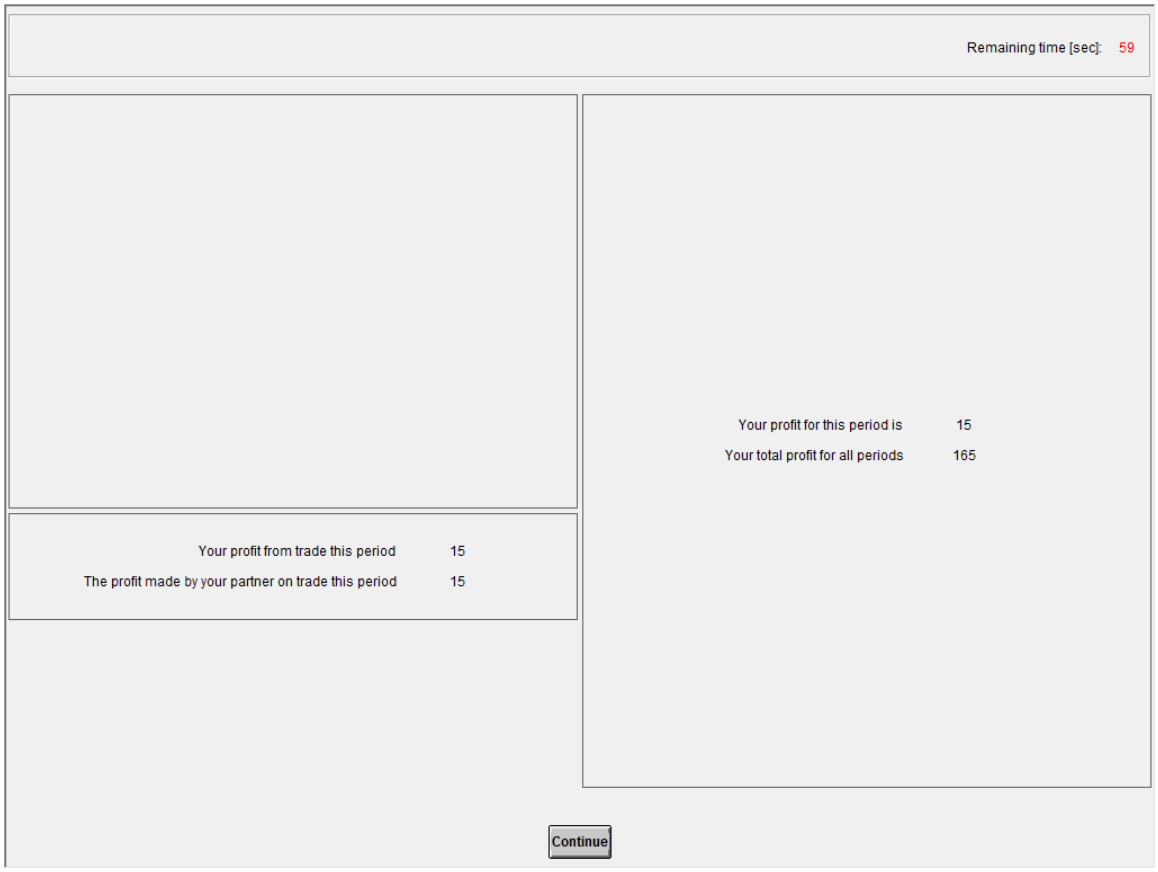
One minor point is that all the screens show the remaining time on the upper right hand corner. In the decision screens, in which subjects had to take an action (e.g. contract formation, quality determination, bonus determination), subjects had five minutes to make a decision. This is a generous amount of time and only a few outliers ran out of time and usually near the beginning of a session.

The screen shots are presented in the same order as the sequence of moves within a stage-game.

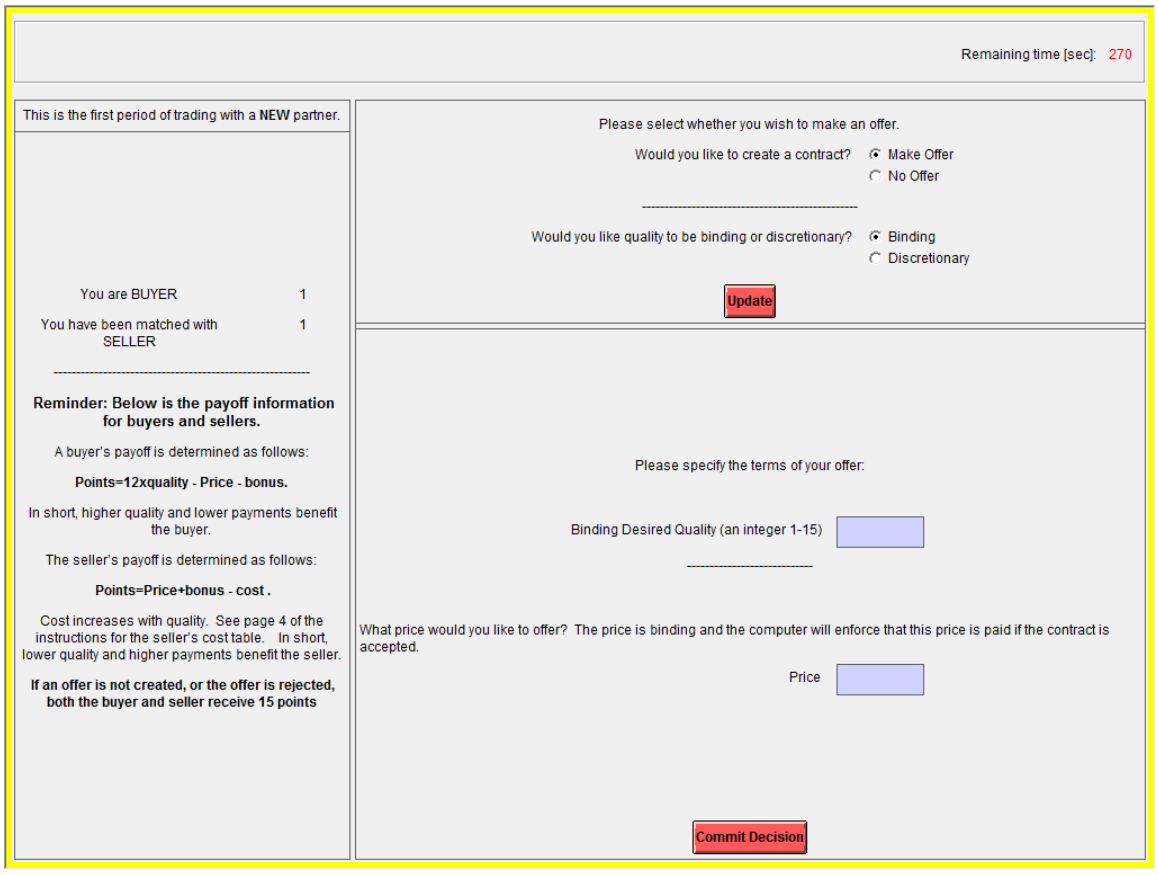
If buyer chooses "No offer," and clicks "Update", this is what s/he sees



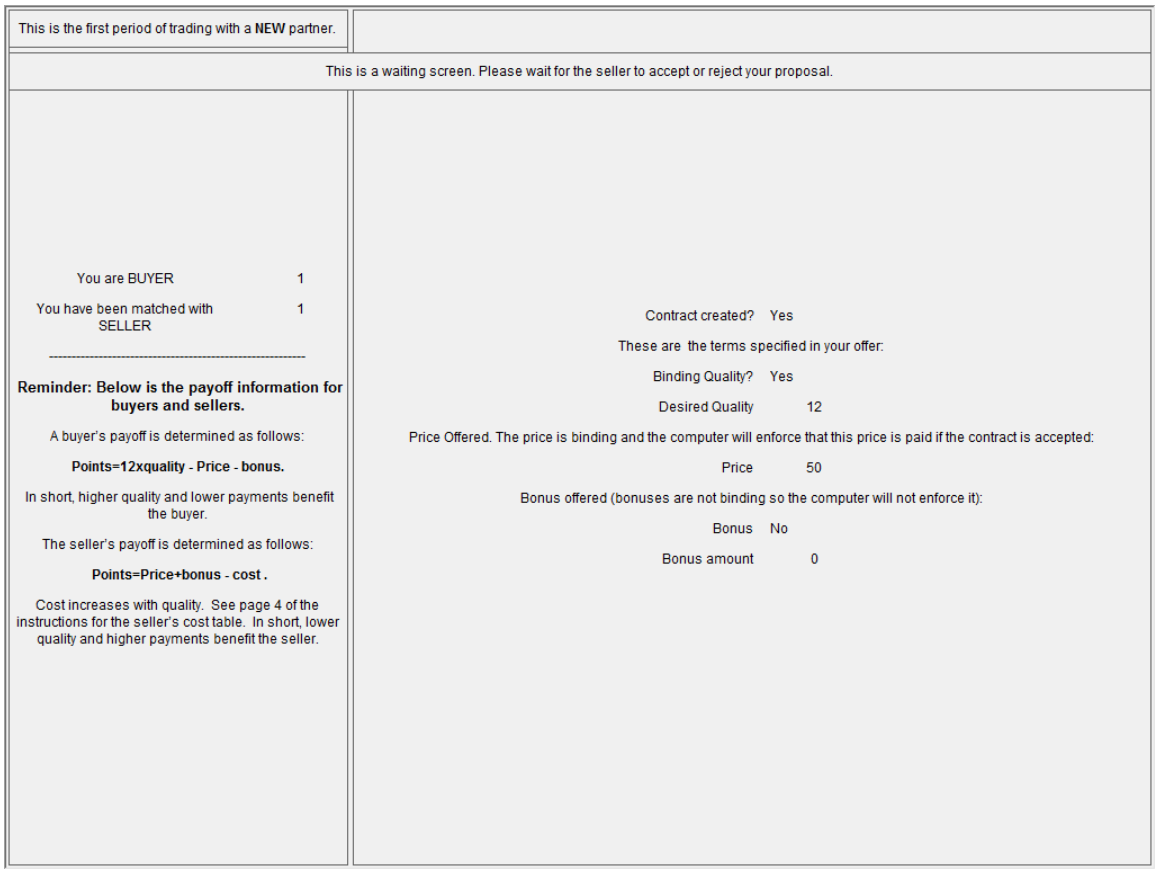
After pressing "Continue" on the previous screen, the subjects are shown the following end of period summary screen



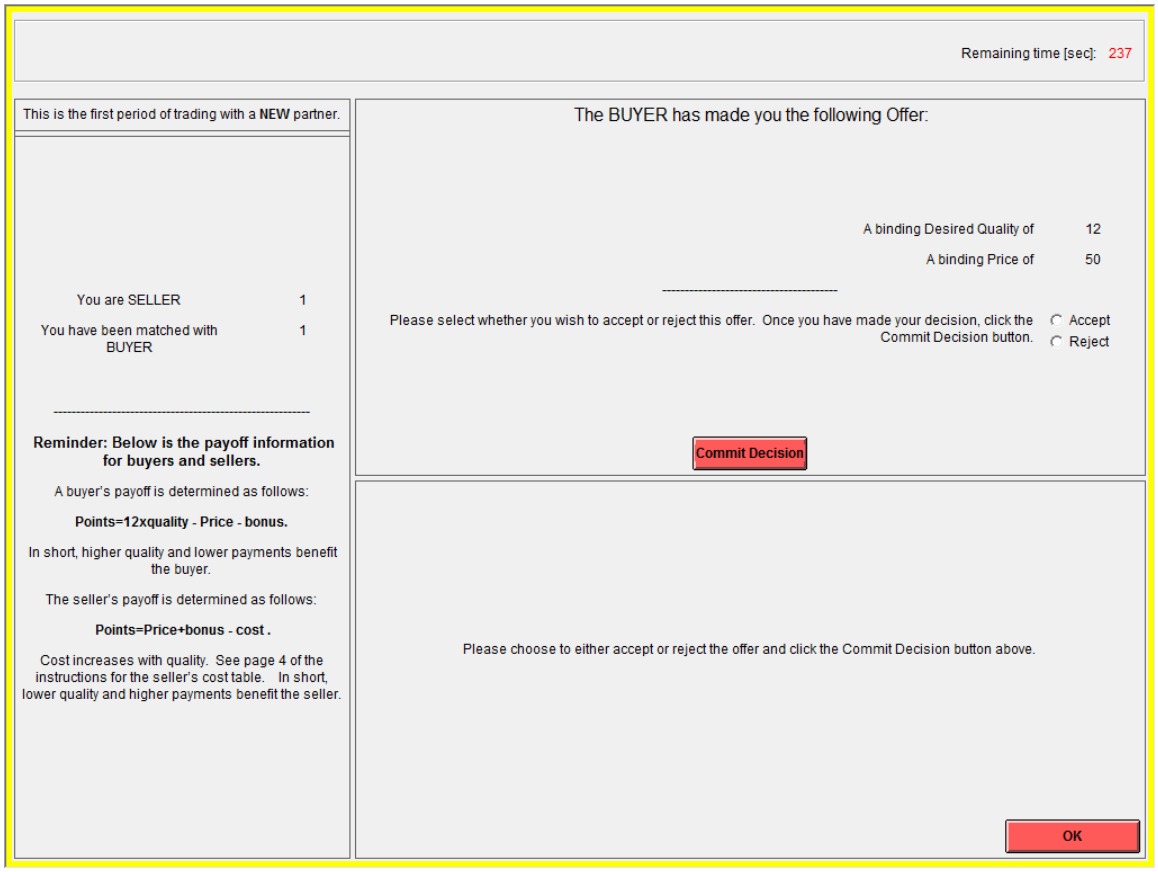
If instead the buyer had clicked "Make Offer" and "Binding" to create a binding contract that enforces quality and price, then the buyer offer screen (after clicking "Update") changes to the screen below. Note the buyer must select the binding quality level and enter an offered Price.



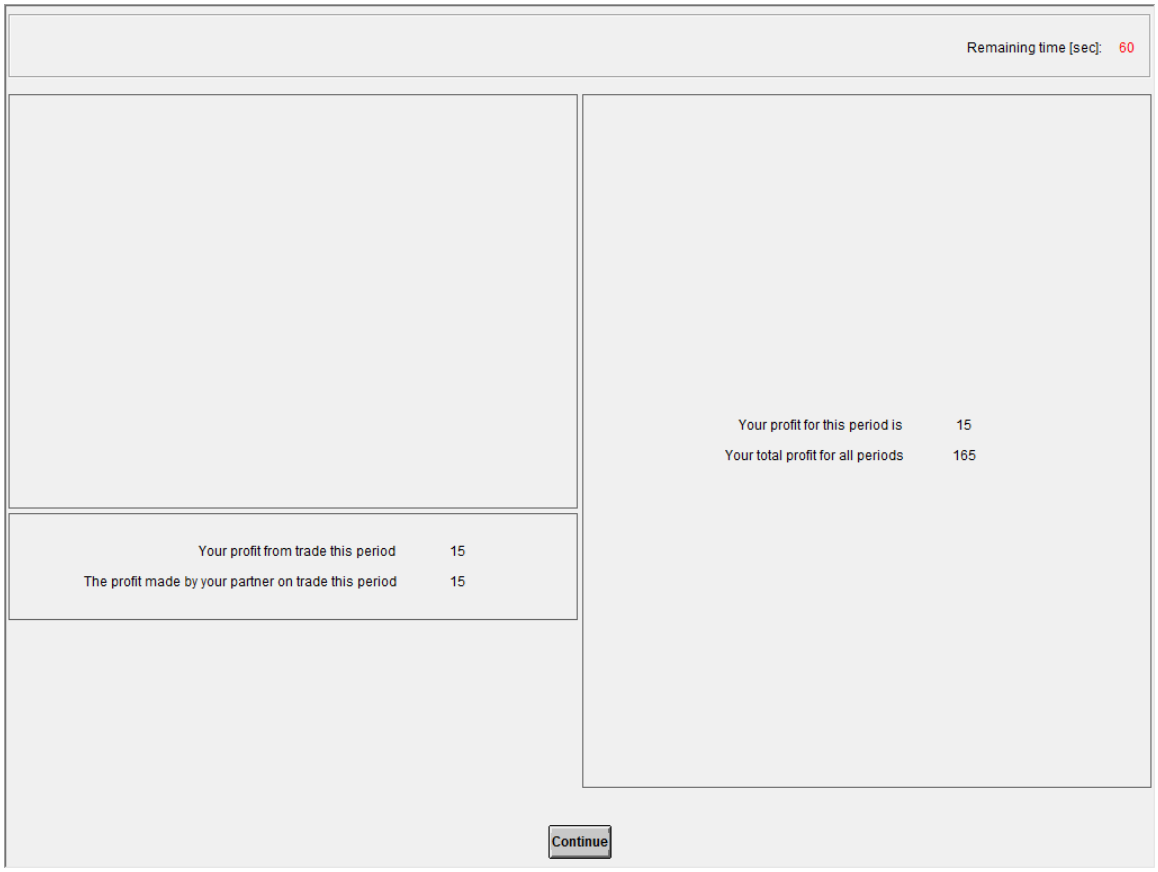
Suppose we enter binding quality of 12 and a price of 50. Then pressing "Commit Decision" takes us to the next screen for the buyer. The buyer waits at this screen because the seller must decide whether to accept or reject the contract. Note that the default bonus for a binding contract is 0 since the bonus plays no incentive role in a binding simple contract.



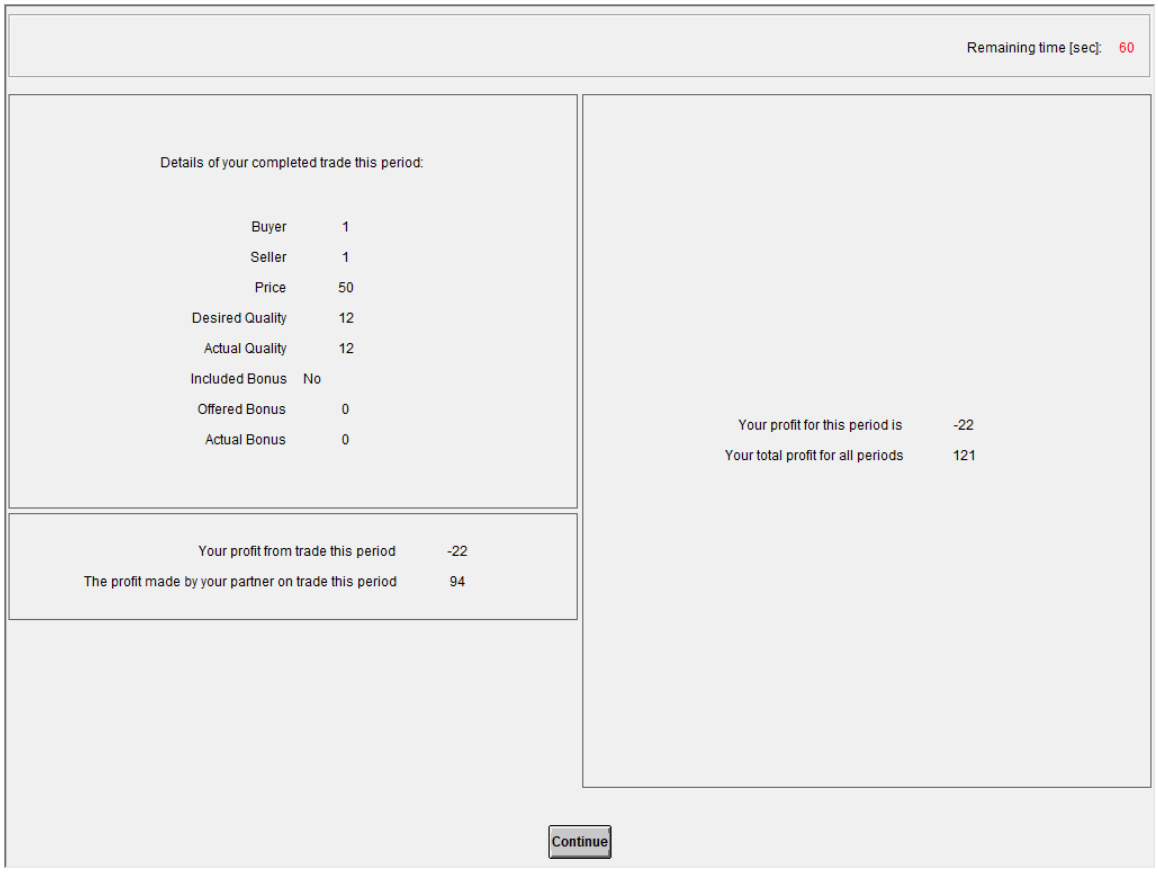
While the buyer is waiting, the seller sees the following screen.



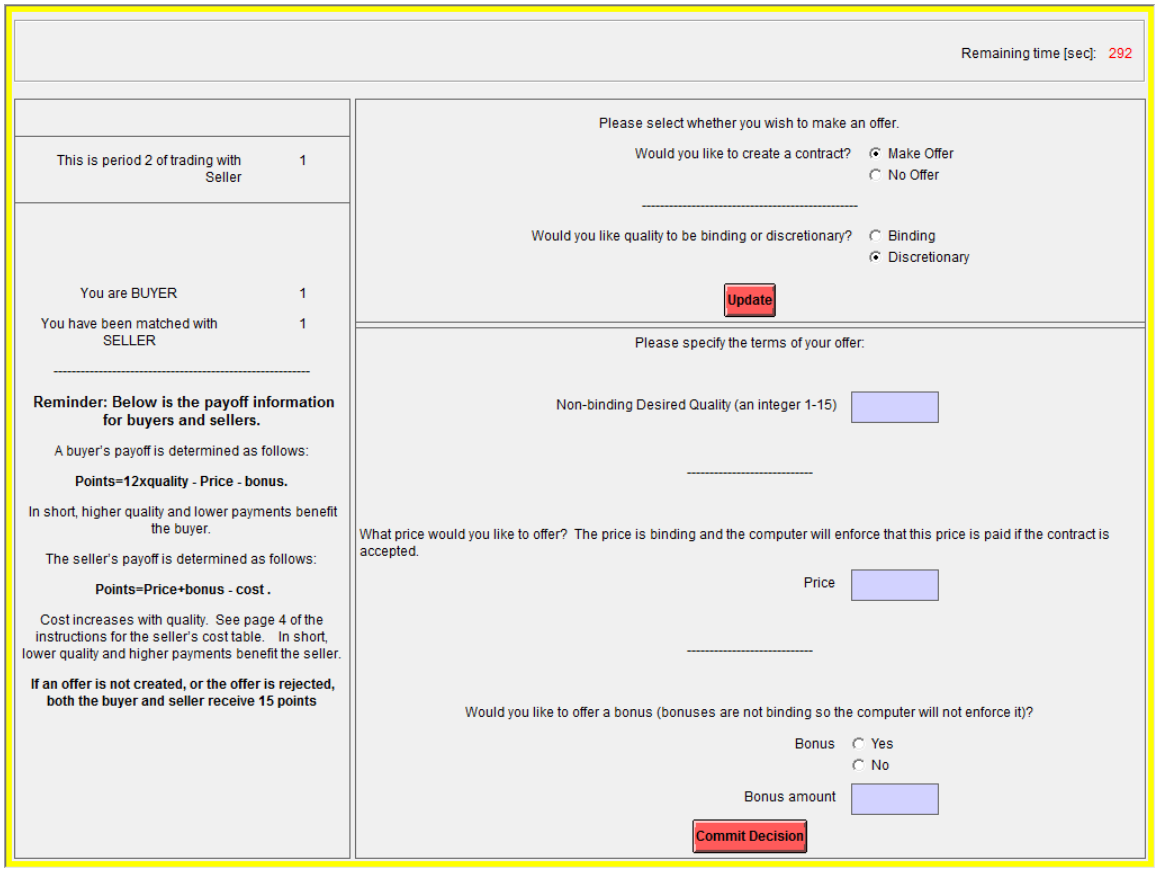
If the seller rejects the contract, then the seller is taken to the following screen (the buyer is shown an analogous screen)



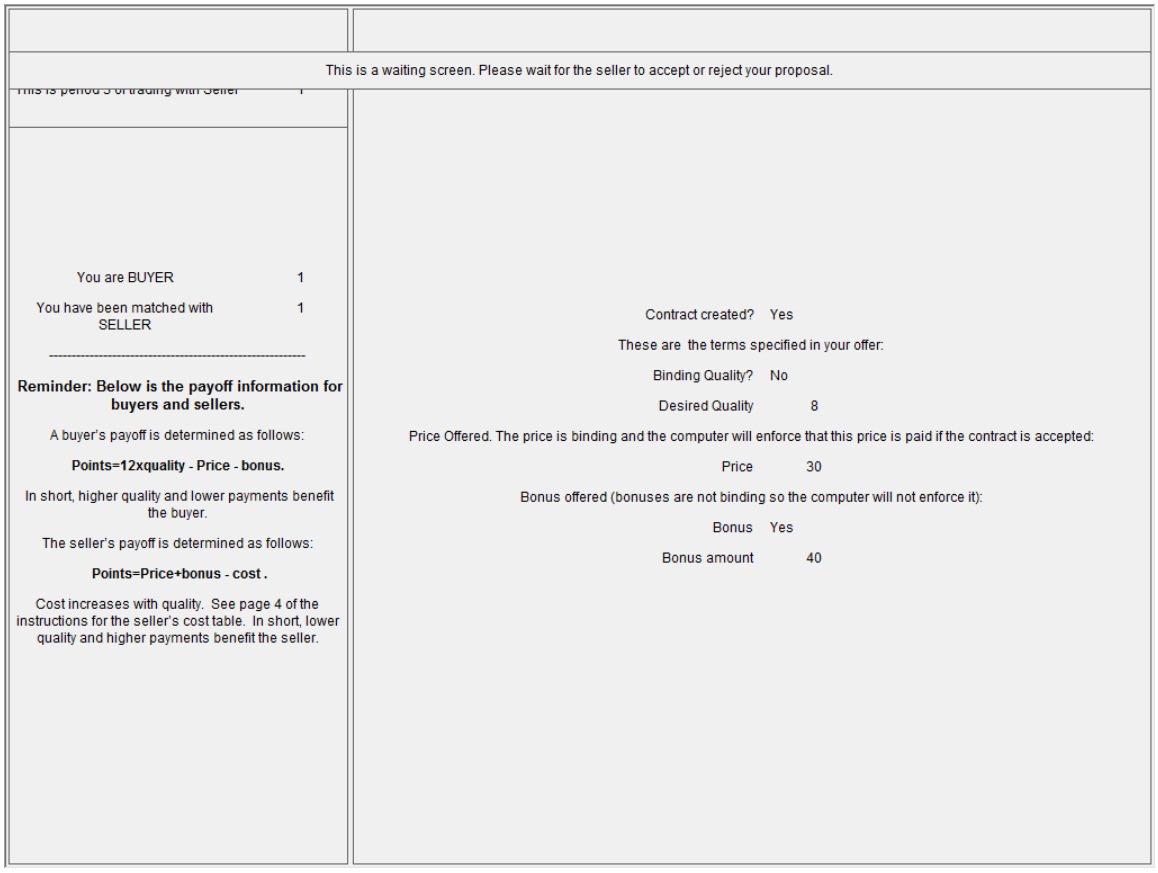
If the seller instead accepts the contract, then the trade is completed (there is no ex post discretion to choose quality or payments under a binding contract) and taken to the following screen (the buyer is shown an analogous screen)



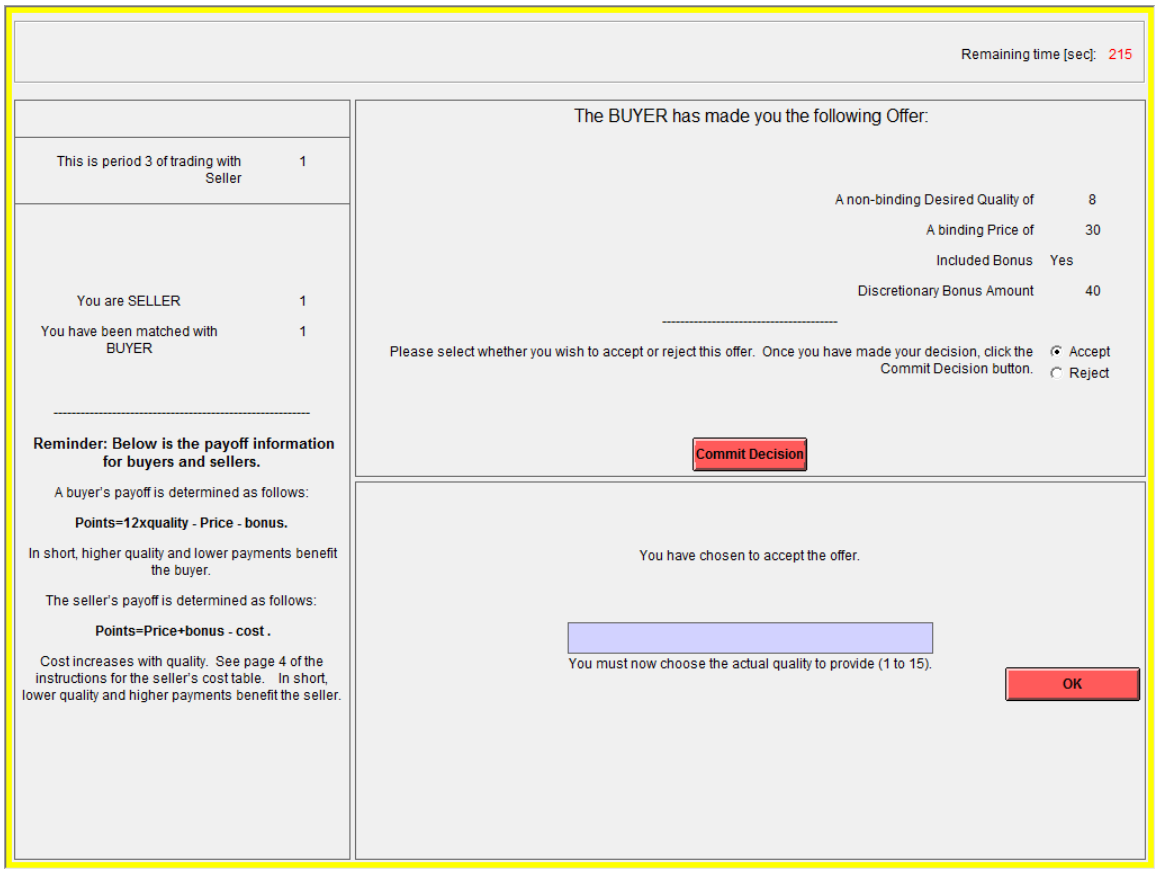
Now let's return to the buyer offer screen. Had the buyer chosen a discretionary contract, then the offer screen changes to the following:



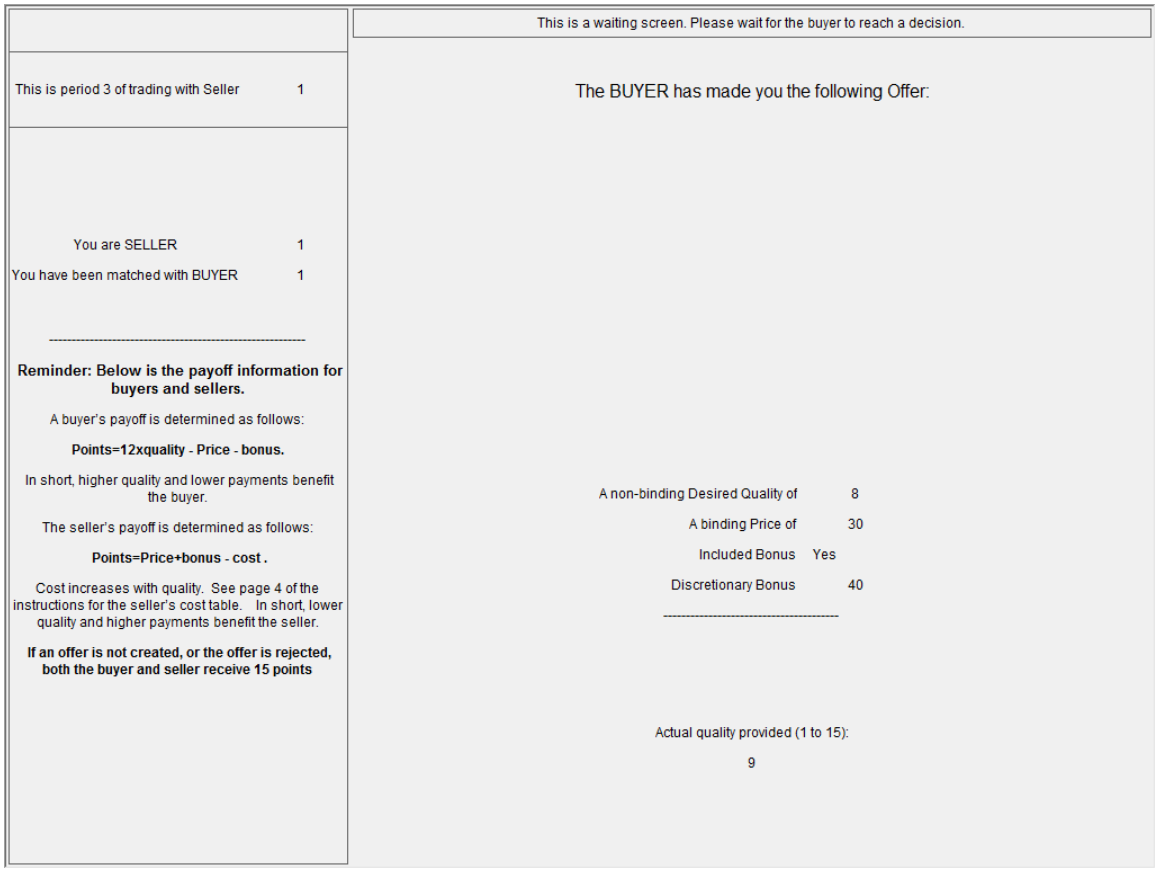
If the buyer offers a discretionary contract asking for Q=8, P=30 and B=40, then after clicking "Commit Decision" s/he is taken to the following waiting screen while the seller is making an accept or reject decision.



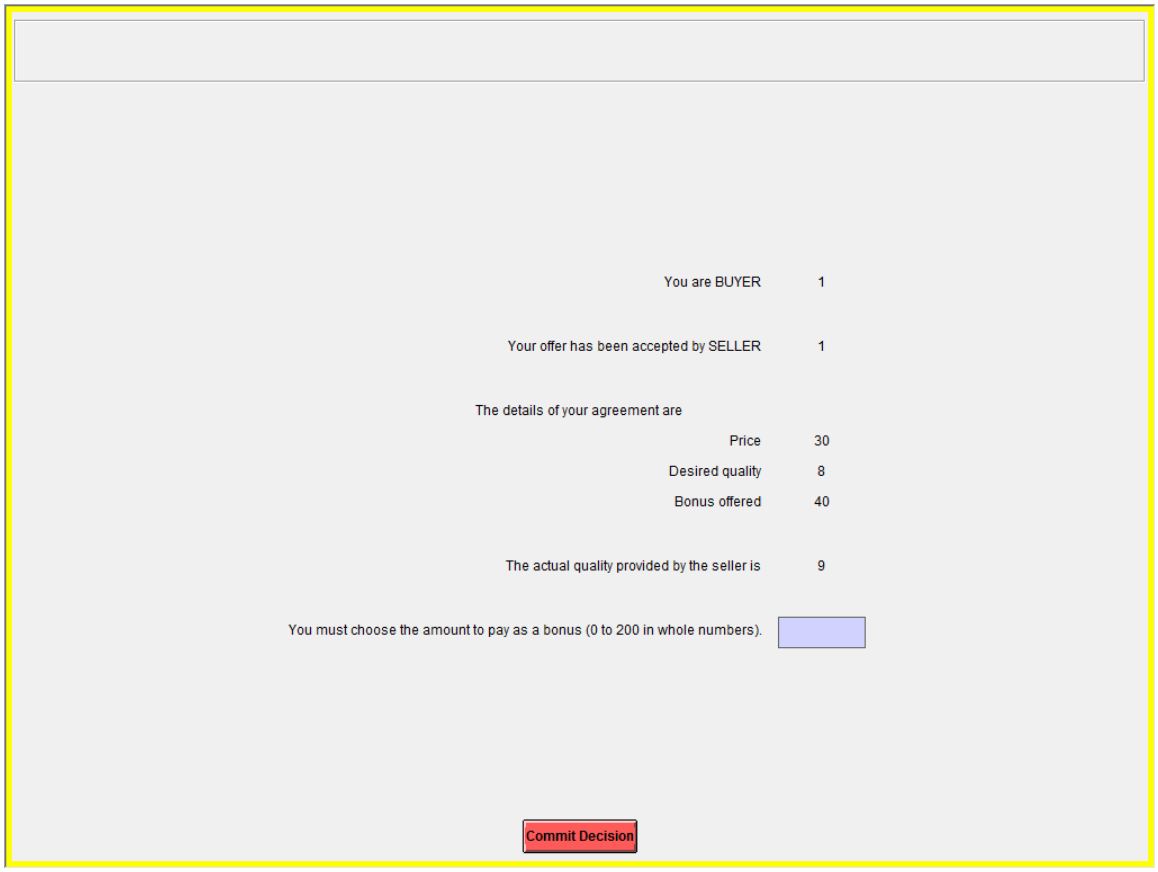
If the seller rejects the discretionary contract, then both buyer and seller are taken to the end of the period screen much like what has already been shown earlier. However, if the seller accepts the contract, her decision screen looks like the following (note once s/he chooses accept, a quality determination box appears at the bottom of the screen):



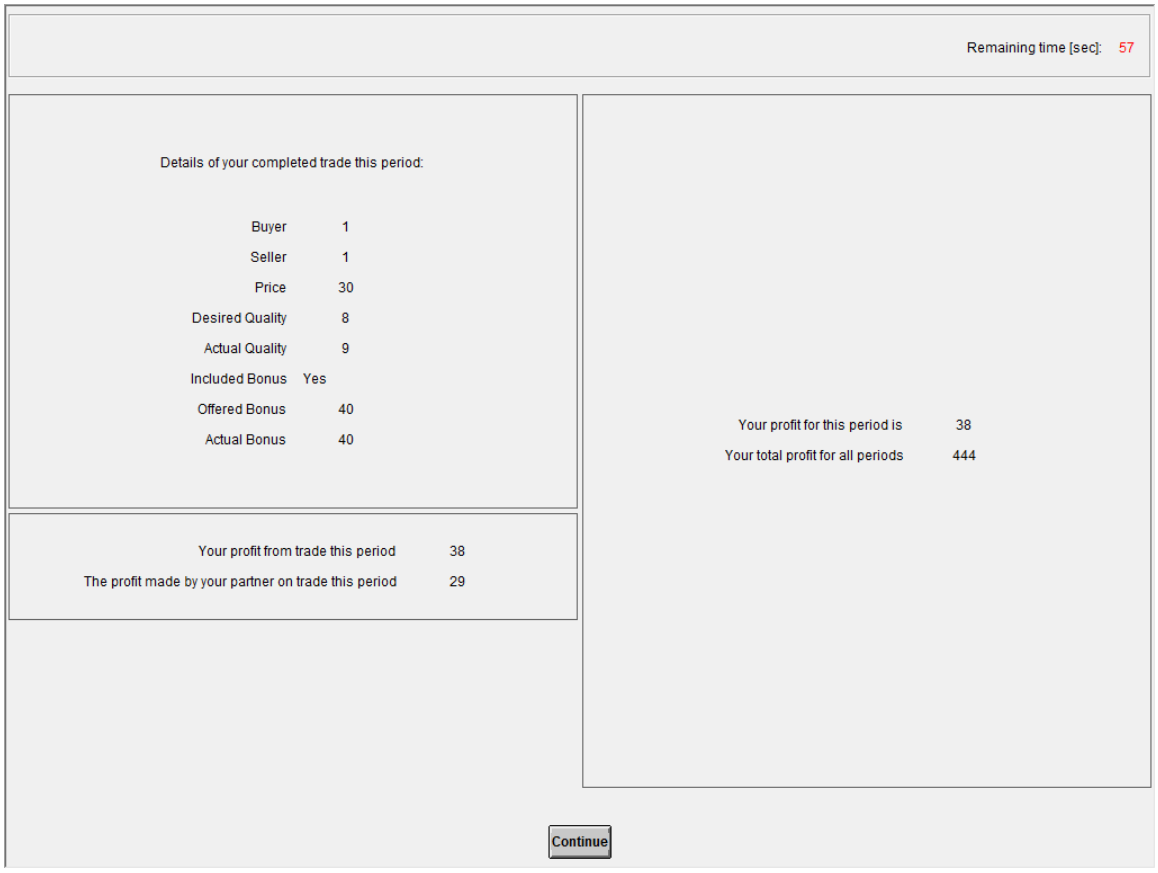
If the seller chooses an actual quality of q=9, s/he is taken to the following waiting screen.



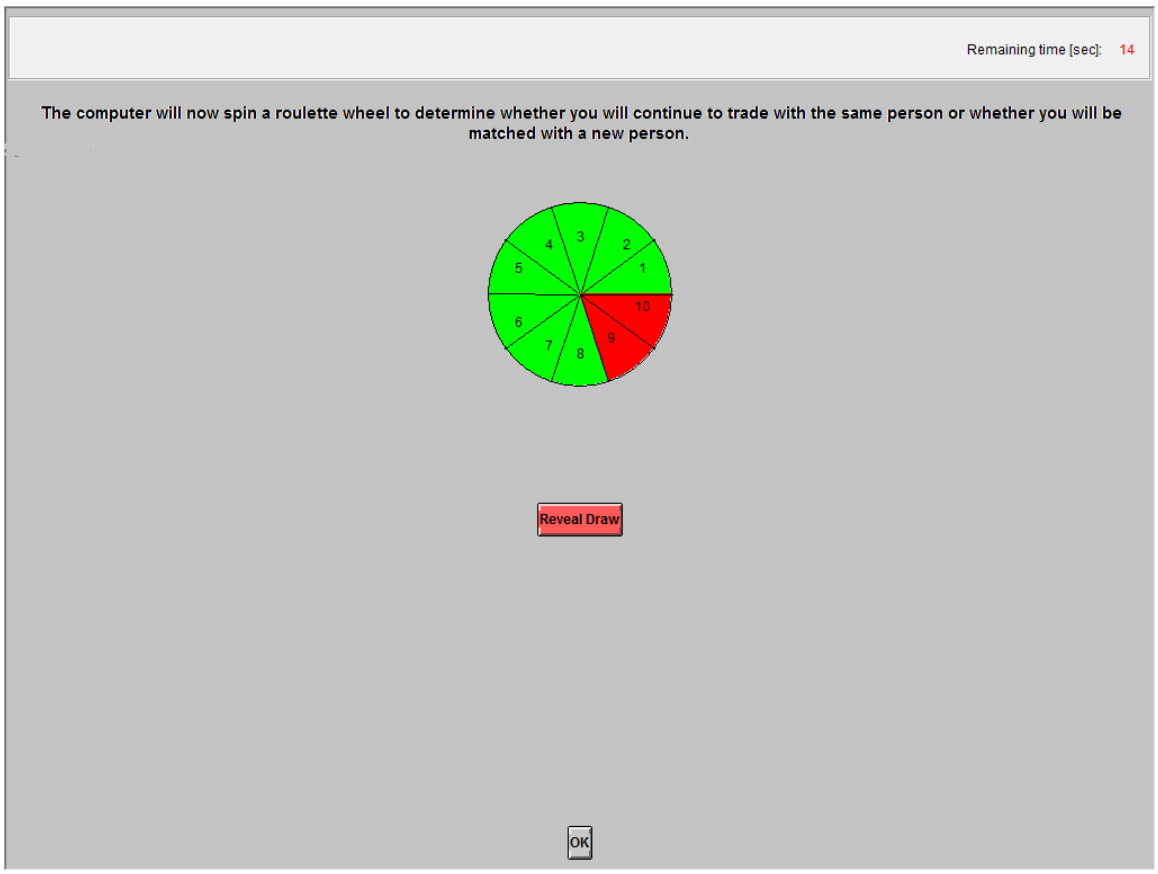
While the seller is waiting, the buyer is taken to the following bonus determination screen.



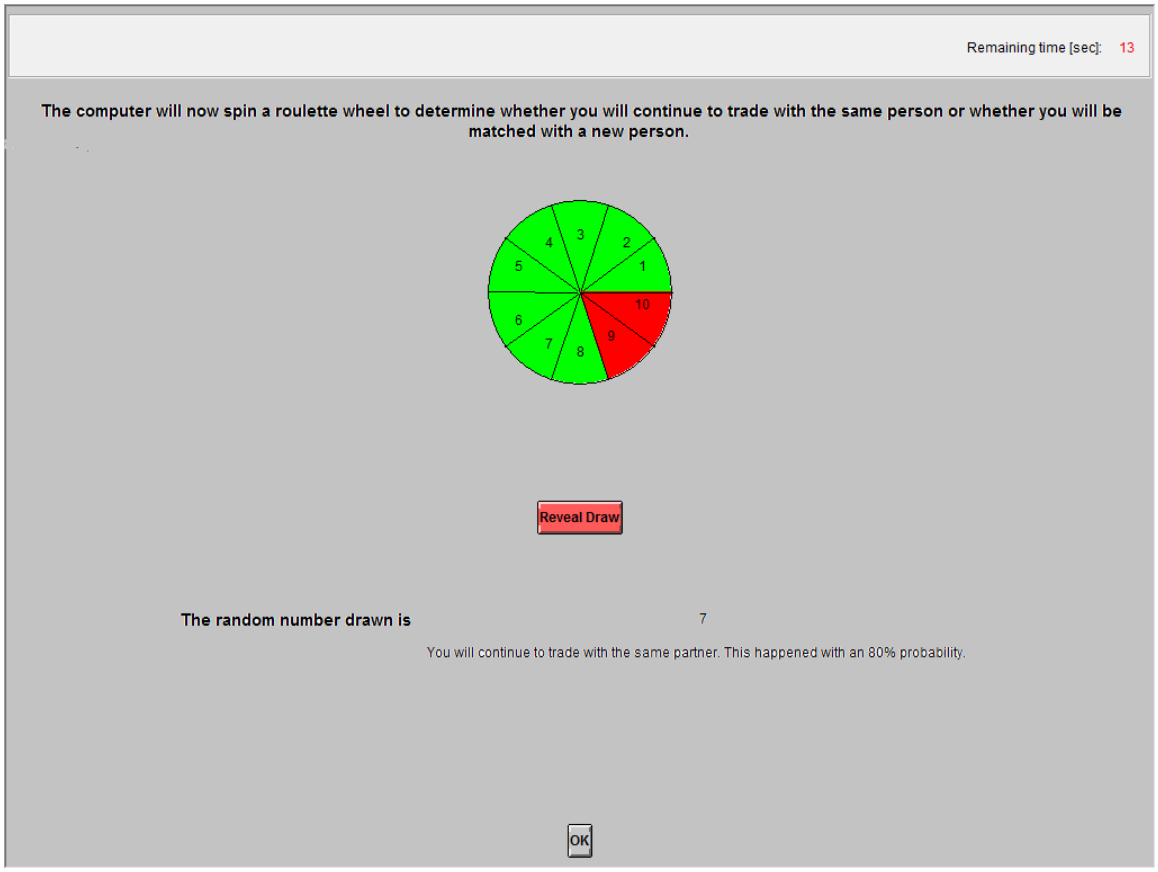
If the buyer pays an actual bonus of b=40 and then presses "Commit Decision," s/he is taken to the following end of the period summary screen. The seller sees an analogous screen.



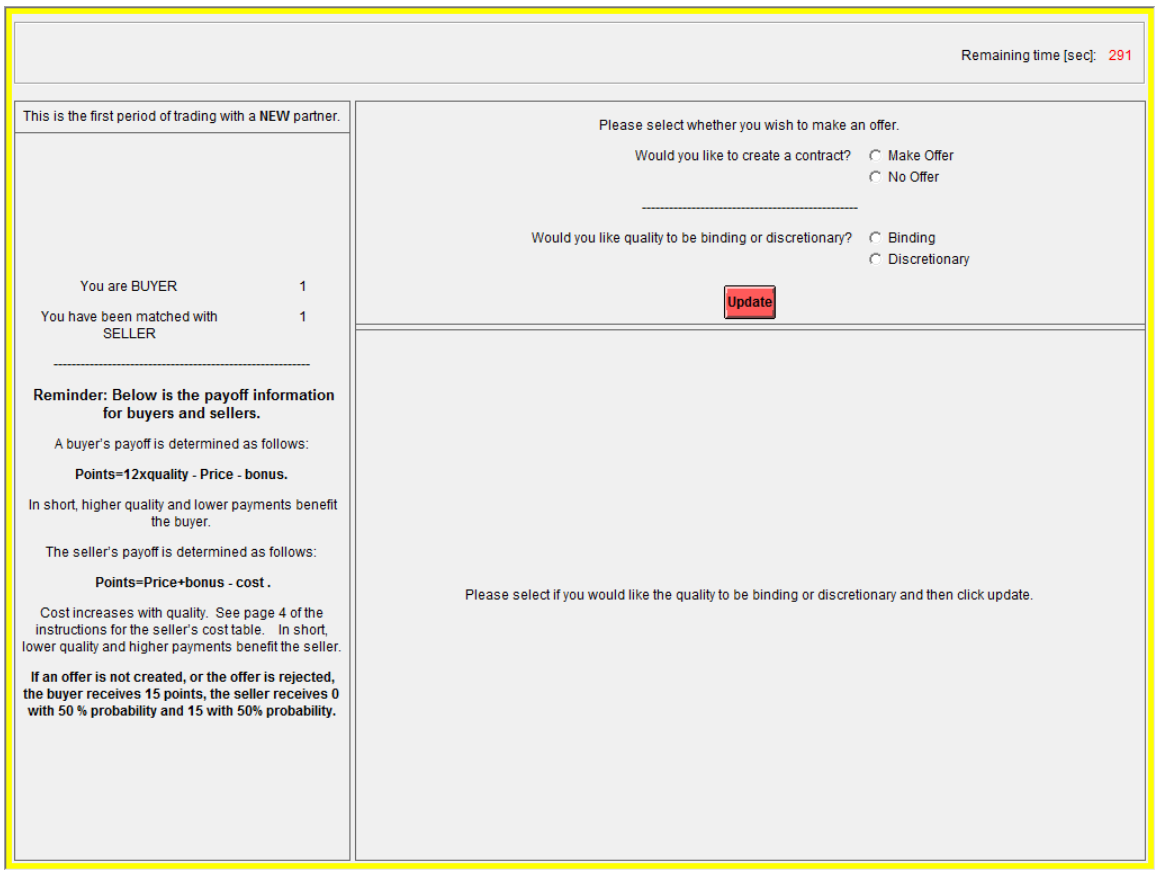
Once a period is over, both the buyer and seller see the following screen that determines their probability of trading with each other again the next period. A key point to note is that, as a practical matter, the realized draw of the continuation probability was simultaneously applied to all pairs of buyers and sellers in a session to facilitate orderly rematching when supergames terminate. In other words, either all pairs in the room continued or terminated in the same period. This made it easy to implement stranger matching. Nonetheless, to ensure saliency of the continuation probability, we forced each subject to press the "Reveal Draw" button to show them the realized draw (whether they will be rematched with the same partner or a new partner). To speed up the experiment, they were given a maximum of 15 seconds to press the button. After 15 seconds, the next period begins and the buyer offer screen appears. The experimenter announced to subjects whether they are rematched with the same person or matched with a new person. Moreover, the top left side of the decision screens for both the buyer and seller remind them how many periods they have been trading with the same partner. Thus, even if some subjects forgot to press the "Reveal Draw" button, subjects were still informed of the realized draw because we implemented multiple layers of prompts to ensure that subjects knew the draw.



The next screen shows the revealed draw after a subject presses the "Reveal Draw" button



Period starts with buyer offer screen

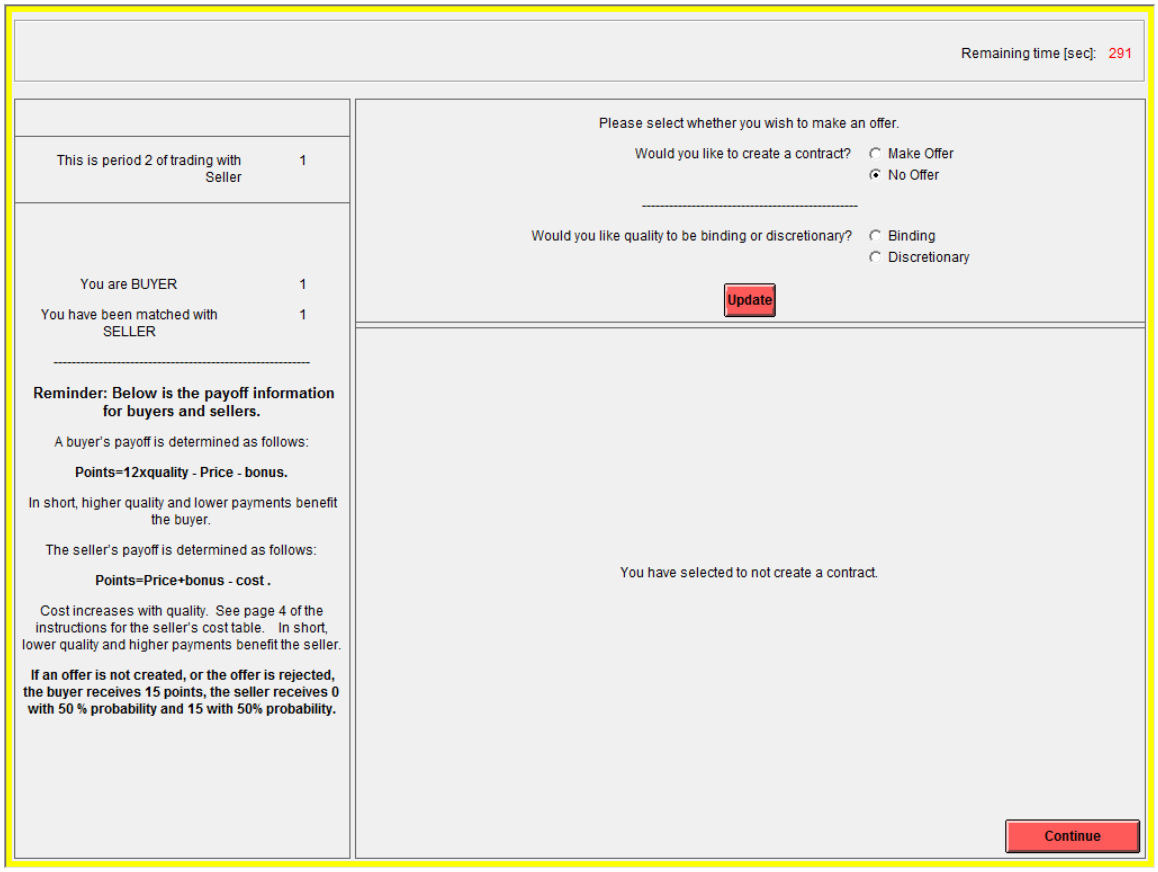


4 Screenshots for PE0.80 Treatment

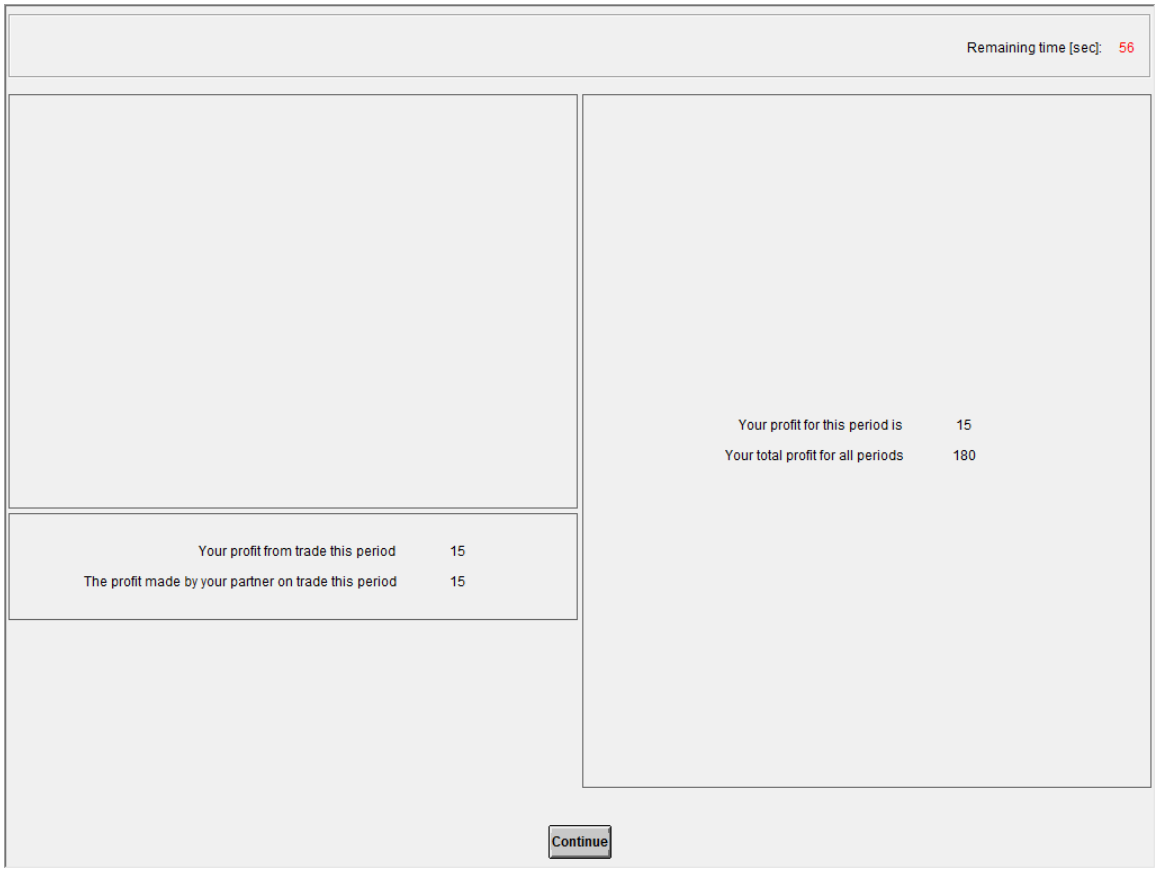
This section contains the screenshots for the PE0.80 treatment. PE0.50 screenshots were not included because they are identical except for the roulette wheel that determines the probability of continuation.

The screen shots are presented in the same order as the sequence of moves within a stage-game.

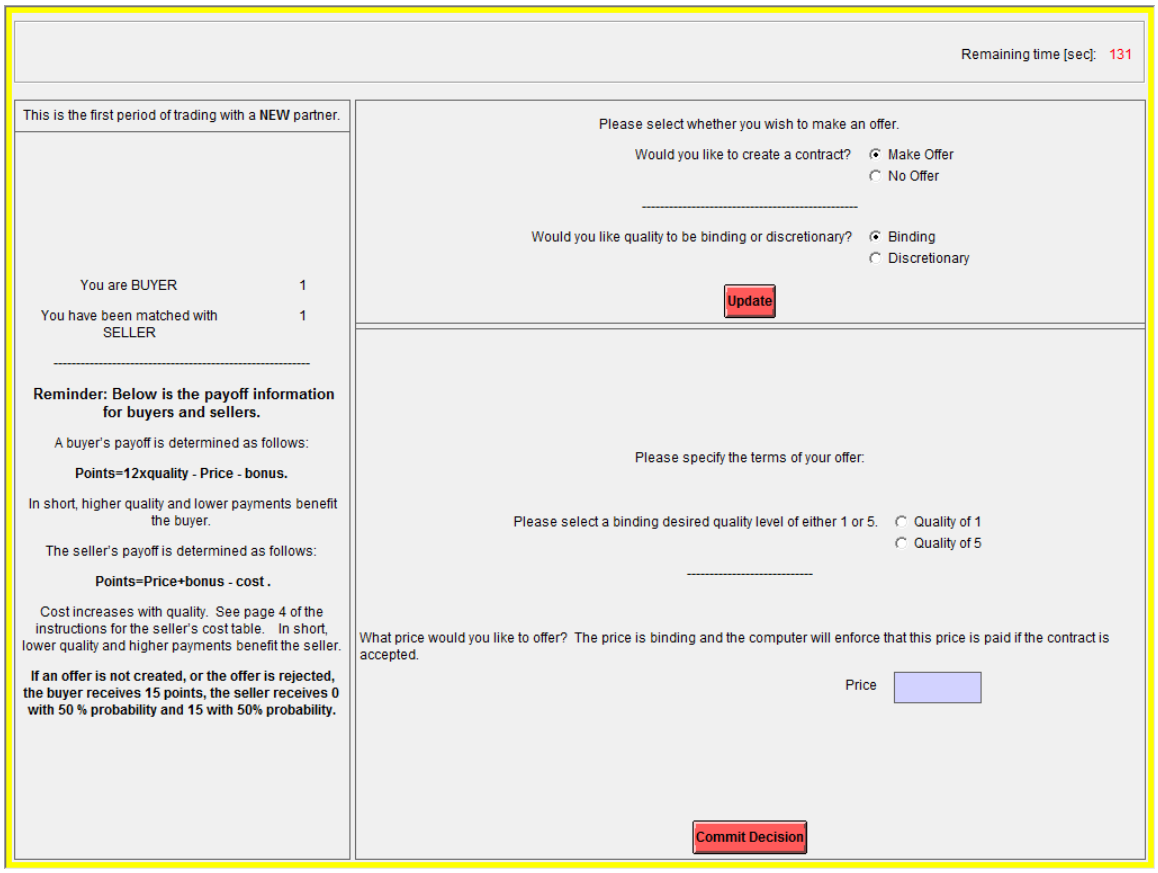
If buyer chooses "No offer," and clicks "Update", this is what s/he sees



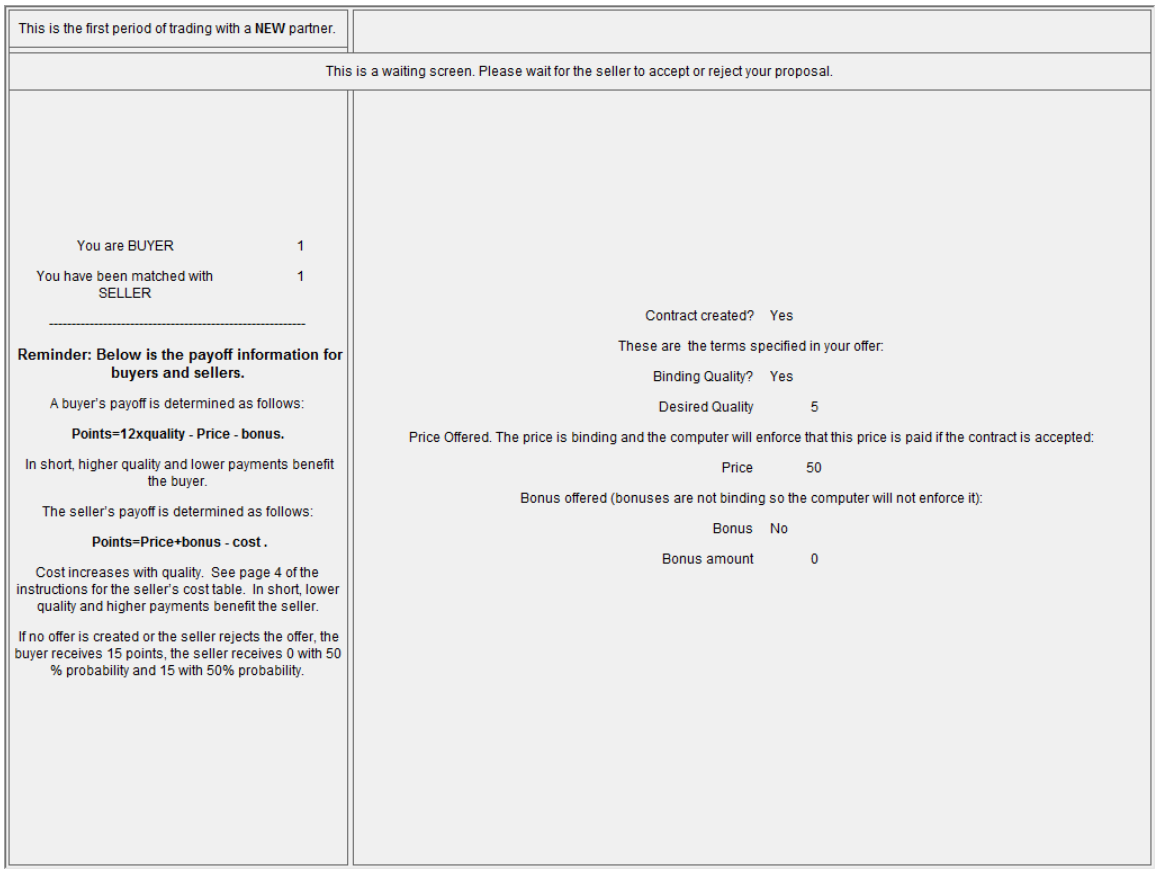
After pressing "Continue" on the previous screen, the subjects are shown the following end of period summary screen



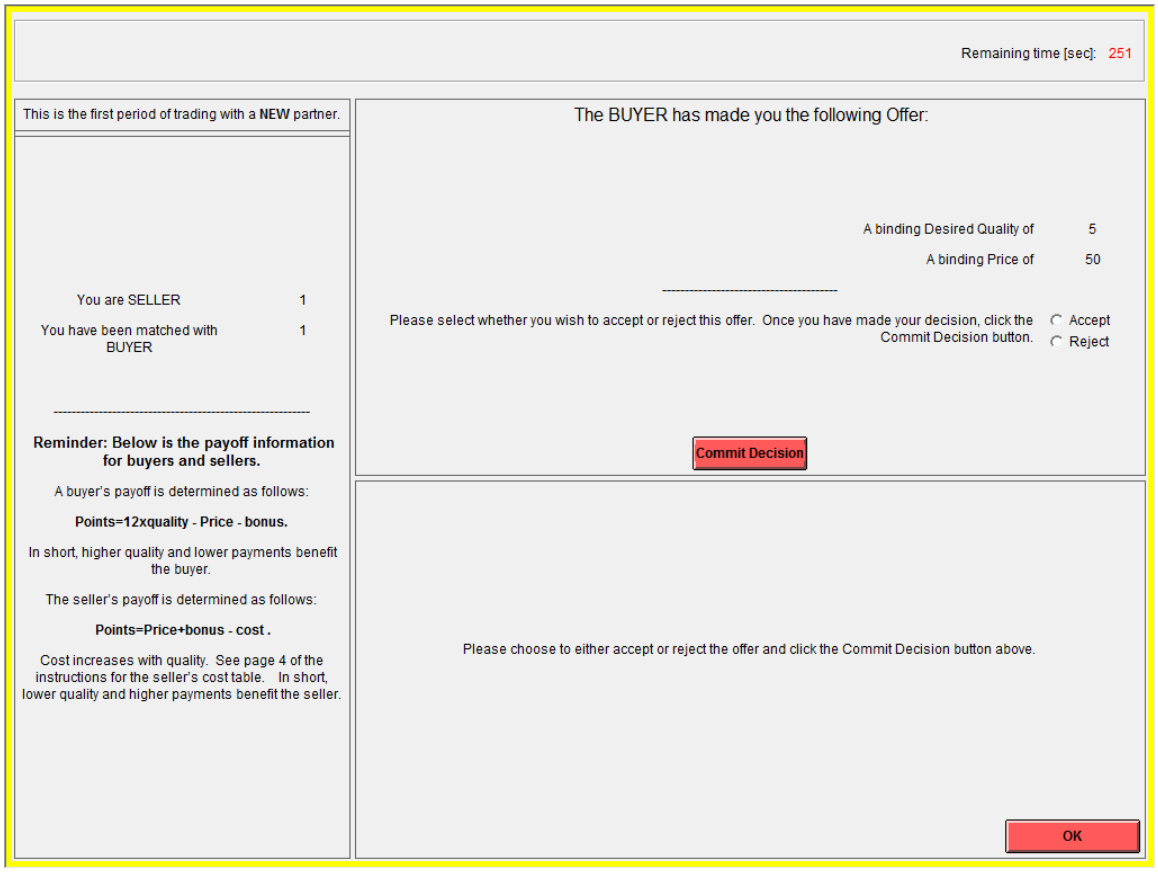
If instead the buyer had clicked "Make Offer" and "Binding" to create a binding contract that enforces quality and price, then the buyer offer screen (after clicking "Update") changes to the screen below. Note the buyer must select the binding quality level (note: only 1 and 5 are verifiable qualities in the PE treatments) and enter an offered Price.



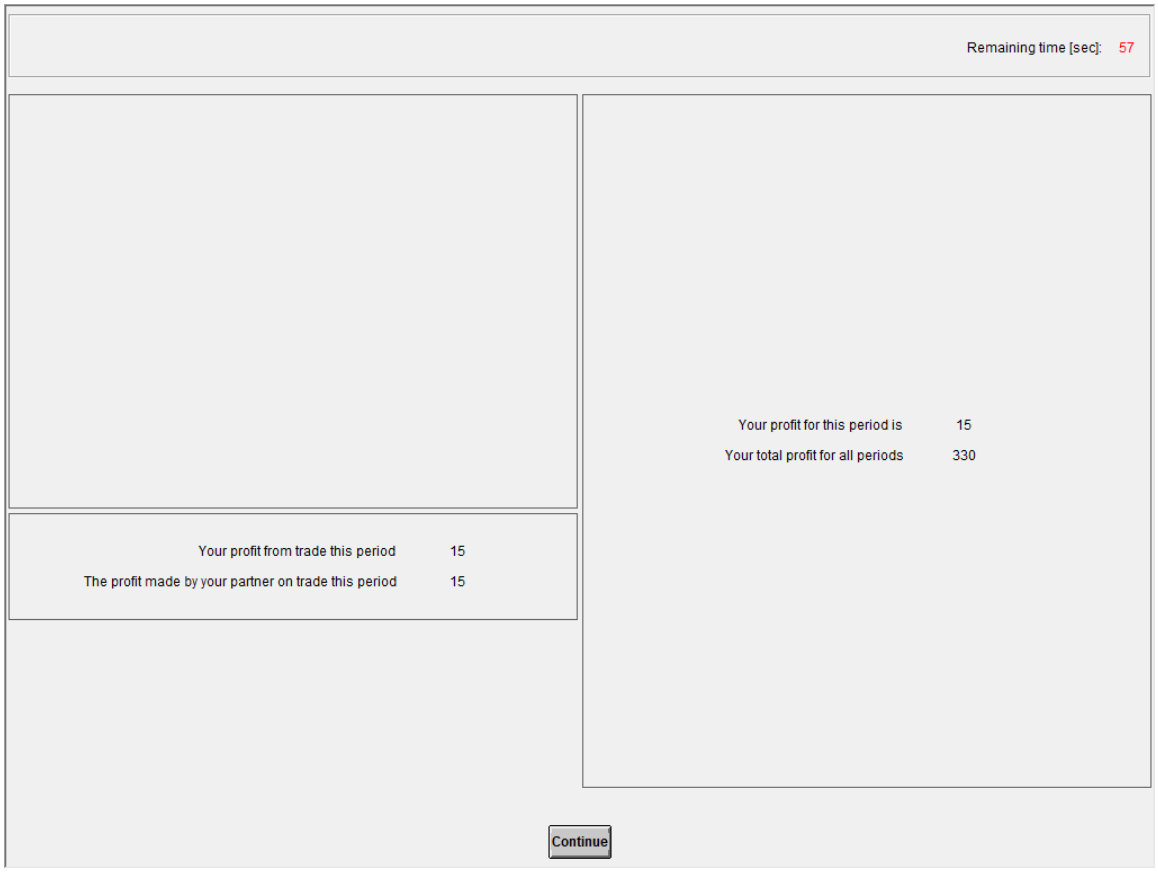
Suppose we enter binding quality of 5 and a price of 50. Then pressing "Commit Decision" takes us to the next screen for the buyer. The buyer waits at this screen because the seller must decide whether to accept or reject the contract. Note that the default bonus for a binding contract is 0 since the bonus plays no incentive role in a binding simple contract.



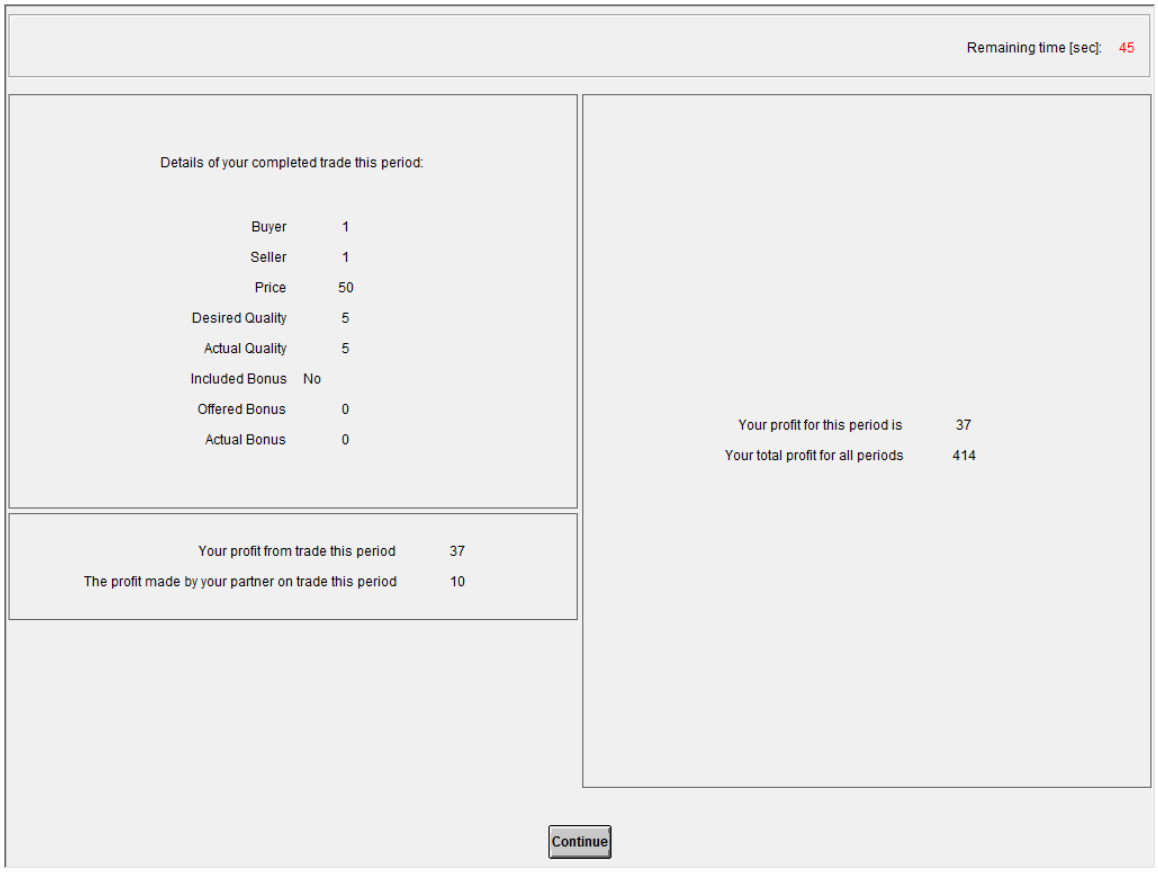
While the buyer is waiting, the seller sees the following screen.



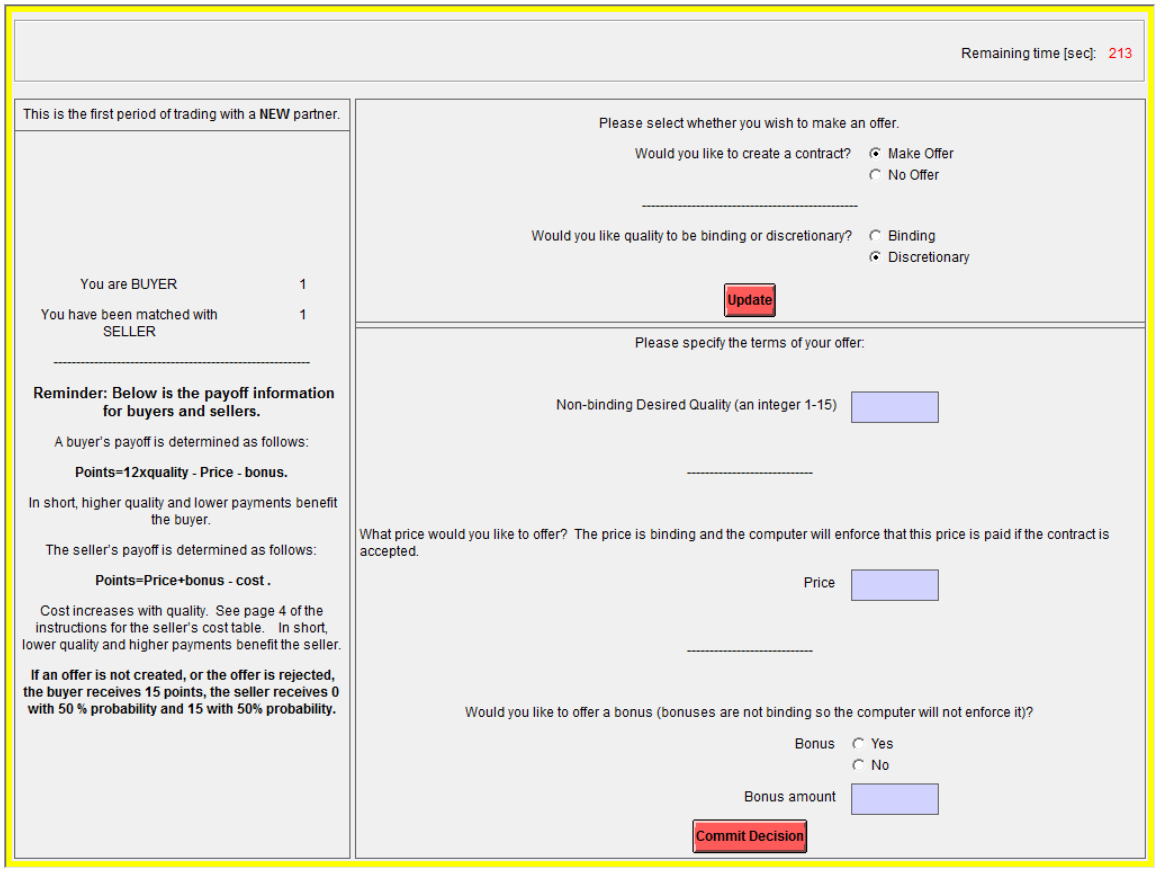
If the seller rejects the contract, then the seller is taken to the following screen (the buyer is shown an analogous screen)



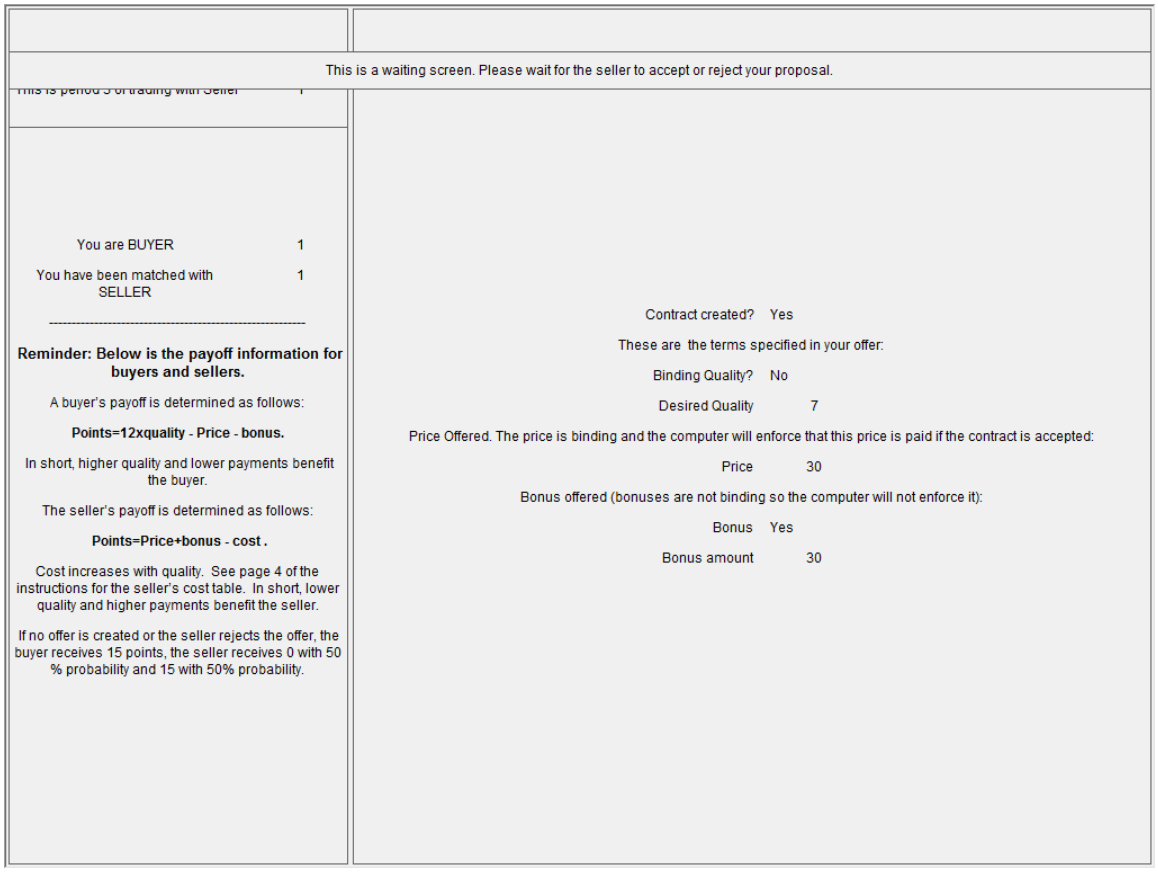
If the seller instead accepts the contract, then the trade is completed (there is no ex post discretion to choose quality or payments under a binding contract) and taken to the following screen (the buyer is shown an analogous screen)



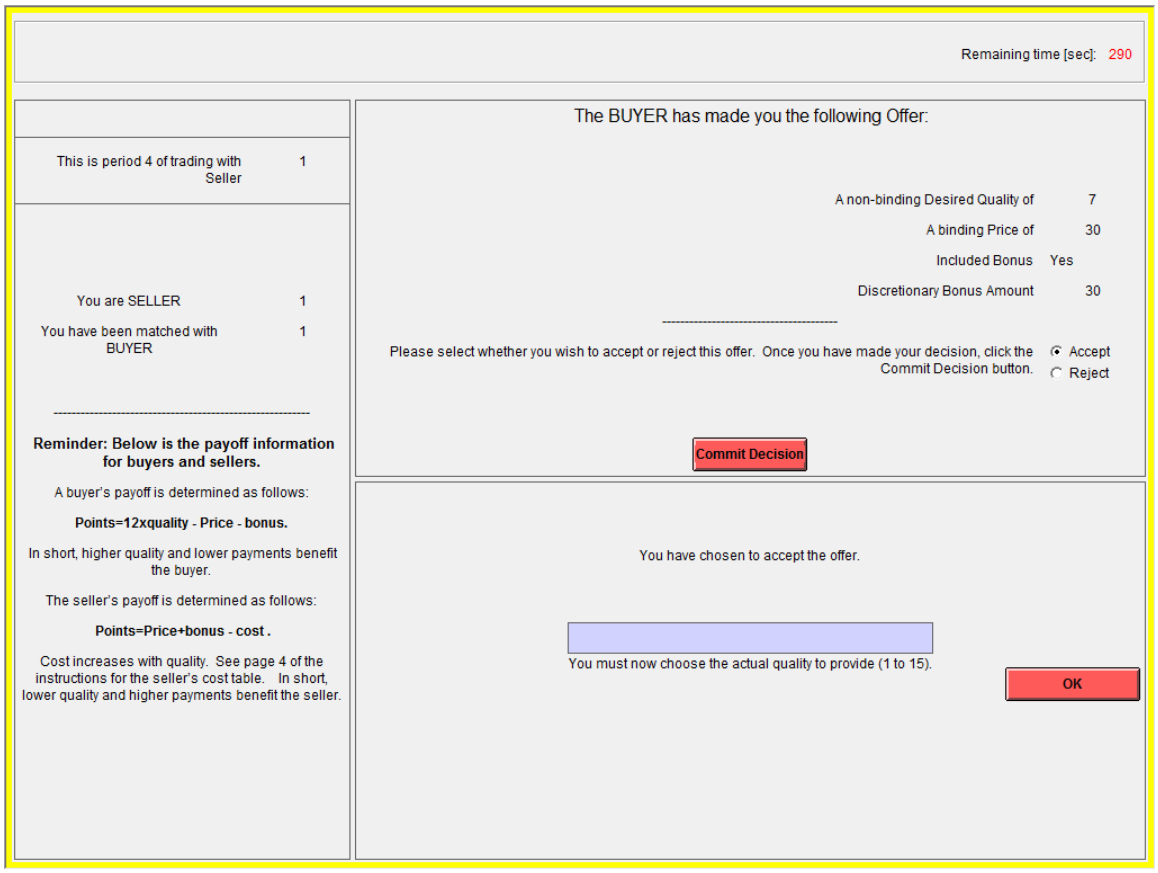
Now let's return to the buyer offer screen. Had the buyer chosen a discretionary contract, then the offer screen changes to the following:



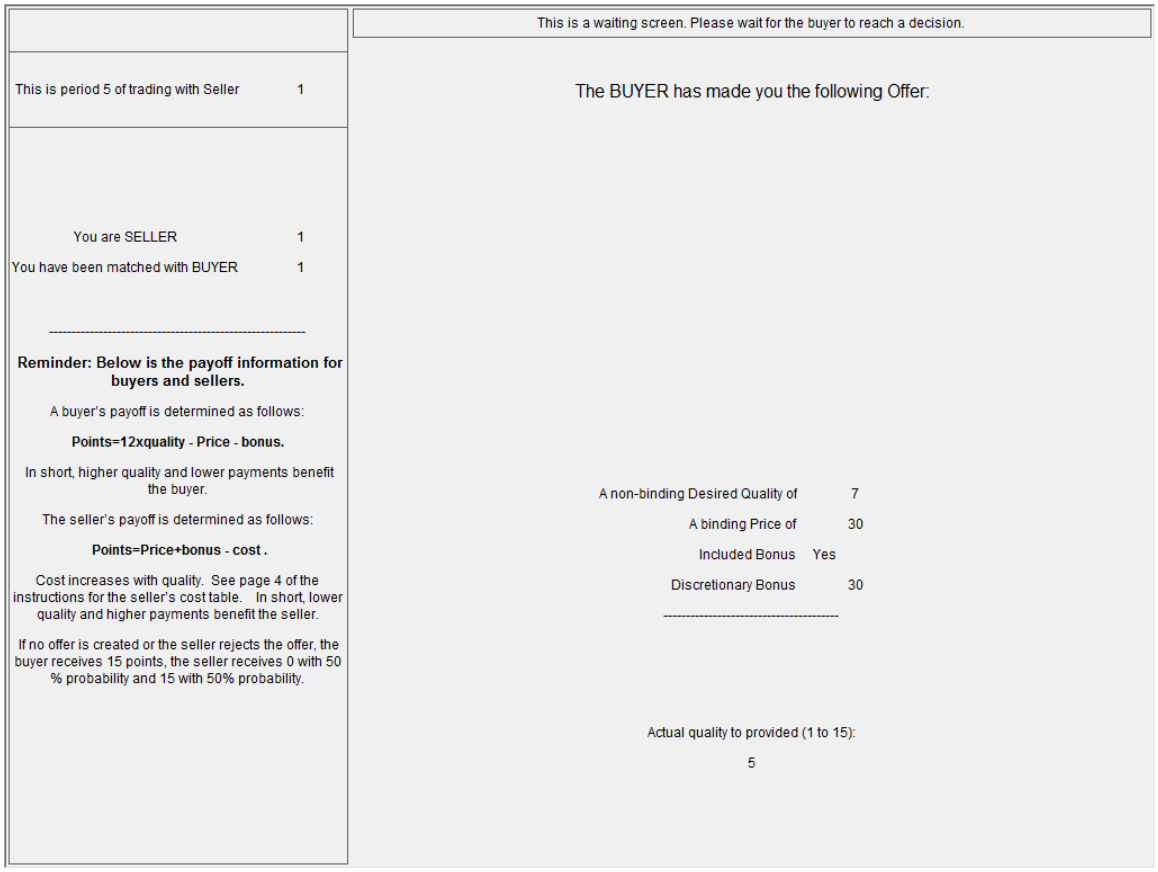
If the buyer offers a discretionary contract asking for Q=7, P=30 and B=30, then after clicking "Commit Decision" s/he is taken to the following waiting screen while the seller is making an accept or reject decision.



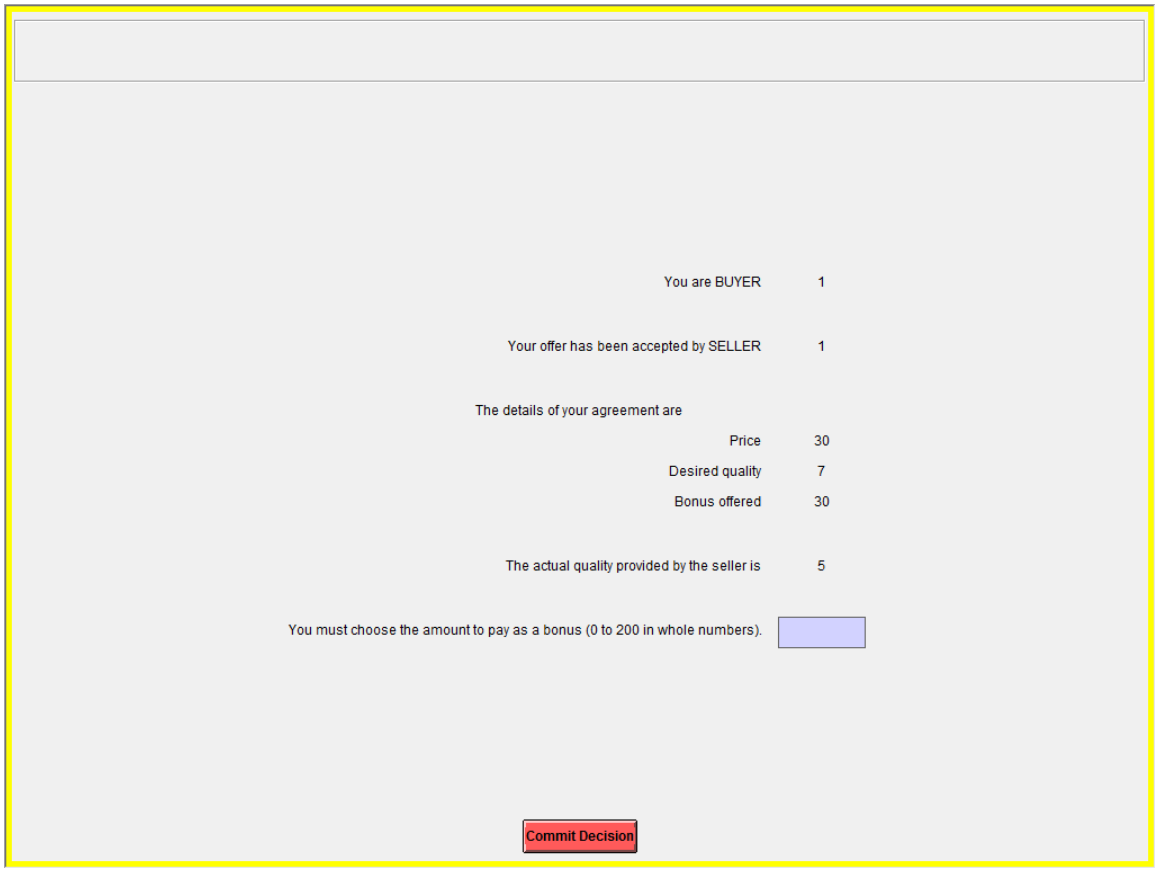
If the seller rejects the discretionary contract, then both buyer and seller are taken to the end of the period screen much like what has already been shown earlier. However, if the seller accepts the contract, her decision screen looks like the following (note: once s/he chooses accept, a quality determination box appears at the bottom of the screen):



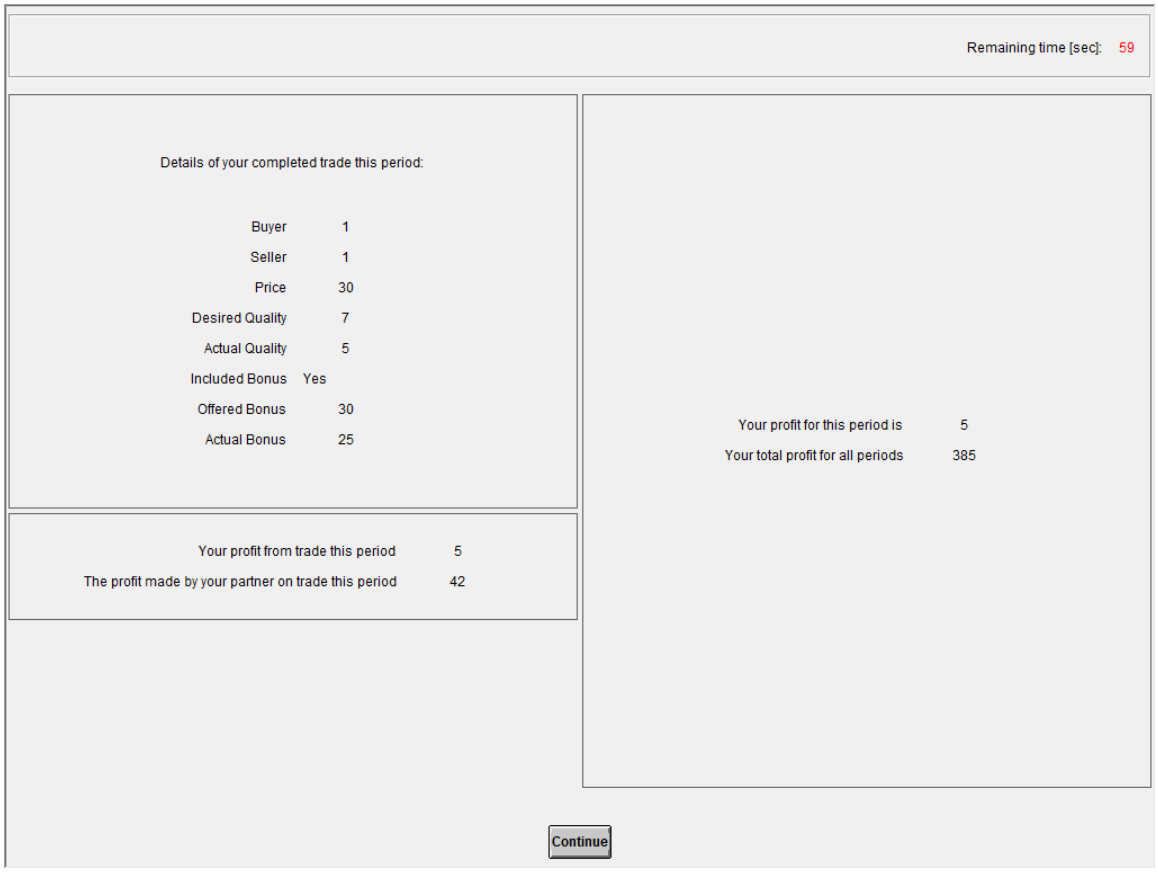
If the seller chooses an actual quality of q=5, s/he is taken to the following waiting screen.



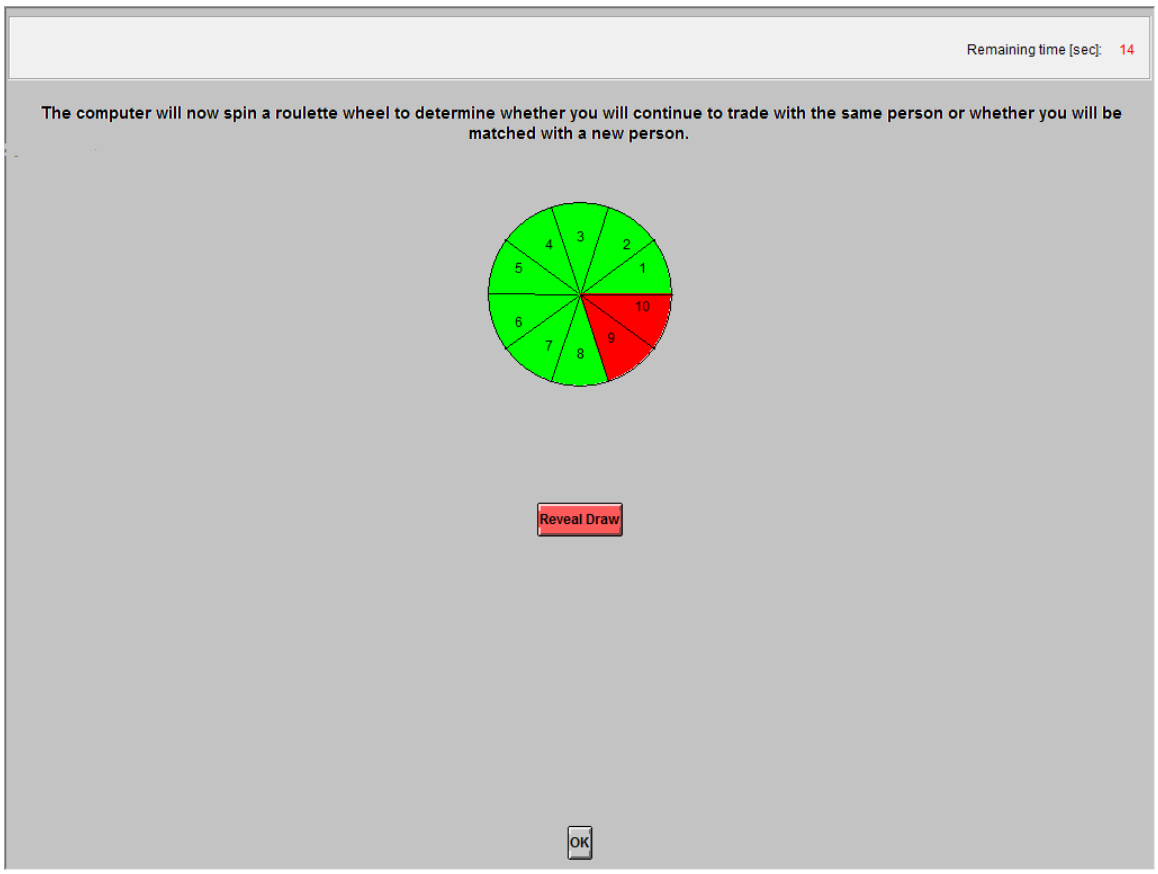
While the seller is waiting, the buyer is taken to the following bonus determination screen.



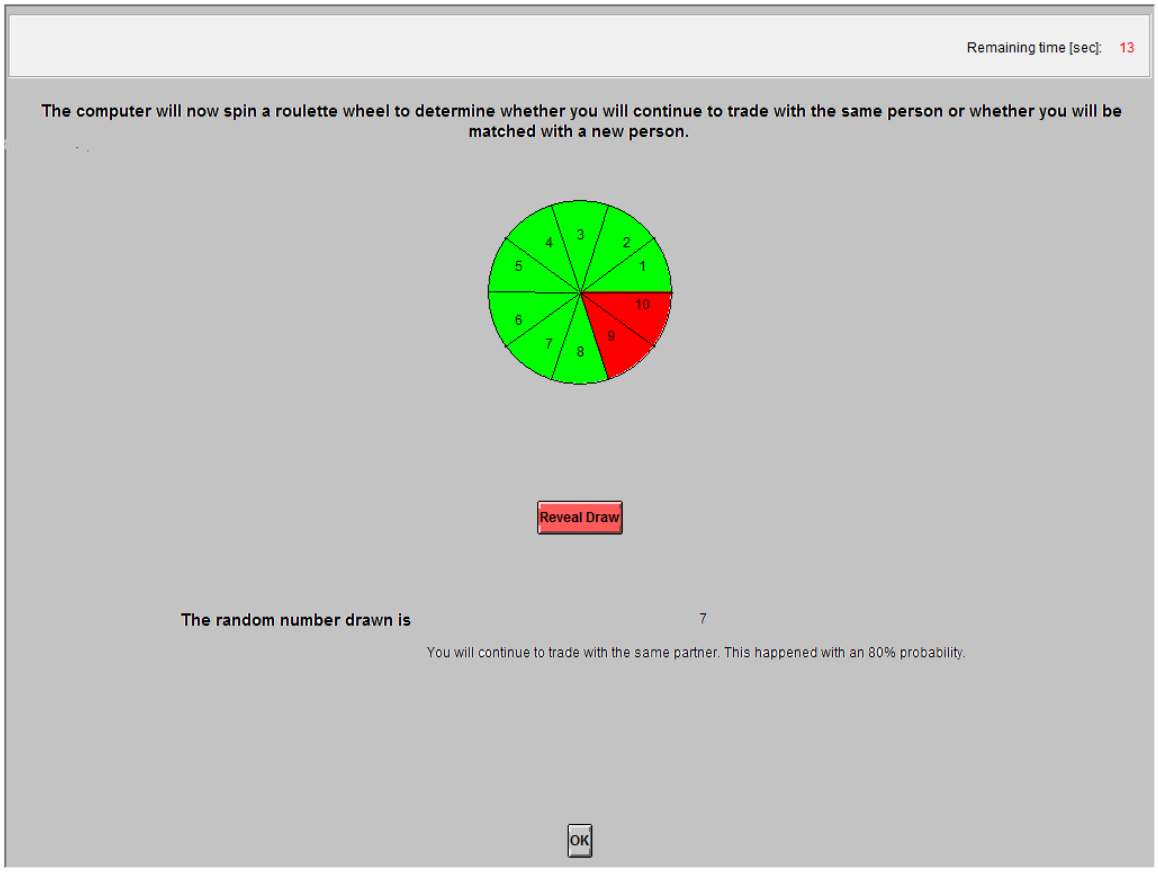
If the buyer pays an actual bonus of b=25 and then presses "Commit Decision," s/he is taken to the following end of the period summary screen. The seller sees an analogous screen.



Once a period is over, both the buyer and seller see the following screen that determines their probability of trading with each other again the next period. A key point to note is that, as a practical matter, the realized draw of the continuation probability was simultaneously applied to all pairs of buyers and sellers in a session to facilitate orderly rematching when supergames terminate. In other words, either all pairs in the room continued or terminated in the same period. This made it easy to implement stranger matching. Nonetheless, to ensure saliency of the continuation probability, we forced each subject to press the "Reveal Draw" button to show them the realized draw (whether they will be rematched with the same partner or a new partner). To speed up the experiment, they were given a maximum of 15 seconds to press the button. After 15 seconds, the next period begins and the buyer offer screen appears. The experimenter announced to subjects whether they are rematched with the same person or matched with a new person. Moreover, the top left side of the decision screens for both the buyer and seller remind them how many periods they have been trading with the same partner. Thus, even if some subjects forgot to press the "Reveal Draw" button, subjects were still informed of the realized draw because we implemented multiple layers of prompts to ensure that subjects knew the draw.



The next screen shows the revealed draw after a subject presses the "Reveal Draw" button



5 Source Code for Conducting the Experiment

The program used to conduct the experiment was z-Tree (Fischbacher, 2007). The files **E.ztt**, **PE 0.5.ztt**, and **PE 0.8.ztt** are the z-Tree treatment computer codes for this experiment and were included with the initial submission. These programs should be available from the Editor.

6 Data, Data Description, and STATA log files

The statistical analyses reported in the paper were carried out using STATA. The file **erkalwuroedata.dta** includes the data used for this paper. This file can be read and analyzed using STATA software. Below is a detailed description of the variables in the **erkalwuroedata.dta** data file.

- **expnum** – This is the session number. *expnum* values 6, 10, and 17 are sessions corresponding to the PE0.50 treatment. Values 8, 9, and 11 are sessions that correspond to the PE0.80 treatment. Values 28 and 29 are sessions corresponding to the E treatment.
- **period** – The period or round in a session. Each period contains a stage-game.
- **buyer**–the ID of the buyer associated with a particular trade.
- **seller**–the ID of the seller associated with a particular trade. If no trade took place for the period, then seller=-2 if the buyer did not offer a contract. If the seller rejected a contract, then seller=-1.
- **desiredprice**–the fixed price offered in the contract. This is the variable P in the model.
- **desiredeffort**–the quality level requested in the contract; i.e. the quality requested by the principal. This is the variable Q in the model.
- **includebd**–a binary variable indicating whether a discretionary bonus was offered (=1) or not (=0).
- **bdamount**–the size of the promised discretionary bonus in the contract. Can range from 0 to 200. This is the variable B in the model.

- **binding**–a binary variable indicating whether the buyer offered a binding (=1) or non-binding (=0) contract.
- **effort**–actual quality delivered by the seller. Can range from 0 (if no trade) to 15. With trade, the minimum quality is "1". This is the variable q in the model.
- **bonus**–actual bonus paid by the buyer. Can range from 0 to 200 though the highest actual bonus paid was 146. This is the variable b in the model.
- **profitseller**–seller's profit for the period.
- **profit**–buyer's profit for the period.
- **myseller**–This is identical to **seller** except that this variable does not change to -2 (no offer) or -1 (rejected). In other words, it stays the seller's ID in all periods.
- **repeating**–The number of periods a pair has played. If **repeating** = 1 then this is the first time the pair has played, 2 second time, etc
- **maxprob**–Probability of continuation after a period. Either 0.8 or 0.5.
- **bid**–The unique buyer subject ID. This is subject-specific and is not repeated across buyer subjects. It can be used to generate buyer-subject fixed effects.
- **sid**–The unique seller subject ID. This is subject-specific and is not repeated across seller subjects. It can be used to generate seller-subject fixed effects.
- **mybuyer**–This variable is identical to **buyer**. It's just a duplicate inadvertently added.
- **E80**–This is a dummy variable that takes a value of "1" if the observation is from the E treatment and "0" otherwise. This variable was generated using STATA command *generate E80=(expnum==28 |expnum==29).*
- **PE80**-This is a dummy variable that takes a value of "1" if the observation is from the PE0.80 treatment and "0" otherwise. This variable was generated using STATA command *generate PE80=(expnum==8 |expnum==9 |expnum==11).*

- **PE50**-This is a dummy variable that takes a value of "1" if the observation is from the PE0.50 treatment and "0" otherwise. This variable was generated using STATA command *generate PE50=(expnum==6 |expnum==10 |expnum==17).*

- **notrade**–Trade did not occur in the period either because the seller rejected the contract or the buyer did not make an offer. This variable was generated using STATA command *generate notrade=(seller==-2 |seller==-1).*

- **reject**–The seller rejected the contract. This variable was generated using STATA command *generate reject=(seller==-1).*

- **nooffer**–The buyer did not make an offer this period. This variable was generated using STATA command *generate nooffer=(seller==-2).*

- **periodsq**–The **period** variable squared.

- **PE**–This is a dummy variables that takes a value of "1" if the observation is from either PE0.80 or PE0.50 and "0" otherwise. This variable was generated using STATA command *generate PE=(PE50==1 |PE80==1).*

- **s1** through **s8**–These are dummies for the eight sessions. They are used as the session fixed effects.

- **sellershirk**–A dummy variable that takes a value of "1" if the seller delivered $q < Q$. This variable was generated using STATA command *generate sellershirk=(effort<desiredeffort).*

- **buyershirk**–A dummy variable that takes a value of "1" if the buyer offered a discretionary bonus, B, but delivered $b < B$. This variable was generated using STATA command *generate buyershirk=(includebd==1)*(bonus<bdamount).*

- **lagbuyershirk**–The variable **buyershirk** lagged one period (i.e. a buyer's own shirk decision the previous period). See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lagsellershirk**–The variable **sellershirk** lagged one period (i.e. a seller's own shirk decision the previous period). See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lagmysellershirk**–The shirk decision of the seller that the buyer contracted with last period. This is **sellershirk** lagged one period but sorted by **bid**. See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lagmymybuyershirk**–The shirk decision of the buyer that the seller contracted with last period. This is **buyershirk** lagged one period but sorted by **sid**. See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lagnotradebid**–The variable **notrade** lagged one period for the buyer (i.e. whether the buyer traded or not in the previous period). See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lagnotradesid**–The variable **notrade** lagged one period for the seller (i.e. whether the seller traded or not in the previous period). See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lagcooperate**–A dummy variables that takes a value of "1" if a buyer-seller pair traded together in the previous period and neither party shirked on each other, and "0" otherwise. See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lag2buyershirk**–The variable **buyershirk** lagged two periods (i.e. a buyer's own shirk decision two periods ago). See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lag2sellershirk**–The variable **sellershirk** lagged two periods (i.e. a seller's own shirk decision two periods ago). See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lag2mysellershirk**–The shirk decision of the seller that the buyer contracted with two periods ago. This is **sellershirk** lagged two periods but sorted by **bid**. See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lag2mymybuyershirk**–The shirk decision of the buyer that the seller contracted with two periods ago. This is **buyershirk** lagged two periods but sorted

by **sid**. See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lag2notradebid**–The variable **notrade** lagged two periods for the buyer (i.e. whether the buyer traded or not two periods ago). See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lag2notradesid**–The variable **notrade** lagged two periods for the seller (i.e. whether the seller traded or not two periods ago). See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **lag2cooperate**–A dummy variables that takes a value of "1" if a buyer-seller pair traded together in the previous two periods and neither party shirked on each other in either period, and "0" otherwise. In other words, it takes a value of "1" only if the buyer-seller pair successfully cooperated (neither party shirked) in both of the previous two periods. See the STATA log file *lagvariables.smcl* for the STATA commands for generating this variable.

- **ecost**–This is a function used to generate the expected cost of delivering the desiredeffort; i.e. the cost of delivering the contracted level of quality. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **eprofitseller**–This is the expected or promised profit to the seller under the offered contract terms. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **satisfyparticipation**–A dummy variable that takes a value of "1" if **eprofiteller** exceeds the reservation payoff of 15 and "0" otherwise. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **BhPE**–This is the upper bound of equation (7) in the main article. In other words, this is the largest self-enforcing B. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **BnotcrediblePE**–A dummy variable that takes a value of "1" if **bdamount** is larger than **BhPE** (i.e. B exceeds **BhPE**). In other words, this is an indicator

variable of B not being credible because it violates the buyer's self-enforcement condition. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **BlPE**–This is the lower bound of equation (7) in the main article. In other words, this is the smallest self-enforcing B that will induce the seller to deliver $q \geq Q$; it is the minimum incentive compatible level of B. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **BhPE** – A dummy variable that takes a value of "1" if the contract includes a zero fixed price and a positive bonus.

- **BnotICPE**–A dummy variable that takes a value of "1" if **bdamount** is smaller than **BlPE** (i.e. B is less than **BhPE**). In other words, this is an indicator variable of B not being incentive compatible to induce $q \geq Q$. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **efficiencyWage**–A STATA generated dummy variable that takes a value of "1" if the contract only includes a fixed price but no bonus.

- **discretBonus**– A STATA generated dummy variable that takes a value of "1" if the contract includes both a fixed price and a bonus.

- **eprofitbuyer**–The promised profit to the buyer under the contract; i.e. the profit that the buyer expects to make if all parties honor the contract. Created using the STATA command *generate eprofitbuyer==12*desiredeffort-desiredprice-bdamount*.

- **ejointprofit**–The sum of eprofitbuyer and eprofitseller. Generated in STATA.

- **esellershare**–The ratio of promised seller profit to promised joint profit. That is, the share of total promised profits to the seller. Generated in STATA.

- **nonbindContinue**–A dummy variable that takes a value of 1 if actual trade occurs and under a non-binding contract. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **bindContinue**–A dummy variable that takes a value of 1 if actual trade occurs and under a binding contract. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **lagBuyerhonorSellerhonor**–A dummy variable that takes a value of 1 if neither the buyer or seller shirked in the last period, providing that the same pair traded the previous period under a non-binding contract. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **lagBuyerhonorSellershirk**–A dummy variable that takes a value of 1 if the buyer honored the contract but the seller shirked in the last period, providing that the same pair traded the previous period under a non-binding contract. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **lagBuyershirkSellerhonor**–A dummy variable that takes a value of 1 if the buyer shirked but the seller honored the contract in the last period, providing that the same pair traded the previous period under a non-binding contract. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **lagBuyershirkSellershirk**–A dummy variable that takes a value of 1 if both the buyer and seller shirked in the last period, providing that the same pair traded the previous period under a non-binding contract. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **b1-b74**–Dummy variables for each buyer (bid). Generated in STATA.

- **seller1-seller74**– Dummy variables for each seller (sid). Generated in STATA.

- **notEffieciencyWage**–A dummy variable that takes a value of 1 if the contract has a discretionary bonus. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **PE80lagBuyerhonorSellershirk**–An interaction term between **PE80** and **lagBuyerhonorSellershirk**. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

- **PE80lagBuyershirkSellerhonor**–An interaction term between **PE80** and **lagBuyershirkSellerhonor**. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.
- **PE80lagBuyershirkSellershirk**–An interaction term between **PE80** and **lagBuyershirkSellershirk**. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.
- **PE50period**–An interaction term between **PE50** and **period**. The STATA command is "generate=PE50*period".
- **meanQPE80**–The average Q under non-binding contracts when actual trading occurs in the PE80 treatment. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.
- **meanQPE50**–The average Q under non-binding contracts when actual trading occurs in the PE50 treatment. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.
- **BcredibilityGapPE**–This is the variable $B - B_h$ for Figure 4a in the paper. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.
- **BICGapPE**–This is the variable $B - B_L$ for Figure 4b in the paper. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.
- **IRGap**–This is the difference between **esellerprofit** and the reservation utility for the agent, which is 15 in the experimental design. It is the main variable used to construct Figure 4c. See the STATA log file *generatedvariables.smcl* for the STATA commands for generating this variable.

References

Fischbacher, U. (2007). z-tree: Zurich toolbox for ready-made economic experiments. *Experimental Economics 10*(2), 171–178.