Supplementary Material for *Rational Inattention in Games: Experimental Evidence*

David Almog* and Daniel Martin†

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Appendix

A Experiment Implementation

A.1 Experiment Instructions (LOO Treatment)

Introduction:
You are about to participate in an experiment on the economics of decision making. You will be paid for your participation at the end of the session. The exact amount earned depends partly on chance and partly on following instructions carefully and making good decisions. You may earn a considerable amount of money in addition to the €8 participation fee.

The Game:
In this experiment you will have the opportunity to earn Experimental Points (EPs) by playing several rounds of a "buyer-seller" game. Experimental Points increase your chances of receiving real euro rewards at the end of the experiment. We will start by describing the game:

In each round, a Seller and a Buyer are matched together, and the Seller is assigned a hypothetical product that has a value of either 100 or 50 Experimental Points to the Buyer.

*Kellogg School of Management, Northwestern University, david.almog@kellogg.northwestern.edu.
†University of California, Santa Barbara and Kellogg School of Management, Northwestern University, daniel@martinonline.org.

The Seller decides whether to offer a price of 50 or 25 Experimental Points for the product, which is how many Experimental Points it will cost the Buyer to obtain the product. The Buyer is told this price, and if he or she so chooses, the Buyer has a way to learn the value before deciding whether or not to accept the Seller's offer.

If the Buyer accepts the Seller's offer, then the Buyer gets an amount equal to the value of the product minus its price and the Seller gets an amount equal its price. If the Buyer rejects the offer, the Buyer gets a fixed amount of 12.5 Experimental Points and the Seller gets 0 Experimental Points.

Before the game starts, everyone will have the chance to play a few practice rounds to familiarize with the interface and the game rules.

Game Dynamics:
The session will be divided into two phases: (1) a Seller phase and then (2) a Buyer phase. Decisions made during the Seller phase will be used to determine prices in the Buyer phase.

1. Seller Phase: Every subject starts out as a Seller. As a Seller, you will be asked to choose your pricing strategy for the remainder of the game. By default, all products with a value of 100 will automatically receive a price of 50. You will have to indicate with what probability (from 0% to 100%) you want to set a price of 50 (instead of a price of 25) when the product has a value of 50.

2. Buyer Phase: After the Seller phase, every subject will become a Buyer. In the Buyer phase, you will complete 16 rounds. In each round you will be matched with a randomly drawn Seller, and it is likely you will be matched with a different Seller than in the preceding round.

Buyer round description:
Each round, the computer randomly selects the value of the product: With 50%chance the product has a value of 100 and with 50% chance a value of 50.

- If the value drawn is 100: A price of 50 will automatically be chosen.
- If the value drawn is 50: The Seller strategy is implemented. That is, the computer selects a high price of 50 with the probability that the Seller you were matched with chose in their Seller phase.

The Buyer is informed of the price and can learn the value of the product by performing a task of adding up 20 numbers. The 20 numbers are determined by randomly drawing twenty numbers between -50 and 50 such that they add up to the product's value. The Buyer cannot use scratch paper or a calculator. If the Buyer rejects the Seller's offer, the Buyer's payoff is 12.5, and the Seller's payoff is 0. The Buyer has up to 120 seconds to make a decision. If

no decision is made after 120 seconds, the offer will be rejected.

Round Summary:

1. Randomly match every Buyer with a Seller
2. The value of the product is randomly determined to be 100 or 50.
3. Price is chosen
   a) **If the Value is 100:** the price is set to 50 by default.
   b) **If the value is 50:** Price implemented according to the Seller strategy.
4. The Buyer is told the price of the product.
5. The Buyer can learn the value of the product by adding up 20 numbers.
6. The Buyer accepts or rejects the offer.
   a) **Payoffs for accepting:** Buyer gets value minus price, Seller gets price.
   b) **Payoffs for rejecting:** Buyer gets 12.5, Seller gets 0.

Throughout the game, you will have available a payoff table for reference. This table will summarize all the possible payoff combinations derived from different values, prices, and Buyer actions.

Payment:

In addition to the €8 show-up fee, you can earn two additional rewards of €20:

The chances of winning the first €20 reward depend solely on your performance in the Seller role. We will select a random round and you will get the Experimental Points earned in that round as a Seller, which will determine your chances of earning the first reward.

The chances of winning the second €20 reward depend solely on your performance in the Buyer role. We will select another random round and you will get the Experimental Points earned in that round as a Buyer, which will determine your chances of earning the second reward.

For every Experimental Point you receive your chance of receiving that reward will increase by 1 percentage point.

- For example, imagine that the computer randomly selected the 15th round for the seller role, and the 4th round for the buyer role. Let suppose that in the 15th round as a seller you earned 50 Experimental Points, and in the 4th round as a buyer you earned 25 Experimental Points. You would then have a 50% chance of winning the first €20 reward and a 25% chance of winning the second €20 reward. Both rewards are independent of each other and your chances of earning one reward would not affect your chances in the other one.

Remember: All identities remain anonymous. No one will learn what strategy you played or what payoff you earned.

A.2 Interface Screenshots

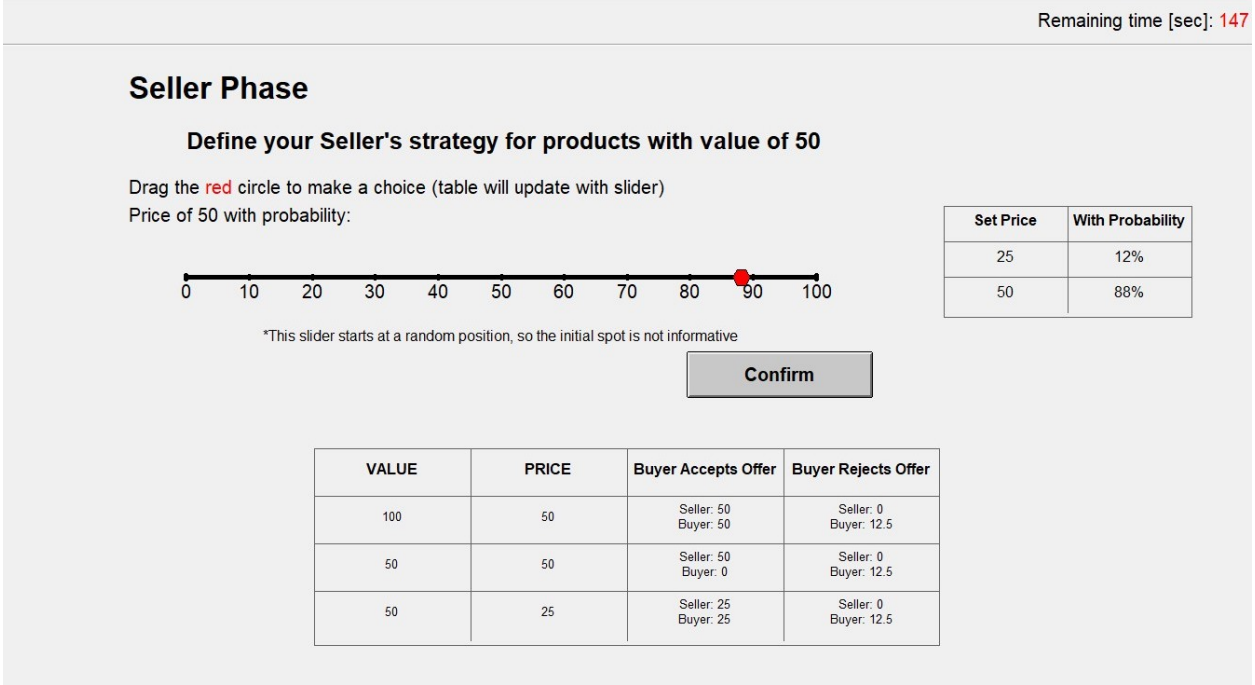

Figure A.1: Seller phase example screenshot.

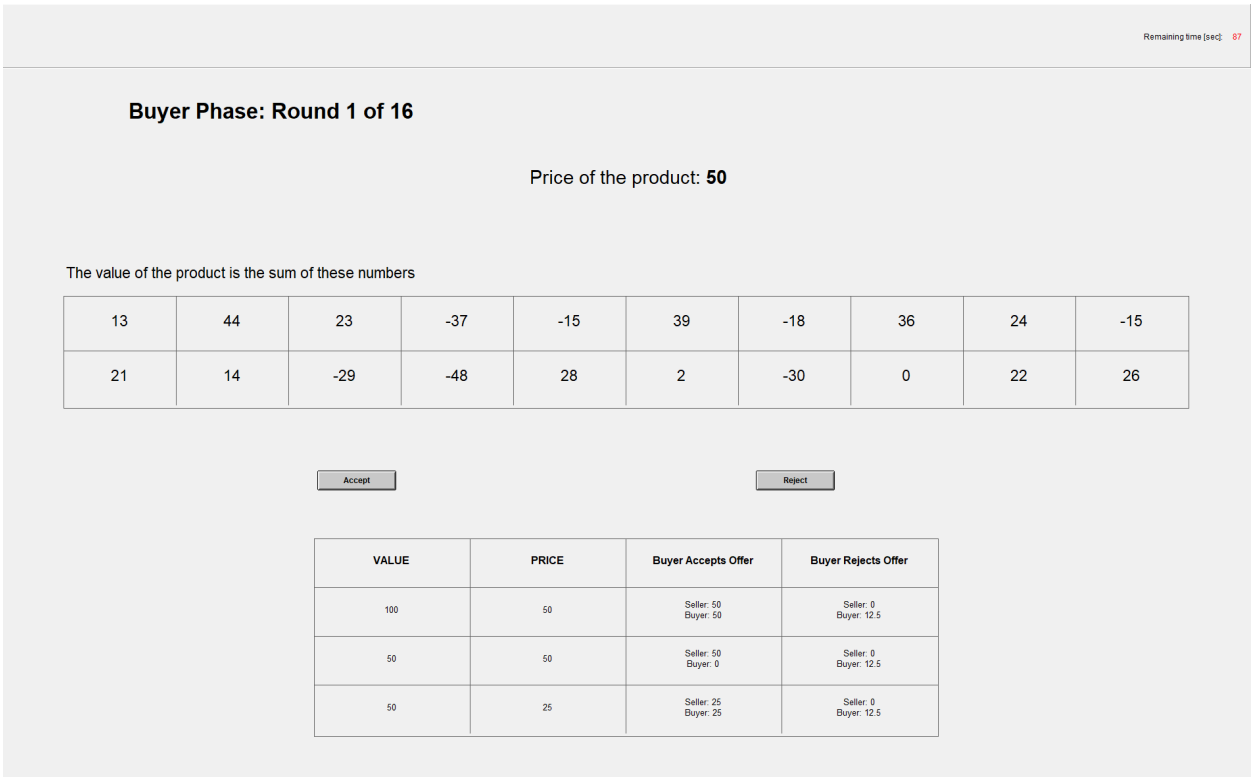

Figure A.2: Buyer phase example screenshot.

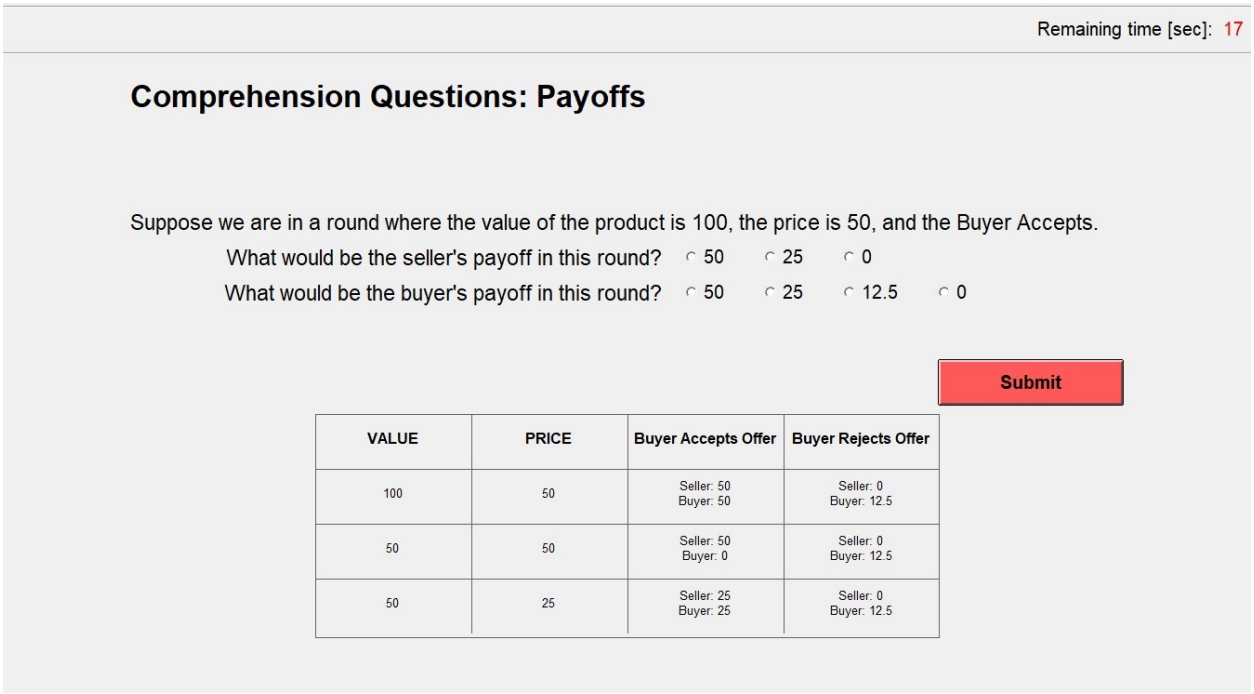

Figure A.3: Comprehension question example screenshot.

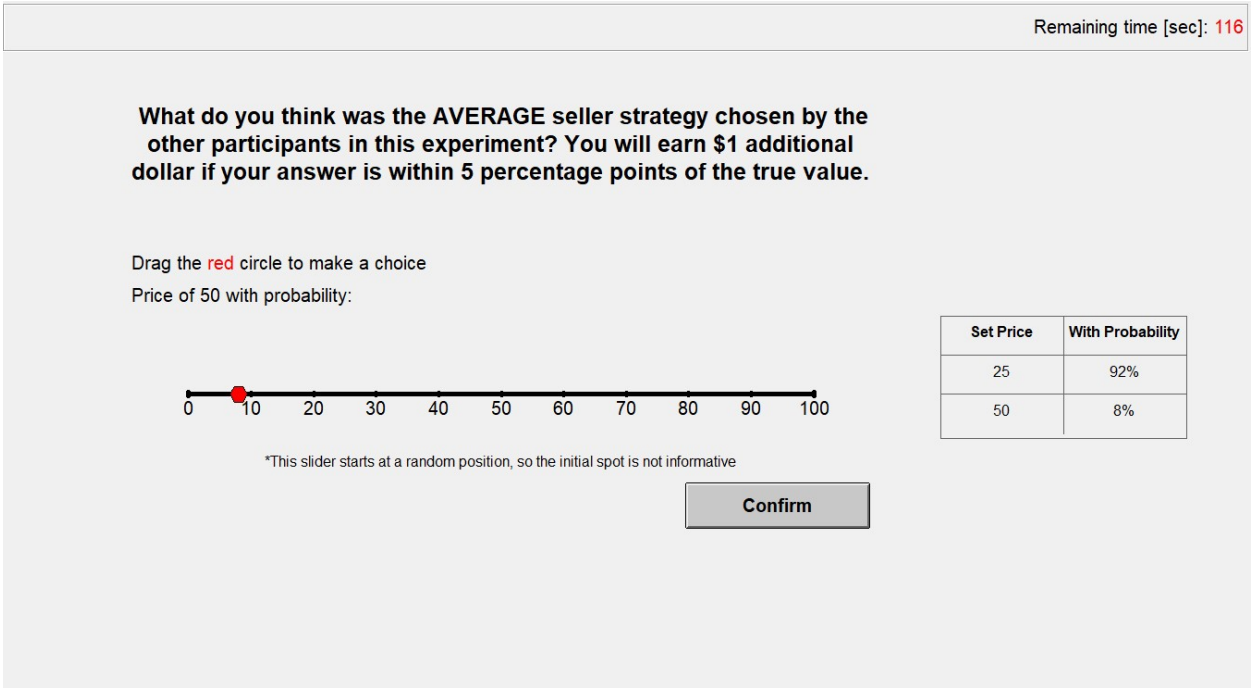

Figure A.4: Seller strategy belief elicitation example screenshot.

B Additional Figures

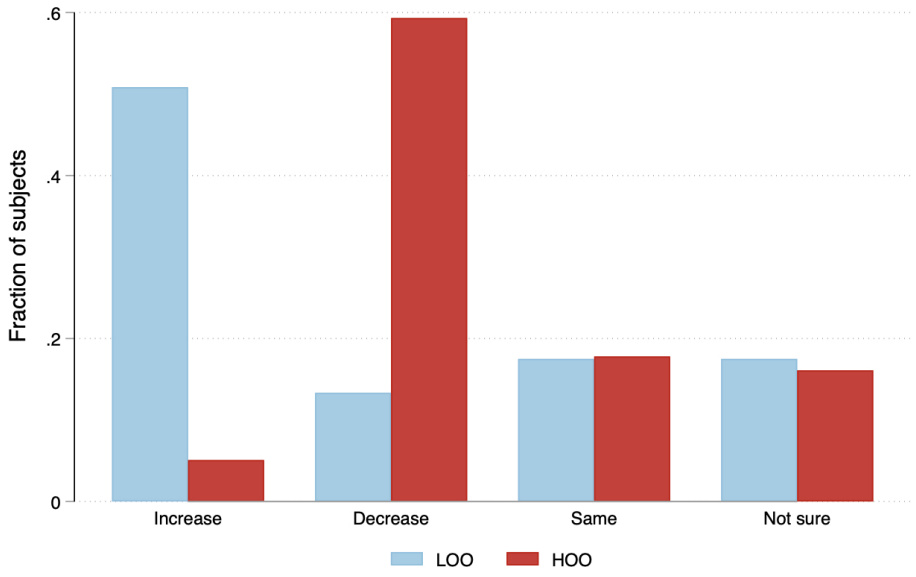

Figure B.1: Self-reported change in seller strategy for a hypothetical switch in outside option.

C Additional Tables

	Rounds 1-8			Rounds 9-16			Overall		
(Value,Price)	50,25	50,50	100,50	50,25	50,50	100,50	50,25	50,50	100,50
LOO	6.50%	23.53%	24.89%	9.79%	17.62%	24.53%	8.17%	20.77%	24.71%
HOO	6.51%	23.66%	19.20%	9.36%	13.55%	19.18%	7.89%	18.32%	19.19%

Table C.1: Mistake rates at each price and value for each treatment (including buyer rounds that ran out of time and hence ended up as rejections).

D Adapted Version of NIAC

To formally express this condition in our setting, we denote P_{LOO} and P_{HOO} as the buyers' state-dependent stochastic choice data in the LOO treatment and the HOO treatment, respectively. This adapted version of the NIAC condition requires that there is no way to cycle the state-conditional marginal distributions of P_{LOO} and P_{HOO} such that expected utility is increased:

$$\begin{aligned}
&P_{LOO}(reject|\theta_H) * P_{LOO}(\theta_H) * 12.5 + P_{LOO}(reject|\theta_L) * P_{LOO}(\theta_L) * 12.5 \\
&\quad + P_{LOO}(accept|\theta_H) * P_{LOO}(\theta_H) * 50 + P_{LOO}(accept|\theta_L) * P_{LOO}(\theta_L) * \phi \\
&- [P_{HOO}(reject|\theta_H) * P_{LOO}(\theta_H) * 12.5 + P_{HOO}(reject|\theta_L) * P_{LOO}(\theta_L) * 12.5 \\
&\quad + P_{HOO}(accept|\theta_H) * P_{LOO}(\theta_H) * 50 + P_{HOO}(accept|\theta_L) * P_{LOO}(\theta_L) * \phi] \\
&+ P_{HOO}(reject|\theta_H) * P_{HOO}(\theta_H) * 12.5 + P_{HOO}(reject|\theta_L) * P_{HOO}(\theta_L) * 12.5 \\
&\quad + P_{HOO}(accept|\theta_H) * P_{HOO}(\theta_H) * 50 + P_{HOO}(accept|\theta_L) * P_{HOO}(\theta_L) * \phi \\
&- [P_{LOO}(reject|\theta_H) * P_{HOO}(\theta_H) * 12.5 + P_{LOO}(reject|\theta_L) * P_{HOO}(\theta_L) * 12.5 \\
&\quad + P_{LOO}(accept|\theta_H) * P_{HOO}(\theta_H) * 50 + P_{LOO}(accept|\theta_L) * P_{HOO}(\theta_L) * \phi] \\
&\geq 0
\end{aligned}$$

The first two lines of this expression give the utility in the LOO treatment under the signal structure used in that treatment, and the following two lines give the utility in the LOO treatment if we use the signal structure from the other treatment instead. The fourth and fifth lines give the utility in the HOO treatment under the signal structure used in that treatment, and the following two lines give the utility in the HOO treatment if we instead use the signal structure from in the other treatment.

For the P_{LOO} and P_{HOO} observed in our experiment, this condition reduces to:

$$-1.62852 + 0.0137712 * \phi + 1.549155 - 0.0161268 * \phi \geq 0 \tag{1}$$

This expression is satisfied, for example, if we use a ϕ of -50, as before.