

SUPPLEMENT TO “CONTINUITY, INERTIA, AND STRATEGIC
UNCERTAINTY: A TEST OF THE THEORY OF CONTINUOUS
TIME GAMES”: INSTRUCTIONS TO SUBJECTS
(*Econometrica*, Vol. 85, No. 3, May 2017, 915–935)

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APPENDIX B: INSTRUCTIONS

YOU ARE ABOUT TO PARTICIPATE in an experiment in the economics of decision-making. If you follow these instructions carefully and make good decisions, you can earn a CONSIDERABLE AMOUNT OF MONEY, which will be PAID TO YOU IN CASH at the end of the experiment.

Your computer screen will display useful information. Remember that the information on your computer screen is PRIVATE. To insure best results for yourself and accurate data for the experimenters, please DO NOT COMMUNICATE with the other participants at any point during the experiment. If you have any questions, or need assistance of any kind, raise your hand and the experimenter will come and help you.

In the experiment you will make decisions over several periods. At the end of the last period you will be paid, in cash, the sum of your earnings over all periods.

The Basic Idea

In each of several *periods*, you will be randomly matched with another participant for 60 seconds and you will each decide when to *Enter the market*. If you both enter at the same time, you will both earn the same amount, which will depend on the time at which you both entered. If one player enters earlier than the other, she will earn more money while her counterpart will earn less. The longer the second player waits to enter after the first player enters, the greater the difference in their earnings.

Screen Information

A vertical dashed line marks the passage of time, moving from left to right over the course of the period until both players have chosen to *Enter the Market*. A dot moving left to right labeled ‘Me’ and another labeled ‘Other’ shows payment information for each player, although before either player has entered the market the two dots will be precisely on top of each other. The dots show the amount of money each subject will earn if both players have entered now. If nobody has entered yet the dots (which are on top of each other) show what will happen if both enter now. If one player has entered already the dots (which are now separated) will show the amount each player will earn if the second player enters the market now.

You can choose to Enter the market at any time by pressing the space bar. The time of entry will be shown on the screen as a dashed vertical line.

The screen gives you information on your potential earnings under three possible scenarios:

If You Both Enter in the Same Sub-Period

If you and your counterpart enter at the same time, you will earn exactly the same amount as your counterpart. The *black line* that looks like a hill shows exactly what you and your counterpart would both earn if you both entered in each moment of the period.

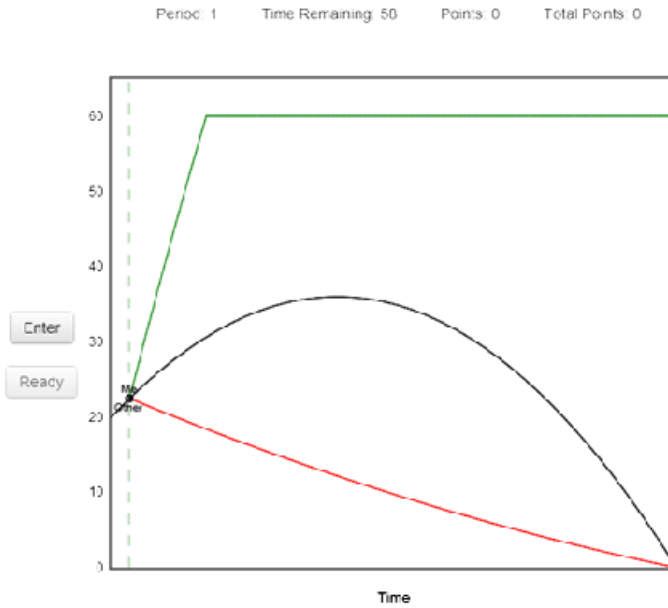


FIGURE B.1.—Nobody has entered.

Notice that your joint earnings depend on when you both choose to enter in. For example, if you and your counterpart both entered at time 0, you would both earn 20 points. However, if you both entered at time 24, you would both earn approximately 36 points.

If You Enter First

If your counterpart enters later than you, she will earn less and you will earn more than if she had entered at the same time you did. At every moment the screen tells you what would happen if you entered now, and your counterpart entered at a later time than you:

- The green line shows you what you would earn if you entered now and your counterpart entered in each of the remaining moments in the period.
- The red line shows you what your counterpart would earn if you entered now and she entered in each of the remaining moments in the period.

Notice that the longer your counterpart waits to enter after you, the less she earns. For instance in the example in Figure B.1, if you entered now and your counterpart entered 5 seconds later, you would earn approximately 38 points (the amount on the green line 5 seconds later) and your counterpart would earn approximately 20 points (the amount on the red line 5 seconds later). If, instead, your counterpart waited 10 seconds to enter, you would earn approximately 50 points and your counterpart approximately 18 points.

Note that these lines will change as you move along: the green line will always be above the current point on the black hill and the red line will always be below, reflecting the fact that you earn more (and your counterpart less) than if your counterpart entered when you did.

If You Enter Second

If you enter at a later time than your counterpart, you will earn less and your counterpart more than if you had moved at the same time as your counterpart. Importantly, these

graphs and payoffs are symmetric: your counterpart sees the same screen (at least prior to anyone entering) and faces the same payoff consequences as you do. Thus it is also true that:

- The green line shows you what your counterpart would earn if (s)he entered now and you entered later at a future time.
- The red line shows you what you would earn if your counterpart entered now and you entered at a later time.

For instance in the example in Figure B.1, if your counterpart entered now and you entered in 5 seconds, your counterpart would earn approximately 38 points (the amount on the green line 5 seconds to the right) and you would earn approximately 20 points (the amount on the red line 5 seconds to the right). If, instead, you waited 10 seconds to enter, you would earn approximately 18 points and your counterpart approximately 50 points.

Time Freeze

After a player first enters, the game will *freeze* for 5 seconds. During these 5 seconds the player's counterpart can choose whether to enter too by pressing the spacebar. If (s)he does, the software will treat both entry decisions as occurring *at the same time* and both players will earn the exact same amount (the amount shown on the black line at the moment of entry). If she does not choose to enter during the time freeze, the clock will resume and her earnings will drop, following the red line. The time freeze is demonstrated in Figure B.2.



FIGURE B.2.—One player has decided to enter and the clock has frozen.

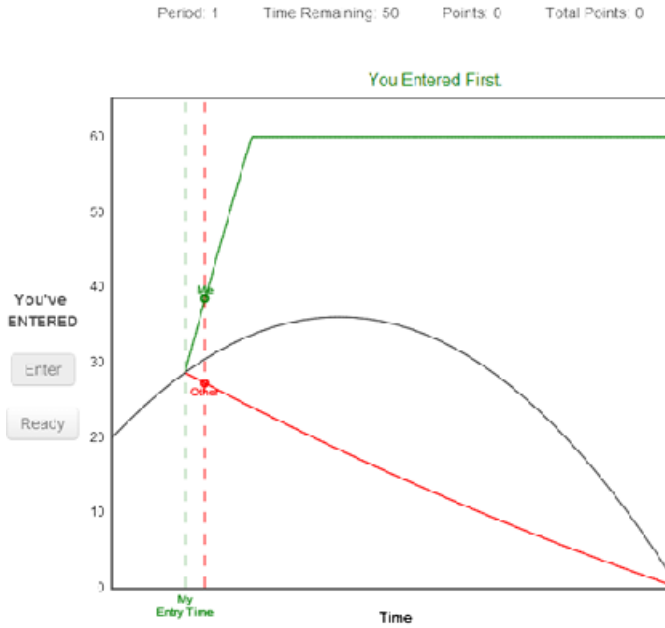


FIGURE B.3.—The green player has entered but the red player has not.

After Entry Occurs

If one player enters before the other, you will see a dotted green line mark the time of first entry and you will see the dots separate, one following the green line and the other red line. A label next to each dot will tell you which corresponds to you (labeled “Me”) and which to your counterpart (labeled “Other”). A message at the top of the screen will also remind you whether you were the first to enter (in green) or the second (in red). If you were not the first to enter, the timing of your entry decision will now determine both of your earnings. Figure B.3 shows an example.

After both players enter, horizontal lines will appear showing your earnings. At the end of these lines (on the right side of the screen) you will see your and your counterparts’ exact earnings (if you both entered at the same time, you will both earn the same amount). Figure B.4 shows an example in which one player has entered at time 10 and the other later at time 14. As a consequence the first to enter (in green) earns 45.01 points and the second (in red) player earns 26.23 points.

Other Information and Earnings

At the top of the screen you will see the current period number, the time remaining in the current period, the number of points you will earn this period based on current decisions and the total number of points you have accumulated over all periods so far. You will be paid cash for each total point you have earned at the end of the experiment, at a rate given by the experimenter.

At the beginning of each new period, you will be randomly matched with a new participant from the room to play again. All matchings are anonymous—you will never know who you were matched with and neither will they.

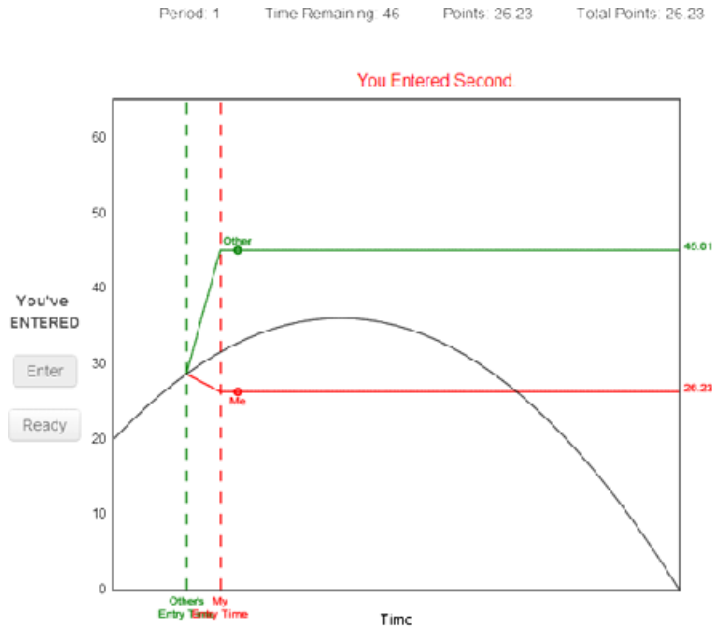


FIGURE B.4.—Both have entered.

Summary

- Your and your counterparts' earnings depend on the time you each decide to Enter the market (by pressing the spacebar).
- When either player enters, the clock will freeze and her counterpart will have the opportunity to enter too, at the same time.
 - If you both enter at the same time, you will earn the same amount, shown on the black hill-like line. As the black hill line shows, your joint earnings depend on the time at which you both enter.
 - If your counterpart enters at a later time than you, you will earn more and she will earn less than if she had entered when you did. These amounts are shown via the green and red lines.
 - Likewise, if you enter at a later time than your counterpart, you will earn less and your counterpart more than if you had entered when she did.
- You will be paid based on the total number of points you earn, over all periods.

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Co-editor Dirk Bergemann handled this manuscript.

Manuscript received 26 April, 2016; final version accepted 30 January, 2017; available online 6 February, 2017.