Sample Instructions

Introduction

Welcome and thank you for participating.

You are about to participate in an experiment in the economics of decision making in which you will earn money based on the decisions you make. All earnings you make are yours to keep and will be paid to you IN CASH at the end of the experiment. During the experiment all units of account will be in experimental dollars. Upon concluding the experiment the amount of experimental dollars you receive as payoff will be converted into dollars at the conversion rate of US $1 per 100 experimental dollars.[1] Your earnings plus a show-up fee of $5 dollars will be paid to you in private.

Do not communicate with the other participants except according to the specific rules of the experiment. If you have a question, feel free to raise your hand. I will come over to you and answer your question in private. Please turn off and put away all your electronic equipment.

The experiment will consist of several series of decision-making, each of which will have several rounds. You will also be asked to complete a short exit questionnaire.

In this experiment, you will be referred to by your ID number. Your ID number will be assigned to you by the computer and will be displayed on your computer screen.

Decisions and Earnings

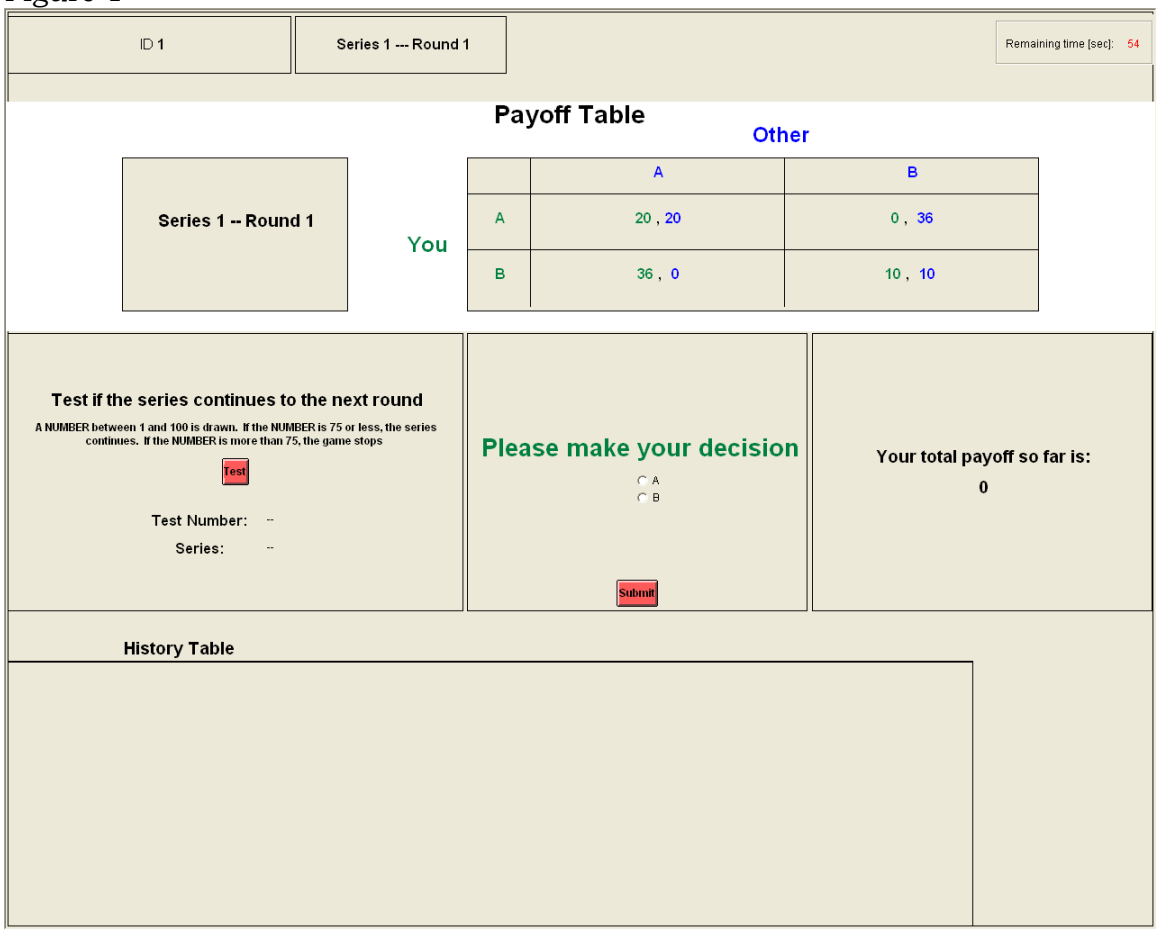
Decisions in this experiments will occur in a number of ***decision series***. At the beginning of each series you will be matched with another participant in this room. You will not be told which of the other participants you are matched with.

A series will consists of several ***decision rounds***. You will make decisions in each of the rounds. You will be matched with the SAME other person in all rounds of a given series, but you will be rematched with a DIFFERENT other person in the room every time a new series starts.

In each round, you will be asked to make a choice between options A and B, using a decision screen as in Figure 1 below. You will see several items on your screen, including a payoff table on top, and a decision box in the center.

[1] For the cumulative treatment, the corresponding sentence in the instructions read: "Upon concluding the experiment the amount of experimental dollars you receive as payoff will be converted into dollars at the conversion rate of US $.25 per 100 experimental dollars.

Figure 1



Payoff table The payoff table shows how much you and the other participant you are matched with can earn based on your and the other's decisions. (The numbers in these tables are hypothetical.)

Both you and the other participant have two choices, A or B. Your payoff table will always display you as the row chooser, and the other participant as the column chooser. Your and the other participant's payoffs are displayed in the cells corresponding to your and the other participant's choices, with your payoff first, and the other's payoff second. Your decision choices and payoffs will be displayed in **green**, and the Other's decisions and payoffs will be displayed in **blue**.

Example: Suppose, for example, that your payoff table is as given in Figure 1 above, then:

- If you choose A, and the Other participant also chooses A, then the payoffs will be the ones written in the upper left hand corner of the table: Here you and the other will both earn a payoff of 20.
- If you choose B and the other also chooses B, then the payoffs will be the ones written in the lower right hand corner of the table. Here you and the other participant will both earn a payoff of 10.
- If you choose A and the other chooses B, then you earn 0 while the other will earn 36.
- If If you choose B and the other chooses A, then you earn 36 while the other will earn 0.

ARE THERE ANY QUESTIONS?

Please complete the exercise in the Tutorial displayed on your computer screen now. Your screen shows a hypothetical payoff table. Please answer the questions on your screen regarding your payoff: enter numbers from your payoff table. When you have answered all questions, click OK button, and wait for further instructions.
(Keep your cursor in the box when typing)

Your payoff table will be given to you by the computer. The numbers in the payoff table may change between series. If they change, you will be informed.

Decision box. You will enter your decision by clicking "A" or "B" button in the box, which says "**Please make your decision**". It is located in the center of the decision screen; See Figure 1.

Results. After you and the other participant have entered their decisions, the computer results screen will display your and the other person's decision in this round, and your payoff for the current round. A history window at the bottom of the screen will display a history of your choices and payoffs in the previous rounds and series.

Continuation of the Series to the Next Round. The results screen will also display whether the series ends or continues to the next round. To determine whether the current decision series ends with this round or continues to the next round, the computer will draw a random number between 1 an 100. If this random number is 75 or less, the series will continue into the next round. If the number selected is greater than 75, then the series ends. If the series continues, you will then be matched with the SAME person in the next round. If a series ends, and a new series starts, then you will be matched with a DIFFERENT other person than in the previous series.

In sum, after each round there are THREE CHANCES OUT OF FOUR that this series continues to the next round where you will be matched with the SAME other person, and ONE CHANCE OUT OF FOUR that the series ends.

Suppose, for example, that number 68 is drawn by the computer. Then the series will continue, and you will be matched with the SAME person in the next round. Suppose, on the other hand, that number 92 is drawn. Then the series ends. If the new series starts, then you will be matched with a DIFFERENT other person than in this series.

You will be given a test box which illustrates how a random number determines whether a series continues or stops. The test box, which says **"Test if the series continues to the next round"** is located in the center left part of the decision screen; see Figure 1. You may click "Test" button in this box at any time, and as many times as you wish, before making your choice in a round. The computer will then draw a test random number and will inform you whether the series would continue or stop if this number were to be drawn. The numbers drawn will be for test purposes only, not the actual number number that will be drawn to determine continuation of the series into the next round.

Please practice with the test box located on your computer tutorial sceen now. (Click OK to go to the test sceen.) Click "Test" button in this box as many times as you wish, to see how the computer determines if the series continues or ends.

ARE THERE ANY QUESTIONS?

Click OK on the tutorial screen to continue.

Series Earnings and Total Earnings

Series Earnings

[The following two paragraphs appear for the CUMULATIVE treatment only]
Your earnings in each series is equal to the sum of your per round payoffs.

Suppose, for example, that the series ends after five rounds. Then the series earnings is the sum of your payoffs in these five rounds. Suppose now that the series ends after one round. Then your earnings in this series are equal to your round one payoff.

[The following two paragraphs paragraphs appear for the RANDOM treatment only]
After each series ends, one of the rounds in the series will be chosen by the computer randomly as PAID round. Your earnings in this series will be equal to your payoff in this paid round. Other rounds will be unpaid. You will be informed which round is paid when the series ends. Each round is equally likely to be paid, but which round is to be paid won't be determined until after the series ends.

Suppose, for example, that the series ends after five rounds. Then each one of the five rounds is equally likely to be paid. Suppose now that the series ends after one round. Then round one will be paid.

[The following two paragraphs appears for the LAST PERIOD treatment only]
After each series ends, the LAST round in the series will be the PAID round. Your earnings in this series will be equal to your payoff in this last round. Other rounds will be unpaid. Which round is going to be last won't be determined until the series ends.

Suppose, for example, that the series ends after five rounds. Then round five round will be paid. Suppose now that the series ends after one round. Then round one will be paid.

The experiment will continue for a fixed number of series. We suggest that you make your desions in each series carefully, as they will affect your total earnings in the experiment.

Total Earnings Your total earnings in this experiment will be equal to the sum of your series earning. In all times during the experiment, your current total earnings will be displayed in the center right part of your decision screen. You will be paid your total earnings IN CASH at the end of today's session.

ARE THERE ANY QUESTIONS?

Frequently asked questions

- *What is the difference between a round and a series?*

Each series consists of several decision rounds. You will make decisions in each of the rounds. You are matched with the SAME other person in all rounds of a given series, but you are rematched with a DIFFERENT other person in the room every time a new series starts.

- *What does my payoff in a round depend upon?*

It depends upon your decision and the decision of the other person you are matched with, as displayed in the Payoff Table.

- *How many rounds are there in a series?*

The number of rounds in each series is determined randomly by the computer. After each round there are THREE CHANCES OUT OF FOUR that this series continues to the next round, and ONE CHANCE OUT OF FOUR that the series ends. On average, you may expect the series to continue for three more rounds after the current round. However, the series may end after any round, or continue for many rounds.

- *How is my payoff in a series determined?*

[Answer given for the CUMULATIVE treatment] Your payoff in a series is a sum of your per round payoffs in this series.

[Answer given for the RANDOM treatment] When a series ends, one of the rounds in the series is chosen randomly as PAID round. Your earnings in this series is equal to your payoff in this paid round. Other rounds are unpaid.

[Answer given for the LAST PERIOD treatment] The LAST round in the series will be the paid round. Other rounds are unpaid. Which round is going to be the last won't be determined until the series ends.

- *How many series are there in this experiment?*

The experiment will consist of a pre-determined number of decision series. I will announce when the experiment ends.

Review questions:

Suppose that you are given a payoff table as shown below:

Payoff Table		OTHER	
		A	**B**
YOU	**A**	**15, 15**	**12, 5**
	B	**70, 50**	**44, 44**

Please answer the following questions:

I. Consider the following choices in a decision round:

a. If you and other person both choose A, what is:
Your earning?_____ Other's earning? _____

b. If you and other person both choose B, what is:
Your earning?_____ Other's earning? _____

c. If you choose A, and the other person chooses B, what is:
Your earning?_____ Other's earning? _____

d. If you choose B, and the other person chooses A, what is:
Your earning?_____ Other's earning? _____

II. **Suppose that, at the end of a round, number 49 is drawn** to determine whether the series continues. **Will the current series continue to the next round?** Please circle the correct answer below:

a. The series will continue. I will be matched with the same other person next round as in this round.

b. The series will stop. If a new series starts, I will be matched with a different other person than in this round.

III. **Suppose that a decision series continues for FOUR rounds**, and the decisions that you and the other person make in each round are as in question I above: item (1) in round 1, item (2) in round 2, item (3) in round 3, and item (4) in round 4. **What are your total earnings in this series?** Please circle the correct answer below:

a. I will be paid the sum of round payoffs: 15+44+12+70=141

b. One of the rounds will be paid; I may earn 15, 44, 12 or 70, and all are equally likely.

c. Only the first round will be paid; I will earn 15.

d. Only the last round will be paid; I will earn 70.

Post-Experiment Questionnaire

YOUR ID in this experiment: _____

1. How did you make your decision to choose between A and B?

_____
_____
_____

2. How easy to understand were the instructions?

_____Very Easy _____Easy _____Moderate _____Hard _____Very Hard

3. How many economics courses have you taken so far (including this semester)?

_____

4. How many people in this session do you know?

_____

5. What is your major?
   _____

6. What is your gender?

_____Male _____Female

7. What is your age?
   _____

8. Please add any additional comments below

_____
_____
_____
_____
_____

THANK YOU FOR PARTICIPATING!

Table S1: Strategy descriptions

Strategy[1]	Initial action	If CC		if CD		If DC		If DD	
		s≤1	s>1	s≤1	s>1	s≤1	s>1	s≤1	s>1
Always Coop[2]	C	C	C	C	C	C	C	C	C
Always Defect[2]	D	D	D	D	D	D	D	D	D
TFT[2]	C	C	C	D	D	C	C	D	D
Trigger[2]	C	C	C	D	D	D	D	D	D
Trigger-Reverse[3]	C	C	C	D	D	D	D	D	D
Trigger1forgive[4]	C	C	D	C	D	C	D	C	D
WSLS[2]	C	C	C	D	D	D	D	C	C

Notes:

1. Each strategy is described by its recommended action (i) in the initial round, and (ii) in all other rounds, given the last period history XY, where X is a player's own most recent action (C or D) and Y is the other player's most recent action (C or D), and s is the the cumulative number of observed defections of the other player.

2. Always Cooperate, Always Defect, TFT, Trigger (also referred to as Grim) and WSLS are standard strategies as discussed in Dal Bo and Frechette (2011) and Fudenberg et al. (2012).

3. Trigger-with-Reversion strategy would be indistinguishable from Trigger if players' actions were perfectly implemented. Yet, it differs from Trigger in the presence of errors, in that it recommends switching back to cooperation if both players cooperated in the most recent round, even if defections were observed earlier in the game. This strategy is not discussed in the previous literature.

4. Trigger-once-forgiving is closely related to Grim2 strategy in Fudenberg et al. (2012). Both strategies prescribe switching from cooperation to defection after the second, not the first, observed defection of the other player. The only difference is that Grim2 waits for two consecutive defections, whereas the Trigger-once-forgiving strategy looks at the cumulative number of observed defections in all previous rounds of the game.

Table S2: Percentage of correctly predicted actions, by strategy, by treatment: all observations

	Overall			First half of the session			Last half of the session		
Strategy*	Cumu	Rand	Last	Cumu	Rand	Last	Cumu	Rand	Last
Always Coop	55.37%	36.08%	52.80%	47.94%	33.28%	51.04%	63.27%	39.05%	54.66%
Always Defect	44.63%	63.92%	47.20%	52.06%	66.72%	48.96%	36.73%	60.95%	45.34%
TFT	75.95%	68.81%	71.81%	73.97%	66.83%	69.89%	78.06%	70.92%	73.83%
Trigger	71.00%	68.20%	72.28%	70.19%	67.57%	70.97%	71.87%	68.87%	73.67%
Trigger-Reverse	**78.01%**	**71.97%**	**75.91%**	**76.99%**	**70.42%**	**74.68%**	**79.08%**	**73.61%**	**77.19%**
Trigger1forgive	70.08%	60.65%	67.25%	66.38%	59.51%	67.29%	74.02%	61.85%	67.21%
WSLS	59.58%	41.87%	58.56%	54.95%	39.75%	56.77%	64.50%	44.12%	60.45%
No of obs	5656	5044	5246	2912	2596	2690	2744	2448	2556

*Best-predictor strategies are given in bold