Reviewers' Appendix: Subject Instructions

[The instructions, as viewed by subjects, were presented as part of the computer interface and were formatted as a webpage. As a result, there were no page breaks and the spacing and leading were slightly different than in the example below.]

This is an experiment about decision making. You will be paid for participating, and the amount of money you earn depends on the decisions that you and the other participants make. At the end of the session, you will be paid privately and in cash for your decisions.

Privacy and Anonymity

You will <u>never</u> be asked to reveal your identity to anyone during the course of the experiment. Your name will never be associated with any of your decisions. In order to keep your decisions private, please do not reveal your choices to any other participant.

Your Key and Your Payment

All the money that you earn will be yours to keep, and your earnings will be paid to you **IN CASH** at the end of the experiment.

At this time, you will be given a key with a number on it. After you have finished reading the instructions, you will be asked to enter the number on your key into the computer.

**IT IS VITALLY IMPORTANT THAT YOU ENTER YOUR KEY NUMBER CORRECTLY,
AS THIS NUMBER WILL BE LINKED TO YOUR PAYMENT.**

At the end of the experiment, we will place payment in a locked box which your key will open. We will call you out of the room, one by one, to open your box anonymously, retrieve your earnings, and deposit your key.

This Experiment

In this experiment you will be asked to make a series of decisions about how to invest a set of tokens. You and the other subjects will be randomly assigned into groups and you will not be told each others' identities.

There will be three people in your group—you and two others.

In each period, each of you will have ten (10) tokens to invest. You can invest these in either a **RED** investment or a **BLUE** investment. The amount of money you earn depends upon how many tokens you decide to invest in the **RED** investment or the **BLUE** investment, as well as how many tokens others decide to invest in the **RED** investment or the **BLUE** investment.

In each decision you make, tokens in the **RED** investment will pay a fixed amount per token, and tokens in the **BLUE** investment will pay an amount that depends on the number of tokens invested in the **BLUE** investment by you and the other members of group. The value of each token in the **BLUE** investment is

high when people invest small numbers of tokens in **BLUE**, and decreases as people invest more tokens in **BLUE**. For example, if 1 token is invested in **BLUE**, that token might be worth $0.50. If 2 tokens are invested in **BLUE**, each might be worth $0.47. If 3 tokens are invested in **BLUE**, each might be worth $0.44. In this example, tokens in **BLUE** begin at a value of $0.50 per token and decrease in value at a rate of $0.03 per token for every additional token invested. *No token ever pays less than $0.00*, which is to say, you can never lose money from a token. In this example, if more than 17 tokens are invested in **BLUE**, all tokens invested in **BLUE** will have a value of $0.00.

To summarize:

- In each period, you will have ten (10) tokens.

- Your task, in each period, is to decide how many of your tokens to invest in the **RED** investment and how many to invest in the **BLUE** investment.

- In each period, you will earn a fixed amount for each token you invest in the **RED** investment.

- You may earn money for each token you invest in the **BLUE** investment—the actual amount you earn for each token you invest depends on your and everyone else in your group's decision to invest in the **BLUE** investment.

Earning money in this experiment

You will be asked to make twenty-one (21) investment decisions like the example we have just discussed. At the end of the experiment, whatever money you have earned will be yours to keep.

As an example of how money is earned, assume that:

- tokens invested the **RED** investment pay $0.05 per token

- tokens invested in the **BLUE** investment begin at a value of $0.50 per token and decrease in value at a rate of $0.03 per token for every additional token invested.

You will make a decision about how to invest your ten tokens.

Example 1: If you invest 6 tokens in **RED** and 4 tokens in **BLUE**, and the other members of your group combine to invest 3 tokens in **BLUE**, then your earnings will be calculated as follows:

Each token in **RED** pays **$0.05**.

There are 7 tokens invested in **BLUE** in total, combining your decision with the rest of the group's decisions. Each token in **BLUE** begins at $0.50, and then for each token invested after

the first one, decreases by $0.03 per token. So each token in *BLUE* pays $0.50 – 6 * ($0.03) = $0.50 - $0.18

In this case, each token in *BLUE* pays **$0.32**.

You earn $0.05 * 6 = $0.30 for your *RED* tokens, $0.32 * 4 = $1.28 for your *BLUE* tokens, so your total earnings for the round are:

$0.30 + **$1.28** = **$1.58**.

Example 2: If you decide to invest 2 tokens in *RED* and 8 tokens in *BLUE*, and the other members of your group combine to invest 17 tokens in *BLUE*, then your earnings will be calculated as follows:

Each token in *RED* pays **$0.05**.

There are 25 tokens invested in *BLUE* in total, combining your decision with the rest of the group's decisions. Each token in *BLUE* begins at $0.50, and then for each token invested after the first one, decreases by $0.03 per token. So each token in *BLUE* is worth $0.50 – 24 * ($0.03) = $0.50 - $0.72 = -$0.22.

Because this is less than zero, in this case, each token in *BLUE* pays = **$0.00**.

You would earn $0.05 * 2 = $0.10 for your *RED* tokens, $0.00 * 8 = $0.00 for your *BLUE* tokens, so your total earnings for the round are:

$0.10 + **$0.00** = **$0.10**

 To figure out by hand how much each token will pay during the game can take a long time. To help you with this, a calculator is provided as part of the computer program. This calculator shows the amount you will earn, **assuming** that you invest a certain number of tokens in the *BLUE* investment and **assuming** that your group combines to invest a certain number of tokens in the *BLUE* investment. You will have an opportunity to practice using the calculator before you make any decisions that will determine your payment.

 After each choice, the decision you have made and the decision the other members of your group have made will be tallied, and your earnings will be determined. You will be informed of your earnings for the round. You will then have an opportunity to review the decision you made, the decision made by the other members of your group, and your earnings for the round.

 The Computer Interface

In the experiment, you will be making decisions on the computer screen. This section of the instructions will briefly introduce and explain the parts of the program. After you complete the instructions, you will have an opportunity to practice making decisions before any of your decisions will be counted for payment.

The screen you will see will look like the one below.

You will use the slide-bar in the upper left to decide how to invest your tokens. As you move the slider on the slide-bar, the tokens you see will change. In the image above, it says "I have decided to invest 6 tokens in *RED* and 4 tokens in *BLUE*." Use the slider to make your decision, and then click that button to submit your investment choice for the period.

Below the decision slider is the Calculator. The Calculator will tell you what your earnings for the period will be if you submit your decision, *depending on what the other members of your group decide*. As you move the sliders or enter numbers in the text boxes, the contents of the Calculator will change. In each case, the table will tell you what your earnings for the period will be under different choices by your group members.

In the example above, the Calculator is being used to predict what the profit would be for a decision of 4 tokens in BLUE, assuming that the rest of the group combines to invest 9 tokens in BLUE.

In the upper right corner, you will see messages that change depending on what you are currently doing. While you are making your decision, the message will tell you what the value of the tokens are. While you are reviewing your decision and earnings, the message will tell you what you earned in the round and what your total earnings are.

The table at the right of the screen contains the decisions you've made in previous rounds, your earnings for those rounds, as well as your total earnings.

Questions

If you have any questions, please raise your hand and the experimenter will come by to answer your question privately.

When you are finished reading these instructions, click OK below. Once you have finished reading the instructions, you will have an opportunity to practice using the computer screen.

Tutorial

The following screens are the screens of the tutorial that the subjects use to familiarize themselves with the software.

Top screen:

RED   BLUE

10 ◄ [_____] ► 0

I have decided to invest 10 tokens in RED and 0 tokens in BLUE.

Submit Decision

Calculator

If I invest [0] in BLUE

0 ◄ [___] ► 10

If the rest of my group invest

[0]

in BLUE

20

		0	1
0	0		
	0		$0.00	$0.00
	1		$0.00	$0.00

In each decision you make, tokens in the RED investment will pay a fixed amount per token, and tokens in the BLUE investment will pay an amount that depends on the number of tokens invested in the BLUE investment by you and the other members of group. The value of each token in the BLUE investment is high when people invest small numbers of tokens in BLUE, and decreases as people invest more tokens in BLUE. For example, if 1 token is invested in BLUE, that token might be worth $0.50. If 2 tokens are invested in BLUE, each might be worth $0.47. If 3 tokens are invested in BLUE, each might be worth $0.44. In this example, tokens in BLUE begin at a value of $0.50/token and decrease in value at a rate of $0.03/per token for every additional token invested.

To figure out by hand how much each token will pay during the game can take a long time. To help you with this, a calculator is provided. This calculator shows the amount you will earn, ASSUMING that you invest a certain number of tokens in the BLUE investment and ASSUMING that your group combines to invest a certain number of tokens in the BLUE investment.

Click NEXT to try a few examples.

Previous   Next

Bottom screen:

RED   BLUE

8 ◄ [_____] ► 2

I have decided to invest 8 tokens in RED and 2 tokens in BLUE.

Submit Decision

Calculator

If I invest [2] in BLUE

0 ◄ [___] ► 10

If the rest of my group invest

[2]

in BLUE

20

		1	2	3
0	1	$3.19	$3.36	$3.51
2	2	$3.18	$3.34	$3.48
	3	$3.17	$3.32	$3.45

RED pays $0.20. BLUE pays $0.75 and decreases by $0.05 per token

RED pays $0.00. BLUE pays $0.50 and decreases by $0.01 per token

RED pays $0.10. BLUE pays $0.90 and decreases by $0.09 per token

In each decision you make, tokens in the RED investment will pay a fixed amount per token, and tokens in the BLUE investment will pay an amount that depends on the number of tokens invested in the BLUE investment by you and the other members of group. The value of each token in the BLUE investment is high when people invest small numbers of tokens in BLUE, and decreases as people invest more tokens in BLUE. For example, if 1 token is invested in BLUE, that token might be worth $0.50. If 2 tokens are invested in BLUE, each might be worth $0.47. If 3 tokens are invested in BLUE, each might be worth $0.44. In this example, tokens in BLUE begin at a value of $0.50/token and decrease in value at a rate of $0.03/per token for every additional token invested.

To figure out by hand how much each token will pay during the game can take a long time. To help you with this, a calculator is provided. This calculator shows the amount you will earn, ASSUMING that you invest a certain number of tokens in the BLUE investment and ASSUMING that your group combines to invest a certain number of tokens in the BLUE investment.

Click NEXT to try a few examples.

Previous   Next

RED   BLUE

8 ◁ ▷ 2

I have decided to invest 8 tokens in RED and 2 tokens in BLUE.

Submit Decision

Calculator

If I invest 2 in BLUE

0 ◁ ▷ 10

If the rest of my group invest
2
in BLUE

20

	0	1	2	3
1		$3.19	$3.36	$3.51
2		$3.18	$3.34	$3.48
3		$3.17	$3.32	$3.45

You will be making multiple decisions over the course of the experiment. This section will display the results from previous periods as the experiment continues.

Previous

Next

Period	Your Decision	Rest of Your Group	Profit (by Round)	Total Profit

---

RED   BLUE

8 ◁ ▷ 2

I have decided to invest 8 tokens in RED and 2 tokens in BLUE.

Submit Decision

Calculator

If I invest 2 in BLUE

0 ◁ ▷ 10

If the rest of my group invest
2
in BLUE

20

	0	1	2	3
1		$3.19	$3.36	$3.51
2		$3.18	$3.34	$3.48
3		$3.17	$3.32	$3.45

This area will provide you with information in each period. This is where the value of each type of investment will be posted, as well as instructions on what to do next.

Click NEXT to practice for a few rounds.

Previous

Next

Period	Your Decision	Rest of Your Group	Profit (by Round)	Total Profit

Panel 1

RED   BLUE

8 ◁ ▭ ▷ 2

I have decided to invest 8 tokens in RED and 2 tokens in BLUE.

Submit Decision

During these practice rounds, the computer will start at investing zero (0)tokens in the BLUE investment, and then increase by one in each round, so in the second round, the computer will invest one (1) token in BLUE; in the third round, the computer will invest two (2) tokens in BLUE, etc. Once it reaches twenty (20) tokens, the computer will start over at zero (0).

Click NEXT to begin practicing.

—

Previous

Next

Calculator

If I invest 2 in BLUE

0 ◁ ▭ ▷ 10

	1	2	3
1	$3.19	$3.36	$3.51
2	$3.18	**$3.34**	$3.48
3	$3.17	$3.32	$3.45

If the rest of my group invest

2

in BLUE

0
20

Period	Your Decision	Rest of Your Group	Profit (by Round)	Total Profit

Panel 2

RED   BLUE

8 ◁ ▭ ▷ 2

I have decided to invest 8 tokens in RED and 2 tokens in BLUE.

Submit Decision

In this period, each token in the RED investment will pay $0.30 and each token in the BLUE investment will pay a value between $0.51 and $0.00. The value of tokens in the BLUE investment depends on the number of tokens invested by you and the members of your group.

[During this period, the computer will choose 0 tokens in BLUE.]

—

Previous

End Practice Session

Calculator

If I invest 2 in BLUE

0 ◁ ▭ ▷ 10

	1	2	3
1	$3.19	$3.36	$3.51
2	$3.18	**$3.34**	$3.48
3	$3.17	$3.32	$3.45

If the rest of my group invest

2

in BLUE

0
20

Period	Your Decision	Rest of Your Group	Profit (by Round)	Total Profit

RED   BLUE

3 ◄ ▬▬▬▬▬ ► 7

I have decided to invest 3 tokens in RED and 7 tokens in BLUE.

Submit Decision

Your earnings this period were **$3.91**.

Your total earnings so far are **$7.81**.

Previous

End Practice Session

OK

Calculator

If I invest 7 in BLUE

0 ◄ ▬▬▬▬ ► 10

If the rest of my group invest 0
2
in BLUE
20

	6	7	8
1	$3.84	$3.91	$3.96
2	$3.78	$3.84	$3.88
3	$3.72	$3.77	$3.80

Period	Your Decision	Rest of Your Group	Profit (by Round)	Total Profit
1	6	0	$3.90	$3.90
2	7	1	$3.91	$7.81

RED   BLUE

3 ◄ ▬▬▬▬▬ ► 7

I have decided to invest 3 tokens in RED and 7 tokens in BLUE.

Submit Decision

Please wait until the experiment continues.

OK

Calculator

If I invest 7 in BLUE

0 ◄ ▬▬▬▬ ► 10

If the rest of my group invest 0
2
in BLUE
20

	6	7	8
1	$3.84	$3.91	$3.96
2	$3.78	$3.84	$3.88
3	$3.72	$3.77	$3.80

Period	Your Decision	Rest of Your Group	Profit (by Round)	Total Profit