

APPENDIX: Instructions

1 General Information

(Students received actual instructions in z-tree at their computer screens.)

Thank you for agreeing to participate in this experiment, which is financed by the Erb Institute of the Ross School of Business and School of Natural Resources and Environment. Please make sure your cell phones are turned off to avoid interruptions during the meeting.

This is an experiment in the economics of decision making. Your participation in this experiment is voluntary. You will be compensated for your participation. If you read the instructions carefully and act wisely, you can earn a considerable amount of money in addition to the \$5 for showing up. Your earnings in this experiment depend both on your decisions and the decisions of the 5 other participants in the room.

The experiment is divided into six separate parts. As the experiment proceeds you will get more detailed information on each part. The experiment will be conducted on the computer screen in front of you:

The six of you will be divided into groups of the same size and this size will change in each part of the experiment. In the first four parts, you will be divided into one-member groups, two-member groups, three-member groups, or a six-member group. In the fifth part of the experiment you will collectively choose from among these four group sizes. You will be informed of the group size for each part before that part begins. Each of the first five parts (Part I-V) consists of a sequence of 5 decision-making rounds.

Part VI consists of some questions about you. Your answers to these questions do not affect your earnings in the experiment. The published results of our research will not identify any individual or the choice he or she made in any way. All records will be linked to an

anonymous subject ID only.

During the experiment your earnings will be calculated in Tokens. At the end of the experiment, we will randomly select one round from each of the first five parts (Part I-V). So, in total 5 rounds out of 25 rounds will be used for your payment. To determine your final earnings in Tokens we will add up your earnings corresponding to each of these rounds. At the end of the experiment the total amount of Tokens you have earned will be converted to US Dollars at the following rate:

1 Token = 0.01 US Dollars

Please do not communicate with the other participants during the experiment. Should you have any questions please raise your hand. At the end of the experiment we will call you, one at a time, to pay you in private. The following pages describe the first part of the experiment in detail.

Please click “Continue”

Please wait for everyone to continue.

2 General Instructions

In this experiment, 6 people will be divided into groups of identical size: one-member groups, two-member groups, three-member groups, or a six-member group. At the beginning of each decision round, you will be given 6 experimental tokens. In each decision round, you must decide on how to allocate your experimental tokens between two projects: Project A and B. Whatever you do not invest in Project B will be automatically invested in Project A.

2.1 Project A

(This treatment has an opportunity cost of 100. Our experimental design varies this parameter.)

Project A has a fixed return. For each token you invest in Project A, you will earn 100 times that amount.

Return to Project A = 100 tokens for every token you invested in Project A

Your earnings from Project A = 100 * your investment in Project A

2.2 Project B

The return from Project B always depends on the sum of your investment and the investments of the 5 other participants in this room and the formula for computing it is always the same. For each token you invest in Project B, the return from Project B is given by

Return to Project B per token of group investment = $200 - 5 * (\text{total investment in Project B by all participants})$

Your earnings from Project B depend on YOUR GROUP'S INVESTMENT IN PROJECT B and YOUR GROUP'S SIZE:

Your earnings from Project B = (return to Project B * your group's investment in Project B) divided by the number of people in your group

2.3 Final earnings

Final earnings in each round (in tokens) = Earnings from Project A + Earnings from Project B

Please click "Continue" when you are ready.

Please wait for everyone to continue.

3 Example

(After the general instructions, we provide subjects with an example and a quiz regarding one particular group size. This group size changed across sessions to control for order effects. After reading the example and answering the quiz question correctly, we repeat the same procedure for other group sizes. Here, we provide instructions for "groups of one." The other parts of the instructions are similar and can be requested from the authors.)

You are now in groups of one. Let's say you invested 2 tokens in Project B and the total investment in Project B by others in the room is 21. Then the total investment in Project B is 23 tokens. The return per token invested in Project B is $(200 - 5 * 23) = 85$.

If you are in a "group" of one (you are the only member), your total earnings from Project B equal the number of tokens you invested in that project multiplied by the return you calculated $2 * 85 = 170$. You can do these calculations in your head, on scratch paper, or using the calculator provided.

Since you invested 2 of your 6 tokens in Project B, the other 4 are automatically invested

for you in Project A. Since the return there is 100 times the amount invested, you earn 400 tokens from Project A.

Your final earnings this round is the sum of your earnings from Project A and Project B. In the example, you would have earned 570 tokens.

Please click "Continue" when you are ready.

Please wait for everyone to continue.

4 QUIZ: Groups Of One

You are now in groups of one. Suppose your investment to Project B is 4 tokens and the other participants totally invest 20 tokens in Project B.

What are your total earnings from Project B? What are your total earnings from Project A? What are your total earnings?

(A calculator is provided on the screen as well as a summary of the relevant formulas.)

5 Situation Analyzer

In fact, you will not know how much others are investing at the time you choose your own investment in project B. To help you decide how much to invest, we will provide a "Situation Analyzer." This example situation analyzer is for groups of two. For any estimate for the investments of others, when you click the button "Analyze This Situation" a table will appear informing you the total amount you would earn from the two projects if you invested different amounts in project B and your estimates of the pair of investments of the others are accurate (i.e. coincide with their actual investments). You do not need to use the "Situation Analyzer" but may find it helpful. The Situation Analyzer will be provided in each round

and you can use the Situation Analyzer as many times as you need.

Remember, everyone is in the same situation as you: in a group of the same size, being asked to make the same decision about investment in Project B, and their earnings depend in the same way as yours on their investments in Project B, the Project B investments of others in their group and of those outside their group.

Figure 1: Situation Analyzer for Groups of Two

If the total investment by others outside your group in Project B is

If the total investment by others inside your group in Project B is

Analyze this situation

Your investment in B	0	1	2	3	4	5	6
Your earnings (A + B)	727.5	660.0	587.5	510.0	427.5	340.0	247.5

The instructions part has concluded. What follows will matter for your earnings.

(Part 1 of the experiment starts now.)

6 Decision Screen

Figure 2: Screen shot of the decision screen

Period
1 of 5
Remaining time [sec]: 52

Situation Analyzer: Groups of 1

Situation Analyzer

If the Total Investment By Others in Project B is

Analyze This Situation

Your Investment in B	0	1	2	3	4	5	6
Your Earnings (A + B)	600.0	585.0	560.0	525.0	480.0	425.0	360.0

Return to Project B per token invested = $200 - 5 * (\text{total number of tokens invested in Project B by all participants})$

Your Earnings from Project B = Return to Project B per token invested * number of tokens you invested in Project B

Return to Project A = 100

Your earnings from Project A = $100 * \text{your investment in Project A}$

Decision Entry

You are now in a group of: 1

Number of tokens: 6

Your investment in Project B:

OK

7 Income Screen

Figure 3: Income screen

The income screen:

Period: 1 of 20	Time left (seconds): 27
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Your investment in Project B:	<input style="width: 80%;" type="text" value="..."/>
Total investment in Project B by others in your group:	<input style="width: 80%;" type="text" value="..."/>
Total investment of the other participants outside your group in Project B:	<input style="width: 80%;" type="text" value="..."/>
Your earnings from Project B:	<input style="width: 80%;" type="text" value="..."/>
Your investment in Project A: (6 tokens – your investment in B)	<input style="width: 80%;" type="text" value="..."/>
Your earnings from Project A:	<input style="width: 80%;" type="text" value="..."/>
YOUR TOTAL EARNINGS THIS PERIOD:	<input style="width: 80%;" type="text" value="...."/>

History of Play:

Period	Group Size	Your B Investment	Others' B investment in your group	Others' B investment outside your group	Earnings
1					
...					

8 Part V

To begin each of the next 5 rounds you and the other 5 participants will be asked to vote for your most preferred group size. In the event of a tie, the group size will be chosen randomly from the winning choices. Following the vote, you will be assigned to groups according to the group size that receives the most votes. You and the other 5 participants will then choose how to allocate your tokens between Project A and Project B just as you did in previous rounds.

What is your most preferred group size?

(A history of play and earnings is also provided on the screen.)

9 Questionnaire

What did you think this experiment was about?

What was your strategy for choosing Project B contributions?

How did you decide which group size to vote for?

Do you have any other comments about the experiment?