

Group Decision Making Experiment

Instructions

You are about to participate in a group decision experiment that involves two types of interaction: WITHIN-group interaction and BETWEEN-group interaction.

Your payoff for each round of the experiment will therefore come from two sources, the within-group interaction and the between-group interaction. The payoff will depend on your decision, the decisions made by other members of *your* group, and the decisions made by the members of *another* group.

Payoffs from the experiment are given in tokens, which will be converted to US dollars at the end of the experiment. There will be many decision rounds, all structured in exactly the same way. Below are the rules of the game that determine your payoff for each round.

Rules of the game and computation of payoffs.

Before *each* round, each participant in the experiment will be randomly assigned to a group of four. Your group will then interact with another group of four to which members have also been randomly assigned. At the beginning of each round, each participant will receive an investment capital of 50 tokens. They then must decide how much of it to invest. You may invest any number of tokens between 0 and 50. The remaining part of your investment capital is yours to keep.

1. Within-group interaction.

With their investments, members of each group of four generate a *within-group payoff*. The within-group payoff is paid out to all individual members of a group and is the same for all of them. The size of the within-group payoff is determined by the following ratio:

$$\frac{\text{Group's total investment}}{\text{Group's total investment capital}}$$

Which amounts to:

$$\frac{\text{Group's total investment}}{4 \times 50} = \frac{\text{Group's total investment}}{200}$$

As investments may not exceed investment *capital*, this ratio can never be larger than 1. The ratio can also not be smaller than 0. In order to compute the within-group payoff to each group member, this ratio is multiplied by 100 tokens.

Therefore, your earnings from the within-group interaction will be computed as follows:

$$\left(\text{Your investment capital (50 tokens)} - \text{Your investment} \right) + \left[\left(\frac{\text{Group's total investment}}{200} \right) \times 100 \right]$$

The expression in the first parenthesis is the number of tokens you keep after making your investment. The expression in the second parenthesis is the within-group payoff.

You can see from this formula that the within-group payoff to each member reaches its maximum of 100 tokens if all group members contribute their entire investment capital. It follows that if all group members contribute their entire investment capital, each group member earns 100 tokens from the within-group interaction. If all group members contribute nothing, each earns 50 tokens from the within-group interaction, because each kept his or her investment capital for him/herself.



2. Between-group interaction with another group.

As mentioned earlier, at each round, your group will be randomly paired with another group of four. Either your group or the other group will get a *between-group payoff* of 152 tokens. In each round, only one of the two groups can obtain this payoff.

I.) A group's probability of obtaining the between-group payoff. The computer will assign the between-group payoff either to your group or to the other group, *via a*

lottery. This means that a group can never guarantee itself the between-group payoff. However, by increasing your investment, you can increase your group's *probability* of obtaining this payoff. A group's probability of obtaining the between-group payoff is calculated according to the following formula:

$$\text{Probability of Group A getting the between-group payoff} = \frac{\text{Group A's total investment}}{\text{Group A's total investment} + \text{Group B's total investment}}$$

Of course, the two probabilities (of Group A getting the between-group payoff and of Group B getting the between-group payoff) always sum up to one.

II.) Allocating the between-group payoff (in case your group obtained that payoff). Members of the group that was awarded the between-group payoff will receive an *equal* share of the between-group payoff of 152 Francs. The exact calculation of a group member's share in the between-group payoff is as follows

$$\text{Individual's share in between-group payoff} = \left(\frac{152}{4} \right) = 38$$

In other words, the between-group payoff is shared equally among members of the group which obtained that payoff.

3. Computing total earnings per round.

Your total earnings per round are the sum of your earnings from the *within*-group interaction and from the *between*-group interaction (in the event your group was awarded the between-group payoff). That is, total earnings are computed according to the following formula:

$$\text{Total earnings per round} = \left(\text{Within-group earnings} \right) + \left(\text{Individual's share in between-group payoff (if any)} \right)$$

4. General:

I.) Group membership. To remind you, the composition of your group and of the other group changes before each round, because each participant in the experiment will be randomly re-assigned to a *new* group of four.

II.) Numbers. When making investment decisions, use whole numbers. Earnings in tokens will be rounded to the nearest whole number.

III.) Anonymity. All decisions during the experiment are anonymous. You will never know the identity of other members of your group or of the other group. Also, you will only receive information about the total group investment but not about individual investments.

IV.) Managing your decision task. Before the actual experiment, you will take a computer quiz to assure that you understand the payoff computations. You may refer back to the instructions at any time during the quiz and during the experiment, and you may take notes at any time. Calculator use is allowed throughout.

V.) Experimental earnings. At the end of the experiment, tokens will be converted to US\$ at a rate of 100 tokens = ____ US\$. Your earnings will be paid out to you in private, at the end of the experiment, before leaving the laboratory.

If you have any questions, please raise your hand and an experimenter will assist you.

Attached: An example of earnings computations for one round, for members of a hypothetical group of four. **NOTE: The numbers (hypothetical investments) in this example are not identical to the numbers in the computer quiz which you are about to take.**