A Instructions for the Within-Subject Design

In this appendix, we present the following:

1. General instructions (printed, one page)
2. Game description and instructions for Treatment 1 (printed, one page)
3. Common instructions for treatments 2-5 (printed, two pages)
4. Treatment-specific instructions for treatments 2-5 (on-screen, 1 page per treatment)

GENERAL INSTRUCTIONS (one page)

OUTLINE OF THE EXPERIMENT

The experiment consists of the following **parts**:

1. **Instructions**.
2. **Five decision scenarios**. You will receive printed instructions for the first scenario. Instructions for the following scenarios will be distributed later. After going through the instructions at your own pace, you will enter your decisions.
3. **Demographic Questionnaire**, in which you will be asked a few questions about your demographic and academic background.
4. **Feedback** about your earnings. You will not be given any feedback on your or anyone else's decisions or earnings before this.

LOGISTICS

- During the experiment, **please do not communicate with other participants**. Please turn off the ringer on your mobile phone at this moment.
- **There are no time restrictions for submitting your decisions during the experiment. You are free to progress at your own pace as you see fit. However, if progressing slowly, you may be asked by an experimenter to enter your decision(s) more quickly.** Note that you might at times need to wait until other participants submit their decisions.
- If you think that your computer is frozen anytime during the experiment, please raise your hand. We will assist you.
- Your earnings and earnings of the other participants in this experiment will be measured in **experimental points**. At the end of the experiment, experimental points you earn will be converted into CZK and paid out in cash (**1 experimental point = 10 CZK**). Individual earnings will be kept confidential.

SCENARIOS, PARTICIPANT MATCHING AND PAYMENT SCHEME

- In each of the five decision scenarios, you will be matched to **another three participants**. With them, you will form a **group of four participants**. No participant will know the identity of the other group members in his or her group.
- Your earnings in a given scenario will depend on your decisions and on decisions of the three other members of your group, and possibly also on a random draw.
- You and every other participant will be paid according to your point earnings in **one and only one of the five scenarios**. However, you do not know which one of the five it will be. Near the end of the experiment, one of the participants will draw a chip from a bag of chips numbered from 1 to 5. The drawn chip will determine which of the five scenarios is relevant for everyone's earnings.
- It is therefore important that you consider your decisions in each scenario **separately from your decisions in the other scenarios**.

GAME DESCRIPTION AND INSTRUCTIONS FOR TREATMENT 1

DECISION SITUATION

- We first introduce you to the basic decision situation.
- You will be a member of a group consisting of **4 participants**. Each group member has to decide on the allocation of 10 tokens. You can put these 10 tokens into your **private account** or you can contribute them **fully or partially** to a **group project**. Each token you do not contribute to the group project will automatically remain in your private account.
- The total amount of tokens allocated to the **group project** is equal to the **sum of contributions of the four group members**.

YOUR EARNINGS FROM THE PRIVATE ACCOUNT

- **You will earn one point for each token you put into your private account**. For example, if you put 10 tokens into your private account (and therefore do not contribute to the group project), your earnings from the private account will amount to exactly 10 points. If you put 6 tokens into your private account, your earnings from this account will be 6 points. **No one except you earns anything from your private account**.

YOUR EARNINGS FROM THE GROUP PROJECT

- **Each group member will profit equally from the amount you contribute to the group project**. You will also benefit from the other group members' contributions. The earnings of each group member from the group project will be determined as follows:

$$\textit{Earnings from the group project} = 0.75 \times \textit{sum of all the contributions}$$

- If, for example, the sum of all contributions to the group project is 28 tokens, then you and the other members of your group each earn 0.75×28 = 21 points out of the group project. If the four members of the group contribute a total of 4 tokens to the group project, you and the other members of your group each earn 0.75×4 = 3 points.

YOUR TOTAL EARNINGS FROM SCENARIO 1

- Your total earnings from this scenario will be the **sum of your earnings from your private account and from the group project**:

Earnings from your private account (= 10 – your contribution to the group project)

+ Earnings from the group project (= 0.75 × sum of the contributions to the group project)

= Total earnings from the scenario

EARNINGS OF THE OTHER GROUP MEMBERS

- Earnings of the other group members are computed in an analogous way.

Please note that all the numbers used in these examples are selected for illustrative purposes only. They do not indicate how anyone decides or should decide. You will have an opportunity to use a "Simulator" of your earnings and earnings of other group members at the beginning of the experiment (without any consequences for your earnings). Instructions for other scenarios will be shown on the screen. However, the calculation of your earnings from the private account and the group project in each scenario is as described on this page.

COMMON INSTRUCTIONS FOR TREATMENTS 2-5 (two pages)

INSTRUCTIONS FOR SCENARIOS 2-5

The method of payoff calculation from the private accounts and the group project is the same as in Scenario 1. In each of these scenarios, there will be three **Type X** participants and one **Type Y** participant in each group. Your type is randomly chosen by the computer, with each participant having the same chance of being the **Type Y** participant. The **Type X** participants contribute to the group project according to the rule which will be announced for each scenario. The **Type Y** participant contributes to the group project based on his/her decisions in the CONTRIBUTION TABLE (see below). Your task in each scenario is to fill out the Contribution table for the case you are selected to be the **Type Y** participant.

CONTRIBUTION TABLE

The Contribution table lets you condition your **Type Y** contribution on the rounded average of three numbers between 0 and 10. Details of what these numbers are will be provided for each scenario. Here is what such table looks like before you fill it out:

Rounded average of the three numbers	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Your contribution if you are the Type Y participant											

In each scenario, the rounded average takes one of the values 0, 1, .., 10, but you do not know which one it is when you fill out the table. Therefore, please carefully consider how much to contribute for each potential value of the average. If you are drawn to be the **Type Y** participant in that scenario, your contribution will be the value you filled in below the value of the average that was actually realized in that scenario.

On the next page, we present several examples. We use letters instead of numbers to denote your conditional contributions in these examples. **Please note that all the values of the average used in these examples are selected for illustrative purposes only. They do not indicate how anyone decides or should decide.**

Example 1: Suppose the rounded average of three numbers is 0. Then your contribution to the group project (if you are the Type Y participant) is **f.**

Rounded average of the three numbers	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Your contribution if you are the Type Y participant	f	g	h	i	j	k	l	m	n	o	p

Your contribution to the group project = f

Example 2: Suppose the rounded average of three numbers is 10. Then your contribution to the group project (if you are the Type Y participant) is **p.**

Rounded average of the three numbers	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Your contribution if you are the Type Y participant	f	g	h	i	j	k	l	m	n	o	p

Your contribution to the group project = p

Example 3: Suppose the rounded average of three numbers is 5. Then your contribution to the group project (if you are the Type Y participant) is **k.**

Rounded average of the three numbers	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Your contribution if you are the Type Y participant	f	g	h	i	j	k	l	m	n	o	p

Your contribution to the group project = k

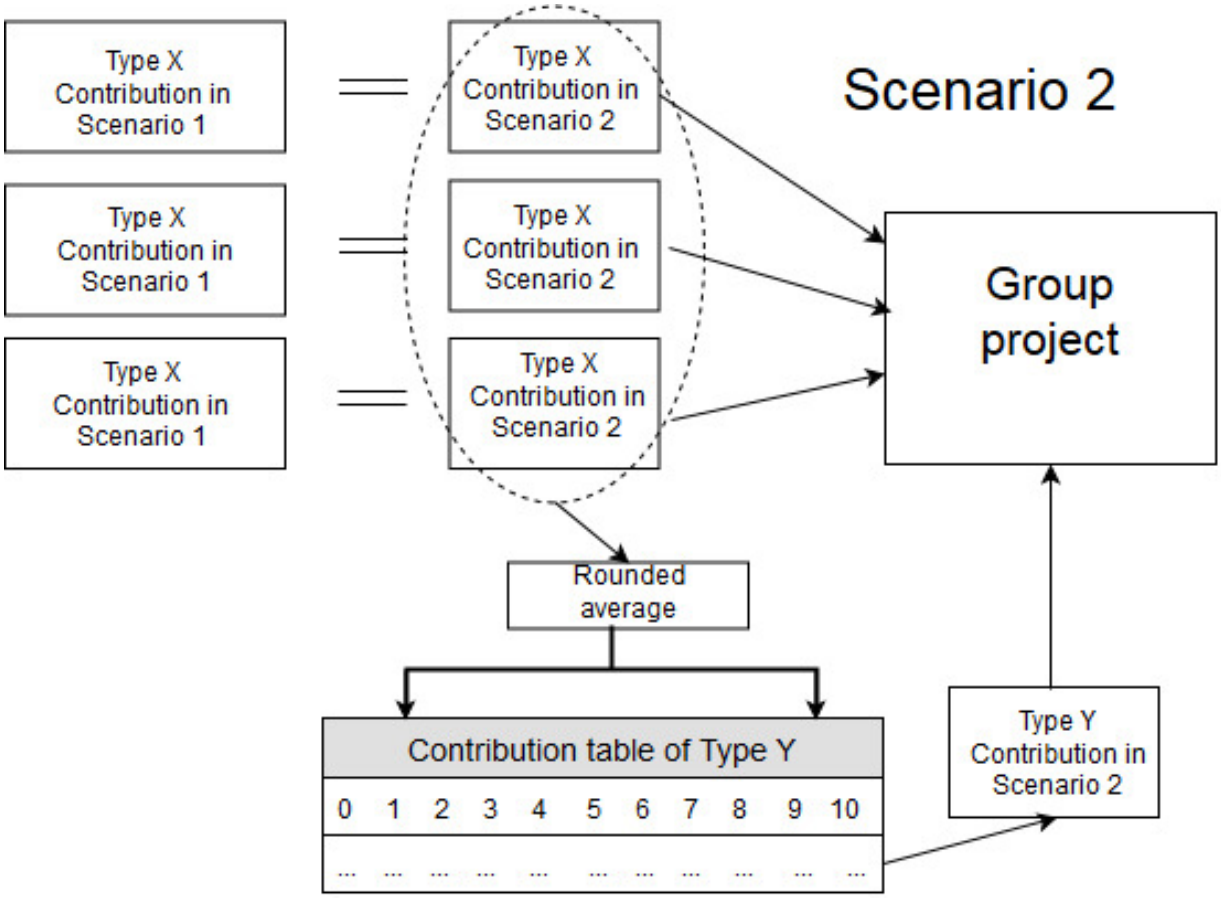
SCENARIO-SPECIFIC INSTRUCTIONS

Scenarios 2 to 5 will be presented to you in a random order. You will receive instructions for each scenario on the screen. They are complemented by a graphical scheme illustrating how the contributions are determined in that particular scenario.

SCENARIO 2

Type X contributions to the group project: Their own contributions in Scenario 1.

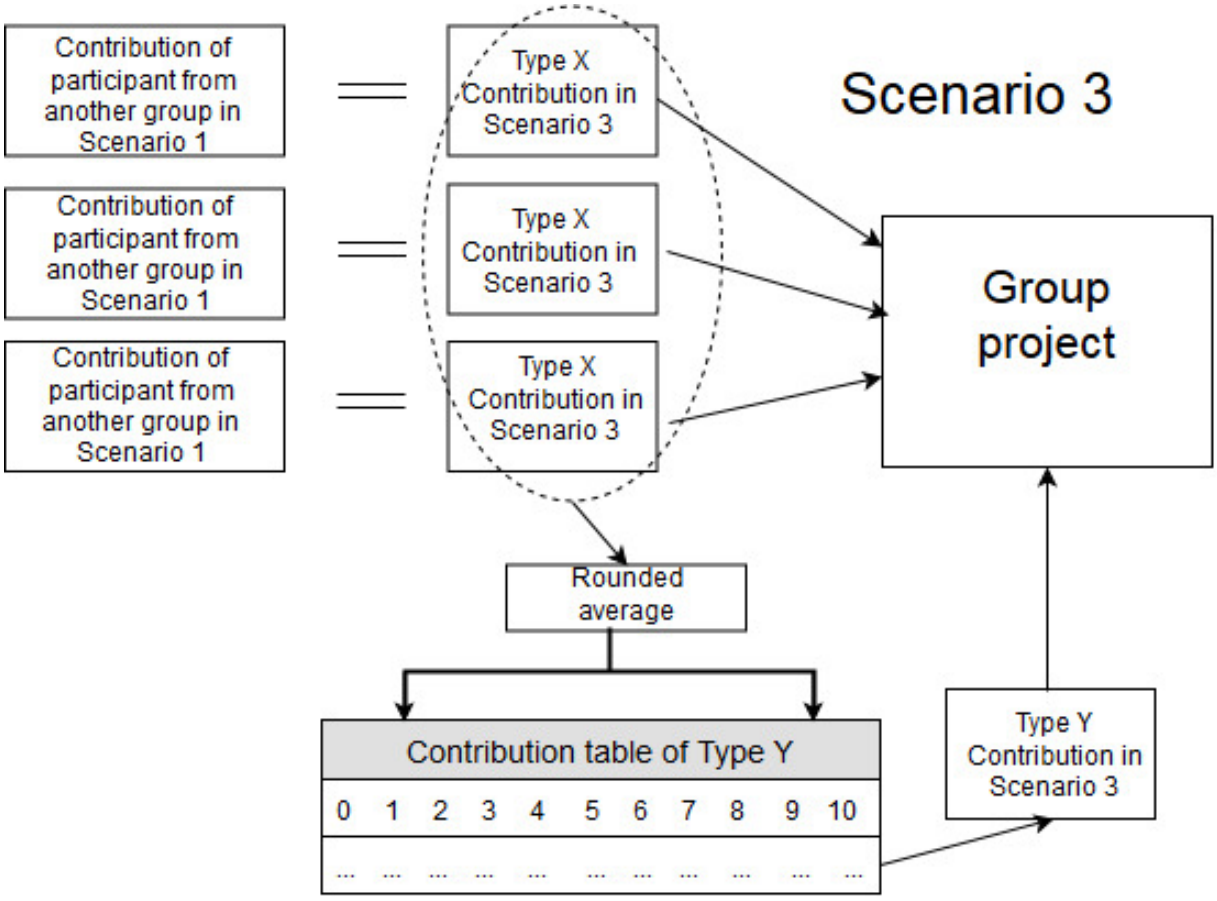
Type Y contribution to the group project: Based on the rounded average of the Type X contributions and the Contribution table.



SCENARIO 3

Type X contributions to the group project: Contributions of randomly chosen participants from other groups in Scenario 1.

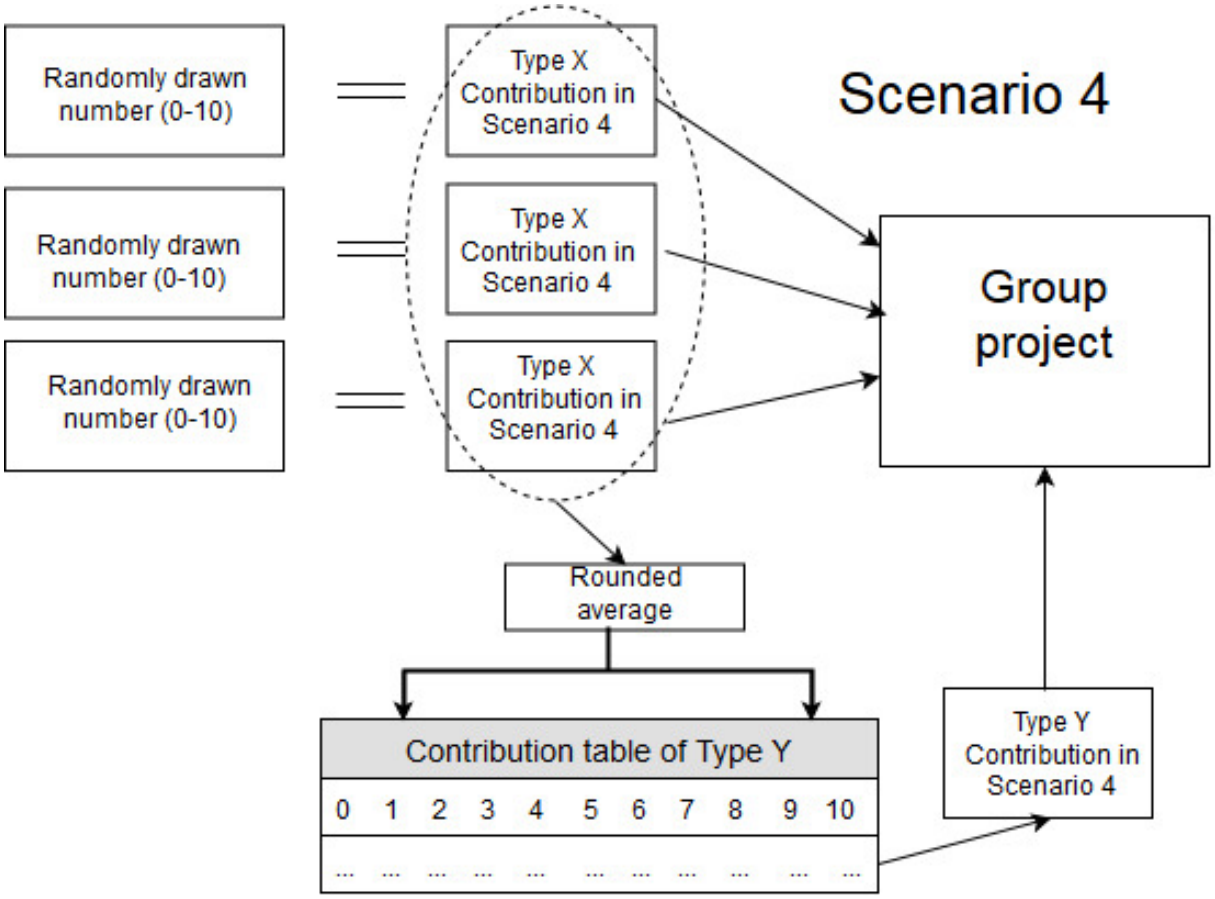
Type Y contribution to the group project: Based on the rounded average of the Type X contributions and the Contribution table.



SCENARIO 4

Type X contributions to the group project: Randomly selected by the computer from values 0, 1, …, 10. Each value has the same chance to be drawn. The three draws for the three Type X participants are independent.

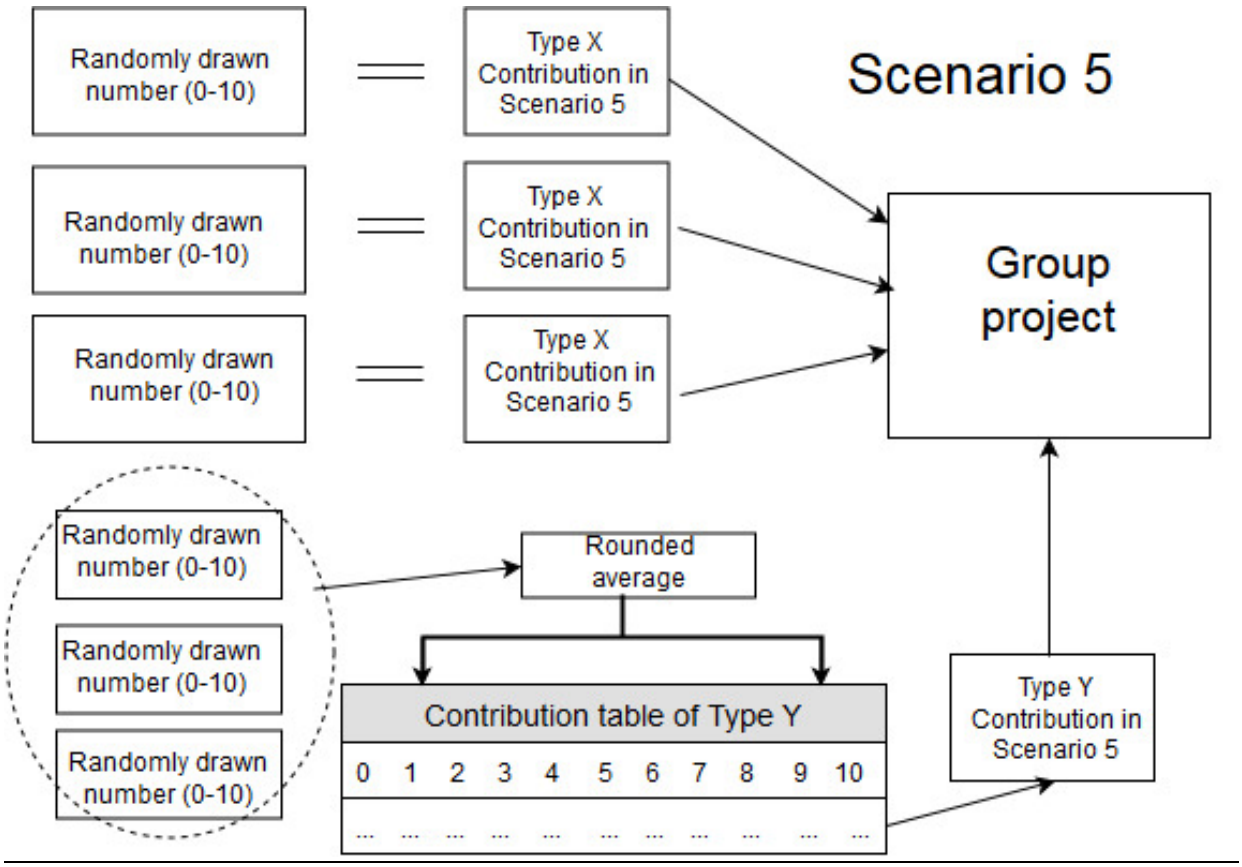
Type Y contribution to the group project: Based on the rounded average of the Type X contributions and the Contribution table.



SCENARIO 5

Type X contributions to the group project: Randomly selected by the computer from values 0, 1, …, 10. Each value has the same chance to be drawn. The three draws for the three Type X participants are independent.

Type Y contribution to the group project: Based on the rounded average of ANOTHER three randomly drawn values from 0, 1, ..., 10 and the Contribution table. Each value has the same chance to be drawn. The three draws are independent from each other and also from the contributions of Type X participants.



B Screenshots for the Within-Subject Design

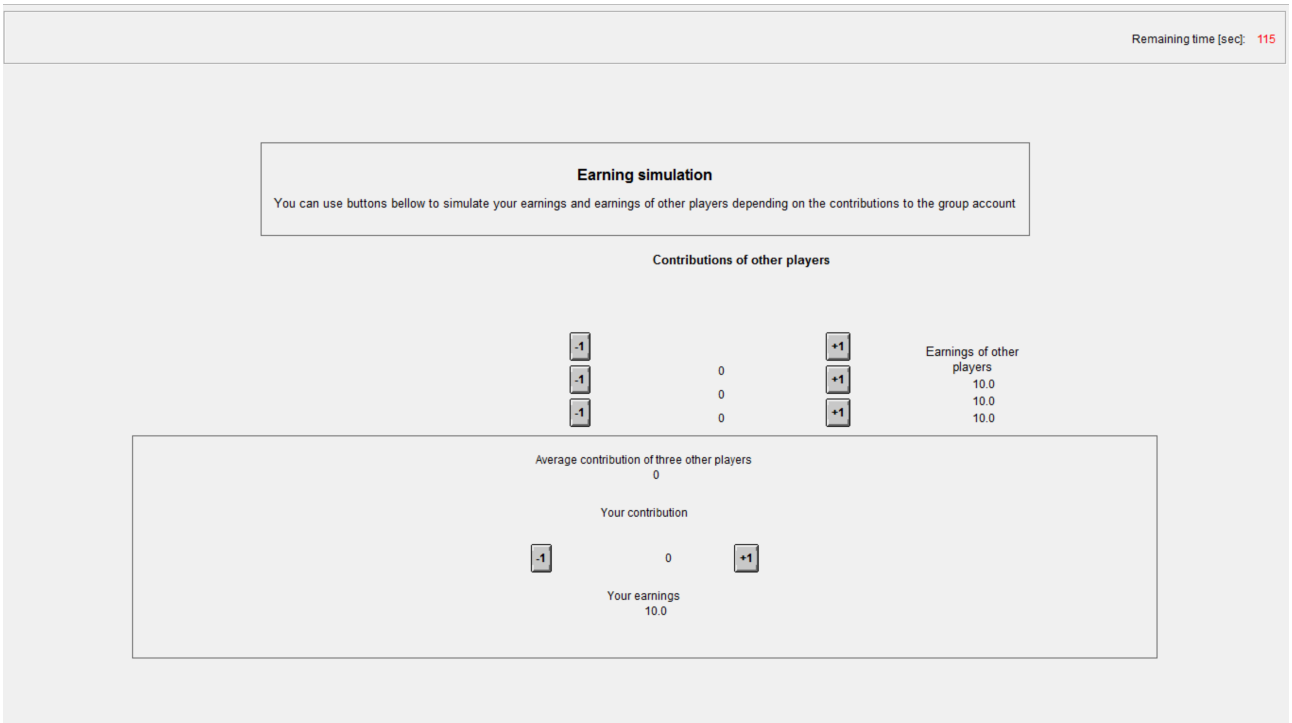


Figure B1: Screenshot of the payoff simulator

Figure B2: Screenshot of the treatment 1 (unconditional contribution) input screen

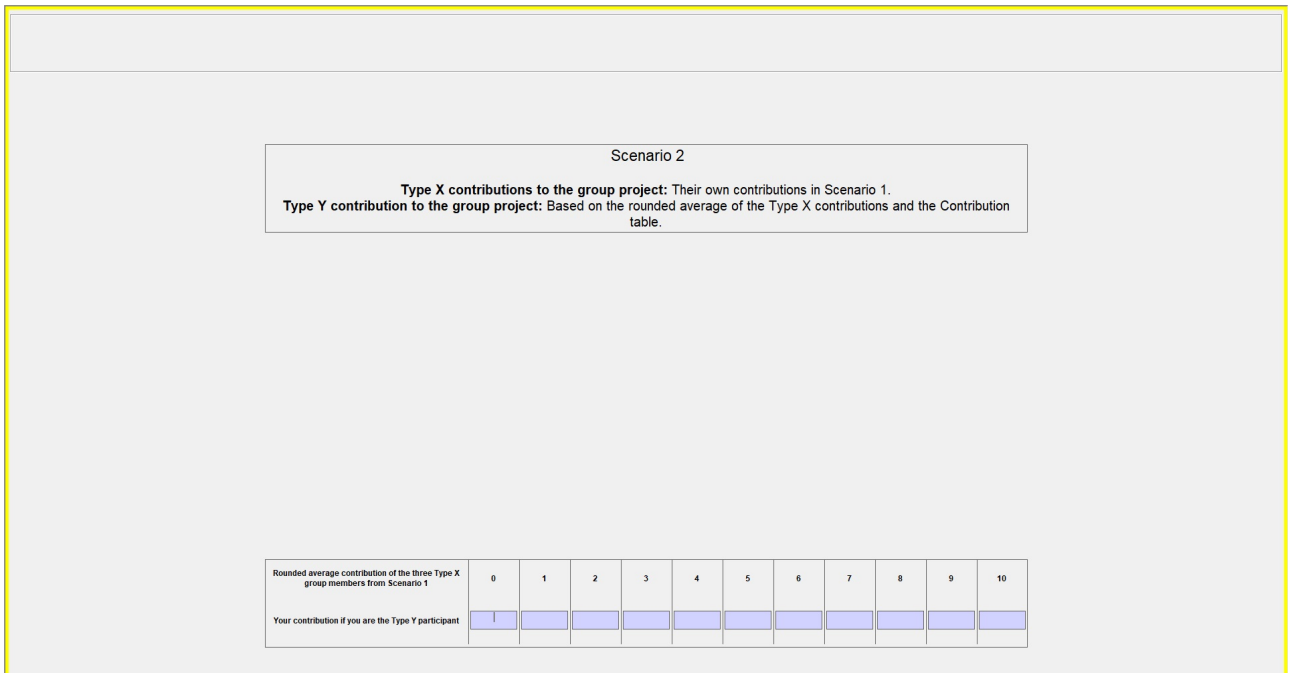


Figure B3: Screenshot of the treatment 2 input screen

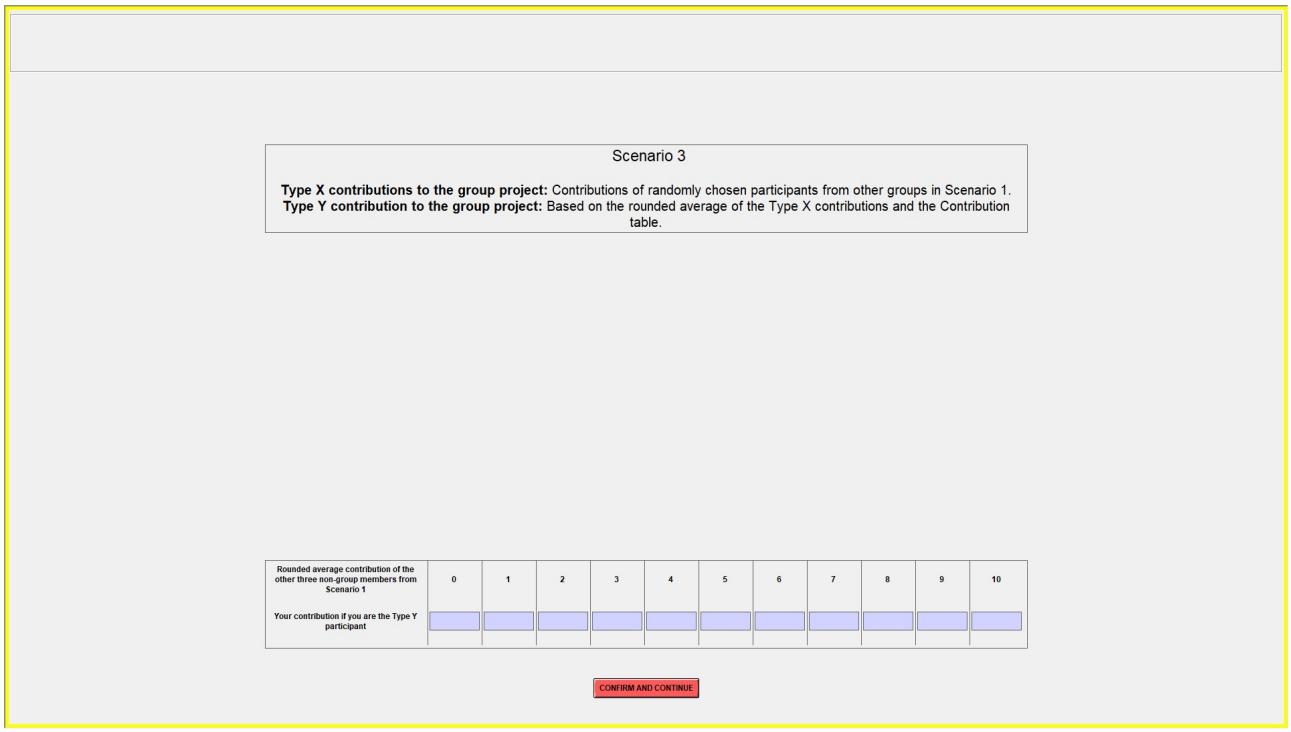


Figure B4: Screenshot of the treatment 3 input screen

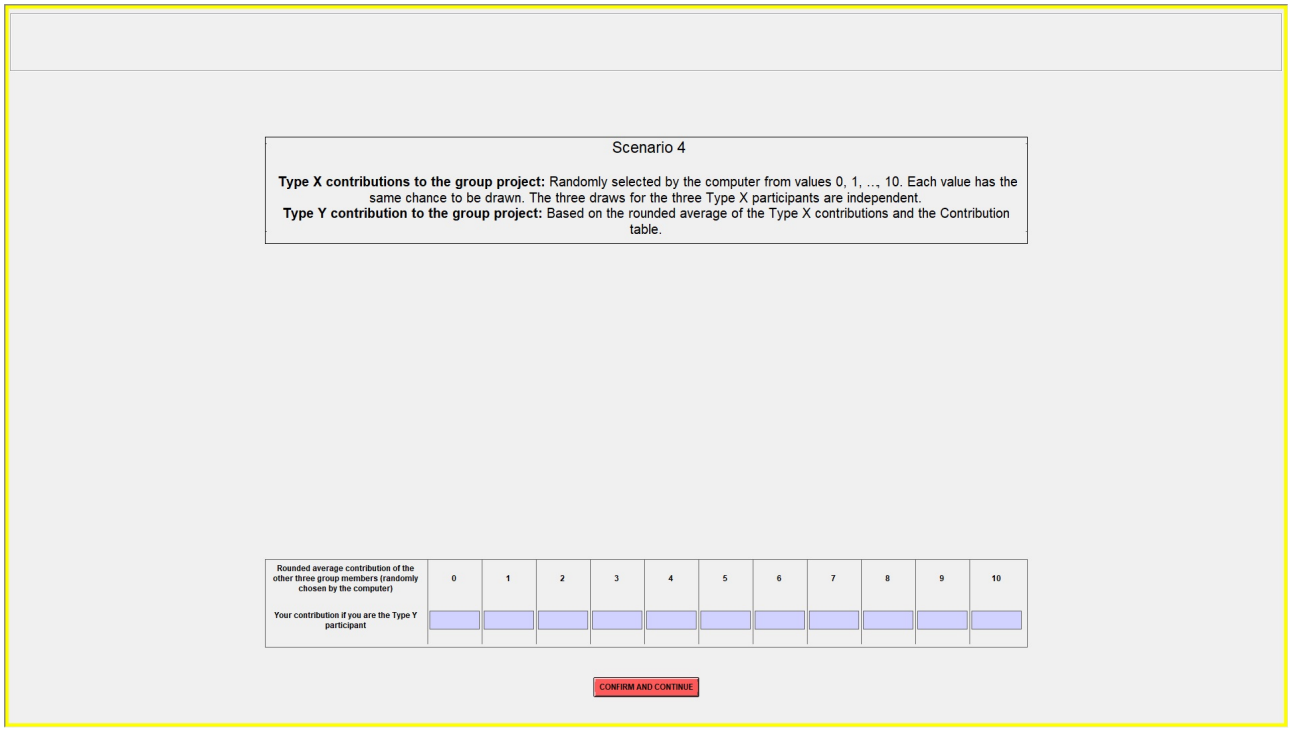


Figure B5: Screenshot of the treatment 4 input screen

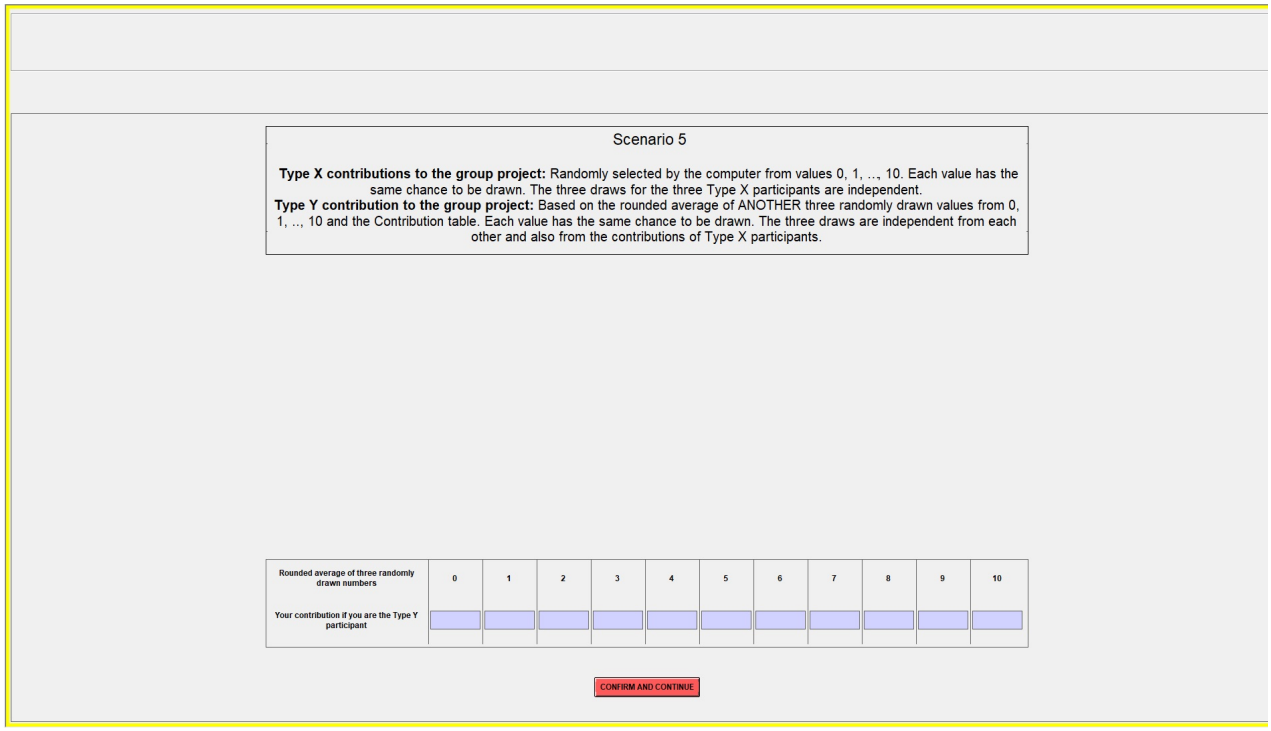


Figure B6: Screenshot of the treatment 5 input screen

C Instructions for the Between-Subject Design

In this appendix, we present the following:

1. General instructions (printed, one page)
2. Instructions for Treatment 1, inclusive of the quiz (printed, two pages)
3. Instructions for Treatment 2, inclusive of the quiz (printed, three pages)
4. Instructions for Treatment 5, inclusive of the quiz (printed, three pages)

GENERAL INSTRUCTIONS

OUTLINE OF THE EXPERIMENT

The experiment consists of the following **parts**:

1. **Instructions**.
2. **Two decision scenarios**. You have already received printed instructions for Scenario 1. Instructions for Scenario 2 will be distributed later. After going through the instructions at your own pace, you will enter your decisions. Each scenario consists of one round (no repetition).
3. **Demographic Questionnaire**, in which you will be asked a few questions about your demographic and academic background.
4. **Feedback** about your earnings. You will not be given any feedback on your or anyone else's decisions or earnings before this.

LOGISTICS

- During the experiment, **please do not communicate with other participants**. Please turn off the ringer on your mobile phone at this moment.
- There are no time restrictions for submitting your decisions during the experiment. You are free to progress at your own pace as you see fit. However, if progressing slowly, you may be asked by an experimenter to enter your decision(s) more quickly. Note that you might at times need to wait until other participants submit their decisions.
- If your computer becomes frozen during the experiment, please raise your hand. We will assist you.
- Your earnings and earnings of the other participants in this experiment are measured in **experimental points**. At the end of the experiment, experimental points you earn will be converted into CZK and paid out to you in cash (**1 experimental point = 10 CZK**). A fixed participation fee of **75 CZK** will be added to this cash payout. Individual earnings will be kept confidential.

SCENARIOS, PARTICIPANT MATCHING AND PAYMENT SCHEME

- Throughout the experiment, you will be **matched to another three participants**. With them, you will form **a group of four participants**. This group will remain fixed throughout both scenarios. No participant will know the identity of the other group members in his/her group.
- Apart from your decisions, your earnings might also be affected by decisions of other participants, computer-generated random numbers, or an outcome of a chip draw (see the next point).
- You and every other participant will be paid according to your point earnings in **one and only one of the two scenarios**. However, you do not know which one of the two it will be. Near the end of the experiment, one of the participants will draw a chip from a bag of chips with numbers 1 and 2. The drawn chip will determine which of the two scenarios is relevant for everyone's earnings.
- It is therefore important that you consider your decisions in each scenario **separately from your decisions in the other scenario**.

INSTRUCTIONS FOR SCENARIO 1

SETUP

- You are a member of a group of **4 participants**. You and every other group member has to decide on the allocation of 10 tokens. You can put these 10 tokens into your **private account,** or you can contribute them **fully or partially** to a **group project**. Each token you do not contribute to the group project automatically remains in your private account.
- The total amount of tokens allocated to the **group project** is equal to the **sum of contributions of the four group members**.

YOUR EARNINGS FROM THE PRIVATE ACCOUNT

- **You earn one point for each token you put into your private account**. For example, if you put 10 tokens into your private account (and therefore do not contribute to the group project), your earnings from the private account are 10 points. If you put 6 tokens into your private account, your earnings from this account are 6 points. **No one except you earns anything from your private account**.

YOUR EARNINGS FROM THE GROUP PROJECT

- **Each group member profits equally from the amount you contribute to the group project**. You also benefit from the other group members' contributions. The earnings of each group member from the group project are determined as follows:

Earnings from the group project *= 0.75 × sum of the contributions to the group project*

- If, for example, the sum of all four contributions is 28 tokens, then you and the other members of your group each earn 0.75×28 = 21 points from the group project. If the sum of all four contributions is 4 tokens, you and the other members of your group each earn 0.75×4 = 3 points from the group project.

YOUR TOTAL EARNINGS FROM SCENARIO 1

- Your total earnings from this scenario are given by the **sum of your earnings from your private account and your earnings from the group project**:

Earnings from your private account (= 10 – your contribution to the group project)

+ Earnings from the group project (= 0.75 × sum of the contributions to the group project)

= Total earnings from the scenario

EARNINGS OF THE OTHER GROUP MEMBERS

- Earnings of the other group members are computed in an analogous way.

OTHER THINGS TO KNOW

- The numbers used in the examples above have been selected **for illustration only**. They do not indicate how anyone decides or should decide.
- To get familiar with the decision situation, before Scenario 1 starts, you will be able to use a **Simulator** of your and other group members' point earnings (without any cash payout consequences for anyone).
- When deciding on your contribution, you do not know the contributions of the other group members.
- Recall that there will be **no feedback** about anyone's decisions or earnings at the end of Scenario 1.
- Instructions for **Scenario 2** will be distributed after Scenario 1 is completed.

Quiz questions:

Please answer the following three quiz questions. They are meant to assure your understanding of the instructions for Scenario 1. You are welcome to use the Simulator that will be started in a few minutes to help you with these questions. If needed, you can take time even after the Simulator ends (in 3 minutes from when it starts). When done answering, please **raise your hand**. An experimenter will privately check your answers and, perhaps, provide an explanation in case of an incorrect answer.

(1) If you increase your contribution, while contributions of the other group members remain unchanged,

(a) earnings of all the group members go up
(b) earnings of all the group members go down
(c) your earnings go down, while earnings of the other group members go up
(d) your earnings go up, while earnings of the other group members go down

(2) If another group member increases his/her contribution, while contributions of you and the two remaining group members remain unchanged,

(a) earnings of all the group members go up
(b) his/her earnings go down, while your and the two remaining group members' earnings go up
(c) your earnings go up, while earnings of the other group members go down
(d) your earnings go down, while earnings of the other group members go up

(3) If one group member increases his/her contribution, while contributions of the remaining group members remain unchanged, **total earnings of all the group members together**

(a) go up
(b) remain unchanged
(c) go down
(d) might go up or down; it is impossible to say for sure

INSTRUCTIONS FOR SCENARIO 2 (TREATMENT 2)

SETUP

- The method of earnings calculation from the private account and the group project is the same as in Scenario 1. What differs from Scenario 1 is how contributions of the group members are determined.
- In Scenario 2, there are three **Type X** participants and one **Type Y** participant in each group. The **Type Y** group member is **chosen randomly**. Each group member has an equal chance to be of **Type Y**.

CONTRIBUTIONS TO THE GROUP PROJECT

- Contributions of the three **Type X** group members are **equal to their contributions in Scenario 1**.
- The **Type Y** group member fills out a **CONTRIBUTION TABLE**. In this table, he/she conditions his/her contribution on the **rounded average contribution of the three Type X group members**. Here is what the contribution table looks like before it is filled out:

Rounded average contribution of the three Type X group members	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Type Y contribution											

Note that the rounded average can take one of the values 0, 1, .., 10. This value is unknown to the **Type Y** participant when filling out the table. The **Type Y** contribution will be **the number filled in below the actual value of the rounded average contribution of the three Type X group members**.

YOUR TASK AND DECISIONS

- Your task is to fill out the contribution table for the case you are the **Type Y** participant.
- **If and only if you are the Type Y participant**, your decisions in the contribution table become relevant for your and the other group members' earnings in Scenario 2.

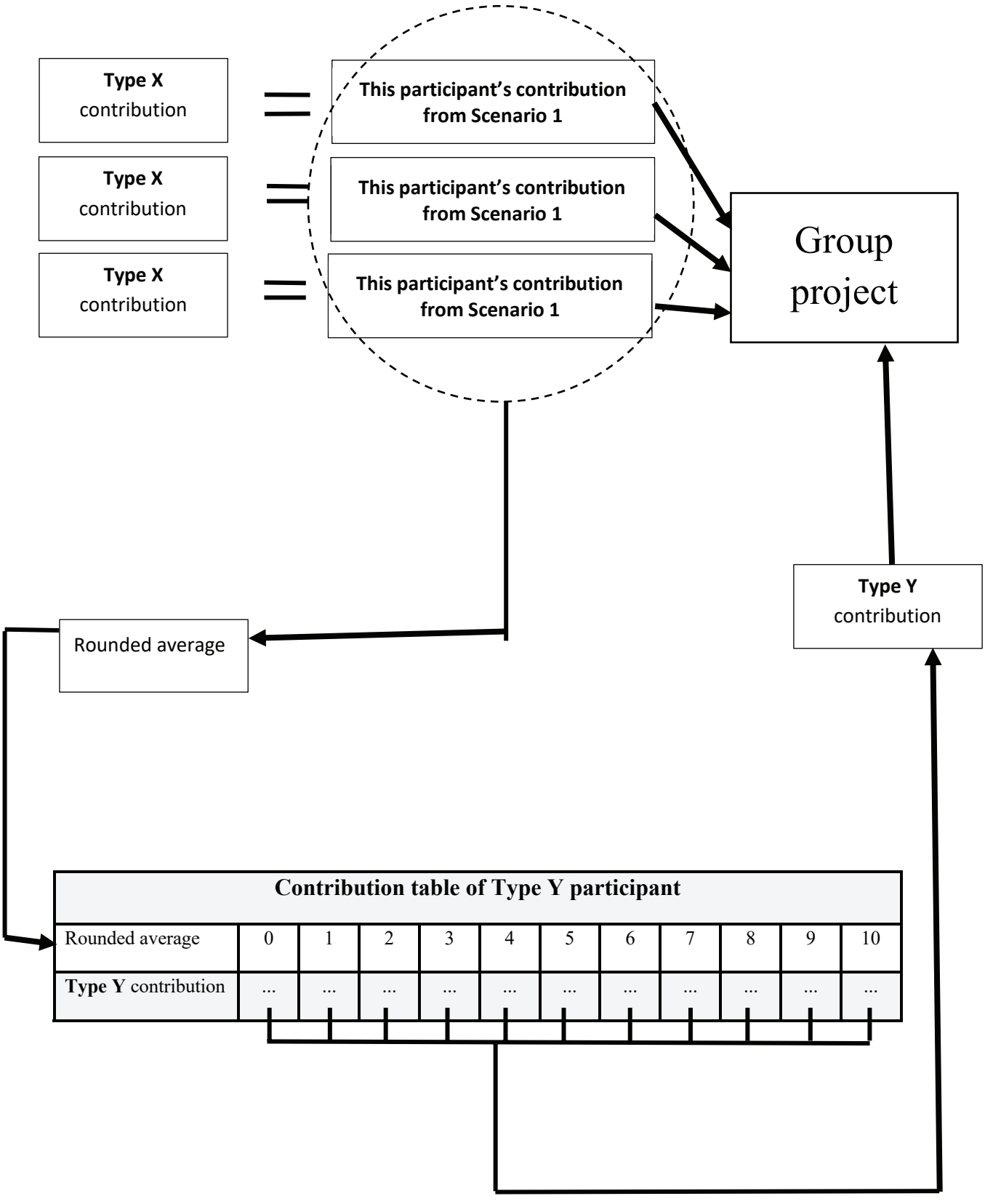
PLEASE NOTE

- Participants **do not know** who the **Type Y** member of their group is before making their decisions.
- Recall that you do not know the actual value of the rounded average in the first row of the contribution table. Therefore, **carefully consider how much to contribute for each potential value of the average**.

For a better illustration, on the next page we present a graphical scheme of how contributions to the group project are determined.

GRAPHICAL SCHEME

Recall that there are three **Type X** participants and one **Type Y** participant in each group. The scheme below illustrates how each group member's contribution to the group project is determined.



Contribution table of Type Y participant											
Rounded average	0	1	2	3	4	5	6	7	8	9	10
Type Y contribution	...	...	...	...	...	...	...	...	...	...	...

Quiz questions:

Please answer the following three quiz questions. They are meant to assure your understanding of the instructions for Scenario 2. When done answering these questions, please **raise your hand**. An experimenter will privately check your answers and, perhaps, provide an explanation in case of an incorrect answer.

(1) If you are of **Type X**, your contribution is:
- (a) equal to your Scenario 1 contribution
- (b) determined by how you fill out your contribution table
- (c) equal to a number randomly generated by a computer
- (d) equal to Scenario 1 contribution of another participant who is not in your group

(2) If you are of **Type Y**, your contribution is:
- (a) equal to your Scenario 1 contribution
- (b) determined by how you fill out your contribution table
- (c) equal to a number randomly generated by a computer
- (d) equal to Scenario 1 contribution of another participant who is not in your group

(3) If you are of **Type Y**, the actual value of the number in the first row of the contribution table is:
- (a) determined by how the other group members filled out their contribution tables
- (b) equal to the rounded average contribution of the other group members
- (c) related to the rounded average contribution of the other group members, but not always equal to it
- (d) unrelated to the average contribution of the other group members

INSTRUCTIONS FOR SCENARIO 2 (TREATMENT 5)

SETUP

- The method of earnings calculation from the private account and the group project is the same as in Scenario 1. What differs from Scenario 1 is how contributions of the group members are determined.
- In Scenario 2, there are three **Type X** participants and one **Type Y** participant in each group. The **Type Y** group member is **chosen randomly**. Each group member has an equal chance to be of **Type Y**.

CONTRIBUTIONS TO THE GROUP PROJECT

- There are two **Computers** named **X** and **Y**. Each of them generates three random numbers from the set 0, 1, ...,10 (same chance for each value). Different numbers generated by the same computer are **independent** of one another. This means that a value of one random number has no connection with values of the other random numbers.
- **Computers X and Y operate independently**. This means that the random numbers generated by one of the computers have no connection with the random numbers generated by the other one.
- Contributions of the three **Type X** group members are **equal to the three random numbers generated by Computer X** (each number corresponding to the contribution of one them).
- The **Type Y** participant fills out a **CONTRIBUTION TABLE**. In this table, he/she conditions his/her contribution on the **rounded average of the three random numbers generated by Computer Y**. Here is what the contribution table looks like before it is filled out:

Rounded average of the three random numbers generated by Computer Y	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Type Y contribution											

Note that the rounded average can take one of the values 0, 1, .., 10. This value is unknown to the **Type Y** participant when filling out the table. The **Type Y** contribution will be **the number filled in below the actual value of the rounded average of the three numbers generated by Computer Y**.

YOUR TASK AND DECISIONS

- Your task is to fill out the contribution table for the case you are the **Type Y** participant.
- **If and only if you are the Type Y participant**, your decisions in the contribution table become relevant for your and the other group members' earnings in Scenario 2.

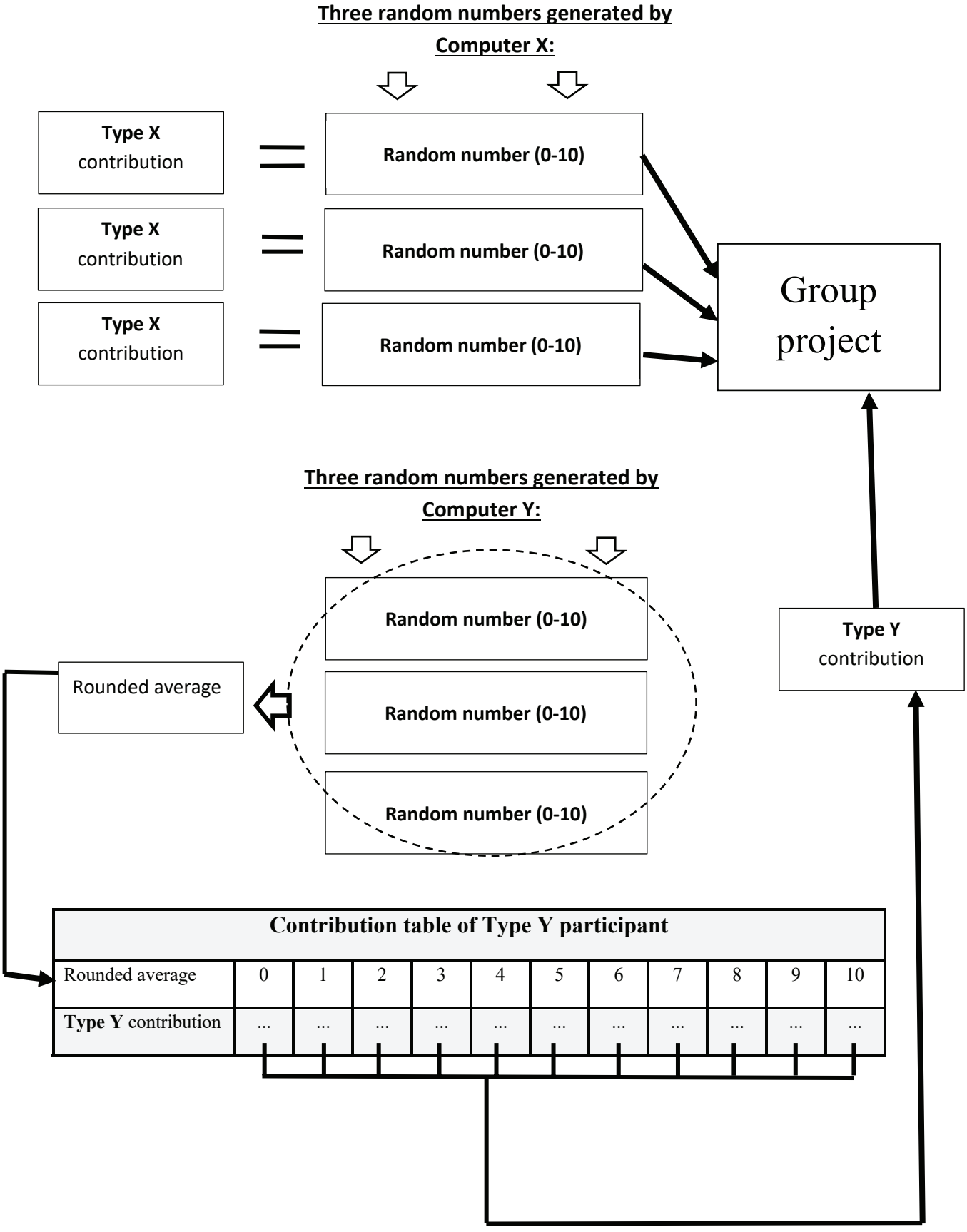
PLEASE NOTE

- Participants **do not know** who the **Type Y** member of their group is or what the random numbers generated by the two computers are before making their decisions.
- Recall that you do not know the actual value of the rounded average in the first row of the contribution table. Therefore, **carefully consider how much to contribute for each potential value of the average**.
- The rounded average in the first row of the contribution table is **not connected** with the average contribution of the other three group members in any way.

For a better illustration, on the next page we present a graphical scheme of how contributions to the group project are determined.

GRAPHICAL SCHEME

Recall that there are three **Type X** participants and one **Type Y** participant in each group. The scheme below illustrates how each group member's contribution to the group project is determined.



Quiz questions:

Please answer the following three quiz questions. They are meant to assure your understanding of the instructions for Scenario 2. When done answering these questions, please **raise your hand**. An experimenter will privately check your answers and, perhaps, provide an explanation in case of an incorrect answer.

(1) If you are of **Type X**, your contribution is:
- (a) equal to your Scenario 1 contribution
- (b) determined by how you fill out your contribution table
- (c) equal to a number randomly generated by a computer
- (d) equal to Scenario 1 contribution of another participant who is not in your group

(2) If you are of **Type Y**, your contribution is:
- (a) equal to your Scenario 1 contribution
- (b) determined by how you fill out your contribution table
- (c) equal to a number randomly generated by a computer
- (d) equal to Scenario 1 contribution of another participant who is not in your group

(3) If you are of **Type Y**, the actual value of the number in the first row of the contribution table is:
- (a) determined by how the other group members filled out their contribution tables
- (b) equal to the rounded average contribution of the other group members
- (c) related to the rounded average contribution of the other group members, but not always equal to it
- (d) unrelated to the average contribution of the other group members

D Screenshots for the Between-Subject Design

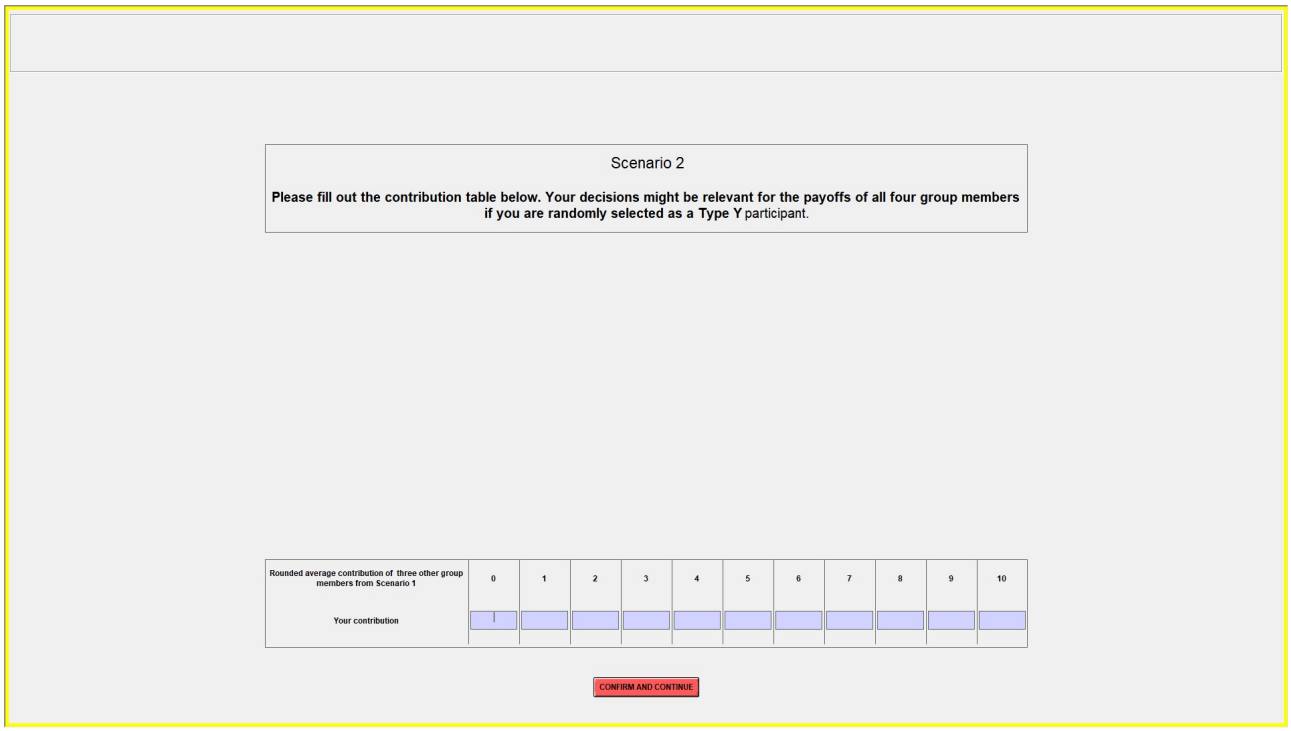


Figure D7: Screenshot of the treatment 2 input screen

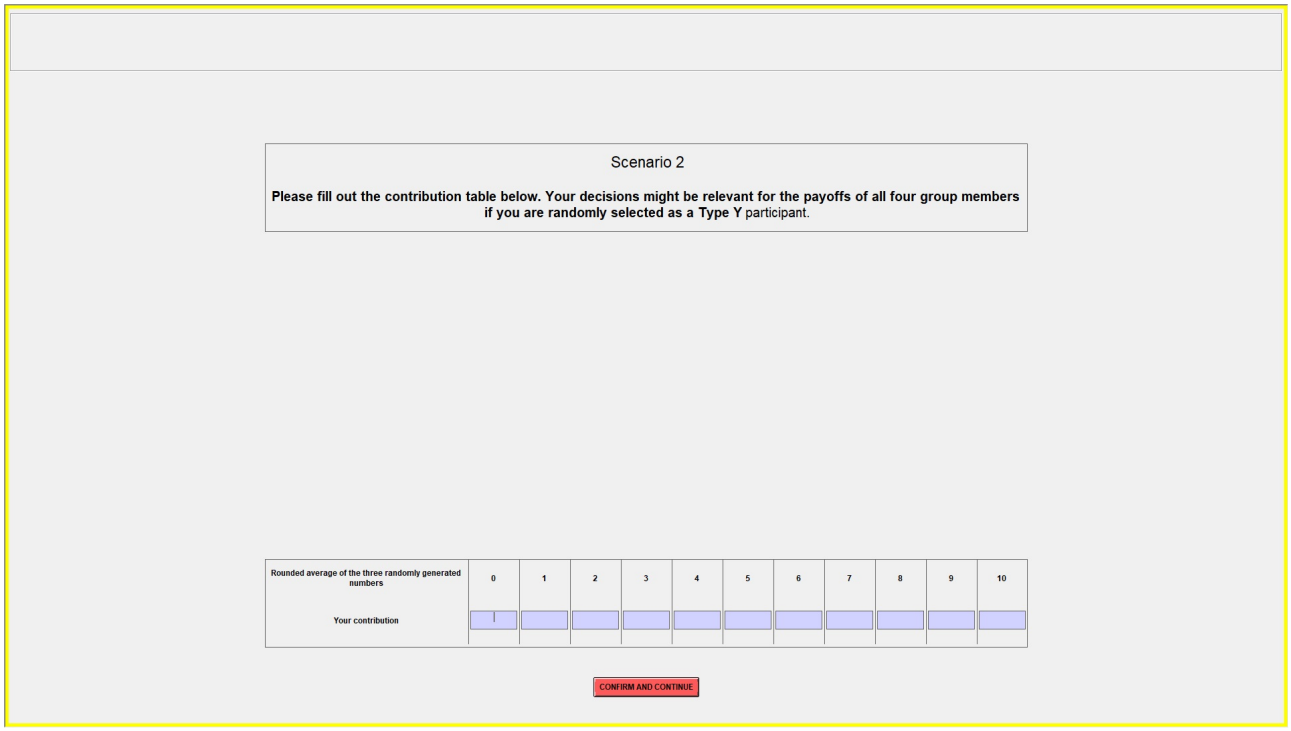


Figure D8: Screenshot of the treatment 5 input screen