

Online Appendix

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I. Instructions Part 1 - Delegation Game – Principal

Instructions for participant A

We are pleased to welcome you to this economic study.

This study is funded by diverse research support institutions. Please read the following instructions carefully. You will be informed about everything you need to know for participation in the study. If you do not understand something, please raise your hand. We will then answer your question at your place.

You will receive an initial endowment of **10 francs** at the beginning of the study. You can earn an additional monetary amount during the study by earning **points**. The number of points you earn depends on your decisions and those of the other participants.

All points that you earn in the course of the study will be converted to francs at the end of the study. The following exchange rate applies:

100 points = 6 francs

At the end of the study, you will receive the monetary amount you earned during the study plus the ten francs initial endowment in cash.

Please note that **communication is strictly forbidden** during the entire study. We also inform you that you may only use those functions on the computer that are necessary for completing the study. Communicating or playing around with the computer lead to exclusion from the study. We remain at your disposal to answer any questions you might have.

This study consists of three parts:

1. The first part of the study lasts 10 rounds. You will be paired with a different participant B in each of the 10 rounds of the study. You can complete a project with the participant B who is paired with you in each round. You will find detailed explanations about this first part of the study on the following pages.
2. In the second part of the study, you will be presented with 20 different decisions between a fixed and an unfixed amount. You will receive exact instructions about the second part as soon as the first part is completed.
3. The third part of the study is very short, and you will receive instructions as soon as the second part is completed.

General information about the first part of the study

There are two types of participants in the first part of the study: participant A and participant B. **You are a participant A.**

There are ten rounds. You will be paired with a different participant B in each round. A **project** can be completed in each round. A successful completion of the project will lead to a positive payment for participants A and B.

The decision right

In each period, either you or participant B has the **decision right**. The player with the decision right can make two decisions:

1. Which alternative of the project – A or B – will be completed?

Participant A receives the larger share of the project income in alternative A, and participant B receives the larger share of the project income in alternative B. (It is possible that participants A and B will receive the same amounts in some rounds.)

2. What is the probability that the project will be successful?

The determination of the probability of success is associated with costs for the participant with the decision right. The higher the probability of success, the higher the costs.

Payment of the project

The payments that result from completion of the project vary from round to round. You will be informed of the payments at the beginning of each round.

Example: The payments from the project in a round. In case of success, you will receive 200 points in alternative A and participant A will receive 150 points. Participant A will receive 200 points in case of success in alternative B and you will receive 150 points. If the project is unsuccessful, both participants receive 100 points each.

		Payment to participant A	Your payment
Successful completion	Alternative A	200	150
	Alternative B	150	200
If unsuccessful		100	100

The probability of success

If you have the decision right, then you can determine the probability with which the chosen project alternative – A or B – will be successful.

How is the probability of success determined?

The probability of success is a number between 0 and 100 that can be chosen freely.

$$0 \leq \text{probability of success} \leq 100$$

A probability of success of 0 means that the project will never be successful. A probability of success of 100 means that the project will always be successful. For all values in between, a project might be successful or it might not be so. A value of 50 means that a project has a 50% chance of being successful.

If the project is successful, participants A and B will be paid out in accordance to the chosen alternative (in the example above, 150 or 200 points). If the project is not successful, both participants will receive a lower payment independent of the chosen alternative (in the example above, 100 points each).

The costs of the choice of the probability of success

The higher the probability of success you chose, the higher are your costs. Two information sheets (blue and yellow) are at your desk; they show you both in a table and in a graph how high the costs are for the various possible probabilities of success. You will be informed in each round whether the costs are on the blue or on the yellow sheet apply. You can also always have the computer show you the costs on the monitor while choosing the probability of success.

A roll of the dice determines whether the project is successful

The participant with the decision right can roll two dice at his or her desk – they are red and white (and show the numbers from 0 to 9). The red die determines the first digit and the white the second digit. This results in a number between 1 and 100 (two zeros are valued as 100). If the number rolled is **smaller than or equal to** the chosen probability of success, the project is successful. If the number rolled is larger, the project is not successful. **The greater the probability of success that you choose, the greater the possibility that the number rolled is smaller than the chosen number, i.e. that the project is successful.**

Examples:

1. **Example:** You choose a **probability of success of 15**, i.e. 15%.

This means the following:

- If – through rolling the red and the white dice – a smaller or equal number results, i.e. a number between 1 and 15 (= 15 of 100 possibilities), the project is successful.
- If the number is greater than 15 (= 16 to 100, or 85 possibilities) results, then the project is not successful.

2. **Example:** You choose **80 as the probability of success**, i.e. a probability of success of 80%.

This means the following:

- If – through rolling the red and the white dice – a number between 1 and 80 results (= 80 of 100 possibilities), the project is successful.
- If the number is greater than 80 (= 81 to 100, or 20 possibilities) results, then the project is not successful.

- **Assume that you roll the number 9 with the red die and a 3 with the white one. This results in the number 93.**

In this case, neither example would have been successful (the number rolled is, in both cases, larger than the chosen probability of success).

- **Assume that you roll the number 5 with the red die and a 4 with the white one. This results in the number 54.**

In this case, the project in the first example would not have been successful (the number rolled is larger than 15), but the project in the second example would have been successful (the number rolled is less than 80).

- **Assume that you roll the number 0 with the red die and a 3 with the white one. This results in the number 03.**

In this case, the project would have been successful in both examples (the number rolled is less than the probability of success chosen in each example).

The income

The incomes of participants A and B consist of the following two parts:

- Payment from the chosen project alternative if the project is successful. If the project is not successful, both participants receive a lower payment that is independent of the project alternative.
- The costs for the probability of success will be deducted from the corresponding payment for the participant with the decision right.

The following four possibilities thus result for you:

1. You have the **decision right** and the project is **successful**:

Income = payment from the project alternative you chose – costs for the choice of the probability of success

2. You have the **decision right** and the project is **not successful**:

Income = payment in case of lack of success – costs for the choice of the probability of success

3. You **do not have the decision right** and the project is **successful**:

Income = payment from the project alternative participant B chose

4. You **do not have the decision right** and the project is **not successful**:

Income = payment in case of lack of success

Detailed procedure for a round on the computer

1st stage: participant B's decision

In each round, you as participant A first have the decision right. You can also delegate the decision right to participant B. Before you decide whether you would like to delegate the decision right to participant B, participant B determines in a binding manner – for the case that the decision right is delegated to him – which project alternative and which probability of success that he would like to select.

If you actually delegate the decision right to participant B, then the decisions participant B make in the first stage will be realized.

You will not yet learn which decisions participant B makes in the first stage.

2nd stage: who has the decision right?

You can decide in each round – after participant B has made his decisions – whether you would like to delegate the decision right to participant B or if he would like to retain this for yourself. In this case, you do not make the decision directly, but by **determining a minimum requirement:**

In each round, you can determine the minimum probability of success that participant B must have chosen for you to be willing to delegate the decision right to him. You can choose any minimum requirement between 1 and 100.

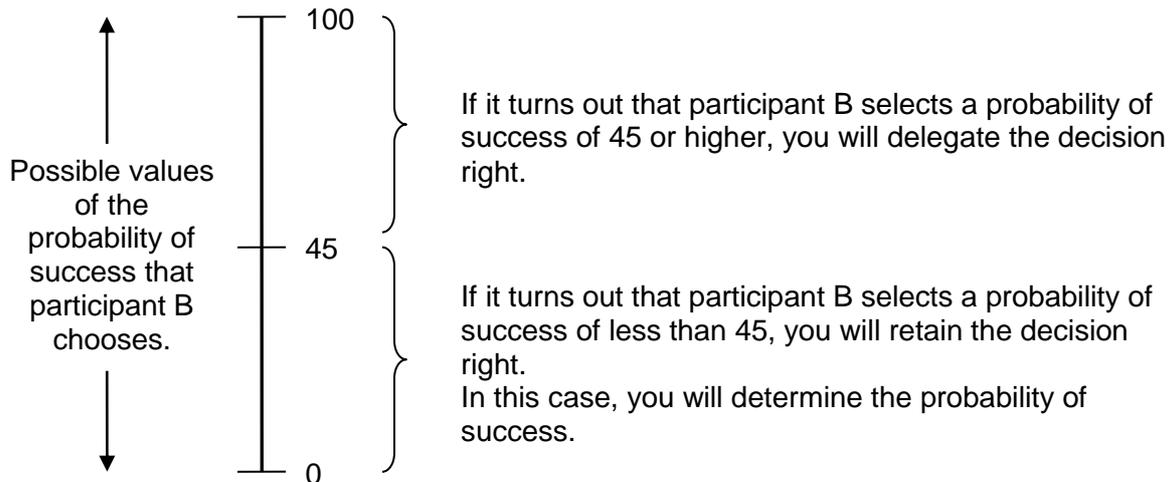
Participant B has already chosen his probability of success at the time you determine a minimum requirement. You thus have no opportunity at all to influence the decision that participant B has already made.

Please take note that you do not know the probability of success that participant B chose when you determine your minimum requirement.

If the probability of success that participant B chooses is greater than the minimum requirement that you determine, you will delegate the decision right. If the probability of success that participant B determines is less than your minimum requirement, you will retain the decision right.

The graph on the next page clarifies the connection between the minimum requirement you determine, the probability of success that participant B chooses, and the question of who has the decision right.

If, for example, you decide on a **minimum requirement of 45**, this means that you would then like to delegate the decision right to participant B if he selects a probability of success of 45 or greater.



When you are considering your minimum requirement, you should ask the following:

- Would I want to delegate the decision right if participant B selected a probability of success of 1? If not, you should then ask:
- Would I want to delegate the decision right if participant B selected a probability of success of 2? If not, you should then ask:
- Would I want to delegate the decision right if participant B selected a probability of success of 3? And so on.

Do this until you reach participant B's probability of success level, above which you would delegate the decision right. You should determine this as your minimum requirement.

- In the example above, this is the value of 45. This means that you would just be willing to delegate the decision right if participant B selects a probability of success of 45, but that you would prefer retaining this right at all values of 44 or less.

Further examples:

1. You select a minimum requirement of 78.

This means the following:

- If participant B selects a probability of success in stage 1 between 0 and 77, you will not delegate the decision right.
- If participant B selects a probability of success in stage 1 between 78 and 100, you will delegate the decision right to him.

2. You select a minimum requirement of 4.

This means the following:

- If participant B selects a probability of success in stage 1 between 0 and 3, you will not delegate the decision right.
- If participant B selects a probability of success in stage 4 between 100 and 100, you will delegate the decision right to him.

You make your decision on the minimum requirement for participant B on the screen shown below:

The upper part of the screen always informs you of the payments in the two project alternatives as well as the payment in case of lack of success in the round in question. Furthermore, you will be informed whether the cost schedule on the yellow or the blue information sheet applies. You can enter your minimum requirement in the lower part of the screen. Here is an example:

Payments for the two project alternatives in this round:

Alternative A: You receive ... points. Participant B receives ... points.
Alternative B: You receive ... points. Participant B receives ... points.

In case of failure, both participants receive ... points.
In this period, the **blue** cost sheet is relevant for both participants.

Participant B has now made his binding choices for the case in which he receives the decision right.
What is the minimal probability of success of participant B such that you are willing to transfer the decision right to him?

After you have entered your minimum requirements, please click on the OK button to move to the next stage.

3rd stage: determination of the project alternative

At the time of the selection of the project alternatives, you do not yet know whether the probability of success that participant B selects is at least as high as your minimum requirement or not. You therefore do not know whether you delegate the decision right or not. For this reason, you must select the project alternative that you would like to realize in case you retain the decision right. The selection of the project alternative is made on the following screen:

Payments for the two project alternatives in this round:

Alternative A: You receive ... points. Participant B receives ... points.
Alternative B: You receive ... points. Participant B receives ... points.

In case of failure, both participants receive ... points.
In this period, the **blue** cost sheet is relevant for both participants.

Assume you keep the decision right.
Which project alternative will you implement in this case?

Your choice: Alternative A
 Alternative B

After you have chosen the project alternative, please click on the OK button.

4th stage: Selection of the probability of success

Furthermore, you do not know at the time of your selection of the probability of success whether the decision right will be delegated or if you will retain it. You must therefore select the probability of success in case you retain the decision right. The cost of the probability of success will only be incurred, however, if you ultimately retain the decision right.

You make your choice of the probability of success on the screen shown below:

Payments for the two project alternatives in this round:

Alternative A: You receive ... points. Participant B receives ... points.
Alternative B: You receive ... points. Participant B receives ... points.

In case of failure, both participants receive ... points.
In this period, the **blue** cost sheet is relevant for both participants.

Assume you keep the decision right.
Which project alternative will you implement in this case?

Assume you keep the decision right.
You have chosen the following alternative:
Alternative A: You receive ... points. Participant B receives ... points.

Which probability of success do you want to choose in this case?
You can only enter integer numbers (0,1, 2,..., 99,100).

Display costs

After you have chosen the probability of success, click on the "display costs" button. This will then show the exact costs of the probability of success that you chose. You can then change your probability of success if you wish. You make your final decision with "confirm".

5th stage: determination of the project success

At the end of the study, the computer will randomly determine **one** of the ten rounds, and the payment that determines your income from this part of the study will be decided **for this round** based on your decision and that of the participant B assigned to you in this period. As you do not know which round the computer will randomly determine, you should consider your decisions in each round very carefully.

- a) The computer will first randomly determine which round will be selected for payment.
- b) It will then examine whether the participant B randomly assigned to you in this round chose a probability of success that is at least as large as your minimum requirement.
 - If the minimum requirement is fulfilled, you will delegate the decision right.
 - If the minimum requirement is not fulfilled, you will retain the decision right.

If you retain the decision right, you can determine the project success yourself by rolling the dice. You will do this at your desk, under supervision of the head of the study. The result is entered on the following screen:

The following round of the first part of the study has been chosen for payment: ...

The payments of the two alternatives in this round were:

Alternative A:
If successful: You receive ... points. Participant B receives ... points.
If unsuccessful: Both participants receive ... points.

Alternative B:
If successful: You receive ... points. Participant B receives ... points.
If unsuccessful: Both participants receive ... points.

The probability of success of participant B in the chosen round was smaller than your minimum requirement.
Hence, you have kept the decision right.
You have chosen the following alternative: ...

You chosen probability of success was: ...

Please determine the success of your project, once an instructor is at your place:

Red Dice:

White Dice:

Code:

You can roll the dice yourself, but the entry of the result and the code (necessary in order to press the "continue" button) must be done by the head of the study.

Do you have questions about the study? Please raise your hand. We will come to your desk.

You will find some test questions on the next pages.

Test questions

Please answer the following test questions. Please contact the head of the study if you have any questions.

1. Assume you determined a minimum requirement of 85.
 - a) If participant B selects a probability of success of 80, who has the decision right in this round?
 - b) If participant B selects a probability of success of 90, who has the decision right in this round?
2. Assume you determined a minimum requirement of 55.
 - c) If participant B selects a probability of success of 50, who has the decision right in this round?
 - d) If participant B selects a probability of success of 60, who has the decision right in this round?
3. Assume participant B chose a probability of success of 3.
 - a) If you specify a minimum requirement of 1, who has the decision right in this round?
 - b) What is the probability that the project will then be successful?
 - c) If, however, you specify a minimum requirement of 4, who has the decision right in this round?
 - d) What is the probability that the project will then be successful?
4. Assume participant B chose a probability of success of 90.
 - a) If you specify a minimum requirement of 85, who has the decision right in this round?
 - b) What is the probability that the project will then be successful?
 - c) If, however, you specify a minimum requirement of 95, who has the decision right in this round?
 - d) What is the probability that the project will then be successful?

Assume that you retained the decision right and chose a probability of success of 54. The cost schedule on yellow information sheet applies in this round. Assume further that you roll an 8 with the red die and a 2 with the white one.

- a) How high are your costs?
- b) Would the project have been successful?

The following payments apply for the project:

		Your payment	Payment of participant B
Successful completion	Alternative A	200	150
	Alternative B	150	200
If not successful		100	100

Assume you chose project alternative A.

- a) How high would your income be?
- b) How high would participant B's income be?

Now assume that you chose a probability of success of 24. Assume further that you roll a 1 with the red die and a 5 with the white one. The cost schedule on yellow information sheet applies in this round. You again chose project alternative A.

- c) How high are your costs?
- d) Would the project have been successful?
- e) How high would your income be?
- f) How high would participant B's income be?

6. Assume that you delegated the decision right. Participant B selected project alternative B and chose a probability of success of 48. The cost schedule on blue information sheet applies in this round.

The following payments apply for the project:

		Your payment	Payment of participant B
Successful completion	Alternative A	180	150
	Alternative B	150	180
If not successful		100	100

Assume further that participant B rolls a 5 with the red die and a 7 with the white one.

- Would the project have been successful?
- How high would your income be?
- How high would participant B's income be?

Now assume participant B rolls a 3 with the red die and a 9 with the white one.

- Would the project have been successful?
- How high would your income be?
- How high would participant B's income be?

II. Screenshots for Principals in the delegation game

Screen 1: Minimum Agent Effort Choice

Payments for the two project alternatives in this round:

Alternative A: You receive 560 points. Participant B receives 470 points.
Alternative B: You receive 470 points. Participant B receives 560 points.

In case of failure, both participants receive **200** points.
In this period, the **blue** cost sheet is relevant for both participants.

Participant B has now made his binding choices for the case in which he receives the decision right.
What is the minimal probability of success of participant B such that you are willing to transfer the decision right to him?

Screen 2: Confirmation of Minimum Agent Effort Choice

Payments for the two project alternatives in this round:

Alternative A: You receive 560 points. Participant B receives 470 points.
Alternative B: You receive 470 points. Participant B receives 560 points.

In case of failure, both participants receive **200** points.
In this period, the **blue** cost sheet is relevant for both participants.

Your chosen minimal requirement: 55

You keep the decision right in case participant B has chosen a success probability between 0 and 54.
You transfer the decision right if participant B has chosen a success probability between 55 and 100.

Screen 3: Project Choice

Payments for the two project alternatives in this round:

Alternative A: You receive 560 points. Participant B receives 470 points.
Alternative B: You receive 470 points. Participant B receives 560 points.

In case of failure, both participants receive **200** points.
In this period, the **blue** cost sheet is relevant for both participants.

Assume you keep the decision right.
Which project alternative will you implement in this case?

Your choice: Alternative A
 Alternative B

OK

Screen 4: Own Effort Choice

Payments for the two project alternatives in this round:

Alternative A: You receive 560 points. Participant B receives 470 points.
Alternative B: You receive 470 points. Participant B receives 560 points.

In case of failure, both participants receive **200** points.
In this period, the **blue** cost sheet is relevant for both participants.

Assume you keep the decision right.

You have chosen the following alternative:
Alternative A: You receive 560 points. Participant B receives 470 points.

Which probability of success do you want to choose in this case?
You can only enter integer numbers (0,1, 2,..., 99,100).

Display costs

Screen 5: Confirmation of Own Effort Choice

Payments for the two project alternatives in this round:

Alternative A: You receive 560 points. Participant B receives 470 points.

Alternative B: You receive 470 points. Participant B receives 560 points.

In case of failure, both participants receive **200** points.

In this period, the **blue** cost sheet is relevant for both participants.

Please confirm your choice:

You have chosen the following alternative:

Alternative A: You receive 560 points. Participant B receives 470 points.

Your chosen probability of success

Your choice: 46

Costs: 42.3

Change probability of success

confirm

Payments for the two project alternatives in this round:

Alternative A: You receive 560 points. Participant B receives 470 points.
 Alternative B: You receive 470 points. Participant B receives 560 points.

In case of failure, both participants receive **200** points.
 In this period, the **blue** cost sheet is relevant for both participants.

Your decisions imply the following possibilities (assuming participant B would choose alternative B):

If you keep the decision right:	If you transfer the decision right, participant B will choose:
<p>Alternative: Alternative A</p> <p>Probability of Success: 46 Your Costs: 42.3</p> <p>Your payment from the project in case of success: 560 Participant B's payment from the project in case of success: 470</p>	<p>Alternative: Alternative B</p> <p>Minimal probability of success: 55 Minimal costs for Participant B: 60.5</p> <p>Your payment from the project in case of success: 470 Participant B's payment from the project in case of success: 560</p>

You have the possibility to adjust your decisions.
 If you want to do so, click on "Change decisions".
 If you are satisfied with your decisions, please click on "Confirm decisions".

change decisions
confirm decisions

III. Instructions Part 1 – Delegation Game – Agent

Instructions for participant B

We are pleased to welcome you to this economic study.

This study is funded by diverse research support institutions. Please read the following instructions carefully. You will be informed about everything you need to know for participation in the study. If you do not understand something, please raise your hand. We will then answer your question at your place.

You will receive an initial endowment of **10 francs** at the beginning of the study. You can earn an additional monetary amount during the study by earning **points**. The number of points you earn depends on your decisions and those of the other participants.

All points that you earn in the course of the study will be converted to francs at the end of the study. The following exchange rate applies:

100 points = 6 francs

At the end of the study, you will receive the monetary amount you earned during the study plus the ten francs initial endowment in cash.

Please note that **communication is strictly forbidden** during the entire study. We also inform you that you may only use those functions on the computer that are necessary for completing the study. Communicating or playing around with the computer lead to exclusion from the study. We remain at your disposal to answer any questions you might have.

This study consists of three parts:

4. The first part of the study lasts 10 rounds. You will be paired with a different participant A in each of the 10 rounds of the study. You can complete a project with the participant B who is paired with you in each round. You will find detailed explanations about this first part of the study on the following pages.
5. In the second part of the study, you will be presented with 20 different decisions between a fixed and an unfixed amount. You will receive exact instructions about the second part as soon as the first part is completed.
6. The third part of the study is very short, and you will receive instructions as soon as the second part is completed.

General information about the first part of the study

There are two types of participants in the first part of the study: participant A and participant B. **You are a participant B.**

There are ten rounds. You will be paired with a different participant A in each round. A **project** can be completed in each round. A successful completion of the project will lead to a positive payment for participants A and B.

The decision right

In each period, either you or participant A has the **decision right**. The player with the decision right can make two decisions:

3. Which alternative of the project – A or B – will be completed?

Participant A receives the larger share of the project income in alternative A, and participant B receives the larger share of the project income in alternative B. (It is possible that participants A and B will receive the same amounts in some rounds.)

4. What is the probability that the project will be successful?

The determination of the probability of success is associated with costs for the participant with the decision right. The higher the probability of success, the higher the costs.

Payment of the project

The payments that result from completion of the project vary from round to round. You will be informed of the payments at the beginning of each round.

Example: The payments from the project in a round. In case of success, you will receive 200 points in alternative B and participant A will receive 150 points. Participant A will receive 200 points in case of success in alternative A and you will receive 150 points. If the project is unsuccessful, both participants receive 100 points each.

		Payment to participant A	Your payment
Successful completion	Alternative A	200	150
	Alternative B	150	200
If unsuccessful		100	100

The probability of success

If you have the decision right, then you can determine the probability with which the chosen project alternative – A or B – will be successful.

How is the probability of success determined?

The probability of success is a number between 0 and 100 that can be chosen freely.

$$0 \leq \text{probability of success} \leq 100$$

A probability of success of 0 means that the project will never be successful. A probability of success of 100 means that the project will always be successful. For all values in between, a project might be successful or it might not be so. A value of 50 means that a project has a 50% chance of being successful.

If the project is successful, participants A and B will be paid out in accordance to the chosen alternative (in the example above, 150 or 200 points). If the project is not successful, both participants will receive a lower payment independent of the chosen alternative (in the example above, 100 points each).

The costs of the choice of the probability of success

The higher the probability of success you chose, the higher are your costs. Two information sheets (blue and yellow) are at your desk; they show you both in a table and in a graph how high the costs are for the various possible probabilities of success. You will be informed in each round whether the costs are on the blue or on the yellow sheet apply. You can also always have the computer show you the costs on the monitor while choosing the probability of success.

A roll of the dice determines whether the project is successful

The participant with the decision right can roll two dice at his or her desk – they are red and white (and show the numbers from 0 to 9). The red die determines the first digit and the white the second digit. This results in a number between 1 and 100 (two zeros are valued as 100). If the number rolled is **smaller than or equal to** the chosen probability of success, the project is successful. If the number rolled is larger, the project is not successful. **The greater the probability of success that you choose, the greater the possibility that the number rolled is smaller than the chosen number, i.e. that the project is successful.**

Examples:

3. You choose 15 as the probability of success, i.e. a probability of success of 15%.

If – through rolling the red and the white dice – a smaller or equal number results, i.e. a number between 1 and 15 (= 15 of 100 possibilities), the project is successful. If the number is greater than 15 (= 16 to 100, or 85 possibilities) results, then the project is not successful.

4. You choose 80 as the probability of success, i.e. a probability of success of 80%.

If – through rolling the red and the white dice – a number between 1 and 80 results (= 80 of 100 possibilities), the project is successful. If the number is greater than 80 (= 81 to 100, or 20 possibilities) results, then the project is not successful.

Assume that you roll the number 9 with the red die and a 3 with the white one. This results in the number 93. In this case, neither project would have been successful.

Assume that you roll the number 5 with the red die and a 4 with the white one. This results in the number 54. In this case, the first project would not have been successful, but the second project would have been successful.

Assume that you roll the number 0 with the red die and a 3 with the white one. This results in the number 03. In this case, both projects would have been successful.

The income

The incomes of participants A and B consist of the following two parts:

- Payment from the chosen project alternative if the project is successful. If the project is not successful, both participants receive a lower payment that is independent of the project alternative.
- The costs for the probability of success will be deducted from the corresponding payment for the participant with the decision right.

The following four possibilities thus result for you:

5. You have the **decision right** and the project is **successful**:

Income = payment from the project alternative you chose – costs for the choice of the probability of success

6. You have the **decision right** and the project is **not successful**:

Income = payment in case of lack of success – costs for the choice of the probability of success

7. You **do not have the decision right** and the project is **successful**:

Income = payment from the project alternative participant A chose

8. You **do not have the decision right** and the project is **not successful**:

Income = payment in case of lack of success

Detailed procedure for a round on the computer

1st stage: your decision as participant B

In each round, participant A first has the decision right. Participant A can also delegate the decision right to you as participant B. Before participant A decides whether he would like to delegate the decision right to you, you determine in a binding manner – for the case that the decision right is delegated to you – which project alternative and which probability of success that you would like to select.

If participant A actually delegates the decision right to you, then the decisions you make in the first stage will be realized.

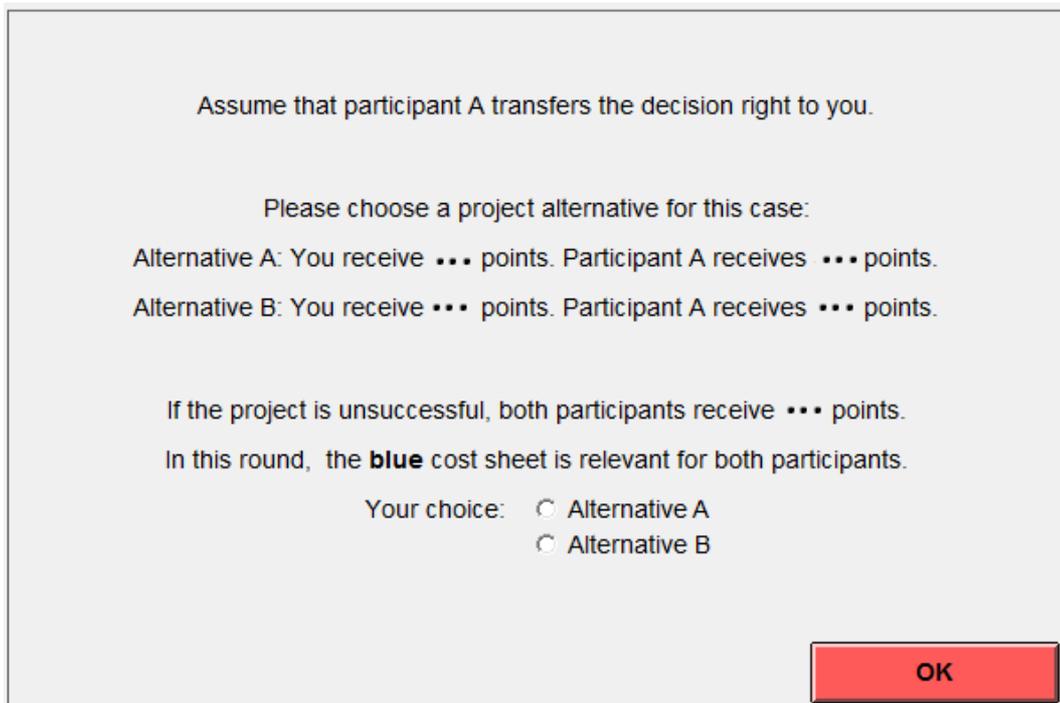
You should therefore carefully consider which probability of success and which project alternative you would like to choose, even though you do not yet know whether you will have the decision right.

Participant A will not yet learn which decisions you as participant B make in the first stage.

You will make your choices of project alternative on the following screen:

The upper part of the screen informs you of the payments for the two project alternatives as well as the payment in case of lack of success in the round in question. You will also be informed whether the cost schedule on the blue or the yellow information sheet applies. You can choose the project alternative in the lower part of the screen.

Here is an example:



Assume that participant A transfers the decision right to you.

Please choose a project alternative for this case:

Alternative A: You receive ... points. Participant A receives ... points.

Alternative B: You receive ... points. Participant A receives ... points.

If the project is unsuccessful, both participants receive ... points.

In this round, the **blue** cost sheet is relevant for both participants.

Your choice: Alternative A
 Alternative B

OK

After you have chosen the project alternative, please click on the OK button.

You make your selection of the probability of success on the screen shown below:

Here is an example:

Assume that participant A transfers the decision right to you.

You have chosen the following project alternative:
Alternative .: You receive ... points. Participant A receives ... points.
If the project is unsuccessful, both participants receive ... points.
In this round, the **blue** cost sheet is relevant for both participants.

Which probability of success do you want to choose in this case?
You can only enter integer numbers (0,1, 2,..., 99,100).

After you have chosen the probability of success, click on the "display costs" button. This will then show the exact costs of the probability of success that you chose. You can then change your probability of success if you wish. You make your final decision with "confirm".

Please take note that the costs for the choice of probability of success only apply if the decision right is actually delegated to you.

2nd stage: who has the decision right?

Participant A can decide in each round – after you as participant B have made your decisions – whether he would like to delegate the decision right to you or if he would like to retain this for himself.

In this case, participant A does not make the decision directly, but by **determining a minimum requirement**:

In each round, participant A can determine the minimum probability of success that participant B must have chosen for him to be willing to delegate the decision right to participant B.

Please take note that participant A does not know the probability of success that you chose when he determines his minimum requirement.

If the probability of success that you choose is greater than the minimum requirement that participant A determines, participant A will delegate the decision right. If the probability of success that you determine is less than the minimum requirement, participant A will retain the decision right.

3. Selection of project and determination of the probability of success by participant A

If participant A retains the decision right, he selects a project and determines a probability of success.

2nd stage: determination of the project success

At the end of the study, the computer will randomly determine **one** of the ten rounds, and the payment that determines your income from this part of the study will be decided **for this round** based on your decision and that of the participant A assigned to you in this period. As you do not know which round the computer will randomly determine, you should consider your decisions in each round very carefully.

- e) The computer will first randomly determine which round will be selected for payment.
- f) It will then examine whether you chose a probability of success that is at least as large as the minimum requirement of the participant A who was randomly assigned to you in this round.
 - If the minimum requirement is fulfilled, participant A will delegate the decision right to you.
 - If the minimum requirement is not fulfilled, participant A will retain the decision right.

If you were delegated the decision right, you can determine the project success yourself by rolling the dice. You will do this at your desk, under supervision of the head of the study. The result is entered on the following screen:

The following round of the first part of the study has been chosen for payment:
The payments of the two alternatives in this round were:

Alternative A:
If successful: You receive ... points. Participant A receives ... points.
If unsuccessful: Both participants receive ... points.

Alternative B:
If successful: You receive ... points. Participant A receives ... points.
If unsuccessful: Both participants receive ... points.

Participant A has transferred the decision right to you.
Your chosen probability of success is: ...
Your chosen project alternative is: ...

Red Dice:

White Dice:

Code:

You can roll the dice yourself, but the entry of the result and the code (necessary in order to press the "continue" button) must be done by the head of the study.

Do you have questions about the study? Please raise your hand. We will come to your desk.

You will find some test questions on the next pages.

Test questions

Please answer the following test questions. Please contact the head of the study if you have any questions.

5. Assume you chose a probability of success of 3.
- c) If participant A specifies a minimum requirement of 1, who has the decision right in this round?
 - d) What is the probability that the project will then be successful?
 - g) If, however, participant A specifies a minimum requirement of 4, who has the decision right in this round?
 - h) What is the probability that the project will then be successful?
6. Assume you chose a probability of success of 90.
- e) If participant A specifies a minimum requirement of 85, who has the decision right in this round?
 - f) What is the probability that the project will then be successful?
 - g) If, however, participant A specifies a minimum requirement of 95, who has the decision right in this round?
 - h) What is the probability that the project will then be successful?

Assume that you received the decision right and chose a probability of success of 54. The cost schedule on yellow information sheet applies in this round. Assume further that you roll an 8 with the red die and a 2 with the white one.

- e) How high are your costs?
- f) Would the project have been successful?

The following payments apply for the project:

		Payment of participant A	Your payment
Successful completion	Alternative A	200	150
	Alternative B	150	200
If not successful		100	100

Assume you chose project alternative B.

- g) How high would your income be?
- h) How high would participant A's income be?

Now assume that you received the decision right and chose a probability of success of 24. Assume further that you roll a 1 with the red die and a 5 with the white one. The cost schedule on yellow information sheet applies in this round. You again chose project alternative B.

- i) How high are your costs?
- j) Would the project have been successful?
- k) How high would your income be?
- l) How high would participant A's income be?

7. Assume that participant A retained the decision right. Participant A selected project alternative A and chose a probability of success of 48. The cost schedule on blue information sheet applies in this round.

The following payments apply for the project:

		Payment of participant A	Your payment
Successful completion	Alternative A	180	150
	Alternative B	150	180
If not successful		100	100

Assume further that participant A rolls a 5 with the red die and a 7 with the white one.

- a) Would the project have been successful?
- b) How high would your income be?
- c) How high would participant A's income be?

Now assume participant A rolls a 3 with the red die and a 9 with the white one.

- d) Would the project have been successful?
- e) How high would your income be?
- f) How high would participant A's income be?

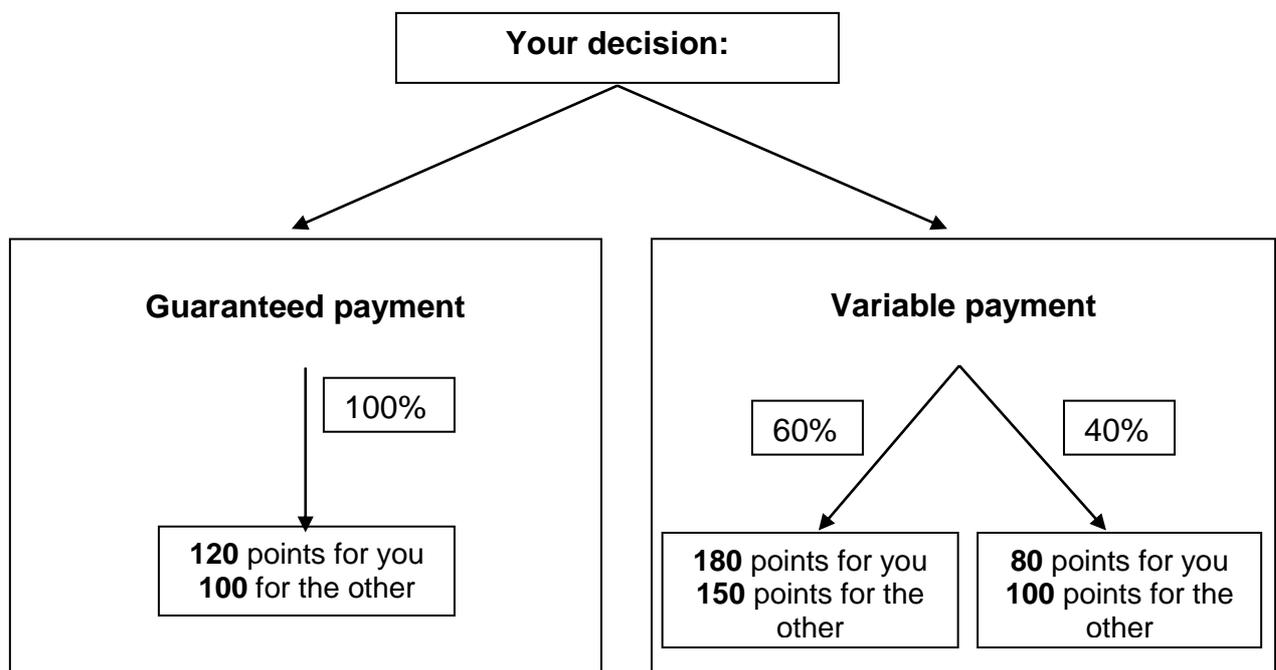
IV. Instructions Part II – Lotteries

Second part of the study

There are 20 rounds in this part of the study. You are randomly paired with another participant in the study in each round. The exchange rate of 100 points = 6 francs still applies.

In each round, you must decide between a guaranteed payment and a variable payment. Your decision also determines the payment of the other participant randomly assigned to you.

An example:



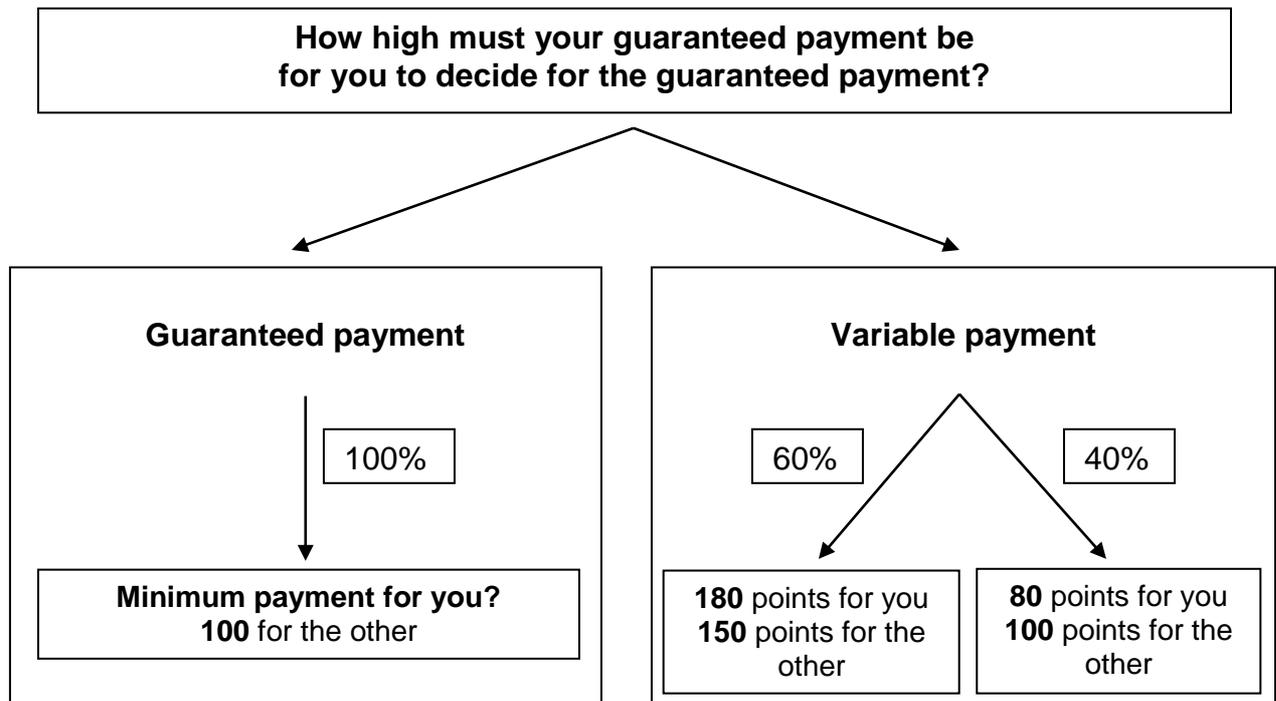
If, in the example above, you decide for the **guaranteed payment**, you will receive 100 points and the other, randomly assigned participant will receive 100 points.

If you opt for the **variable payment**, there is a 60% probability that you will receive a payment of 180 points and the other participant will receive 150 points. There is a 40% probability that you will receive 80 points and the other participant will receive 100 points.

You make a decision in each of the 20 rounds between a guaranteed payment and a variable payment. The payments and the probabilities in case of the variable payment differ in each round.

How can you make your decision between the guaranteed and the variable payment in each round?

When you make your decision in a round between the guaranteed and the variable payment, you do not yet know the amount of your guaranteed payment. You cannot therefore make a direct decision between the guaranteed and the variable payment; rather, you must indicate how high your guaranteed payment must be for you to opt for the guaranteed payment instead of the variable payment.



You will be informed of the guaranteed payment for the other participant, the variable payments for you and the other participant, and the probabilities in case of the variable payments in each round.

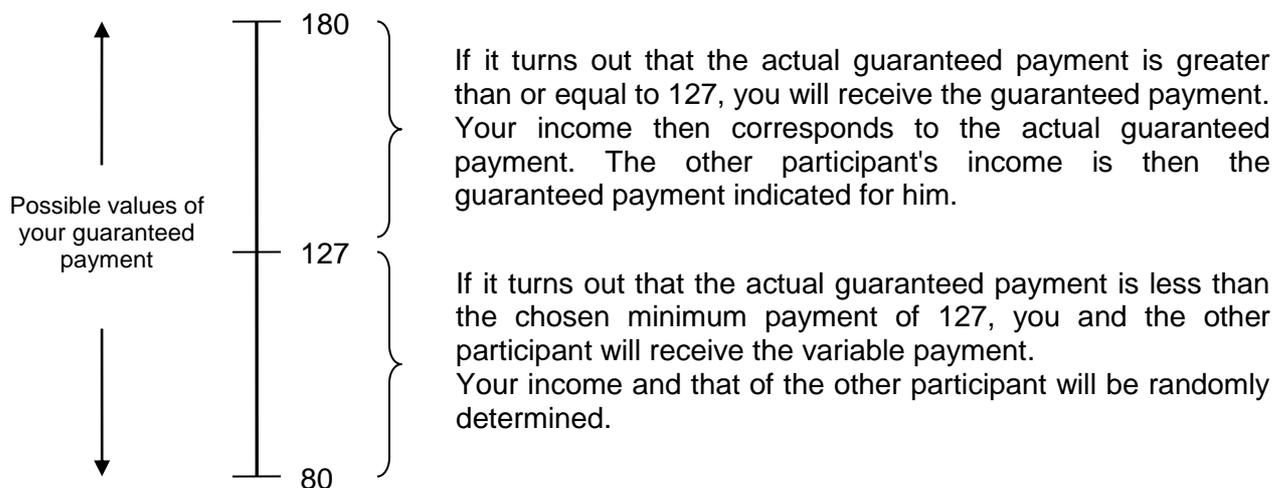
After you have indicated the **minimum payment** that would make you decide for the guaranteed payment in a round, your **actual guaranteed payment** in this round will be notified to you. The decision between the guaranteed payment and the variable payment is then realized as follows:

- If the actual guaranteed payment is less than the minimum payment you indicate, the variable payment determines your income and that of the other participant.
- If the actual guaranteed payment is greater than or equal to the minimum payment you indicate, you will receive the actual guaranteed payment and the other participant will also receive the secure payment shown on the screen (100 points in the example above).

The possible values of your guaranteed payment lie between both of your variable payments (in the example above, between 80 and 180 points). Any integer value in this interval (80, 81, 82, 83, ..., 180) is equally probable. The minimum payment you indicate can also be any integer value between both of your variable payments.

The graph below again clarifies the connection between the minimum payment you determine, the amount of the actual guaranteed payment, and your decision between the guaranteed and the variable payment:

If, for example, you indicate a **minimum payment of 127**, this means that you prefer any guaranteed payment between 127 and 180 points to the variable payment. You will be informed of the exact amount of your **actual guaranteed payment** after you determine your minimum payment.



When you consider your minimum payment, then you should (assuming the numbers from the example above) ask the following questions:

- Would I prefer a guaranteed payment amounting to 180 points to the variable payment? If yes, then you should ask:
- Would I prefer a guaranteed payment amounting to 179 points to the variable payment? If yes, then you should ask:
- Would I prefer a guaranteed payment amounting to 178 points to the variable payment? And so on.

Continue this way until you reach a point amount for the guaranteed payment where you would just prefer the guaranteed payment. You should then enter this point amount as the minimum payment.

The value is 127 in the example above. This means that you just prefer the guaranteed payment instead of the variable payment in case of a guaranteed payment of 127, but at a lower point amount of 126 (and at all values below this), you would prefer the variable payment.

The income:

If the actual guaranteed payment is at least as high as the minimum payment you indicate:

You will receive the actual guaranteed payment.
The other participant will receive the guaranteed payment indicated for him.

If the actual guaranteed payment is less than the minimum payment you indicate:

The choice between the indicated variable payments for you and the other participant will be made randomly with the probabilities that are given.

The computer will randomly determine 2 of the 20 rounds at the end of the study.

In each of the randomly chosen rounds, the minimum payment you indicate will be compared with the actual guaranteed payment. If the actual guaranteed payment is greater than or equal to the minimum payment you indicate, you will receive the guaranteed payment. If the actual guaranteed payment is less than the minimum payment you indicate, a cast of the dice will determine which of the variable payments you and the other participant each receive.

As you do not know which 2 of the 20 rounds the computer will randomly determine, you should consider your decisions in each round very carefully.

Procedure on the computer

1. You enter **your decision about the guaranteed payment that you must receive as a minimum in order to make you prefer the guaranteed payment over the variable payment** in each round on the computer screen below.

Here is an example:

<u>certain payment</u>	<u>uncertain payment</u>	
<p>How large does the certain payment have to be AT LEAST, so that you want to choose the certain over the uncertain payment?</p> <p>Certain payment (in points): <input type="text"/></p> <p>... Points for the other participant.</p> <p><input type="button" value="OK"/></p>	<p>probability: ** % if rolling the numbers 1- ...</p> <p>... points for you. ... points for the other.</p>	<p>probability: ** % (if rolling the numbers ** -100)</p> <p>... points for you. ... points for the other.</p>

You see the variable payments for you and for the other randomly chosen participant on the right side of the screen. You will also see the probability with which the payments will occur. This information varies in each of the 20 rounds.

You enter your **minimum payment** on the left side of the screen. The minimum payment indicates which guaranteed payment you must receive in minimum to make it so that you prefer the guaranteed payment to the variable payment. When you have made your entry, please click on the OK button. You can change your entry until you click on the OK button.

2. If the minimum payment you indicate lies under the actual guaranteed payment in one of the chosen rounds, a cast of the dice will determine which of the variable payments you and the other participant will receive. Casting the dice works in exactly the same way as in the first part of the study. The head of the study will enter the numbers that are cast in the screen below.

First chosen round of the second part of the study:

At the numbers 1-35 (35.00% probability) you receive 415.5 points and the other participant receives 380.0 points.
And at the numbers 36-100 (65.00% probability) you receive 175.5 points and the other participant receives 200.0 points.

Certain amount of points at which you prefer the certain payment over the uncertain payment: ***
Offered certain amount: ***

You have chosen the uncertain payment.
Please wait for an instructor to come to your place. Your payment will then be determined by rolling the dice.

Red Dice: <input style="width: 50px; height: 20px; background-color: #ccccff;" type="text"/>	White Dice: <input style="width: 50px; height: 20px; background-color: #ccccff;" type="text"/>
----------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------

Second chosen round of the second part of the study:

At the numbers 1-55 (55.00% probability) you receive 260.0 points and the other participant receives 229.8 points.
And at the numbers 56-100 (45.00% probability) you receive 100.0 points and the other participant receives 69.8 points.

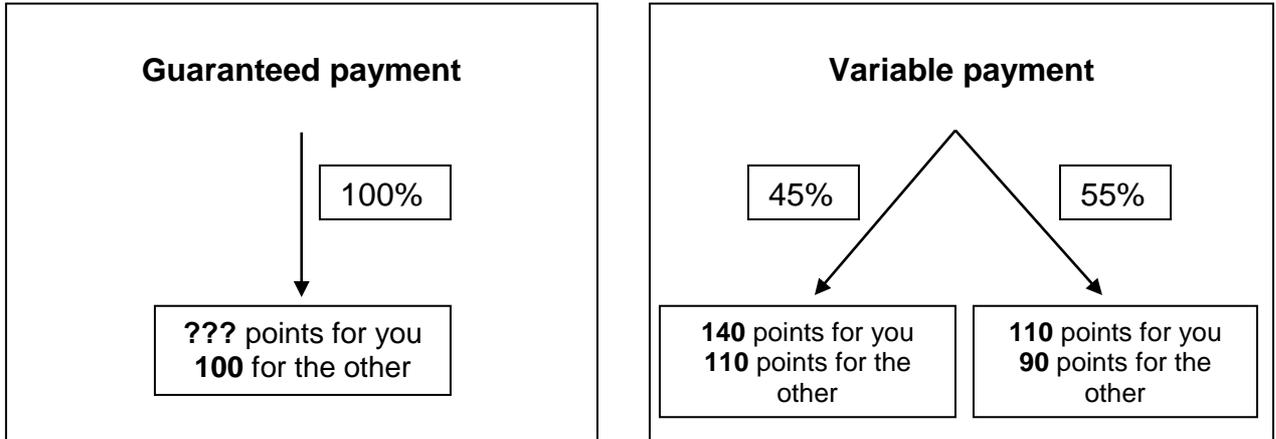
Certain amount of points at which you prefer the certain payment over the uncertain payment: ***
Offered certain amount: ***

You have chosen the certain payment. Hence, you and the other participant receive the certain amounts.
You receive *** points and the other participant receives 100 points.

Do you have questions about the second part of the study? Please raise your hand. We will then come to you at your desk. If you do not have questions, please solve the test questions on the next page.

Test questions

Assume that the following payments and probabilities apply for the case of the variable payment.



1. Assume you specify a minimum payment of 120.

a) Assume the actual guaranteed payment is 128.
How high is your payment in this round?
How high is the other participant's payment in this round?

b) Now assume the actual guaranteed payment is 117.
How high is your payment in this round?
How high is the other participant's payment in this round?

2. Assume you specify a minimum payment of 135.

a) Assume the actual guaranteed payment is 128.
How high is your payment in this round?
How high is the other participant's payment in this round?

b) Now assume the actual guaranteed payment is 113.
How high is your payment in this round?
How high is the other participant's payment in this round?

3. Assume you specify a minimum payment of 115.

a) Assume the actual guaranteed payment is 128.
How high is your payment in this round?
How high is the other participant's payment in this round?

b) Now assume the actual guaranteed payment is 135.
How high is your payment in this round?
How high is the other participant's payment in this round?

Please raise your hand when you have answered the questions. We will come to you at your desk.

V. Instructions Part 3 – Illusion of Control

Additional information

The computer will now randomly determine the round that is relevant for your payments from the first part of the study. If you have the decision right in the chosen round, you can determine the project success by rolling the dice.

We would like to know from you whether it is worth points to roll the dice yourself and not to let another person roll the dice. (This only involves rolling the dice and not the selection of the probability of success or the project alternative.)

You will now receive another 30 points. You can use some or all of these 30 points to purchase the right "to roll the dice yourself". If you do not purchase this right, the head of the study will roll the dice for you. **The head of the study will roll the dice fairly using a cup for dice, i.e. exactly as you would have done it.** If you purchase the right to roll the dice, then you do so yourself.

We will pose the following question on the screen:

Are you willing to pay to be able to roll the dice yourself? Yes
No

If you click on "yes" on the computer, we will then ask the maximum number of points you are willing to pay to be able to roll the dice yourself (for the case that you retained the decision right).

When answering this question, please take the following procedure into account: you can purchase the "right to roll the dice yourself" by stating your maximum willingness to pay for this right – this must lie between 1 and 30. A random decision will then determine a price between 1 and 30 for this right. If the price is less than or equal to your willingness to pay, you will pay the price and roll the dice yourself. If the price is higher, you retain the entire 30 points and the head of the study will roll the dice for you. **This procedure insures that it is best for you to state how many points the value of rolling the dice yourself is worth.**

Example 1: You are willing to pay a maximum of 5 points in order to be able to roll the dice yourself (your willingness to pay is 5 points). The random device determines that the price for rolling the dice yourself is 18 points. As your willingness to pay is less than the price, you do not pay the price. You retain all 30 points and the head of studies rolls the dice.

Example 2: You are willing to pay a maximum of 25 points in order to be able to roll the dice yourself (your willingness to pay is 25 points). The random device determines that the price for rolling the dice yourself is 7 points. As your willingness to pay is greater than the price, you pay the price of 7 points. You retain 23 of the 30 points and roll the dice yourself.

If you are willing to pay something to be able to roll the dice yourself, we ask you to enter your exact willingness to pay. If you delegated or did not receive the decision right in the first part of the study, you will receive the additional 30 points automatically.

If you have questions about these instructions, please raise your hand. We will then come to your desk. Otherwise click on the "continue" button.

VI. Instructions Part 4 – Loss Aversion Lotteries

You now have the possibility to participate in a series of lotteries. Potential earnings will be added to your overall income, potential losses will be subtracted from your overall income.

You will soon see a series of lottery decisions. Please decide for each lottery whether you want to “accept” or “reject” the lottery. At the end, one lottery will be randomly chosen.

If you accepted that lottery, a random process will determine whether you have won or lost the lottery.

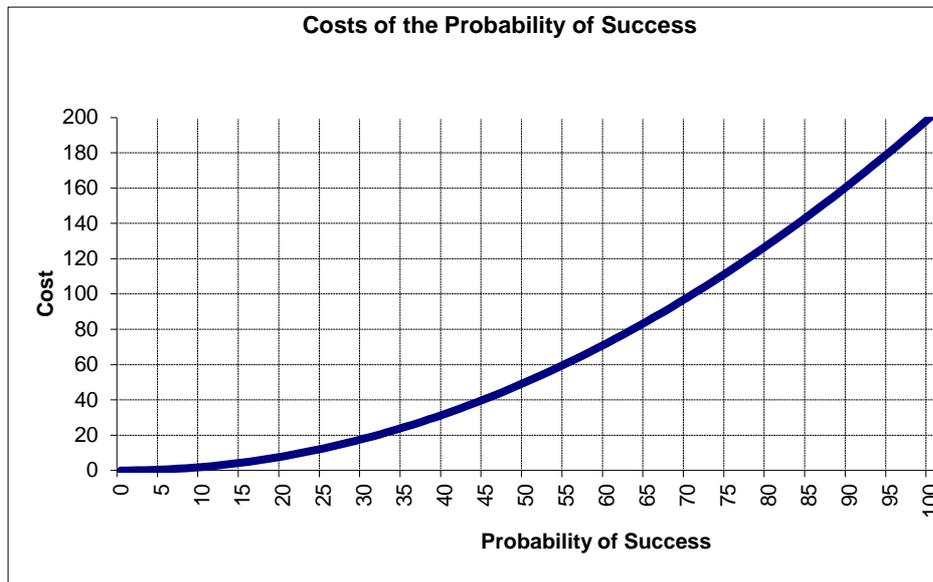
If you rejected the lottery nothing happens and your income remains unchanged.

Please decide for each of the following lotteries whether you want to accept or reject the lottery:

1. With 50% probability you win CHF 6, with 50% probability you lose CHF 2.
2. With 50% probability you win CHF 6, with 50% probability you lose CHF 3.
3. With 50% probability you win CHF 6, with 50% probability you lose CHF 4.
4. With 50% probability you win CHF 6, with 50% probability you lose CHF 5.
5. With 50% probability you win CHF 6, with 50% probability you lose CHF 6.
6. With 50% probability you win CHF 6, with 50% probability you lose CHF 7.

VII. Cost Info Sheets

Supplementary sheet with cost schedule (blue)
 (the yellow sheet was equivalent with the corresponding numbers)



Probability of success	Cost	Probability of success	Cost	Probability of success	Cost	Probability of success	Cost
0	0.0						
1	0.2	26	13.6	51	52.0	76	115.6
2	0.4	27	14.6	52	54.0	77	118.6
3	0.6	28	15.6	53	56.2	78	121.6
4	0.8	29	16.8	54	58.4	79	124.8
5	1.0	30	18.0	55	60.6	80	128.0
6	1.2	31	19.2	56	62.8	81	131.2
7	1.4	32	20.4	57	65.0	82	134.4
8	1.6	33	21.8	58	67.2	83	137.8
9	1.8	34	23.2	59	69.6	84	141.2
10	2.0	35	24.6	60	72.0	85	144.6
11	2.4	36	26.0	61	74.4	86	148.0
12	2.8	37	27.4	62	76.8	87	151.4
13	3.4	38	28.8	63	79.4	88	154.8
14	4.0	39	30.4	64	82.0	89	158.4
15	4.6	40	32.0	65	84.6	90	162.0
16	5.2	41	33.6	66	87.2	91	165.6
17	5.8	42	35.2	67	89.8	92	169.2
18	6.4	43	37.0	68	92.4	93	173.0
19	7.2	44	38.8	69	95.2	94	176.8
20	8.0	45	40.6	70	98.0	95	180.6
21	8.8	46	42.4	71	100.8	96	184.4
22	9.6	47	44.2	72	103.6	97	188.2
23	10.6	48	46.0	73	106.6	98	192.0
24	11.6	49	48.0	74	109.6	99	196.0
25	12.6	50	50.0	75	112.6	100	200.0