## Appendix

A. Experiment 2: Inequity aversion

#### A.1. Elicitation

After the first experiment, we conducted a second experiment aimed at estimating the individual parameters of inequity aversion, following Fehr and Schmidt (1999)'s model. This model assumes that the utility of player *i* may be written as:

$$U_i = x_i - \alpha_i \max(x_i - x_i, 0) - \beta_i \max(x_i - x_i, 0)$$

where  $x_i$  is the monetary payoff of player *i*,  $x_j$  is the monetary payoff of player *j*,  $\alpha_i$  is the parameter for disadvantageous inequity of player *i* and  $\beta_i$  is the parameter for advantageous inequity of player *i*. It is assumed that  $\alpha_i \ge \beta_i$ .

We followed the procedure of Blanco et al. (2011), whereby subjects make decisions in two different games: an ultimatum game using the strategy method and a modified dictator game. In each game, subjects do not learn their role (for example, proposer or responder in the ultimatum game) until the end of the game.

More precisely, the ultimatum game is used to elicit the individual parameter of disadvantageous inequity,  $\alpha_i$ . In this game, the proposer must divide 20 points between himself and the responder. Next, the responder must decide whether to accept or reject the proposition. In our experiment, all subjects decided first as a proposer and second as a responder. To avoid any feedback and to elicit the complete strategy of responders, we used the strategy method; that is, responders must decide whether to accept or reject any of the 21 possible distributions (ranging from (20,0) to (0, 20); see Fig. 1). The estimation of  $\alpha_i$  is obtained through the decisions of the responder *i* and corresponds to the switch point between rejecting and accepting the distribution (See Appendix D for instructions).

Décision	Répartition (Gain de A - Gain de B)	Votre choix (acceptée ou refusée)
Décision nº 1	20 - 0	acceptée C C refusée
Décision n° 2	19-1	acceptée C C refusée
Décision nº 3	18 - 2	acceptée C C refusée
Décision n° 4	17 - 3	acceptée C C refusée
Décision nº 5	16 - 4	acceptée C C refusée
Décision nº 6	15 - 5	acceptée C C refusée
Décision nº 7	14 - 6	acceptée C C refusée
Décision nº 8	13 - 7	acceptée C C refusée
Décision nº 9	12-8	acceptée C C refusée
Décision nº 10	11 - 9	acceptée C C refusée
Décision nº 11	10-10	acceptée C C refusée
Décision nº 12	9-11	acceptée C C refusée
Décision nº 13	8 - 12	acceptée C C refusée
Décision nº 14	7-13	acceptée C C refusée
Décision nº 15	6 - 14	acceptée C C refusée
Décision nº 16	5-15	acceptée C C refusée
Décision nº 17	4 - 16	acceptée C C refusée
Décision nº 18	3 - 17	acceptée C C refusée
Décision nº 19	2 - 18	acceptée C C refusée
Décision nº 20	1 - 19	acceptée C C refusée
Décision nº 21	0 - 20	acceptée C C refusée

Fig. 1: Table for responder's choices in the ultimatum game

Regarding advantageous inequity, we used the modified version of the dictator game in which subjects must make decisions as a proposer by choosing between two distributions - a non-egalitarian one (20,0) and an egalitarian one ( $x_i$ ,  $x_i$ ), for 21 possibilities (ranging from (0,0) to

(20, 20); see Fig. 2). The estimate of the advantageous inequity parameter,  $\beta_i$ , corresponds to the switch point from the unfair distribution (20, 0) to the egalitarian one ( $x_i$ ,  $x_i$ ).

Décision	Gain de la personne A	Gain de la personne B	Votre choix (gauche ou droite)	Gain de la personne A	Gain de la personne
Décision nº 1	20	0	gauche C C droite	0	0
Décision nº 2	20	0	gauche C C droite	1	1
Décision nº 3	20	0	gauche C C droite	2	2
Décision nº 4	20	0	gauche C C droite	3	3
Décision nº 5	20	0	gauche C C droite	4	4
Décision nº 6	20	0	gauche C C droite	6	5
Décision nº 7	20	0	gauche C C droite	6	6
Décision nº 8	20	0	gauche C C droite	7	7
Décision nº 9	20	0	gauche C C droite	8	8
Décision nº 10	20	0	gauche C C droite	9	9
Décision nº 11	20	0	gauche C C droite	10	10
Décision nº 12	20	0	gauche C C droite	11	11
Décision nº 13	20	0	gauche C C droite	12	12
Décision nº 14	20	0	gauche C C droite	13	13
Décision nº 15	20	0	gauche C C droite	14	14
Décision nº 16	20	0	gauche C C droite	15	15
Décision nº 17	20	0	gauche C C droite	16	16
Décision nº 18	20	0	gauche C C droite	17	17
Décision nº 19	20	0	gauche C C droite	18	18
Décision nº 20	20	0	gauche C C droite	19	19
Décision nº 19	20	0	gauche C C droite	18	

Fig. 2: Table for proposer's choices in the modified dictator game

To avoid any order effects, in half of the experimental sessions, the ultimatum game was played before the modified dictator game, and we reversed the order in the other half. We applied this setting to each experimental treatment. Moreover, subjects knew that they would be paired with a different participant in these two games, a participant who was also different from their partner in the power-to-take game, to rule out reputation and retaliation (or acknowledgment) effects.

# A.2. Results

Decisions made in the two games enable us to select subjects with consistent preferences; that is, subjects at some point switch (if they switch at all) from choosing the left column to choosing the right column, but they do not switch back. Overall, out of 192 participants, 158 (82.29%) behaved consistently in the two scenarios. This result is in line with those of **?** who find values of 84.72%. In Table 1, we summarize the distribution of the advantageous and disadvantageous inequity parameters.

Table 1: Distribution of alpha and beta paramaters

α	F&S	Blanco et al.	Data	β	F&S	Blanco et al.	Data
$\alpha < 0.4$	30%	31%	43.67%	$\beta < 0.235$	30%	29%	24.05%
$0.4 \le lpha < 0.92$	30%	33%	20.26%	$0.235 \le eta < 0.5$	30%	15%	16.46%
$0.92 \le lpha < 4.5$	30%	23%	31.01%	$0.5 \le \beta$	40%	56%	59.49%
$4.5 \le \alpha$	10%	13%	5.06%				

As our experiment replicates the one of Blanco et al. (2011) in eliciting individual parameters of inequity aversion, it is interesting to compare our results with those obtained by Blanco et al. (2011) and with the theoretical distribution assumed by Fehr and Schmidt (1999). These distributions are reported in Table 1. Regarding both disadvantageous and advantageous inequity aversion, Chi-square goodness-of-fit tests reveal no significant differences between our distributions and those of Fehr and Schmidt (1999) and Blanco et al. (2011).

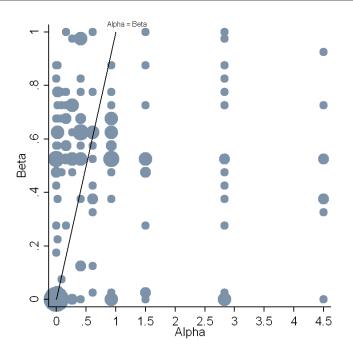


Fig. 3: Distribution of inequity aversion parameters for consistent choices

Finally, the implementation of the two scenarios allows us to determine the joint distribution of the  $\alpha$  and  $\beta$  parameters. Fig. 3 depicts both individual parameters, which are found to be widely distributed in our subject pool, a finding indicative of the highly heterogeneous subject pool used in our experiment. Similarly to Blanco et al. (2011), we reject the assumption of a positive correlation between  $\alpha_i$  and  $\beta_i$  (Spearman rank correlation coefficient,  $\rho = 0.1002$ , p = 0.210and ? find  $\rho = -0.03$ , p = 0.820). Finally, 55.69% of subjects' decisions are consistent with the hypothesis that  $\alpha_i \ge \beta_i$ , while there are 62.29% of subjects in the study of Blanco et al. (2011). The corresponding data points lie above the  $\alpha = \beta$  line in Fig. 3.

**Result.** Subjects exhibit various degrees of inequity aversion and disprove the positive relationship between disadvantageous and advantageous inequity aversion assumed by Fehr and Schmidt (1999).

B. Experimental instructions for experiment 1 with the Full Information treatment and tempting option in the first stage

**Note**: Text in italics in brackets denotes the changes depending on experimental treatments and the order of the tempting option. The instructions were originally written in French.

Welcome. You are participating in an experiment financed by the National Agency for Research. If you read these instructions carefully, you may earn a significant sum of money. The amount of your earnings depends not only on your decisions but also on the decisions of other participants with whom you will interact. It is important that you do not talk to any of the other participants until the experiment is over. If you have a question at any time, please raise your hand and a monitor will come to your desk to answer it in private. If you do not respect this rule, we will be forced to terminate the experiment, and you will be not paid.

This experiment consists of two distinct experiments. Here are the instructions for the first experiment. This first experiment is composed of three stages:

- In the first stage, you will be left alone to undertake an effortful task. Each task performed will allow you to accumulate experimental points. A higher number of accomplished tasks will result in your having a higher number of experimental points. You will be notified of the number of points you have earned at the end of this stage of the experiment.
- The second stage will be identical to the first one, except for one difference, which is explained in the next part of the instructions.
- The third stage follows stages 1 and 2. Groups of two people will be randomly formed. You will then collectively determine the payoffs that each member of the group will receive. This amount will be based on the experimental points that each member of the group has accumulated in the first two stages.

The second experiment is independent of the first one. You will be paired with another participant who is different from your partner in the first experiment. You will have to indicate, between two distributions of experimental points between you and your partner, the one that you prefer. This second experiment will consist of two scenarios, which will be explained later.

Your earnings at the end of the experiment will be equal to one of the following:

- Your earnings at the end of the experiment 1
- Your earnings at the end of scenario 1 of experiment 2
- Your earnings at the end of scenario 2 of experiment 2

to which a show-up fee of 5 Euros will be added. The experiment (and scenario if it is experiment 2) remunerated will be randomly chosen by the computer at the end of the experiment and will be the same for all participants in this session.

From now, we will provide you details of experiment 1

If experiment 1 is randomly selected for payment, the experimental points you have earned in this experiment will be paid to you in Euros according to the following exchange rate: 150 points = 1 Euro.

In the first stage, you will undertake the same task for 30 minutes. A higher number of accomplished tasks will result in a higher number of accumulated experimental points. In this stage, you will be presented with a computer screen with 20 sliders. Each slider is initially positioned at 0 and may be moved as far as 100. Each slider has a number above the line showing its current position. You may readjust the position of each slider as many times as you want. Your total number experimental points accumulated during this task will be the number of sliders positioned at exactly 50 at the end of 30 minutes.

The following figure (Fig. 4) represents a screen with 20 sliders. Once all sliders have been correctly positioned, you must validate the screen by clicking the "ok" button at the bottom right. Once the screen has been validated, the computer will indicate to you the number of correctly positioned sliders, and an identical screen will appear. In addition, at the middle top of the screen, a red button is displayed. This button allows you to exit the screen with sliders and surf the Internet. [If Internet is available in the second stage, this sentence is moved in the explanation of the second stage].

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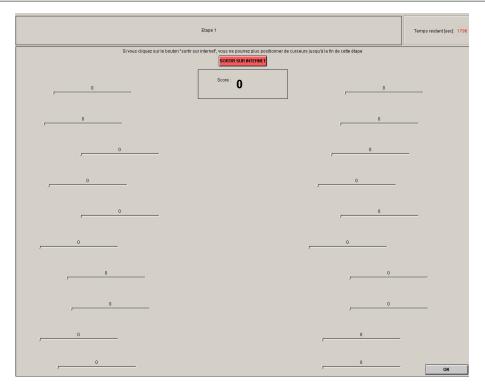


Fig. 4: Computer screen for the first stage with temptation

You can choose to surf the Internet at any moment and visit any website you wish, but if you leave the screen with the sliders, you will be unable to return to this screen until the end of the 30 minute session. [If Internet is available in the second stage, this sentence is moved in the explanation of the second stage].

Your earnings for this first stage, in experimental points, will be the number of sliders you have correctly positioned before exiting to surf the Internet.

- For each correctly positioned slider, you will earn 5 points.
- For each incorrectly positioned slider, you will earn 0 points.

Overall, you will have 30 minutes to complete as many tasks as possible. If, at the end of the 30 minutes allocated to you, you have correctly positioned only a fraction of the 20 sliders on the screen, the correctly positioned sliders will automatically be validated and will be counted in your performance.

In addition, at the beginning of the first stage, you will have an opportunity to indicate the number of sliders you commit yourself to correctly positioning. You can also choose not to commit yourself to meeting any specific objective.

If you decide to commit yourself, you indicate the following:

- The number of sliders you intend to position correctly (this is called your commitment).
- The reduction rate of your earnings, which will be applied in case of failure. This reduction rate must be an integer from 0% to 100% inclusive.

The screen will be as follows (Fig. 5):

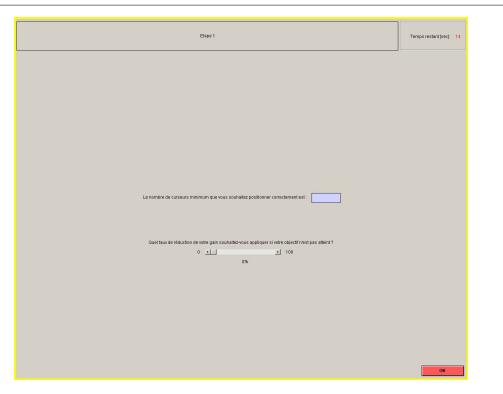


Fig. 5: Computer screen for commitment decisions

To help you in your assessment of the number of sliders you can correctly position in 30 minutes, there will be a practice round lasting two minutes before the start of the experiment. This will allow you to learn the number of sliders you can correctly position in two minutes.

## Examples

Assume that you commit yourself to correctly positioning 10 sliders and choose a reduction rate of 10%.

- If you have correctly positioned only 9 sliders, your objective is not met at the end of the first stage, and the reduction rate is applied. The 9 sliders provide you  $9 \times 5 = 45$  points. However, because your objective has not been reached, the reduction rate of 10% is applied to the 45 points, leading to a reduction of 4.5 points. Therefore, at the end of the first stage, you will have earned 45 4.5 = 40.5 points.
- Conversely, if you have exceeded your objectives by correctly positioning 15 sliders, you have reached your objectives, and the reduction rate will not apply. Your earnings at the end of the first stage will be equal to  $15 \times 5 = 75$  points.

At the end of the first stage, you will learn the number of sliders that you have correctly positioned, whether you have met your objectives (in the case of commitment) and the number of experimental points obtained. Next, the second stage will begin.

The second stage is nearly identical to the first (length 30 minutes, opportunity of commitment) but with one difference. As the figure below indicates (Fig. 6), you will not have the opportunity to surf the Internet.[*The last sentence is dropped if Internet is in the second stage. In this case, the above explanation about surf on Internet is positioned here.*]

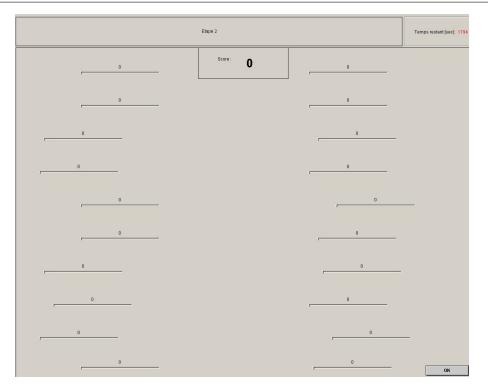


Fig. 6: Computer screen for the second stage without temptation

At the end of this second stage, you will learn the number of sliders you have correctly positioned, whether you have met your objectives (in the case of commitment) and the number of experimental points obtained in this stage. Next, the third stage will begin. At the beginning of the third stage, the experimental points earned by each subject in the first two stages will be added up.

Each participant now has at his disposal the number of experimental points he has accumulated in the first two stages. The third stage consists of two phases. In phase 1, only player A makes a decision, whereas in phase 2, only player B makes a decision. Therefore, each participant makes one decision. You will learn your role through a message displayed on your computer screen. If you are player A, a screen with some information will appear, whereas if you are player B, a message will appear asking you to wait while your partner makes his decision.

Before both players (A and B) make their decisions, the computer screen will provide the following information :

- The number of experimental points each player in the group earned in stage 1 and stage 2 and the total sum of points earned
- The commitments, if any, made by each player in the group, and if commitments were made, the level of objectives and penalties set and whether players were successful in reaching their objectives
- The moment at which either player, if any, stopped working on the task to surf the Internet.

[For the Benchmark treatment:

- The number of experimental points each player in the group earned in stage 1 and stage 2 and the total sum of points earned
- Neither player A nor player B will have the opportunity to know if his partner has committed himself and whether he has fulfilled his commitment in case of commitment
- Finally, neither player A nor player B have the opportunity to know the moment his partner stopped working on the task to surf the Internet, in case of surf the Internet.]

[For the Commitment treatment :

- The number of experimental points each player in the group earned in stage 1 and stage 2 and the total sum of points earned
- The commitments, if any, made by each player in the group, and if commitments were made, the level of objectives and penalties set and whether players were successful in reaching their objectives
- Neither player A nor player B have the opportunity to know the moment his partner stopped working on the task to surf the Internet, in case of surf the Internet.]

[For the Asymmetric P treatment

- The number of experimental points each player in the group earned in stage 1 and stage 2 and the total sum of points earned
- The commitments, if any, made by each player in the group, and if commitments were made, the level of objectives and penalties set and whether players were successful in reaching their objectives
- Only player A has the opportunity to know the moment his partner stopped working on the task to surf the Internet, in case of surf the Internet.]

[For the Asymmetric R treatment

- The number of experimental points each player in the group earned in stage 1 and stage 2 and the total sum of points earned
- The commitments, if any, made by each player in the group, and if commitments were made, the level of objectives and penalties set and whether players were successful in reaching their objectives
- Only player B has the opportunity to know the moment his partner stopped working on the task to surf the Internet, in case of surf the Internet.]

This information is shown throughout the third stage regardless of the role (A or B) of the player. The decisions to be made are as follows:

In phase 1, each player A is paired with a player B. Each player A must choose a percentage, called the take rate. This percentage determines how much of player B's endowment, accumulated by player B in the first two stages, will be transferred to player A. The percentage chosen by player A must be an integer in the interval [0, 100]. Player A will indicate the chosen percentage on the following computer screen (Fig. 7):

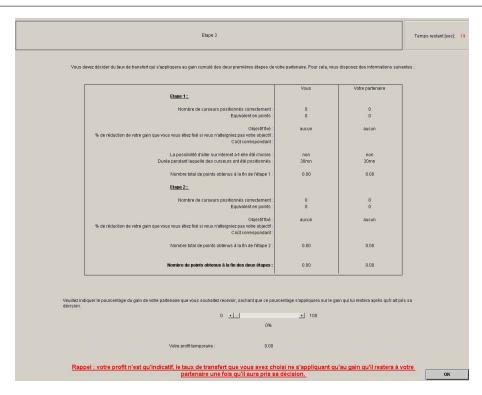


Fig. 7: Computer screen for Player A (proposer)'s decisions in the power-to-take game for the Full Information treatment

In phase 2, player B of each group makes a decision. Player B learns the decision that player A has made. Next, player B chooses the percentage of his own endowment that will be destroyed called the destruction rate. The percentage chosen by player B must be an integer in the interval [0,100]. The transfer from player B to player A will be based on the endowment of player B that is left. When player B chooses his destruction rate, the number of points that he keeps for himself appears immediately on the screen before validation along with the current number of points player A will earn, as shown in the figure below (Fig. 8). Therefore, player B may change his destruction rate as many times as desired before validating the screen.

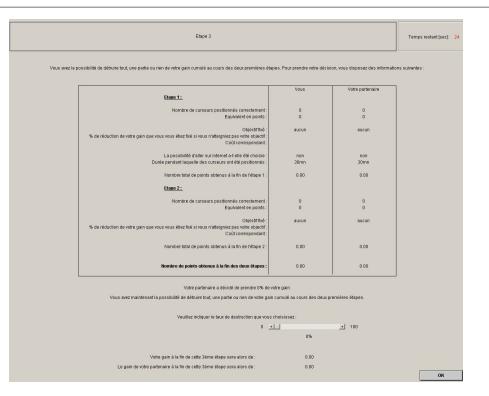


Fig. 8: Computer screen for Player B (responder)'s decisions in the power-to-take game for the Full Information treatment

Example 1: Assume that player A has earned 3,000 points at the end of the first two stages and that player B has earned 2,000 points.

- Phase 1: Player A chooses a take rate of 60%
- Player B may destroy none, all or a part of his endowment. Assume that he chooses a destruction rate of 0%. Then:
  - The transfer from player B to player A is equal to 60% of 2,000 points, yielding 1,200 points
  - By the end of the third stage, player A obtains: 3,000 points (his earnings at the end of the first two stages) + 1,200 points (from the transfer) = 4,200 points
  - By the end of the third stage, player B obtains: 2,000 points (his earnings at the end of the first two stages) 1,200 points (transfer to player A) = 800 points

Example 2: Assume that player A has accumulated 3,000 points by the end of the first two stages and that player B has accumulated 2,000 points.

- Phase 1: Player A chooses a take rate of 60%
- Phase 2: Player B may destroy none, all or a part of his endowment. Assume that he chooses a destruction rate of 50%. Then:
  - After destruction, player B has 1,000 points  $(2,000 (50\% \times 2,000) = 1,000)$
  - The take rate that player A has chosen will be applied to the 1,000 points of player B
  - With a take rate equal to 60%,  $60\% \times 1,000 = 600$  points will be transferred to player A
  - At the end of the third stage, player A has 3,000 points (his earnings at the end of the first two stages) + 600 points (from the transfer) = 3,600 points
  - At the end of the third stage, player B has 2,000 points (his earnings at the end of the first two stages) 1,000 points (destruction) 600 points (transfer to player A) = 400 points

To help you in the computation, you have at your disposal a calculator, and the computer will indicate the number of experimental points that each player of your group will earn once all decisions have been made.

Instructions regarding experiment 2 will be displayed on the computer screen at the end of this first experiment. Before the experiment starts, you must answer a short questionnaire to verify your understanding of the instructions.

C. Questionnaire for experiment 1 (translated from French)

- 1. Your earnings at the end of the first two stages depends on the following:
  - (a) the performance of another participant only
  - (b) your best performance only, either in the first stage or in the second stage
  - (c) the sum of your accumulated point totals in the first two stages
- 2. Assume that in the second stage you have set a commitment equal to 100 correctly positioned sliders and a penalty equal to 10% if you do not reach your commitment. What have you earned at the end of the second stage if you have correctly positioned 200 sliders, knowing that 1 correctly positioned slider earns you 5 points?
  - (a) 1000 points
  - (b) 200 points
  - (c) 900 points
- 3. Assume that in the second stage you have set a commitment equal to 100 correctly positioned sliders and a penalty equal to 10% if you do not reach your commitment. What have you earned at the end of the second stage if you have correctly positioned 50 sliders, knowing that 1 correctly positioned slider earns you 5 points?
  - (a) 250 points
  - (b) 225 points
  - (c) 0 point
- 4. In the third stage, assume that player A has an endowment of 4,000 points and that player B has 6,000 points
  - Player A decides that 50% of player B's endowment will be transferred to him (thus, player A chooses a take rate of 50%)
  - Player B chooses a destruction rate of 10%
  - What are the earnings (in points) of players A and B at the end of the third stage?
  - (a) 4,000 for player A and 6,000 for player B
  - (b) 6,700 for player A and 2,700 for player B
  - (c) 7,000 for player A and 5,400 for player B
- 5. In the third stage, assume that player A has 100 points and player B has 50 points
  - Player A decides that 10% of player B's endowment will be transferred to him (thus, player A chooses a take rate of 10%)
  - Player B chooses a destruction rate of 100%
  - What are the earnings (in points) of players A and B at the end of the third stage?
  - (a) 100 for player A and 0 for player B
  - (b) 100 for player A and 50 for player B
  - (c) 0 for player A and 0 for player B
- 6. In the third stage, assume that player A has 1,000 points and player B has 1,000 points
  - Player A decides that 100% of player B's endowment will be transferred to him (thus, player A chooses a take rate of 100%)
  - Player B chooses a destruction rate of 0%
  - What are the earnings (in points) of players A and B at the end of the third stage?
  - (a) 0 for player A and 0 for player B
  - (b) 1,000 for player A and 1,000 for player B
  - (c) 2,000 for player A and 0 for player B

Thank you for your answers. When you are ready, raise your hand to attract our attention.

D. Experimental instructions for experiment 2 (translated from French)

You will take part in a second experiment that is independent of the first experiment. Your decisions in this experiment are fully independent of your previous choices.

This experiment involves two different and independent scenarios. In each scenario, you must make one or several decisions without knowing the decisions that other participants make. The other participants will not know what decisions you make.

Only one of the two scenarios will be used to determine your payment, if this experiment is randomly selected for payment by the computer. Each scenario has the same chance of being randomly selected at the end of the experiment, and the same scenario will be chosen for all participants. For this second experiment, the exchange rate used is 1 point = 1 Euro.

We now describe the first scenario.

## **SCENARIO 1**

Groups of two individuals (player A and player B) are randomly formed. These groups are different from those formed during experiment 1. Player A must choose between two displayed distributions of payoffs to player A and player B. A total of 21 situations are presented. The roles of player A and player B are randomly assigned at the end of the experiment. If you are selected as player A, you must choose one of the two distributions presented for each of 21 situations (these situations will be displayed on your screen).

Example:

Player A's payoff	Player B's payoff	Decision	Player A's payoff	Player B's payoff
20	0	Left Right	5	5

Assume that during the experiment, you have had to choose between the left-hand distribution and the right-hand distribution:

- If you choose the left-hand distribution, player A will receive 20 points, and player B will
  receive 0 points.
- Alternatively, if you choose the right-hand distribution, both player A and player B will receive 5 points.

If this scenario is selected at the end of experiment 2 for payment, one of the 21 decisions will be randomly selected for payment. The chosen distribution will dictate the payoffs to player A and player B. Moreover, the computer will assign your role randomly, but you will learn your role only at the end of the scenario. Consequently, you will make your choices as player A, but it is possible that the computer will assign you the role of player B at the end of the scenario. In this case, you will receive the payoff bound to player B.

Subjects take part in scenario 1 before the instructions pertaining to scenario 2 are displayed on their screen. See Fig. 2 in Appendix A1 for computer screen of decisions in the modified dictator game.

#### **SCENARIO 2**

Groups of two individuals (player A and player B) are randomly formed. These groups are different from those formed in experiment 1 or the previous scenario. In this scenario:

- Player A must divide his endowment of 20 points between himself and player B.
- Player B can choose whether to accept or reject the division:
  - If player B accepts the division, both individuals receive the proposed amount.
  - If player B rejects the division, both individuals receive a null payoff.

Be careful: the computer will randomly assign you the role of player A or player B at the end of the scenario. Consequently, you will make your decisions both as player A (to choose a division) and as player B (to decide for each of the 21 possible situations whether to accept or reject the proposed division).

If this scenario is randomly selected for payment, the computer will select the offer that player A has made and will determine whether player B has accepted or rejected the division.

- If you learn that you are player A, you will receive the amount you have chosen, if player B has accepted the division. Otherwise, you will receive nothing.
- If you learn that you are player B, you will receive the amount chosen by player A if you have accepted the division; if you have rejected it, you will receive nothing.

Example:

- As player A, from your 20 points, how many points will you offer to player B? Assume that player A proposes 9 points to player B and keeps 11 points for himself.
- As player B, indicate whether you accept or reject each of the following divisions.

If we take the division (11,9) :

Division		Your choice		
Α	В	Accept	Reject	
11	9			

- If player B checks "Accept": player A obtains 11 points, and player B obtains 9 points.
- If player B checks "Reject": both player A and player B obtain 0 points.

See Fig. 1 in Appendix A1 for computer screen of decisions in the ultimatum game.