Online Appendix for Social Status and Prosocial Behavior

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Appendices

A Proofs

Proof of Lemma 1:

If $\tau_H > \tau_L$, we have $\mu_H = \frac{Pr(\varphi_H, s_H)}{Pr(s_H)} = \frac{Pr(s_H|\varphi_H)Pr(\varphi_H)}{Pr(s_H|\varphi_H)Pr(\varphi_H)+Pr(s_H|\varphi_L)Pr(\varphi_L)} = \frac{\tau_H \mu_0}{\tau_H \mu_0 + \tau_L(1-\mu_0)} > \mu_0$. Similarly, we can show that $\mu_0 > \mu_L$. Then we have $\mu_H \varphi_H + (1-\mu_H)\varphi_L > \mu_0 \varphi_H + (1-\mu_0)\varphi_L > \mu_L \varphi_H + (1-\mu_L)\varphi_L$, which implies that $E(\varphi|s_H) > E(\varphi|\emptyset) > E(\varphi|s_L)$.

Proof of Proposition 1:

If $\beta = 0$, $u_2 = \pi_2 = R - \alpha e_2 - |e_2 - a|$. Then, we have $u_2 = R + a - (\alpha+1)e_2$ when $e_2 - a > 0$ and $u_2 = R - a - (\alpha - 1)e_2$ when $e_2 - a \leq 0$. In either case, player 2's optimal strategy is $e_2^* = 0$.

Proof of Proposition 2:

Because $|a - e_2|$ is an absolute term, we need to look at the following two cases.

Case 1: $e_2 - a > 0$.

Player 2's utility now becomes

$$u_2 = R + a - (\alpha+1)e_2 - \beta E(\varphi|s)[(2\alpha+1)e_2 - \alpha\bar{e} - a]^2. \tag{A1}$$

Taking derivatives w.r.t e_2 yields

$$g(e_2) = -(\alpha+1) - 2\alpha(2\alpha+1)\beta E(\varphi|s)[(2\alpha+1)e_2 - \alpha\bar{e} - a]. \tag{A2}$$

In order to have $e_2^* \in (a, \bar{e}]$, we need

$$g(a) = -(\alpha+1) - 2\alpha(2\alpha+1)\beta E(\varphi|s)(2a - \bar{e}) \geq 0 \tag{A3}$$

and

$$g(\bar{e} = -(\alpha+1) - 2(2\alpha+1)\beta E(\varphi|s)[(\alpha+1)\bar{e} - a] \leq 0. \tag{A4}$$

Note that $g(\bar{e}) < 0$ for all a. Thus from (A3), we have

$$a \leq \frac{\bar{e}}{2} - \frac{\alpha+1}{4\alpha(2\alpha+1)\beta E(\varphi|s)} \equiv \underline{a}. \tag{A5}$$

Case 2: $e_2 - a \leq 0$.

Player 2's utility is now

$$u_2 = R - a - (\alpha - 1)e_2 - \beta E(\varphi|s)[(2\alpha - 1)e_2 + a - \alpha\bar{e}]^2. \tag{A6}$$

Taking derivatives w.r.t e_2 yields

$$h(e_2) \equiv -(\alpha - 1) - 2(2\alpha - 1)\beta E(\varphi|s)[(2\alpha - 1)e_2 + a - \alpha\bar{e}]. \tag{A7}$$

In order to have $e_2^* \in [0, a]$, we need

$$h(a) = -(\alpha - 1) - 2\alpha(2\alpha - 1)\beta E(\varphi|s)(2a - \bar{e}) \leq 0 \tag{A8}$$

and

$$h(0) = -(\alpha - 1) - 2\alpha(2\alpha - 1)\beta E(\varphi|s)(a - \alpha\bar{e}) \geq 0. \tag{A9}$$

From (A8) and (A9), respectively, we have

$$a \geq \frac{\bar{e}}{2} - \frac{\alpha - 1}{4\alpha(2\alpha - 1)\beta E(\varphi|s)} \equiv \bar{a} \tag{A10}$$

$$a \leq \alpha\bar{e} - \frac{\alpha - 1}{2(2\alpha - 1)\beta E(\varphi|s)} \equiv \hat{a}. \tag{A11}$$

Because $\alpha > 1$ implies that $\frac{\alpha-1}{2\alpha-1} < \frac{\alpha+1}{2\alpha+1}$, we have $\underline{a} < \bar{a} < \hat{a}$. For $a \in [0, \underline{a}]$, since $g(a) \geq 0$, $h(a) > 0$, and both $g(e_2)$ and $h(e_2)$ are decreasing in e_2, we have $e_2^* > a$ and e_2^* is uniquely determined by $g(e_2^*) = 0$. For $a \in (\underline{a}, \bar{a})$, $h(a) > 0$ and $g(a) < 0$, which implies that $e_2^* = a$. For $a \in [\bar{a}, \bar{e}]$, $h(a) \leq 0$ and $g(a) < 0$, which implied that $e_2^* \leq a$. In this case, given that e_2^* must be nonnegative, e_2^* is determined by $h(e_2^*) = 0$ or is zero.

Proof of Proposition 5:

Similar to those in Proposition 2, the cutoff values satisfy $\underline{a}_t < \bar{a}_t < \hat{a}_t$, $\underline{a}_L < \underline{a}_H$, $\bar{a}_L < \bar{a}_H$, and $\hat{a}_L < \hat{a}_H$, $t = H, L$. Given that $E(\phi|s_H) > E(\phi|s_L)$, the results follow immediately from Proposition 2.

B Instructions in the experiment

Outline of experimental instructions (by treatment)

This is instructions for baseline treatment

Instruction in Part One (Baseline treatment)

Welcome to our experiment!
This is an experiment in decision-making. The amount of money you earn will depend upon the decisions you make and on the decisions other people make. This experiment has 2 parts and in total there are 20 participants. Notice that you might seat on a different table in the second part, so please keep your stuffs together with the table card with you while you move.
Now you have already got 7 Euro for showing up here. Your total earnings will be the sum of your payoffs and the show-up fee. In this experiment, we use experimental points (200 points=1 euro). At the end of the experiment you will be paid IN CASH. Everyone will be paid in private and you are under no obligation to tell others how much you earn. You will receive separate instructions for the two parts before each part begins. Please read all instructions carefully and do NOT communicate with each other during the experiment. If you have a question, feel free to raise your hand, and an experimenter will come to help you.

[Subjects enter the next page of instructions]

Part One

For this experiment, we have randomly assigned you a personal ID (in capital). Yours is A. Please remember your ID because you will use it later. Also please enter below a three-digit number between 99 and 1000 (for example: 123) as your personal password to relog-in your page.
Create your personal password: (a three-digit number between 99 and 1000.)

[When subjects correctly create their own passwords for their user ID, they enter the next page]

Instruction Question in Part One

In this part you and other participants in this room will review ten pairs of paintings. Those paintings are selected randomly from 30 paintings–15 by famous adult professional painters and 15 by children under the age of 15. Your task is to find out which painting is painted by whom. There is no time limit in part 1.

After answering all 10 questions about paintings, we will randomly assign roles for part 2. The results from part 1 will not be revealed. Note that your earnings from the experiment are not directly influenced by decisions in part 1.

Before the experiment starts, we will ask you some questions to check your understanding about the first part.

How many pairs of paintings you are going to review in part one?

– 10.

– 15.

– It depends.

What will you know about your ranking in the end of part one?

– I will know my personal ranking.

– I will not know my personal ranking or others' rankings.

– I will know other people's results.

In general, how are the roles in Part 2 determined?

– Based on the results from part 1.

– Randomly determined by the computer.

– Based on table numbers.

[When subjects correctly answer all questions, they will review ten pairs of paintings.]
[Painting pairs 1 to 10]
[Next, subjects will see the results from part one.]

Instruction Part Two

In this part you will be paired with another participant as a team to do a task together. This task only has one round.

Team-production Task: You and the other participant will be involved in a team-producing task. Both of you need to provide effort for this task. e_1 is the effort units provided by player 1, and e_2 is effort units provided by player 2. In total, the team has to provide 10 units of effort. So $e_1 + e_2 = 10$.

The team production will yield a team payoff of 2800 points which will be split by the two players. Providing effort is costly for the player who provides it; each unit provided by a player will cost that player 200 points.

Roles:
Player 2 is the one who will decide how much effort will be provided by player 1 and how much by player 2. Before player 2 makes the decision about the two effort levels, player 1 can send an advice about how much effort is to be provided by player 2. There will be some costs to player 2 if he or she does not follow the advice. Below we will explain the timing of events, and how the decisions affect the payoffs of the players.

Timing of events:

1. Player 1 provides an advice to player 2 about the effort level of player 2. We call this advice "advice of e_2", because it specifies the effort level that player 1 wants player 2 to provide for the team;
2. Player 2 chooses the two effort levels e_1 and e_2. The two effort levels must sum up to be 10. Each effort level is at least 1 and at most 9. Only effort levels 1, 3, 5, 7 or 9 are allowed.
3. The payoffs are determined.

Rules of payoffs:

1. Player 1's payoff is equal to $2400 - 200e_1$. That is, for each 1 unit of effort he or she provides, player 1 must pay for 200 points.
2. Player 2's payoff follows the same rule except that player 2 will receive a penalty if his or her choice of e_2 is different from player 1's advice–"advice of e_2". For each unit effort that player 2 differs from the advice, player 2 will lose 100 points.

3. So player 2's payoff is equal to $2400 - 200e_2 - penalty$. The Table below lists the payoffs of the two players conditional on the advice of player 1 and the decision of player 2.

For example, if player 1 advices to player 2 to choose an effort level of 9 and the advice is implemented by player 2, so that $e_2 = 9$ and $e_1 = 1$, then the payoff is 2200 $(= 2400 - 200 * 1)$ for player 1 and 600 $(= 2400 - 200 * 9 - 0)$ for player 2.

If in this case, player 2 instead chooses a lower e_2, say $e_2 = 7$ (so that $e_1 = 3$ accordingly), then player 2 will receive a penalty that depends on the difference between the actual e_2 and player 1's advice. In this example, the difference is 2 so that player 2's payoff becomes 800 $(= 2400 - 200 * 7 - 100 * 2)$. Player 1's payoff is 1800 $(= 2400 - 200 * 3)$.

Payoffs (Player 1, Player 2)		Effort chosen by player 2 (e_2)				
		9	7	5	3	1
Effort advice by player 1 (advice of e_2)	9	2200, 600	1800, 800	1400, 1000	1000, 1200	600, 1400
	7	2200, 400	1800, 1000	1400, 1200	1000, 1400	600, 1600
	5	2200, 200	1800, 800	1400, 1400	1000, 1600	600, 1800
	3	2200, 0	1800, 600	1400, 1200	1000, 1800	600, 2000
	1	2200, -200	1800, 400	1400, 1000	1000, 1600	600, 2200

Before the team production task starts, we will ask you some questions to check your understanding about the second part.

How many people are there in total in one team?

– 1.

– 2.

– 3.

What will player 1 do in this task?

– To propose how to divide the revenues between two players.

– To propose how to divide the efforts between two players.

– To accept or reject player 2's proposal.

Who will decide the final revenue?

– Player 1 always.

– Player 2 always.

– Sometimes player 1 sometimes player 2.

Find out the revenues for both players for the following scenario:
Player 1 proposes to divide the effort between (player 1, player 2) to be (5, 5) and player 2 agrees.

– 1400, 1200: 1400 for player 1 and 1200 for player 2.

– 1400, 1400: 1400 for player 1 and 1400 for player 2.

– 1600, 600: 1600 for player 1 and 600 for player 2.

Find out the revenues for both players for the following scenario:
Player 1 proposes to divide the effort between (player 1, player 2) to be (3, 7) and player 2 decides to give the effort (9, 1).

– 1000, 1400: 1000 for player 1 and 1400 for player 2.

– 600, 1600: 600 for player 1 and 1600 for player 2.

– 1600, 600: 1600 for player 1 and 600 for player 2.

Find out the revenues for both players for the following scenario:
Player 1 proposes to divide the effort between (player 1, player 2) to be (9, 1) and player 2 decides to give the effort (1, 9).

– 600, 2200: 600 for player 1 and 2200 for player 2.

– 2200, 200: 2200 for player 1 and 200 for player 2.

– 2200, -200: 2200 for player 1 and -200 for player 2.

[After every subject has answered the questions correctly, they will be led to the page where their roles will be assigned.]

[If this subject is player 1, then her page is]

Team Production Task: Player 1

Now you can make a decision on the team production task. You can refer to the revenue table at the bottom of this page if you need.

You are player 1. You can make a proposal to player 2 how to divide the effort between you two.

- (1, 9): Player 1 makes an effort of 1, player 2 makes an effort of 9.
- (3, 7): Player 1 makes an effort of 3, player 2 makes an effort of 7.
- (5, 5): Player 1 makes an effort of 5, player 2 makes an effort of 5.
- (7, 3): Player 1 makes an effort of 7, player 2 makes an effort of 3.
- (9, 1): Player 1 makes an effort of 9, player 2 makes an effort of 1.

Screenshot of Team Production Task: Player 1

Team Production Task -- Player 1

Now you can make a decision on the team production task. You can refer to the payoff table at the bottom of this page if you need.

You are player 1. You can advise player 2 how much effort to provide.

- ○ 9: Player 1 makes an effort of 1, player 2 makes an effort of 9.
- ○ 7: Player 1 makes an effort of 3, player 2 makes an effort of 7.
- ○ 5: Player 1 makes an effort of 5, player 2 makes an effort of 5.
- ○ 3: Player 1 makes an effort of 7, player 2 makes an effort of 3.
- ○ 1: Player 1 makes an effort of 9, player 2 makes an effort of 1.

SUBMIT

Table: Payoffs for Players

Payoffs (Player 1, Player 2)		**Effort chosen by player 2 (e_2)**				
		9	7	5	3	1
Effort advice by player 1 (advice of e_2)	9	2200, 600	1800, 800	1400, 1000	1000, 1200	600, 1400
	7	2200, 400	1800, 1000	1400, 1200	1000, 1400	600, 1600
	5	2200, 200	1800, 800	1400, 1400	1000, 1600	600, 1800
	3	2200, 0	1800, 600	1400, 1200	1000, 1800	600, 2000
	1	2200, -200	1800, 400	1400, 1000	1000, 1600	600, 2200

[If this subject is player 2, her page is]

Team Production Task: Player 2

Now you can make a decision on the team production task. You can refer to the revenue table at the bottom of this page if you need.

You are player 2. Here we will ask you what effort you want to make under all situations. Your final revenue depends on player 1's proposal and your decision. In other words, one of the decisions you make below will be realised.

Screenshot of Team Production Task: Player 2

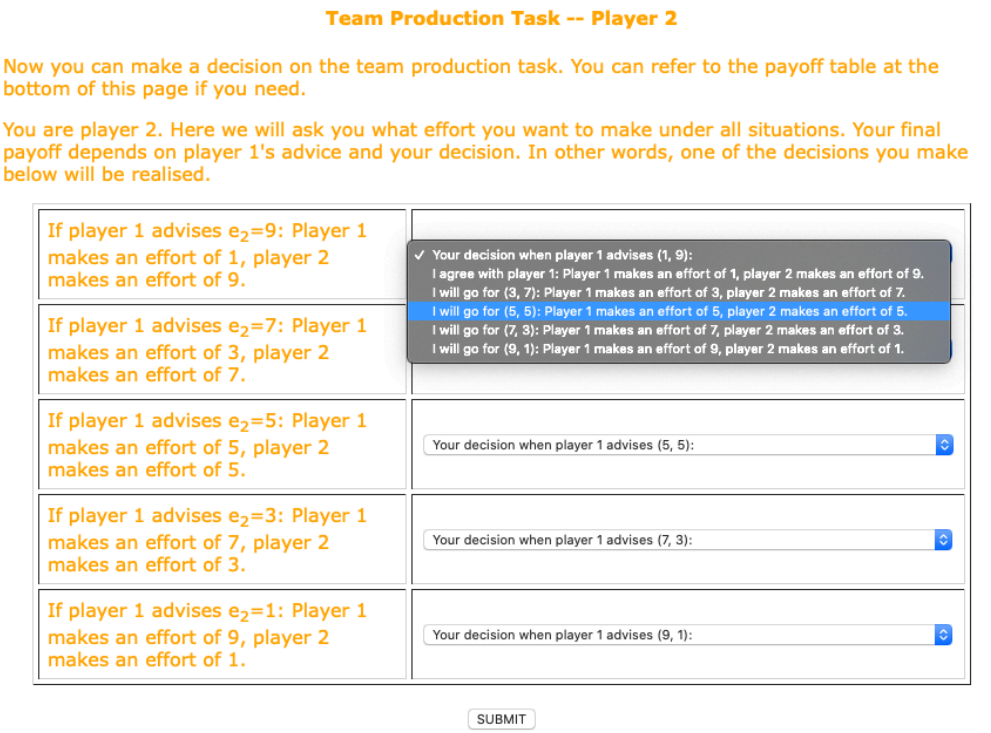

Table: Payoffs for Players

Payoffs (Player 1, Player 2)		Effort chosen by player 2 (e_2)				
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Effort advice by player 1 (advice of e_2)	9	2200, 600	1800, 800	1400, 1000	1000, 1200	600, 1400
	7	2200, 400	1800, 1000	1400, 1200	1000, 1400	600, 1600
	5	2200, 200	1800, 800	1400, 1400	1000, 1600	600, 1800
	3	2200, 0	1800, 600	1400, 1200	1000, 1800	600, 2000
	1	2200, -200	1800, 400	1400, 1000	1000, 1600	600, 2200

[The screenshot shows the decisions player 2 has to make. Condition on every possible choice player 1 could choose, player 2 decides what her response is.]

[Before subjects receive the choices chosen by their opponent they are asked about their characteristics, beliefs about their opponent, and the attitudes to their opponents.]

Exit Survey

Please fill out the following questionnaire.

1) Gender:

2) Age:

3) What do you consider your racial or ethnic background to be:

- White/Caucasian
- Black
- Hispanic
- Asian
- Other

4) Have you participated in an experiment in this lab before?

- No
- Yes, once
- Yes, more than once

5) Have you ever done similar tasks (distinguish paintings from professional ones and unprofessional ones) before?

- No
- Yes, once
- Yes, more than once

6) Department where you study:

- Faculty of Economics and Business
- Faculty of Social and Behavioural Sciences-Psychology
- Faculty of Social and Behavioural Sciences-non Psychology
- Faculty of Science
- IIS: beta gamma bachelor
- Faculty of Law

- Faculty of Humanities
- Faculty of Medicine
- Faculty of Dentistry
- Another university
- A Dutch "hogeschool" (HBO)
- Other different places

7) (Extra opportunity to earn money) What is your guess for your opponent's choice in the team-production task (correct guess will bring you extra 100 points)?

Instruction in Part One (Random Status treatment)

Welcome to our experiment!

This is an experiment in decision-making. The amount of money you earn will depend upon the decisions you make and on the decisions other people make. This experiment has 2 parts and in total there are 20 participants. Notice that you might seat on a different table in the second part, so please keep your stuffs together with the table card with you while you move.

Now you have already got 7 Euro for showing up here. Your total earnings will be the sum of your payoffs and the show-up fee. In this experiment, we use experimental points (200 points=1 euro). At the end of the experiment you will be paid IN CASH. Everyone will be paid in private and you are under no obligation to tell others how much you earn.

You will receive separate instructions for the two parts before each part begins. Please read all instructions carefully and do NOT communicate with each other during the experiment. If you have a question, feel free to raise your hand, and an experimenter will come to help you.

[Subjects enter the next page of instructions]

Part One

For this experiment, we have randomly assigned you a personal ID (in capital). Yours is A. Please remember your ID because you will use it later. Also please enter below a three-digit number between 99 and 1000 (for example: 123) as your personal password to relog-in your page.

Create your personal password: (a three-digit number between 99 and 1000.)

[When subjects correctly create their own passwords for their user ID, they enter the next page]

Instruction Question in Part One

In this part you and other participants in this room will review ten pairs of paintings. Answers will be ranked among all participants. The results of this part will determine

your role in the second part. Those paintings are selected randomly from 30 paintings–15 by famous adult professional painters and 15 by children under the age of 15. Your task is to find out which painting is painted by whom. There is no time limit in part 1.

After answering all 10 questions about paintings, we will randomly select winners for part 1 based on table numbers. Your role in part 2 will also be randomly determined by table numbers. If you are a winner in part 1, you will be awarded with small gifts from the experimenter. You will get the awards in the reception room. Also you will sit at the front of the lab (VIP area) so that your questions can be answered quickly by the experimenter. Note that your earnings from the experiment are not directly influenced by decisions in part 1.

Before the experiment starts, we will ask you some questions to check your understanding about the first part.

How many paintings you are going to review in part one?

– 10.

– 15.

– It depends.

What will you know about your ranking in the end of part one?

– I will know my personal ranking.

– I will know whether I am randomly chosen as winners or not.

– I will know other people's results.

In general, how are the roles in Part 2 determined?

– Based on the results from part 1.

– Randomly determined by the computer.

– Based on table numbers.

[When subjects correctly answer all questions, they will review 10 pairs of paintings.]

[Painting pairs 1 to 10]

Next, subjects will see the results from part one. The winners receive small gifts from the experimenter. They also have the privilege to sit on the "VIP" area in the lab.

Instruction Part Two

In this part you will be paired with another participant as a team to do a task together. This task only has one round.

Team-production Task:
You and the other participant will be involved in a team-producing task. Both of you need to provide effort for this task. e_1 is the effort units provided by player 1, and e_2 is effort units provided by player 2. In total, the team has to provide 10 units of effort. So $e_1 + e_2 = 10$.

The team production will yield a team payoff of 2800 points which will be split by the two players. Providing effort is costly for the player who provides it; each unit provided by a player will cost that player 200 points.

Roles:
Player 2 is the one who will decide how much effort will be provided by player 1 and how much by player 2. Before player 2 makes the decision about the two effort levels, player 1 can send an advice about how much effort is to be provided by player 2. There will be some costs to player 2 if he or she does not follow the advice. Below we will explain the timing of events, and how the decisions affect the payoffs of the players.

Timing of events:

1. Player 1 provides an advice to player 2 about the effort level of player 2. We call this advice "advice of e_2", because it specifies the effort level that player 1 wants player 2 to provide for the team;
2. Player 2 chooses the two effort levels e_1 and e_2. The two effort levels must sum up to be 10. Each effort level is at least 1 and at most 9. Only effort levels 1, 3, 5, 7 or 9 are allowed.
3. The payoffs are determined.

Rules of payoffs:

1. Player 1's payoff is equal to $2400 - 200e_1$. That is, for each 1 unit of effort he or she provides, player 1 must pay for 200 points.

2. Player 2's payoff follows the same rule except that player 2 will receive a penalty if his or her choice of e_2 is different from player 1's advice–"advice of e_2". For each unit effort that player 2 differs from the advice, player 2 will lose 100 points.

3. So player 2's payoff is equal to $2400 - 200e_2 - penalty$. The Table below lists the payoffs of the two players conditional on the advice of player 1 and the decision of player 2.

For example, if player 1 advices to player 2 to choose an effort level of 9 and the advice is implemented by player 2, so that $e_2 = 9$ and $e_1 = 1$, then the payoff is 2200 $(= 2400 - 200 * 1)$ for player 1 and 600 $(= 2400 - 200 * 9 - 0)$ for player 2.

If in this case, player 2 instead chooses a lower e_2, say $e_2 = 7$ (so that $e_1 = 3$ accordingly), then player 2 will receive a penalty that depends on the difference between the actual e_2 and player 1's advice. In this example, the difference is 2 so that player 2's payoff becomes 800 $(= 2400 - 200 * 7 - 100 * 2)$. Player 1's payoff is 1800 $(= 2400 - 200 * 3)$.

Payoffs (Player 1, Player 2)		Effort chosen by player 2 (e_2)				
		9	7	5	3	1
Effort advice by player 1 (advice of e_2)	9	2200, 600	1800, 800	1400, 1000	1000, 1200	600, 1400
	7	2200, 400	1800, 1000	1400, 1200	1000, 1400	600, 1600
	5	2200, 200	1800, 800	1400, 1400	1000, 1600	600, 1800
	3	2200, 0	1800, 600	1400, 1200	1000, 1800	600, 2000
	1	2200, -200	1800, 400	1400, 1000	1000, 1600	600, 2200

Before the team production task starts, we will ask you some questions to check your understanding about the second part.

How many people are there in total in one team?

– 1.

– 2.

– 3.

What will player 1 do in this task?

– To propose how to divide the revenues between two players.

– To propose how to divide the efforts between two players.

– To accept or reject player 2's proposal.

Who will decide the final revenue?

– Player 1 always.

– Player 2 always.

– Sometimes player 1 sometimes player 2.

Find out the revenues for both players for the following scenario:
Player 1 proposes to divide the effort between (player 1, player 2) to be (5, 5) and player 2 agrees.

– 1400, 1200: 1400 for player 1 and 1200 for player 2.

– 1400, 1400: 1400 for player 1 and 1400 for player 2.

– 1600, 600: 1600 for player 1 and 600 for player 2.

Find out the revenues for both players for the following scenario:
Player 1 proposes to divide the effort between (player 1, player 2) to be (3, 7) and player 2 decides to give the effort (9, 1).

– 1000, 1400: 1000 for player 1 and 1400 for player 2.

– 600, 1600: 600 for player 1 and 1600 for player 2.

– 1600, 600: 1600 for player 1 and 600 for player 2.

Find out the revenues for both players for the following scenario:
Player 1 proposes to divide the effort between (player 1, player 2) to be (9, 1) and player 2 decides to give the effort (1, 9).

– 600, 2200: 600 for player 1 and 2200 for player 2.

– 2200, 200: 2200 for player 1 and 200 for player 2.

– 2200, -200: 2200 for player 1 and -200 for player 2.

[After every subject answers the questions correctly, they will be led to the page where their roles will be assigned.]

[If this subject is player 1, then her page is]

Team Production Task: Player 1

Now you can make a decision on the team production task. You can refer to the revenue table at the bottom of this page if you need.

You are player 1. You can make a proposal to player 2 how to divide the effort between you two.

– (1, 9): Player 1 makes an effort of 1, player 2 makes an effort of 9.

– (3, 7): Player 1 makes an effort of 3, player 2 makes an effort of 7.

– (5, 5): Player 1 makes an effort of 5, player 2 makes an effort of 5.

– (7, 3): Player 1 makes an effort of 7, player 2 makes an effort of 3.

– (9, 1): Player 1 makes an effort of 9, player 2 makes an effort of 1.

Screenshot of Team Production Task: Player 1

Team Production Task -- Player 1

Now you can make a decision on the team production task. You can refer to the payoff table at the bottom of this page if you need.

You are player 1. You can advise player 2 how much effort to provide.

- ○ 9: Player 1 makes an effort of 1, player 2 makes an effort of 9.
- ○ 7: Player 1 makes an effort of 3, player 2 makes an effort of 7.
- ○ 5: Player 1 makes an effort of 5, player 2 makes an effort of 5.
- ○ 3: Player 1 makes an effort of 7, player 2 makes an effort of 3.
- ○ 1: Player 1 makes an effort of 9, player 2 makes an effort of 1.

SUBMIT

Table: Payoffs for Players

Payoffs (Player 1, Player 2)		**Effort chosen by player 2 (e_2)**				
		9	7	5	3	1
Effort advice by player 1 (advice of e_2)	9	2200, 600	1800, 800	1400, 1000	1000, 1200	600, 1400
	7	2200, 400	1800, 1000	1400, 1200	1000, 1400	600, 1600
	5	2200, 200	1800, 800	1400, 1400	1000, 1600	600, 1800
	3	2200, 0	1800, 600	1400, 1200	1000, 1800	600, 2000
	1	2200, -200	1800, 400	1400, 1000	1000, 1600	600, 2200

[If this subject is player 2, her page is]

Team Production Task: Player 2

Now you can make a decision on the team production task. You can refer to the revenue table at the bottom of this page if you need.

You are player 2. Here we will ask you what effort you want to make under all situations. Your final revenue depends on player 1's proposal and your decision. In other words, one of the decisions you make below will be realised.

Screenshot of Team Production Task: Player 2

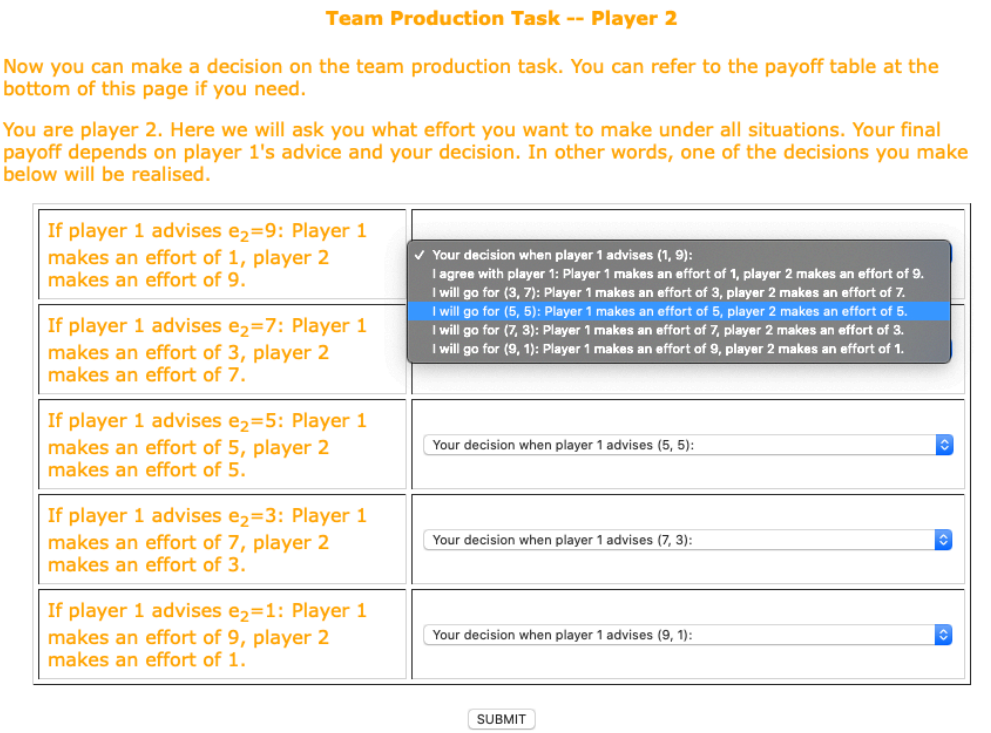

Table: Payoffs for Players

Payoffs (Player 1, Player 2)		Effort chosen by player 2 (e_2)				
		9	7	5	3	1
Effort advice by player 1 (advice of e_2)	9	2200, 600	1800, 800	1400, 1000	1000, 1200	600, 1400
	7	2200, 400	1800, 1000	1400, 1200	1000, 1400	600, 1600
	5	2200, 200	1800, 800	1400, 1400	1000, 1600	600, 1800
	3	2200, 0	1800, 600	1400, 1200	1000, 1800	600, 2000
	1	2200, -200	1800, 400	1400, 1000	1000, 1600	600, 2200

[The screenshot shows the decisions player 2 has to make. Condition on every possible choice player 1 could choose, player 2 decides what her response is.]

[Before subjects receive the choices chosen by their opponent they are asked about their characteristics, beliefs about their opponent, and the attitudes to their opponents.]

Exit Survey

Please fill out the following questionnaire.

1) Gender:

2) Age:

3) What do you consider your racial or ethnic background to be:

- White/Caucasian
- Black
- Hispanic
- Asian
- Other

4) Have you participated in an experiment in this lab before?

- No
- Yes, once
- Yes, more than once

5) Have you ever done similar tasks (distinguish paintings from professional ones and unprofessional ones) before?

- No
- Yes, once
- Yes, more than once

6) Department where you study:

- Faculty of Economics and Business
- Faculty of Social and Behavioural Sciences-Psychology
- Faculty of Social and Behavioural Sciences-non Psychology
- Faculty of Science
- IIS: beta gamma bachelor

– Faculty of Law

– Faculty of Humanities

– Faculty of Medicine

– Faculty of Dentistry

– Another university

– A Dutch "hogeschool" (HBO)

– Other different places

7) To what extent do you agree with the following statements? (Number 1 to 7 measure the degree of agreement, where 1 = "Totally Disagree", 7 = "Totally Agree") Statement 1: People with stars in my experiment session are more powerful.

Statement 2: People with stars in my experiment session are cleverer.

Statement 3: People with stars in my experiment session are more aggressive.

Statement 4: People with stars in my experiment session deserve to get more in team-production task.

Statement 5: The role I am playing in this experiment is generally better.

Statement 6: The role I am playing in this experiment performs better.

Statement 7: The method to allocate stars in this experiment is fair.

Statement 8: The method to allocate stars reflects abilities.

Statement 9: People with stars have unfair advantages in this experiment.

Statement 10: I am satisfied with my performance.

Statement 11: I prefer the star groups.

8) (Extra opportunity to earn money) What is your guess for your opponent's choice in the team-production task (correct guess will bring you extra 100 points)?

Instruction in Part One (Earned Status treatment)

Welcome to our experiment!

This is an experiment in decision-making. The amount of money you earn will depend upon the decisions you make and on the decisions other people make. This experiment has 2 parts and in total there are 20 participants. Notice that you might seat on a different table in the second part, so please keep your stuffs together with the table card with you

while you move.

Now you have already got 7 Euro for showing up here. Your total earnings will be the sum of your payoffs and the show-up fee. In this experiment, we use experimental points (200 points=1 euro). At the end of the experiment you will be paid IN CASH. Everyone will be paid in private and you are under no obligation to tell others how much you earn.

You will receive separate instructions for the two parts before each part begins. Please read all instructions carefully and do NOT communicate with each other during the experiment. If you have a question, feel free to raise your hand, and an experimenter will come to help you.

[Subjects enter the next page of instructions]

Part One

For this experiment, we have randomly assigned you a personal ID (in capital). Yours is A. Please remember your ID because you will use it later. Also please enter below a three-digit number between 99 and 1000 (for example: 123) as your personal password to relog-in your page.

Create your personal password: (a three-digit number between 99 and 1000.)

[When subjects correctly create their own passwords for their user ID, they enter the next page]

Instruction Question in Part One

In this part you and other participants in this room will review ten pairs of paintings. Answers will be ranked among all participants. The results of this part will determine your role in the second part. Those paintings are selected randomly from 30 paintings–15 by famous adult professional painters and 15 by children under the age of 15. Your task is to find out which painting is painted by whom. There is no time limit in part 1.

After answering all 10 questions about the paintings, we will rank you based on correct answers among all participants in this session, and choose those people who have scored in the Top 50% as the winners in Part 1. The winners will be randomly selected

in case of same scores.

You will see whether you are in the top 50% of the ranks or not. If you are a winner in part 1, you will be awarded with small gifts from the experimenter. You will get the awards in the reception room. Also you will sit at the front of the lab (VIP area) so that your questions can be answered quickly by the experimenter. Note that your earnings from the experiment are not directly influenced by decisions in part 1.

Before the experiment starts, we will ask you some questions to check your understanding about the first part.

How many paintings you are going to review in part one?

- 10.
- 15.
- It depends.

What will you know about your ranking in the end of part one?

- I will know my personal ranking.
- I will know whether I am at the top 50% or not.
- I will know nothing about my performance in part one.

In general, how are the roles in Part 2 determined?

- Based on the results from part 1.
- Randomly determined by the computer.
- Based on table numbers.

[When subjects correctly answer all questions, they will review ten pairs of paintings.]

[Painting pairs 1 to 10]

Next, subjects will see the results from part one. The winners receive small gifts from the experimenter. They also have the privilege to sit on the "VIP" area in the lab.

Instruction Part Two

In this part you will be paired with another participant as a team to do a task together. This task only has one round.

Team-production Task:
You and the other participant will be involved in a team-producing task. Both of you need to provide effort for this task. e_1 is the effort units provided by player 1, and e_2 is effort units provided by player 2. In total, the team has to provide 10 units of effort. So $e_1 + e_2 = 10$.

The team production will yield a team payoff of 2800 points which will be split by the two players. Providing effort is costly for the player who provides it; each unit provided by a player will cost that player 200 points.

Roles:
Player 2 is the one who will decide how much effort will be provided by player 1 and how much by player 2. Before player 2 makes the decision about the two effort levels, player 1 can send an advice about how much effort is to be provided by player 2. There will be some costs to player 2 if he or she does not follow the advice. Below we will explain the timing of events, and how the decisions affect the payoffs of the players.

Timing of events:

1. Player 1 provides an advice to player 2 about the effort level of player 2. We call this advice "advice of e_2", because it specifies the effort level that player 1 wants player 2 to provide for the team;
2. Player 2 chooses the two effort levels e_1 and e_2. The two effort levels must sum up to be 10. Each effort level is at least 1 and at most 9. Only effort levels 1, 3, 5, 7 or 9 are allowed.
3. The payoffs are determined.

Rules of payoffs:

1. Player 1's payoff is equal to $2400 - 200e_1$. That is, for each 1 unit of effort he or she provides, player 1 must pay for 200 points.
2. Player 2's payoff follows the same rule except that player 2 will receive a penalty if his or her choice of e_2 is different from player 1's advice–"advice of e_2". For each unit effort that player 2 differs from the advice, player 2 will lose 100 points.

3. So player 2's payoff is equal to $2400 - 200e_2 - penalty$. The Table below lists the payoffs of the two players conditional on the advice of player 1 and the decision of player 2.

For example, if player 1 advices to player 2 to choose an effort level of 9 and the advice is implemented by player 2, so that $e_2 = 9$ and $e_1 = 1$, then the payoff is 2200 $(= 2400 - 200 * 1)$ for player 1 and 600 $(= 2400 - 200 * 9 - 0)$ for player 2.

If in this case, player 2 instead chooses a lower e_2, say $e_2 = 7$ (so that $e_1 = 3$ accordingly), then player 2 will receive a penalty that depends on the difference between the actual e_2 and player 1's advice. In this example, the difference is 2 so that player 2's payoff becomes 800 $(= 2400 - 200 * 7 - 100 * 2)$. Player 1's payoff is 1800 $(= 2400 - 200 * 3)$.

Payoffs (Player 1, Player 2)		Effort chosen by player 2 (e_2)				
		9	7	5	3	1
Effort advice by player 1 (advice of e_2)	9	2200, 600	1800, 800	1400, 1000	1000, 1200	600, 1400
	7	2200, 400	1800, 1000	1400, 1200	1000, 1400	600, 1600
	5	2200, 200	1800, 800	1400, 1400	1000, 1600	600, 1800
	3	2200, 0	1800, 600	1400, 1200	1000, 1800	600, 2000
	1	2200, -200	1800, 400	1400, 1000	1000, 1600	600, 2200

Before the team production task starts, we will ask you some questions to check your understanding about the second part.

How many people are there in total in one team?

– 1.

– 2.

– 3.

What will player 1 do in this task?

– To propose how to divide the revenues between two players.

– To propose how to divide the efforts between two players.

– To accept or reject player 2's proposal.

Who will decide the final revenue?

– Player 1 always.

– Player 2 always.

– Sometimes player 1 sometimes player 2.

Find out the revenues for both players for the following scenario:
Player 1 proposes to divide the effort between (player 1, player 2) to be (5, 5) and player 2 agrees.

– 1400, 1200: 1400 for player 1 and 1200 for player 2.

– 1400, 1400: 1400 for player 1 and 1400 for player 2.

– 1600, 600: 1600 for player 1 and 600 for player 2.

Find out the revenues for both players for the following scenario:
Player 1 proposes to divide the effort between (player 1, player 2) to be (3, 7) and player 2 decides to give the effort (9, 1).

– 1000, 1400: 1000 for player 1 and 1400 for player 2.

– 600, 1600: 600 for player 1 and 1600 for player 2.

– 1600, 600: 1600 for player 1 and 600 for player 2.

Find out the revenues for both players for the following scenario:
Player 1 proposes to divide the effort between (player 1, player 2) to be (9, 1) and player 2 decides to give the effort (1, 9).

– 600, 2200: 600 for player 1 and 2200 for player 2.

– 2200, 200: 2200 for player 1 and 200 for player 2.

– 2200, -200: 2200 for player 1 and -200 for player 2.

[After every subject answers the questions correctly, they will be led to the pages where their roles will be assigned.]

[If this subject is player 1, then her page is]

Team Production Task: Player 1

Now you can make a decision on the team production task. You can refer to the revenue table at the bottom of this page if you need.

You are player 1. You can make a proposal to player 2 how to divide the effort between you two.

– (1, 9): Player 1 makes an effort of 1, player 2 makes an effort of 9.

– (3, 7): Player 1 makes an effort of 3, player 2 makes an effort of 7.

– (5, 5): Player 1 makes an effort of 5, player 2 makes an effort of 5.

– (7, 3): Player 1 makes an effort of 7, player 2 makes an effort of 3.

– (9, 1): Player 1 makes an effort of 9, player 2 makes an effort of 1.

Screenshot of Team Production Task: Player 1

Team Production Task -- Player 1

Now you can make a decision on the team production task. You can refer to the payoff table at the bottom of this page if you need.

You are player 1. You can advise player 2 how much effort to provide.

- ○ 9: Player 1 makes an effort of 1, player 2 makes an effort of 9.
- ○ 7: Player 1 makes an effort of 3, player 2 makes an effort of 7.
- ○ 5: Player 1 makes an effort of 5, player 2 makes an effort of 5.
- ○ 3: Player 1 makes an effort of 7, player 2 makes an effort of 3.
- ○ 1: Player 1 makes an effort of 9, player 2 makes an effort of 1.

SUBMIT

Table: Payoffs for Players

Payoffs (Player 1, Player 2)		**Effort chosen by player 2 (e_2)**				
		9	7	5	3	1
Effort advice by player 1 (advice of e_2)	9	2200, 600	1800, 800	1400, 1000	1000, 1200	600, 1400
	7	2200, 400	1800, 1000	1400, 1200	1000, 1400	600, 1600
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	3	2200, 0	1800, 600	1400, 1200	1000, 1800	600, 2000
	1	2200, -200	1800, 400	1400, 1000	1000, 1600	600, 2200

[If this subject is player 2, her page is]

Team Production Task: Player 2

Now you can make a decision on the team production task. You can refer to the revenue table at the bottom of this page if you need.

You are player 2. Here we will ask you what effort you want to make under all situations. Your final revenue depends on player 1's proposal and your decision. In other words, one of the decisions you make below will be realised.

Screenshot of Team Production Task: Player 2

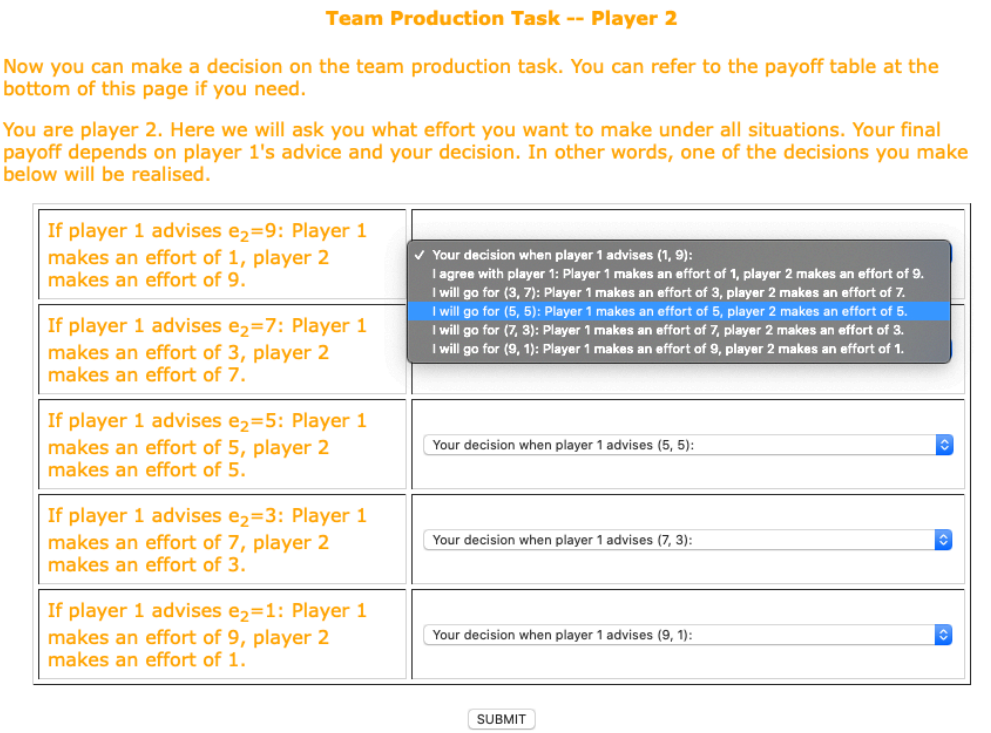

Table: Payoffs for Players

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[The screenshot shows the decisions player 2 has to make. Condition on every possible choice player 1 could choose, player 2 decides what her response is.]

[Before subjects receive the choices chosen by their opponent they are asked about their characteristics, beliefs about their opponent, and the attitudes to their opponents.]

Exit Survey

Please fill out the following questionnaire.

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3) What do you consider your racial or ethnic background to be:

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- Black
- Hispanic
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- Other

4) Have you participated in an experiment in this lab before?

- No
- Yes, once
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5) Have you ever done similar tasks (distinguish paintings from professional ones and unprofessional ones) before?

- No
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- Yes, more than once

6) Department where you study:

- Faculty of Economics and Business
- Faculty of Social and Behavioural Sciences-Psychology
- Faculty of Social and Behavioural Sciences-non Psychology
- Faculty of Science
- IIS: beta gamma bachelor

– Faculty of Law

– Faculty of Humanities

– Faculty of Medicine

– Faculty of Dentistry

– Another university

– A Dutch "hogeschool" (HBO)

– Other different places

7) To what extent do you agree with the following statements? (Number 1 to 7 measure the degree of agreement, where 1 = "Totally Disagree", 7 = "Totally Agree") Statement 1: People with stars in my experiment session are more powerful.

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Statement 9: People with stars have unfair advantages in this experiment.

Statement 10: I am satisfied with my performance.

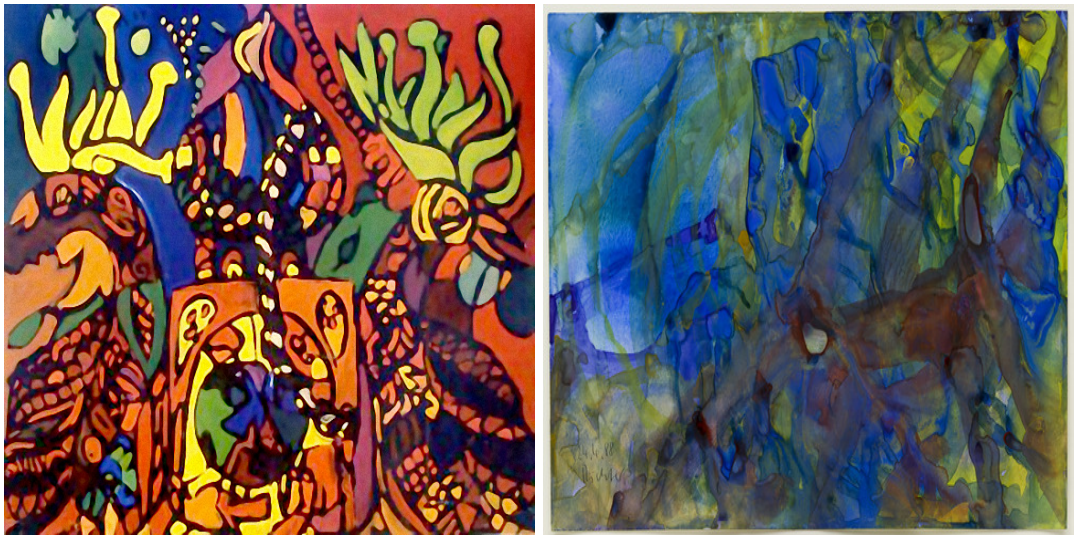
Statement 11: I prefer the star groups.

8) (Extra opportunity to earn money) What is your guess for your opponent's choice in the team-production task (correct guess will bring you extra 100 points)?

C Paintings for the painting task

Correct answers: D, A, A, B, C, C, C, C, D, D.

Figure C1: Pair 1



Left: Yavagina M., age 11, Minsk, Belarus. Right: Gerhard Richter.

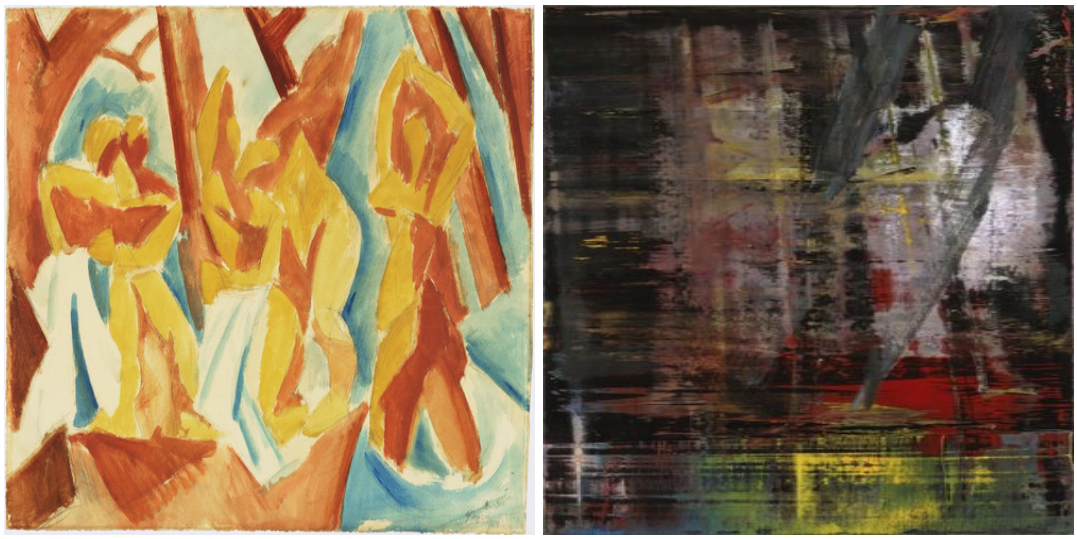
Figure C2: Pair 2

Left Yavagina M., age 8, Minsk Belarus. Right: Jakob B.M., age 3, Florida, USA.

Figure C3: Pair 3

Left: Amanda K., age 8, California, USA. Right: Anna M., age 10, Ma'ale Adumim, Israel.

Figure C4: Pair 4



Left: Pablo Picasso. Right: Gerhard Richter.

Figure C5: Pair 5

Left: Nick Mauss. Right: Vincent K., age 5, California, USA.

Figure C6: Pair 6

Left: Jeff Davis. Right: Kate C., Age 11, Iowa, USA.

Figure C7: Pair 7

Left: Pablo Piccaso. Right: Rachael L., age 4, British Columbia, Canada.

Figure C8: Pair 8

Left: Gerhard Richter. Right :Caimen M., age 2, Wisconsin, USA.

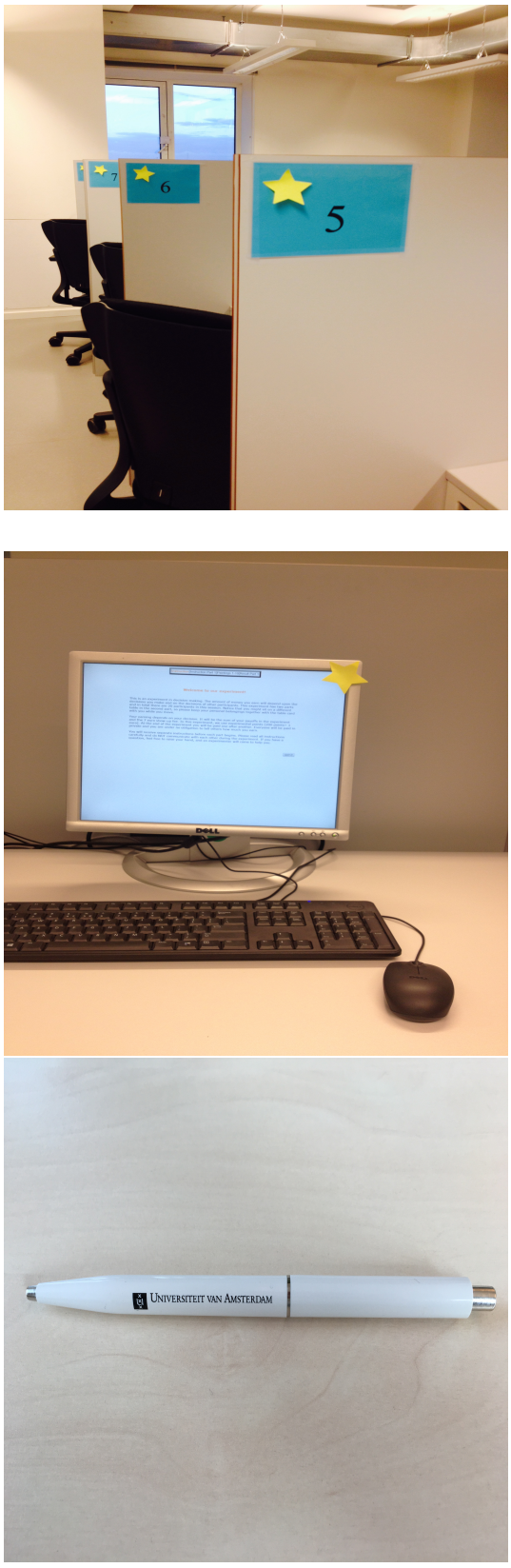
Figure C9: Pair 9

Left: Jean-Pierre L., age 9, California, USA. Right: Willem de Kooning.

Figure C10: Pair 10

Left: Yoon-Jong S., age 11, Kyoggido, South Korea. Right: Gerhard Richter.

Figure C11: Stars, VIP Area, and Award in the Experiment



D Descriptive Statistics

Table D1: Descriptive Statistics

Treatments	Baseline (BL)	Random Status (RS)	Earned Status (ES)
Age	21.60	21.08*	21.38
	(0.22)	(0.14)	(0.18)
%Female	45.10***	54.55**	60.98
	(3.49)	(3.07)	(3.01)
%Econ Major	49.02	51.89	51.14
	(3.51)	(3.08)	(3.08)
N (Player 1)	102	132	129[a]
N (Player 2)	102	132	135
N	204	264	264

Notes:
Standard deviations are between parentheses. Significance level (MW test) of the differences between BL and RS/ES are reported. We find no significant differences between RS and ES in observable characteristics. *** $p < 0.01$, $**p < 0.05$, $*p < 0.10$.
a: The unequal number of players 1 and players 2 in ES is due to a programming glitch. The behavior of those players, however, is not affected.