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**Working Paper**

## Public goods and voting on formal sanction schemes: An experiment

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# **Supplementary Appendix to “Public Goods and Voting on Sanction Schemes” by Louis Putterman, Jean-Robert Tyran and Kenju Kamei**

## **Overview**

Appendix A: Instructions

Appendix B: Additional Tables and Figures

Appendix C. Results of Pilot Experiment in Copenhagen

## **Appendix A: Instructions**

At the beginning of the session, the experimenter said to all subjects present: “Today you will take part in one main experiment and two shorter tasks, and we expect the whole thing to take less than two hours. The main experiment is divided into six phases of four periods each. We will now read the instructions for the first four periods. Once phase 1 is over you will receive further instructions.” Then the experimenter began to read aloud the following instructions, of which the subjects also had printed copies:

## **Welcome**

You are now taking part in a decision-making experiment. Depending on your decisions and the decisions of other participants, you will be able to earn money in addition to the \$5 guaranteed for your participation. Please read the following instructions carefully.

During the experiment you are not allowed to communicate with other participants. If you have a question, raise your hand. One of us will come to answer your question.

During the experiment your earnings will be calculated in points. At the end of the experiment points will be converted to U.S. dollars at the following rate:

**28 points = \$1**

(This means each point will exchange for a little over 3½ cents of real money.) At the end of the experiment your total earnings (including the \$5 participation fee) will be paid out to you in cash.

The experiment has several phases. The following instructions explain the details of phase 1. The details of the subsequent phases will be explained later.

# Instructions for Phase 1

In the experiment, all participants are randomly divided into **groups of 5**. This means that you are in a group with four other participants. **You will be part of the same group throughout the entire experiment.** Nobody knows which other participants are in their group, and nobody will be informed who was in which group after the experiment.

Phase 1 is divided into 4 periods. In each period, each group member, yourself included, will be given an **endowment of 20 points**. In each period you will have to make one decision.

## *Your decision*

You and the other four group members simultaneously decide how to use the endowment. There are two possibilities:

- 1. You can allocate points to a group account.**
- 2. You can allocate points to a private account.**

You will be asked to indicate the number of points you want to allocate to the group account. The remaining points will automatically be allocated to the private account. Your earnings depend on the total number of points in the group account, and the number of points in your private account.

## *How to calculate your earnings*

Your earnings from your private account are equal to the number of points you allocate to the private account. That is, **for each point you allocate to the private account you get 1 point as earnings**. For example, your earnings from the private account equal 3 points if you allocate 3 points to it. The points you allocate to your private account do not affect the earnings of the other group members.

Your earnings from the group account equal the **sum** of points allocated to the group account by all 5 group members multiplied by 0.3. **For each point you allocate to the group account you and all other group members each get 0.3 points as earnings**. For example, if the sum of points in the group account is 30, then your earnings from the group account and the earnings of each other group member from the group account are equal to 9 points.

Your earnings can be calculated with the following formula:

$$20 - (\text{points you allocated to the group account}) + 0.3 * (\text{sum of points allocated by all group members to the group account})$$

Note that you get 1 point as earnings for each point you allocate to your private account. If you instead allocate 1 extra point to the group account, your earnings from the group account increase by  $0.3 * 1 = 0.3$  points and your earnings from your private account decrease by 1 point. However, by allocating 1 extra point to the group account, the earnings of the other 4 group members also increase by 0.3 points. Therefore, the total group earnings increase by  $0.3 * 5 = 1.5$  points. Note that you also obtain income from points allocated to the group account by other

members. You obtain  $0.3 * 1 = 0.3$  points for each point allocated to the group account by another group member.

### *Example*

Suppose you allocate 15 points to the group account, the second and third members of your group each allocate 20 points to the group account, and the remaining two group members allocate 0 points each. In this case, the sum of points in the group account is  $15 + 20 + 20 + 0 + 0 = 55$  points. All group members get an income of  $0.3 * 55 = 16.5$  points from the group account.

Your earnings are:  $20 - 15 + (0.3 * 55) = 21.5$  points.

The second and third group members' earnings are:  $20 - 20 + (0.3 * 55) = 16.5$  points.

The fourth and fifth group members' earnings are:  $20 - 0 + (0.3 * 55) = 36.5$  points.

### *An additional decision*

There is an additional decision for you to make in this part of the experiment that will also impact your earnings. You will be asked to enter numbers into a form of the kind shown below, by which you will indicate how many of 20 points you want to allocate to the group account assuming that the others in your group, on average, allocate the amount shown. For example, in the top box, you'll enter the number of points you want to allocate if the others all allocate 0 to the group account; in the middle box, the number of points you want to allocate if the others allocate an average of 10; and in the last box, the number you want to allocate if they allocate an average of 20. The completed form is called a "conditional contribution schedule."

Period
1 out of 24
Remaining time [sec]: 67

**The additional decision**

If others on average choose 0, I choose	<input type="text"/>
If others on average choose 1, I choose	<input type="text"/>
If others on average choose 2, I choose	<input type="text"/>
If others on average choose 3, I choose	<input type="text"/>
If others on average choose 4, I choose	<input type="text"/>
If others on average choose 5, I choose	<input type="text"/>
If others on average choose 6, I choose	<input type="text"/>
If others on average choose 7, I choose	<input type="text"/>
If others on average choose 8, I choose	<input type="text"/>
If others on average choose 9, I choose	<input type="text"/>
If others on average choose 10, I choose	<input type="text"/>
If others on average choose 11, I choose	<input type="text"/>
If others on average choose 12, I choose	<input type="text"/>
If others on average choose 13, I choose	<input type="text"/>
If others on average choose 14, I choose	<input type="text"/>
If others on average choose 15, I choose	<input type="text"/>
If others on average choose 16, I choose	<input type="text"/>
If others on average choose 17, I choose	<input type="text"/>
If others on average choose 18, I choose	<input type="text"/>
If others on average choose 19, I choose	<input type="text"/>
If others on average choose 20, I choose	<input type="text"/>

The choices you will enter in it will affect your earnings in the following way: after you and the others in your group fill in this decision form, you will be asked to make the first of the four allocation decisions in the manner described in the first part of these instructions. This first set of decisions will determine your earnings and those of the other members of your group in the first period in the way already described. The first set of decisions will also influence your earnings in a second way: there will be an extra allocation round between period 1 and period 2 in which the payment is determined by one randomly selected subject's conditional contribution schedule, and the average of the other four subjects' first-period contributions.

For example, suppose that you (subject 1) allocate 5 to the group account in period 1 and that subjects 2, 3, 4 and 5 in your group allocate 0, 10, 15, and 20. Also suppose that you are the group member who is randomly selected as the subject whose contribution schedule is used. Then, the average unconditional contribution by the four others is 11 (rounded from 11.25). Suppose that your conditional schedule says that if others contribute an average of 11, you will contribute 6. Then, your payment in the extra round is  $(20 - 6) + 0.3 \cdot (6 + 0 + 10 + 15 + 20) = 29.3$ . On the other hand, subjects 2, 3, 4 and 5 earn  $(20 - 0) + 0.3 \cdot (0 + 6 + 10 + 15 + 20) = 35.3$ ,  $(20 - 10) + 0.3 \cdot (0 + 6 + 10 + 15 + 20) = 25.3$ ,  $(20 - 15) + 0.3 \cdot (0 + 6 + 10 + 15 + 20) = 20.3$  and  $(20 - 20) + 0.3 \cdot (0 + 6 + 10 + 15 + 20) = 15.3$ , respectively. As you can see, the other subjects' earnings in the extra round are determined by their first round decisions and by your contribution schedule given their first round decisions. The extra round between periods 1 and 2 is the only round in the

experiment in which earnings are affected by one of the schedules that you or another members of your group submit in this additional decision task.

### *Comprehension questions*

Please answer following questions. Raise your hand if you need help. A member of the experiment team will come to help you and will check your answers when you are done.

1. Suppose all five group members allocate 0 points to the group account.

a) How much do you earn? \_\_\_\_\_

b) How much do the other group members earn? \_\_\_\_\_

2. Suppose all five group members allocate 20 points to the group account.

a) How much do you earn? \_\_\_\_\_

b) How much do the other group members earn? \_\_\_\_\_

3. Suppose the other group members allocate 40 points in total to the group account.

a) How much do you earn if you allocate 0 points to the group account? \_\_\_\_\_

b) How much do you earn if you allocate 10 points to the group account? \_\_\_\_\_

c) How much do you earn if you allocate 20 points to the group account? \_\_\_\_\_

[When the comprehension questions were reached, experimenter asked subjects to try to answer on their own and says members of the experiment team would come around to check that participants had correctly answered all questions, and that if any had any questions about the questions they should raise their hand and one of us would come to help them.]

[In the BASELINE treatment after Phase 1, the following instructions were read:]

We've just completed Phase 1 and will now begin Phase 2, which also consists of four periods of play. The rules and decisions you have to make in Phase 2 are the same as in Phase 1. If you have a question, please raise your hand and one of us will come to you. If not, we'll begin Phase 2 now.

[Similar instructions were read after Phases 2, 3 and 4. After Phase 5, the following instructions were read:]

We've just completed Phase 5 and will now begin Phase 6, which also consists of four periods of play and is the same as the previous 5 phases. At the end of Phase 6, the main portion of the experiment will be over and you will receive instructions for the second part of the experiment. Any questions? Please begin."

[In the PENALTY treatment, the following instructions were read after Phase 1:]

We've just completed phase 1 and will now begin phase 2, which also consists of four periods of play. Phase 2 is different from phase 1, and now I will read the instructions.

[Then the experimenter began to read aloud the following instructions, of which the subjects also had printed copies:]

## Instructions for phase 2

Phase 2 is essentially the same as phase 1, except that all members have to decide on a **rule for imposing fines** before making the allocation decision. The decision is made by a **voting** procedure.

In particular, phase 2 consists of 4 periods in which you and the other group members decide on the allocation of 20 points to the group account and the private account, exactly as in phase 1. However, before group members make their first allocation decision they hold a vote, and the outcome of the vote is binding for all 4 periods in this phase. The vote determines whether group members are to pay a fine for allocating points to the group account or for allocating points to their private accounts. The vote also determines what the maximum fine is, whether some level of allocation is exempt from being fined, and what that level is. It is possible to choose a maximum fine of 0, in which case there is essentially no fine. In that case, phase 2 would be no different from phase 1 once the vote is completed.

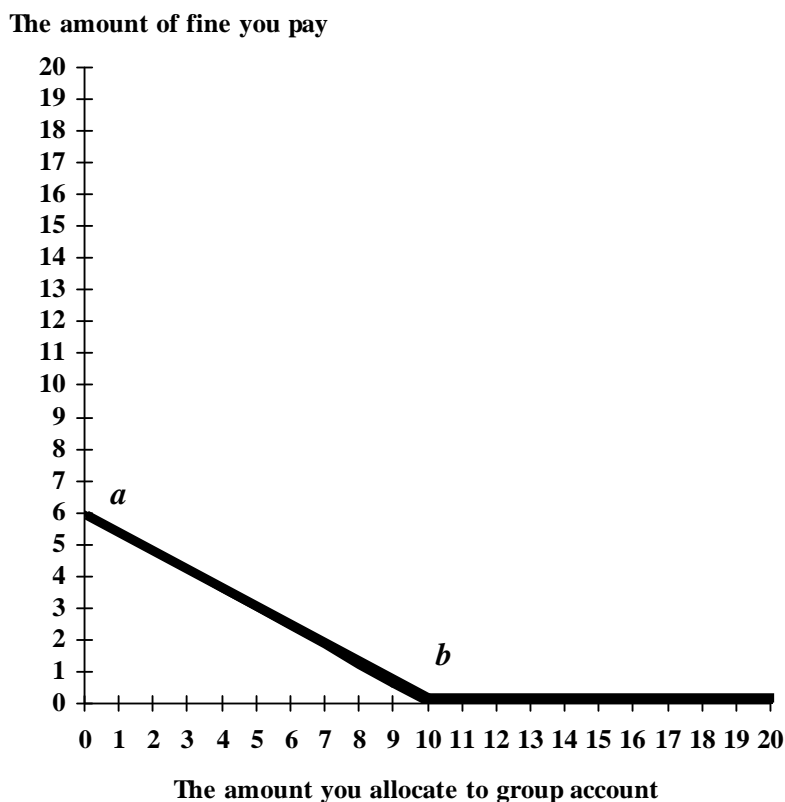
### *Voting procedure*

The voting procedure has **three steps**. Step 1 determines what type of allocation (i.e. to the private accounts or the group account) is fined, step 2 determines the maximum fine, and step 3 determines the exemption level. As will be seen, steps 2 and 3 together also determine the rate of fine per point allocated beyond the exemption level.

**Step 1: What's fined?** All group members simultaneously vote on whether the fine is applied to the points allocated to the private account or points allocated to the group account. Each person has one vote. The option obtaining a majority of votes (3 or more), is selected. All group members are informed about the outcome of step 1 before proceeding to step 2. Figure 1, labeled **private case**, shows the case in which fining allocations to the private account has been chosen in step 1. This means that the more you allocate to your private account and the less to the group account, the more fine you pay. Figure 2, labeled **group case**, shows the case in which fining allocations to the group account has been chosen in step 1. This means that the more you allocate to the group account and the less to your private account, the more fine you pay.

**Step 2: Setting maximum fine.** All group members simultaneously vote on a whole number between 0 and 20 called  $a$ .  $a$  represents the **maximum fine**. Suppose that the **private case** prevails as shown in Figure 1 where  $a$  is equal to 6. A group member allocating 0 points to the group account has to pay a fine of 6 points. Suppose that the **group case** prevails as shown in Figure 2 where  $a$  is equal to 6. A group member allocating 20 points to the group account has to pay a fine of 6 points. Independent of the outcome in steps 1 and 3, the fine is 0 if  $a = 0$  is chosen.

Figure 1: THE PRIVATE CASE: Fine paid on points allocated to the private account



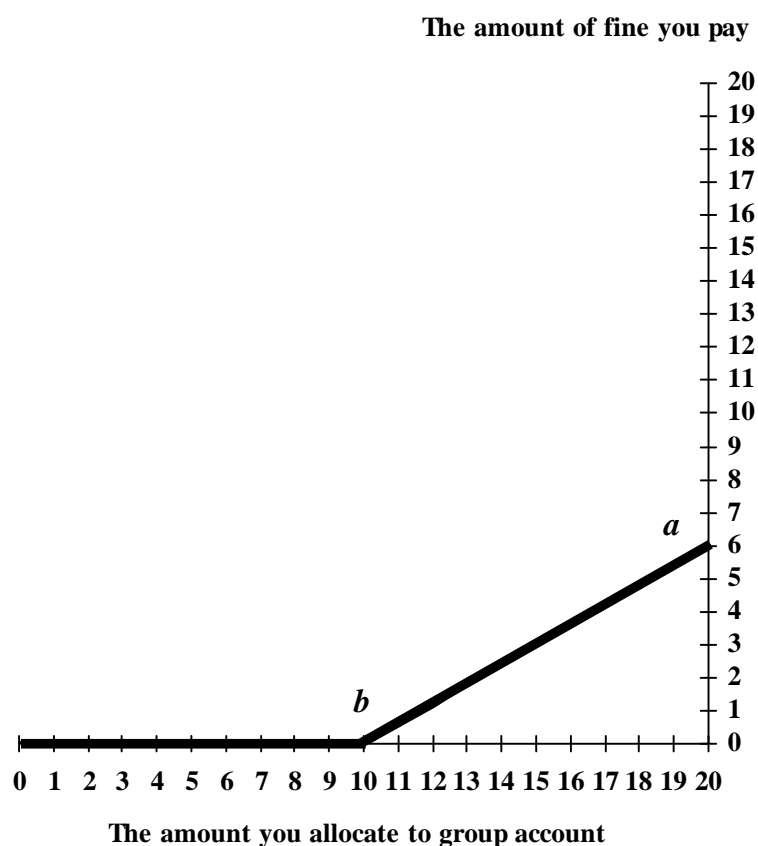
**Step 3: Setting an exemption level.** All group members simultaneously vote on a whole number between 0 and 20 called  $b$ .  $b$  determines what allocations are exempt from fines. Suppose that the **private case** prevails and  $b = 10$  and  $a = 6$ , as in figure 1. Then if a group member allocates 10 or fewer points to her private account, he or she does not have to pay a fine. However if a group member allocates more than 10 points to her private account, he or she will have to pay a fine. For example, when a group member allocates 15 points to her private account and 5 points to the group account, he or she has to pay a fine of 3 points. Note that  $a/b$  is the rate at which the fine goes up for each point allocated to the private account above 10 (equivalently, the rate at which



the fine goes down for each point allocated to the group account up to 10); in the example,  $a/b = 6/10$  so the fine falls  $5 \cdot (6/10) = 3$  points from its maximum of 6 points due to the group member's allocation of 5 points to the group account.

Suppose instead that the **group case** prevails and  $b = 10$  and  $a = 6$ , as in figure 2. Then if a group member allocates less than 10 points to the group account he or she does not have to pay a fine. However, if a group member allocates more than 10 points to the group account, he or she will have to pay a fine. For example, if a group member allocates 15 points to the group account he or she has to pay a fine of 3 points. The fine rises with each additional point allocated to the group account by the amount  $a/(20 - b)$  which in the example is  $6/10 = 0.6$ . So, for allocating an extra 5 points to the group account, the subject pays a fine of  $5 \cdot (6/10) = 3$  points. Independent of the outcome in steps 1 and 2, the fine is 0 if  $b = 0$  is chosen in the **private case** or  $b = 20$  is chosen in the **group case** (or if  $a = 0$  is chosen in either case).

Figure 2 THE GROUP CASE: Fine paid on points allocated to the group account



### Voting rule

Both  $a$  and  $b$  are determined as follows. All group members choose a whole number from 0 to 20. The numbers are ranked and the middle number (i.e. the median) is chosen. For example, if the numbers chosen by individual group members are 15, 12, 0, 18, and 12, then 12 is the selection for the group as a whole.

To summarize, group members vote on the fine structure in three steps and then make four decisions on how to allocate the endowment of 20 points. The sequence as a whole is:

1. **Vote for fine on points allocated to the group account or points allocated to the private account**
2. **Vote on the maximum fine  $a$ . This can be any whole number between 0 and 20.**
3. **Vote on the fine exemption  $b$ . This can be any whole number between 0 and 20.**
4. **You decide how to allocate your points between the private or the group account.**

These group decisions will be announced to all group members after each step.

There are four such allocation rounds that follow one set of votes.

Each group member is informed of his or her individual earnings each period.

### *How to calculate your earnings*

#### **PRIVATE CASE: Points allocated to the private account are fined**

$20 - (\text{points you allocate to group account}) + \{0.3 * (\text{sum of points allocated by all group members to group account})\} - (\text{your fine})$

where

**your fine** =  $a - \{(a/b) * (20 - \text{points you allocate to your private account})\}$

equivalently:  $a - \{(a/b) * (\text{points you allocate to the group account})\}$

**or 0**, if your allocation to the private account is  $\leq 20 - b$   
(i.e., if your allocation to the group account is  $\geq b$ )

#### **Examples with $a = 6$ , $b = 10$ :**

Your allocation to private (group) account	Your fine payment
20 (0)	$6 - (6 / 10) * 0 = 6$
17 (3)	$6 - (6 / 10) * 3 = 4.2$
13 (7)	$6 - (6 / 10) * 7 = 1.8$
8 (12)	0
2 (18)	0

#### **GROUP CASE: Points allocated to the group account are fined:**

$20 - (\text{points you allocate to group account}) + \{0.3 * (\text{sum of points allocated by all group members to group account})\} - (\text{your fine})$

where

**your fine** =  $(\text{your allocation to group account} - b) * (a / \{20 - b\})$

**or 0**, if your allocation to the group account  $\leq b$

**Examples with  $a = 6, b = 10$ :**

Your allocation to group account	Your fine payment
0	0
5	0
12	$(12 - 10) * (6 / (20-10)) = 1.2$
15	$(15 - 10) * (6 / (20-10)) = 3$
20	$(20 - 10) * (6 / (20-10)) = 6$

Note that except for the fine rule your points are calculated as in the first four rounds.

*Comprehension questions*

Please answer following questions. Raise your hand if you need help. A member of the experiment team will come to help you and will check your answers when you are done.

**1.** Suppose the votes in your group are:

Step 1: Private, Group, Group, Private, Group

Step 2: 3, 7, 10, 8, 0

Step 3: 20, 4, 15, 9, 9

a) What is the outcome of the vote in step 1? \_\_\_\_\_ case

b) What is the outcome of the vote in step 2?  $a =$  \_\_\_\_\_

c) What is the outcome of the vote in step 3?  $b =$  \_\_\_\_\_

**2.** Suppose  $a = 10$  and  $b = 20$  and allocations to the private account are being fined. Suppose you allocate 20 points to the group account, and the other 4 group members allocate a total of 10 points to the group account.

a) How much do you have to pay in fine? \_\_\_\_\_

b) How much do you earn? \_\_\_\_\_

**3.** Suppose  $a = 10$  and  $b = 10$  and allocations to the group account are being fined. Suppose you allocate 10 points to the group account, and the other 4 group members allocate a total of 30 points the group account.

a) How much do you have to pay in fine? \_\_\_\_\_

b) How much do you earn? \_\_\_\_\_

**4.** Suppose  $a = 15$  and  $b = 5$  and allocations to the group account are being fined. Suppose you allocate 10 points to the group account, and the other 4 group members allocate a total of 10 points to the group account.

a) How much do you have to pay in fine? \_\_\_\_\_

b) How much do you earn? \_\_\_\_\_

[In the PENALTY treatment, like the instruction of phase 1, when the comprehension questions were reached, experimenter asked subjects to try to answer on their own. Our experiment team came around to check that participants had correctly answered all questions. Then, experimenter says “If you have any questions about phase 2, please raise your hand. If not, we’ll begin Phase 2 now.”]

[In the PENALTY treatment after Phase 2, the following instructions were read:]

We’ve just completed Phase 2 and will now begin Phase 3, which also consists of four periods of play and is the same as phase 2. Any questions? Please begin.

[Similar instructions were read after Phases 3 and 4. After Phase 5, the following instructions were read:]

We’ve just completed Phase 5 and will now begin Phase 6, which also consists of four periods of play and is the same as the previous 4 phases. At the end of Phase 6, the main portion of the experiment will be over and you will receive instructions for the second part of the experiment. Any questions? Please begin.

[In both the BASELINE and PENALTY treatments, after Phase 6 the following instructions were read:]

This next experiment consists of your completion of a questionnaire. Please read the instructions carefully. The questionnaire is distributed face down – please do not turn it over before I tell you to. There are 15 questions. You have to enter your answer to each question on the screen. If you have any questions please raise your hand and we will come and help you. As before, you are not allowed to communicate with other participants. When everyone has finished, we will introduce the final task.

[When there was no question, experimenter said: “Please turn over your questionnaire and begin.”]

[The subjects had printed copies of the following instruction and questions:]

# Instructions

In this experiment you will have to solve 15 tasks in which you can earn points (28 points = \$1.00). Each task consists of a series of symbols and you are required to find the symbol that would come next in the series.

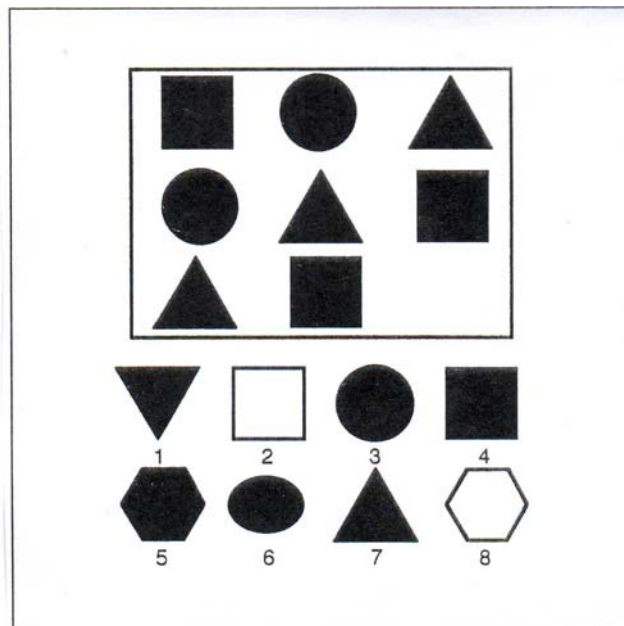
For each task you can choose between 8 possible symbols. Once you have located the symbol you think should be the next in the series, you indicate the number on your screen and continue to the next task. Once an answer is submitted you cannot go back and change your answer. All questions must be answered. If you fail to answer a question within 60 seconds, this question will be counted as a wrong answer. You will have one minute to solve each question before continuing to the next task.

## *How to calculate your earnings*

Your earnings depend on your answers. For each right answer you earn 15 points, for each wrong answer you lose 3 points.

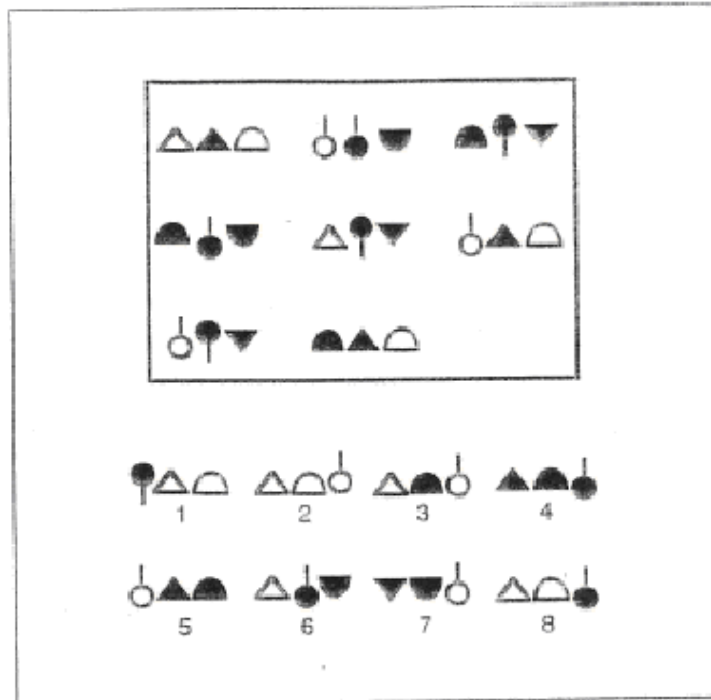
## *Example of a question*

This is an example of a question. The correct answer is symbol 3. There has to be a square, a circle and a triangle in each line. In line three there is a triangle and a square but it is missing a circle and therefore symbol 3 is the correct answer.

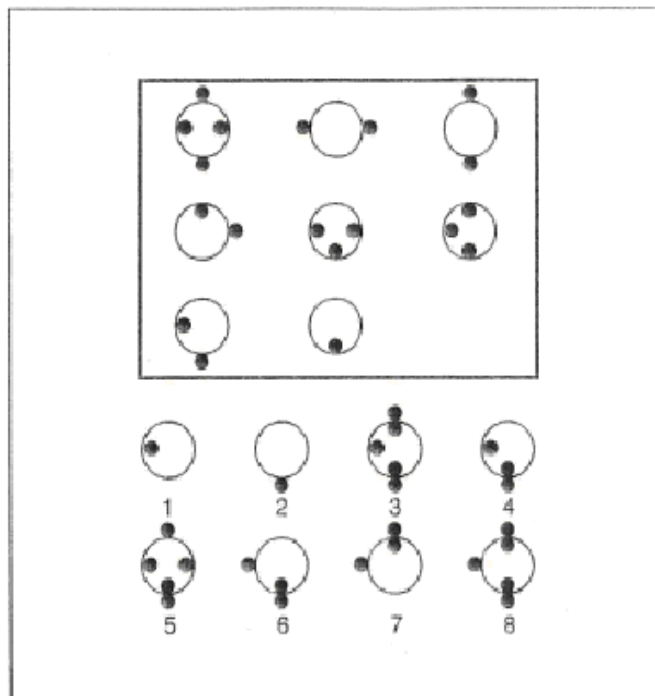


[We show here two examples of the actual 15 questions or tasks.  
More examples are available on request.]

9.



13.



[In both the BASELINE and PENALTY treatments, after the intelligence test the following instructions were read:]

This is the final task for today. In the following you are asked to indicate your views on various issues. How would you place your views on a scale from 1 to 10? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. There is no right or wrong answers to these questions, and your earnings in today's experiment are unaffected by how you answer. Please indicate in the white box on the left of your screen the number you choose and continue to the next question. There are in all 8 questions. Once a question is submitted you cannot go back and change your answer. All questions must be answered. If you have any questions please raise your hand and we will come and help you. You are still not allowed to communicate with other participants. Once you have finished the questionnaire you will be asked a few last questions about your semester level, economics course experience, concentration, and gender. After you have done this, your exact earnings will be calculated and shown to you. Then there will be a few open-ended questions to get your feedback about today's experiment while we prepare to give you your earnings.

[The following is the list of political survey questions and additional questions:]

### Points of view

We'd like you to tell us your views on various issues. How would you place your views on each of the scales below? Circle 1 if you agree completely with the position or statement on the left; circle 10 if you agree completely with the position or statement on the right; and if your views fall somewhere in between, you can circle any number in between. Select only one number for each issue.

In political matters, people talk of "the left" and "the right". How would you place your views on this scale, generally speaking?

Left					Right				
1	2	3	4	5	6	7	8	9	10
Income should be made more equal					We need larger income differences as incentives for individual efforts				
1	2	3	4	5	6	7	8	9	10
Private ownership of business and industry should be increased					Government ownership of business and industry should be increased				
1	2	3	4	5	6	7	8	9	10
The government should take more responsibility to ensure that everyone is provided for					People should take more responsibility to provide for themselves				
1	2	3	4	5	6	7	8	9	10

Competition is good. It stimulates people to work hard and develop new ideas

1 2 3 4 5 6 7 8 9 10

In the long run, hard work usually brings a better life

1 2 3 4 5 6 7 8 9 10

People can only get rich At the expense of others

1 2 3 4 5 6 7 8 9 10

Competition is harmful. It brings out the worst in people

Hard work doesn't generally brings success – it's more a matter of luck and connections

Wealth can grow so there's enough for everyone

Some people believe that individuals can decide their own destiny, while others think that it is impossible to escape a predetermined fate. Please tell me which comes closest to your view on this scale on which 1 means “everything in life is determined by fate”, and 10 means that “people shape their fate themselves.”

Everything is determined by fate

1 2 3 4 5 6 7 8 9 10

People shape their fate themselves

### Exit Question

- (1) Your Concentration or Major
- (2) How many semesters of college or university have you completed?
- (3) How many economics courses have you taken?
- (4) Are you a regular Brown student or summer only?
- (5) Gender

### Open-ended Question

[For the BASELINE treatment:]

Finally, we would like to ask you a couple of questions about our experiment as a whole. If you don't have any comment, it's alright to leave one or more of the boxes blank and proceed.

- (1) Please explain briefly what your strategy was in deciding how much to allocate to your group account.
- (2) Were you surprised by decisions that other group members made?



(3) Did your strategy change much over time, and if so how and why?

(4) Were the instructions clear enough?

Thank you for your participation.

[For the PENALTY treatment:]

Finally, we would like to ask you a couple of questions about our experiment as a whole. If you don't have any comment, it's alright to leave one or more of the boxes blank and proceed.

(1) Please explain briefly what your strategy was in deciding how much to allocate to your group account and what to vote for with regard to the fine scheme.

(2) Were you surprised by decisions that other group members made?

(3) Did your strategy change much over time, and if so how and why?

(4) Were the instructions clear enough?

Thank you for your participation.

## Appendix B: Additional Tables and Figures

Numbers of left and right-censored observations in the Tobit regressions of tables 3 – 5 and 7.

Table 3. The numbers of left-censored and right-censored observations of contributions (i.e. 0 and 20, respectively) are 51 and 544, respectively, out of 720 observations for columns (1) – (3), and 81 and 549, respectively out of 760 observations for columns (4) – (6).

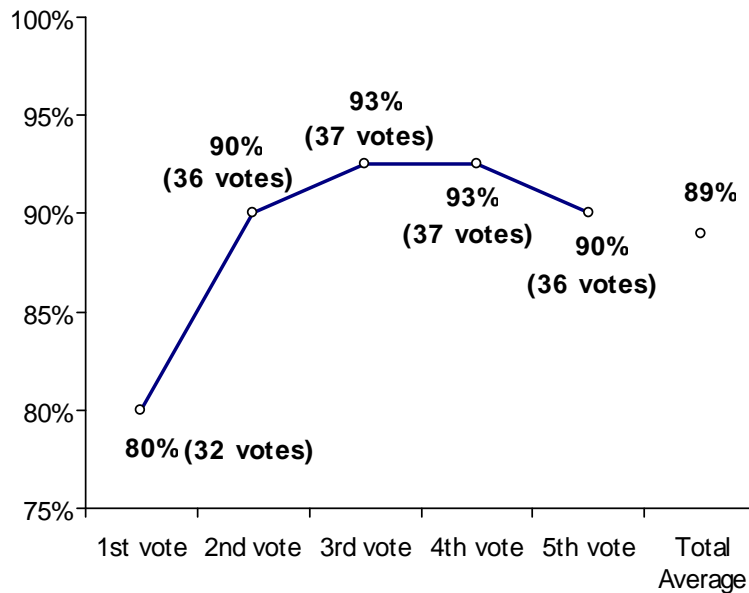
Table 4. The numbers of left-censored and right-censored observations of contributions (i.e. 0 and 20, respectively) are 498 and 31, respectively, out of 960 observations.

Table 5. The numbers of left-censored and right-censored observations of contributions (i.e. 0 and 20, respectively) are 24 and 9, respectively, out of 80 observations for the first period contributions, and 110 and 20, respectively out of 320 observations for contributions in periods 1 – 4.

Table 7. The numbers of left-censored and right-censored observations of  $a$  (i.e.  $a = 0$  and 20, respectively) are 7 and 17, respectively, out of 40 observations for the very first vote, and 7 and 119, respectively out of 150 observations for votes 2 – 5. Likewise, the numbers of left-censored and right-censored observations of  $b$  (i.e.  $b = 0$  and 20, respectively) are 11 and 16, respectively, out of 40 observations for the very first vote, and 6 and 121, respectively out of 150 observations for votes 2 – 5.

**Table B.1. Summary of contributions to public account by group and phase**

	Contributions in Phase 1 (Periods 1-4)		Contributions in the 2nd to 5th Phase (Periods 5-24)		Contributions in the Final Phase (Periods 21-24)	
	mean	median	mean	median	mean	median
BASELINE treatment						
Group 1	9.2	10.0	2.7	0.0	0.9	0.0
Group 2	3.9	1.5	0.6	0.0	0.0	0.0
Group 3	5.1	5.0	1.3	0.0	0.0	0.0
Group 4	5.7	5.0	4.9	5.0	3.2	0.0
Group 5	9.5	10.0	4.6	3.0	1.1	0.0
Group 6	10.6	13.5	5.4	2.0	3.2	1.5
Group 7	5.0	3.0	5.2	1.5	5.6	3.5
Group 8	7.6	4.5	3.2	0.0	3.1	0.0
Treatment Average	7.0	5.0	3.5	0.0	2.1	0.0
PENALTY treatment						
Group 9	2.6	2.0	19.6	20.0	20.0	20.0
Group 10	9.3	10.0	16.4	20.0	20.0	20.0
Group 11	7.7	8.0	15.5	20.0	20.0	20.0
Group 12	1.1	0.0	19.5	20.0	20.0	20.0
Group 13	4.0	2.0	1.7	0.0	0.2	0.0
Group 14	4.6	3.0	15.7	20.0	20.0	20.0
Group 15	10.7	10.0	14.4	20.0	20.0	20.0
Group 16	2.6	1.5	19.9	20.0	20.0	20.0
Treatment Average	5.3	3.0	15.3	20.0	17.5	20.0



**Figure B.1: The proportion of individuals voting to penalize private account contributions**

Note: The figure in parenthesis indicates the number of individual votes to penalize contributions to the private account, out of 40 total votes.

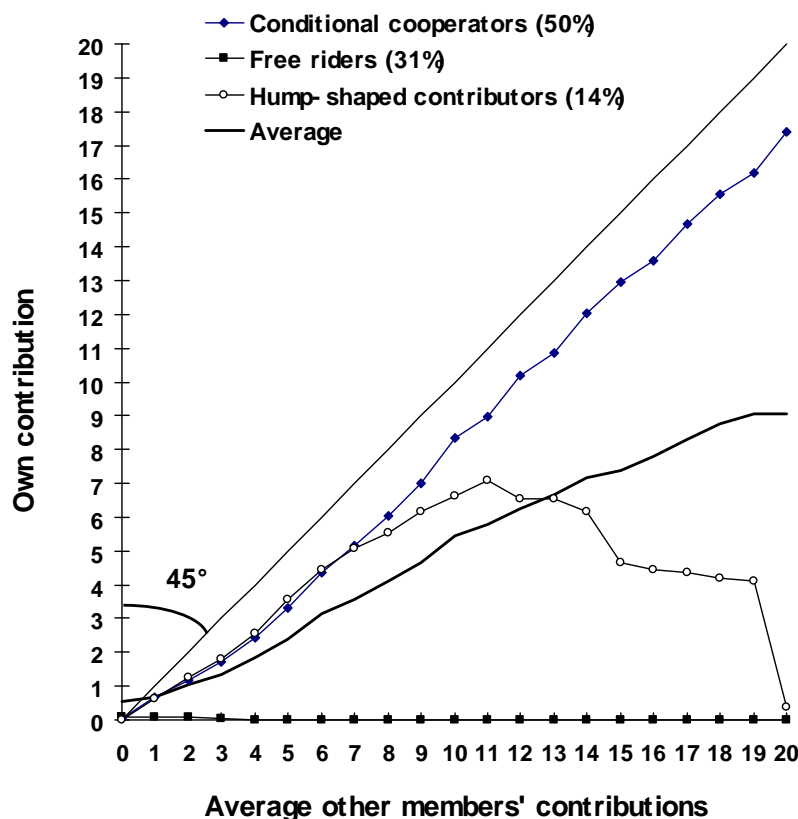
#### Notes on conditional contribution schedules

In the terminology of Fischbacher, Gächter and Fehr (2001), conditional cooperators are those who prefer to contribute more the more they believe that others contribute, free riders maximize their own payoff and thus contribute nothing regardless of others' contributions, and hump-shaped contributors appear "ready to help if necessary" but prefer to free ride if others "carry them along" (the name refers to the first upward and then downward sloping graph of own contribution as a function of that of others). Those whose decisions fail to conform to one of these types are classified as "other."<sup>1</sup>

Out of the 80 subjects in total, 40 (50%) are classified as conditional cooperators,

<sup>1</sup> Conditional cooperators can be understood as having preferences such that what is a prisoners' dilemma game in pecuniary payoffs is an assurance or stag hunt game in psychological or utility terms. Operationally, we follow Fischbacher *et al.* and classify a subject as a conditional cooperator if his or her contribution is significantly increasing in the contribution of the others according to the Spearman's rho correlation coefficient at the 1% significance level or better. The hump-shaped type was not hypothesized on theoretical grounds, but has been found to consistently characterize a subset of subjects in several studies, now including our own. We adopt the hump-shaped contributor classification if the Spearman's rho is positive and significant at the 1% level or better up to some interior point and if it is negative and significant after that point. We classify the subject as a free rider if his or her contributions are always zero. We also classify as a free rider one subject who contributes 2 or 1 when others contribute less than 4 and contributes 0, otherwise (see subject 42 in Appendix). For other studies resembling this portion of our experiment and obtaining similar results, see Fischbacher and Gächter (forthcoming) and Herrmann and Thöni (2007).

25 (31%) as free riders, 11 (14%) as hump-shaped contributors, and 4 (6%) as other.<sup>2, 3</sup> Subjects in both treatments conform to roughly the same breakdown. Figure 4 shows the average contribution schedule of each of the three classifiable types.<sup>4</sup> The contribution schedules of each individual subject labeled and listed by our classifications are found in Appendix Figure B.1.



**Figure B.2.a: Average conditional contribution schedule for three main types**

Note: percentages in key are shares of subject population.

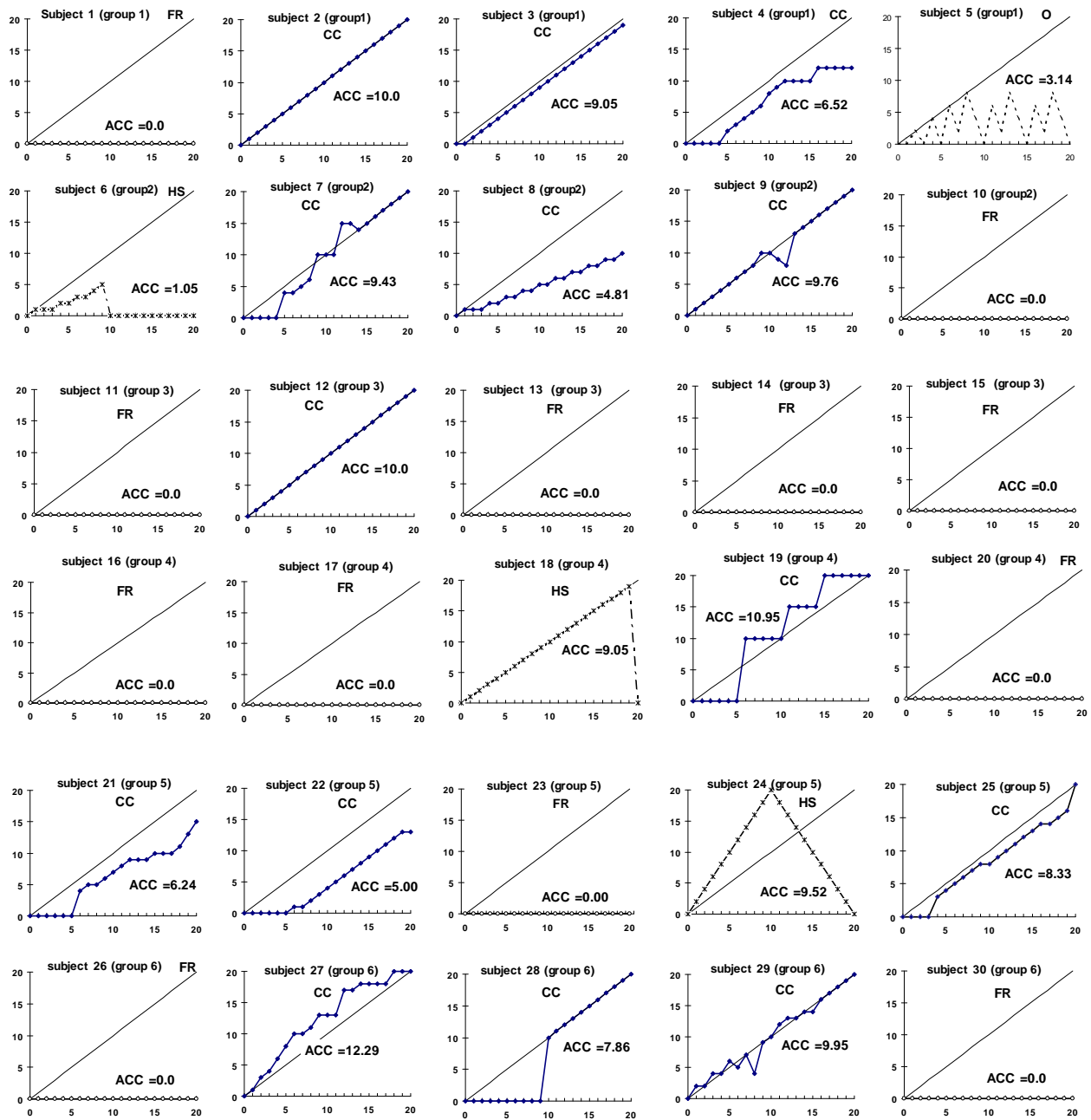
<sup>2</sup> Of the four subjects classified as “other,” one is an unconditional contributor who always contributes 20, one has a seemingly random contribution schedule, and two resemble free riders but contribute to the public account at a few specific levels of average contribution by others.

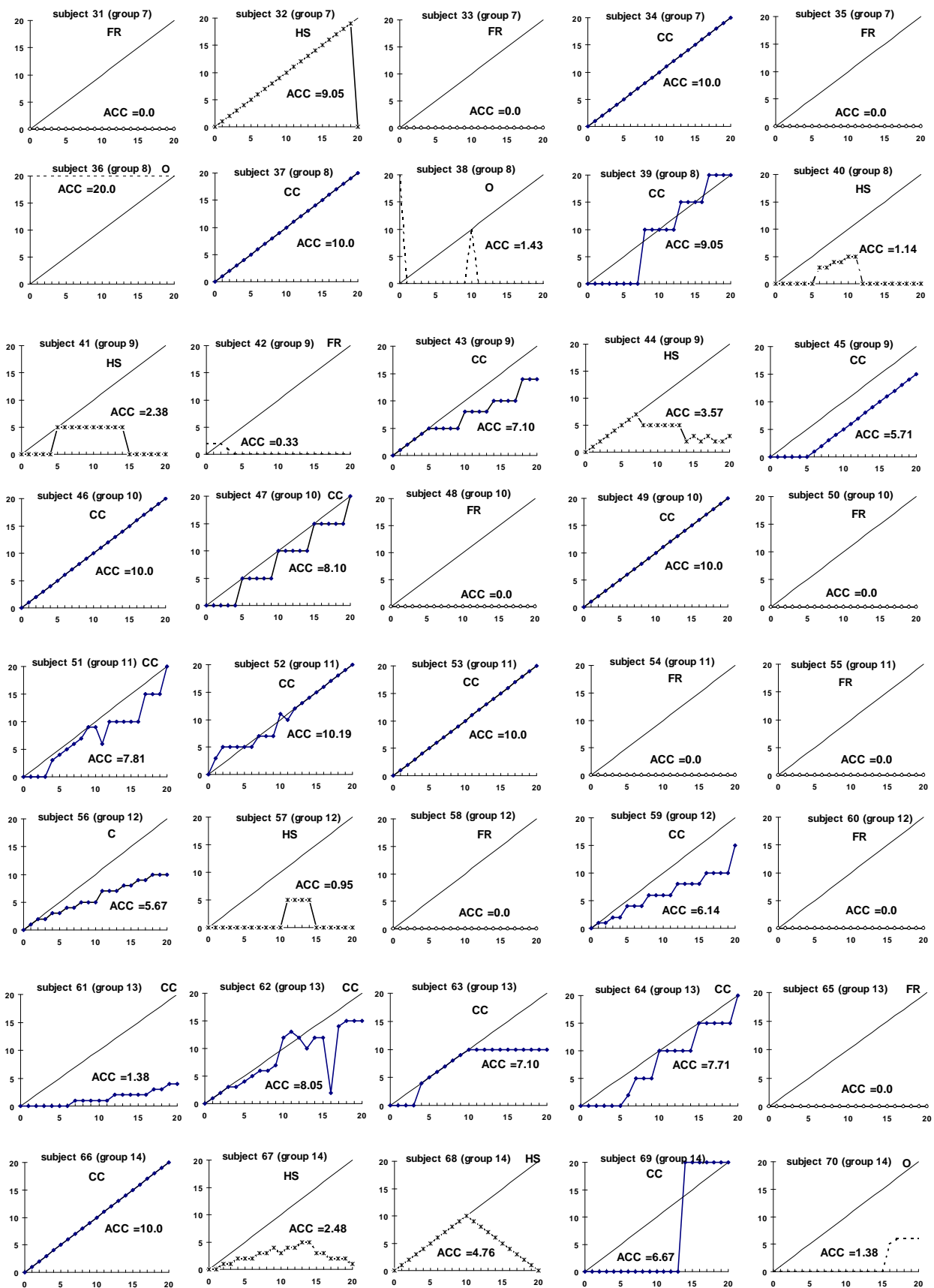
<sup>3</sup> The distribution of types varies among reported results, possibly in part due to differences by country. The percentage of conditional cooperators, hump-shaped contributors and free riders are 50%, 14% and 30% in Fischbacher, Gächter and Fehr, 2001, and 55%, 12% and 23 % in Fischbacher and Gächter, forthcoming, both conducted in Switzerland; the corresponding percentages are 76%, 6% and 9% in Burlando and Guala, 2003, conducted in Italy, 56%, 8% and 6% in Herrmann and Thöni, 2009, conducted in Russia, and Kocher, Cherry, Kroll, Netzer and Sutter, 2008, report shares of 81%, 0% and 8% for their U.S. subjects, 44%, 11% and 22% for their Austrian subjects, and 42%, 11% and 36% for their Japanese subjects. The type distribution among our own subjects is almost identical to that in Fischbacher *et al.* Also see Kurzban and Houser (2001) and Chaudhuri and Paichayontvijit (2005).

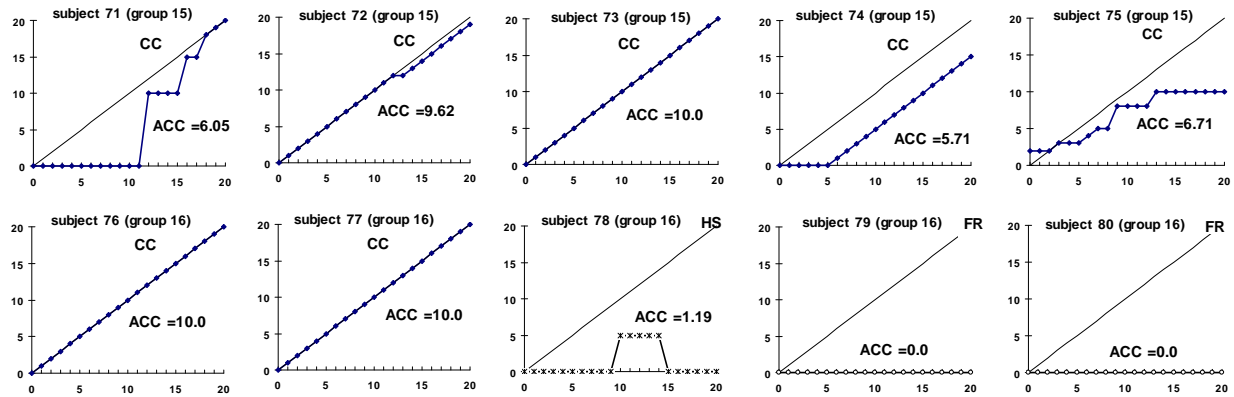
<sup>4</sup> Note that the average contribution schedule of conditional cooperators is downward biased, meaning that as others' contributions rise, their own contributions go up on a less than one-to-one basis. The same bias is noted by Fischbacher and Gächter, forthcoming, and plays an important part in their analysis.

**Figure B.2.b: Strategy method contribution schedules of individual subjects**

(CC: Conditional Cooperator, HS: Hump-shaped contributor, FF: Free rider and O: Other)







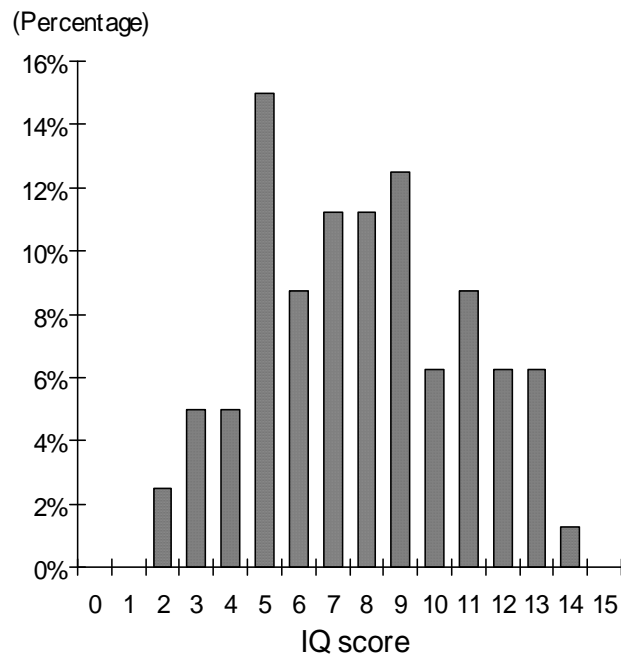
### List of Subjects by ID # and Classification (Type)

Conditional Cooperator (40 subjects): 2, 3, 4, 7, 8, 9, 12, 19, 21, 22, 25, 27, 28, 29, 34, 37, 39, 43, 45, 46, 47, 49, 51, 52, 53, 56, 59, 61, 62, 63, 64, 66, 69, 71, 72, 73, 74, 75, 76, 77

Hump-shaped contributor (11 subjects): 6, 18, 24, 32, 40, 41, 44, 57, 67, 68, 78

Free rider (25 subjects): 1, 10, 11, 13, 14, 15, 16, 17, 20, 23, 26, 30, 31, 33, 35, 42, 48, 50, 54, 55, 58, 60, 65, 79, 80

Other (4 subjects): 5, 36, 38, 70



**Figure B.3: Histogram of IQ scores**

**Table B.2:** Summary statistics of IQ by treatment

Treatment	Median	Mean	Standard deviation
BASELINE	7	7.28	3.32
PENALTY	8	8.35	2.58
Overall	8	7.81	3.00

**Table B.3:** Average IQ by type in each treatment

Treatment	Conditional Cooperator		Hump-shaped contributor		Free rider	
	Total # of subjects	Average IQ	Total # of subjects	Average IQ	Total # of subjects	Average IQ
BASELINE	17	5.94	5	7.40	15	8.40
PENALTY	23	7.96	6	7.83	10	9.10
Over all	40	7.10	11	7.64	25	8.68



**Table B.4:** The correlation between political preferences and types and IQ**(a) Average response to political preference questions, by type<sup>1</sup>**

	Conditional cooperator	Hump-shaped contributor	Free rider	Over all
General	3.77	3.30	3.68	3.71
Income	5.28	5.30	5.04	5.38
Ownership	6.21	6.40	6.32	6.30
Responsibility	4.13	5.00	4.52	4.41
Competition	7.44	8.70	7.24	7.58
Hard work	6.35	6.45	7.04	6.51
Wealth	5.75	7.00	5.84	5.91
Destiny	7.08	8.27	7.48	7.39

**(b) Correlation between conditional contribution type, ACC, IQ, Female & political preference**

		Conditional cooperator	Hump-shaped contributor	Free rider	ACC	IQ	Female
General	Spearman's $\rho$	-0.025	-0.047	0.027	-0.059	0.017	-0.186*
	Sig. (2-tailed)	0.826	0.676	0.813	0.606	0.879	0.098
Income	Spearman's $\rho$	-0.044	0.036	-0.097	0.037	-0.104	0.056
	Sig. (2-tailed)	0.701	0.748	0.394	0.746	0.356	0.620
Ownership	Spearman's $\rho$	-0.072	0.019	-0.005	0.030	0.180	-0.286**
	Sig. (2-tailed)	0.525	0.867	0.963	0.794	0.111	0.010
Responsibility	Spearman's $\rho$	-0.119	0.010	0.060	-0.120	0.257**	-0.181
	Sig. (2-tailed)	0.294	0.928	0.599	0.289	0.021	0.107
Competition	Spearman's $\rho$	-0.094	0.183	-0.105	-0.010	0.068	-0.267**
	Sig. (2-tailed)	0.408	0.104	0.355	0.929	0.550	0.017
Hard work	Spearman's $\rho$	-0.058	-0.024	0.153	-0.041	0.159	0.021
	Sig. (2-tailed)	0.610	0.834	0.176	0.721	0.159	0.851
Wealth	Spearman's $\rho$	-0.075	0.168	-0.005	0.014	0.065	-0.015
	Sig. (2-tailed)	0.510	0.136	0.963	0.899	0.567	0.897
Destiny	Spearman's $\rho$	-0.175	0.205	0.040	-0.117	0.244**	-0.126
	Sig. (2-tailed)	0.121	0.068*	0.728	0.303	0.029	0.264
IQ	Spearman's $\rho$	-0.250**	-0.014	0.208*	-0.179	---	---
	Sig. (2-tailed)	0.026	0.900	0.064	0.112	---	---
Female	Spearman's $\rho$	0.300***	0.056	-0.263**	0.299***	-0.154	---
	Sig. (2-tailed)	0.007	0.620	0.018	0.007	0.172	---

*Note:*

1. Higher political attitude variable are associated with conventionally “more conservative” attitudes. Definition of the questions can be found in Appendix A.
2. \* and \*\* indicate significance at the .10 level, and .05 level, respectively.
3. Total number of data is 80, the number of total subjects in our experiment.

**Table B.5:** Two-stage Least Squares Estimation for contributions in PENALTY treatment

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)
Per unit penalty $a/b$	3.79*** (1.18)	3.83*** (1.37)	3.87*** (1.49)	3.86*** (0.98)	4.55*** (1.08)	4.82*** (1.14)
Exemption level $b$	1.29*** (0.12)	1.25*** (0.13)	1.27*** (0.15)	1.44*** (0.090)	1.41*** (0.090)	1.46*** (0.10)
Conditional Contribution	---	---	0.0073 (0.018)	---	---	0.019 (0.016)
IQ	---	---	0.024 (0.026)	---	---	0.0066 (0.024)
General (Political Preference)	---	0.015 (0.047)	0.0047 (0.049)	---	0.0029 (0.042)	-0.012 (0.044)
Female	0.0048 (0.14)	-0.0033 (0.15)	0.035 (0.14)	0.062 (0.13)	0.091 (0.13)	0.087 (0.13)
Vote number	0.055 (0.076)	0.069 (0.082)	0.060 (0.093)	-0.018 (0.065)	-0.011 (0.066)	-0.038 (0.071)
Round within phase <sup>2</sup>	-0.0025 (0.048)	-0.0025 (0.048)	-0.0025 (0.047)	-0.0025 (0.048)	-0.0025 (0.047)	-0.0025 (0.047)
Constant	-9.76*** (2.73)	-9.22*** (3.28)	-9.85*** (3.70)	-12.6*** (2.16)	-12.7*** (2.36)	-13.9*** (2.54)
Number of observations	484	484	484	484	484	484
F	80.31	69.03	58.22	105.72	95.02	75.99
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000
Centered R <sup>2</sup>	0.845	0.844	0.846	0.841	0.848	0.845
Uncentered R <sup>2</sup>	0.997	0.996	0.997	0.996	0.997	0.997

Note:

1. Two Stage Least Square Estimation. \*\*\* indicate significance at the .01 level.
2. In all columns (1) to (6), the null hypothesis that  $b$  and  $a/b$  are exogenous was not rejected at the .10 significance level, according to Wu-Hausman F test as well as Durbin-Wu-Hausman chi-square test.
3. Income (Inequality needed?), Destiny and Hard work variables are used as instruments in columns (1) to (3), and all seven political attitude variables except the General political attitude variable are used as instruments in columns (4) – (6).
4. In all columns (1) to (6), the null hypotheses that the matrix of reduced form coefficients is not full rank (underidentified) were rejected at the 0.01 significance level.
5. In columns (1) to (3) and (6), the requirement of overidentifying restrictions according to Sargan N\*R-sq test, the null hypotheses of overidentification was satisfied.
6. Vote number  $\in \{1, 2, 3, 4, 5\}$  and Round within phase  $\in \{1, 2, 3, 4\}$ .
7. The dummy variable “binding” equals 1 when  $a/b \geq 0.7$  and 0 otherwise.
8. In columns (1) to (3), observations in which  $b = 0$  are excluded since then  $a/b = \text{infinity}$ .

## Appendix C. Results of Pilot Experiment in Copenhagen

In early 2007, a pilot version of the experiment was conducted at the University of Copenhagen in three BASELINE and two PENALTY treatment sessions, for a total of seven groups per treatment, with the subjects being 70 students of that university drawn from a wide variety of fields. The design was identical except for a small difference in the manner in which incentives were provided for the “strategy method” task from which conditional contribution schedules were estimated, some differences in the sizes of sessions, and small differences in the wording of the instructions. The quite similar results, referenced in footnote 39 of our paper, are summarized in the following tables and figures.

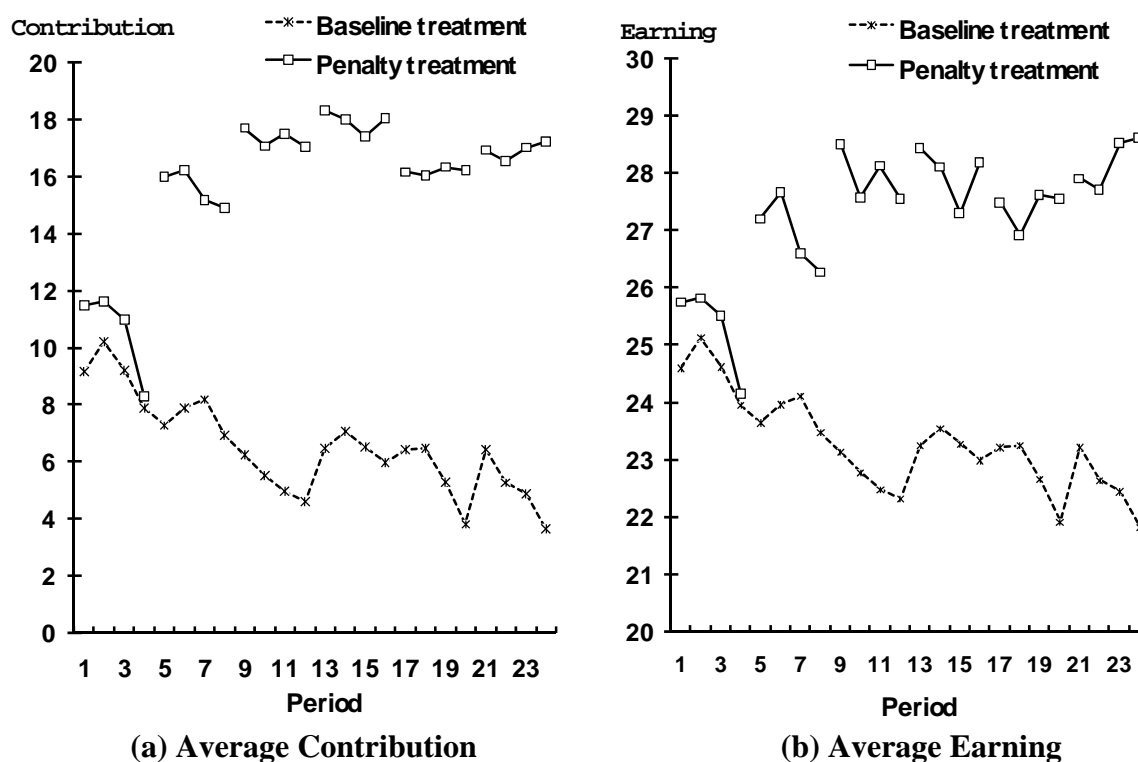


Figure C.1. The trends of average contribution to the public account and average earnings

**Table C.1. Results of voting choice (account to be taxed, *a*, *b* and *a/b*)**

Period	Group8				Group9				Group10				Group11			
	G or P	a	b	a/b	G or P	a	b	a/b	G or P	a	b	a/b	G or P	a	b	a/b
5	P	7	10	0.70	P	20	10	2.00	P	20	15	1.33	P	20	20	1.00
9	P	7	10	0.70	P	20	17	1.18	P	20	20	1.00	P	20	20	1.00
13	P	10	15	0.67	P	20	20	1.00	P	20	20	1.00	P	20	20	1.00
17	P	8	16	0.50	P	20	20	1.00	P	20	20	1.00	P	20	20	1.00
21	G	6	10	0.60	P	20	20	1.00	P	20	20	1.00	P	20	20	1.00

Period	Group12				Group13				Group14			
	G or P	a	b	a/b	G or P	a	b	a/b	G or P	a	b	a/b
5	P	20	19	1.05	P	15	16	0.94	P	10	20	0.50
9	P	20	19	1.05	P	20	20	1.00	P	10	20	0.50
13	P	20	19	1.05	P	20	20	1.00	P	20	20	1.00
17	P	1	19	0.05	P	20	20	1.00	P	20	20	1.00
21	P	20	19	1.05	P	20	20	1.00	P	20	20	1.00

Note: G and P refer to the public account (G) and the private account (P) respectively.

**Table C.2 Summary of contributions to public account by group and phase**

	Contributions in Phase 1 (Periods 1-4)		Contributions in the 2nd to 5th Phase (Periods 5-24)		Contributions in the Final Phase (Periods 21-24)	
	mean	median	mean	median	mean	median
BASELINE treatment						
Group 1	11.0	13.0	7.1	3.0	5.3	0.0
Group 2	14.2	15.0	11.6	15.0	8.0	10.0
Group 3	9.2	9.0	3.7	0.0	6.7	4.5
Group 4	11.6	14.5	7.1	6.0	5.9	4.0
Group 5	5.7	5.0	2.6	2.0	2.2	0.5
Group 6	4.2	3.0	3.0	3.0	1.4	1.5
Group 7	8.1	10.0	6.9	7.0	6.2	6.0
Treatment Average	9.1	10.0	6.0	4.0	5.1	2.0
PENALTY treatment						
Group 8	8.2	7.5	7.8	9.0	1.5	0.0
Group 9	15.2	16.5	17.0	20.0	19.0	20.0
Group 10	10.5	10.0	19.4	20.0	20.0	20.0
Group 11	15.4	20.0	19.7	20.0	20.0	20.0
Group 12	8.1	6.0	15.5	19.0	18.1	19.0
Group 13	3.2	0.0	18.6	20.0	20.0	20.0
Group 14	13.8	16.5	19.6	20.0	20.0	20.0
Treatment Average	10.6	10.0	16.8	20.0	16.9	20.0

**Note regarding Tables C.3 – C.6.** These tables present regression results for specifications replicating or resembling those of tables 6 and 7 of our paper, but substituting the data of the Copenhagen subjects. Tables C.3 and C.5 are identical in specification to Tables 6 and 7, respectively. Tables C.4 and C.6 differ from C.3 and C.5 (Tables 6 and 7) by the inclusion of an additional survey question response, that for the question dubbed “Responsibility,” which takes a higher value the more the individual agrees that “people should take more responsibility to provide for themselves” and a lower value the more he/she agrees that “the government should take more responsibility to assure that everyone is provided for.” In all tables, we find a positive, usually significant, relationship between Average Conditional Contribution, on the one hand, and voting to penalize contributions to the private accounts or voting for a higher maximum penalty, on the other, as in the Brown University subjects’ data. In Table C.3, conservative political preference (response to General) is significantly positively associated with voting to penalize contributions to the private accounts in two specifications, as in Table 6. A difference is that the sign on the significant Income (Inequality needed?) variable is also negative, unlike Table 6. When the “Responsibility” variable is added, it changes the sign of the Income response’s coefficient and makes the coefficients on both General and Income insignificant, while Responsibility gets a negative significant coefficient, consistent with the idea that subjects who oppose greater government responsibility are less likely to support efficient penalties to induce contributions to the group account. In Table 7, Responsibility also has negative, significant coefficients, indicating that those opposed to government intervention favor lower penalties and a lower exemption level, both of which prevent establishment of an efficient penalty scheme. Thus, the general character of the results, as with those for the Brown subjects, is that political outlook matters for voting and that anti-interventionist ideology leads to opposition to use of an efficient penalty scheme to induce contributions to the public good.

**Table C.3:** Determinants of voting to penalize contributions to private vs. public account

Independent variable	Random Effects Probit		Probit		Logistic	
	(1)	(2)	(3)	(4)	(5)	(6)
Conditional Contribution	0.13 (0.11)	0.17 (0.12)	0.043 (0.027)	0.081*** (0.029)	0.074 (0.046)	0.14*** (0.049)
IQ	0.18 (0.20)	0.17 (0.20)	0.052 (0.047)	0.053 (0.052)	0.085 (0.080)	0.078 (0.091)
General (Political Orientation)	---	-0.22 (0.28)	---	-0.12* (0.070)	---	-0.22* (0.12)
Income (Inequality needed?)	---	-0.23 (0.25)	---	-0.13** (0.064)	---	-0.23** (0.11)
Hard Work	---	0.040 (0.20)	---	0.0029 (0.055)	---	-0.021 (0.099)
Female	-0.70 (0.99)	-0.17 (0.20)	-0.29 (0.22)	-0.062 (0.25)	-0.51 (0.39)	-0.18 (0.44)
Vote number	0.020 (0.13)	0.021 (0.13)	-0.0018 (0.078)	0.0068 (0.082)	0.00 (0.14)	0.00 (0.14)
Constant	0.59 (1.85)	1.84 (2.18)	0.34 (0.46)	1.26** (0.63)	0.56 (0.81)	2.59** (1.23)
Number of observations	175	175	175	175	175	175
Log likelihood	-53.17	-51.55	-84.62	-75.21	-84.69	-74.91
Wald chi2	2.66	5.12	---	---	---	---
LR chi2	---	---	5.89	24.72	5.76	25.32
Prob > chi2	0.616	0.646	0.207	0.0009	0.218	0.0007
Pseudo R2	---	---	0.034	0.1411	0.0329	0.145

*Note:*

1. The dependent variable equals 1 if the subject voted to penalize contributions to the private accounts, 0 if s/he voted to penalize contributions to the public account.
2. \*, \*\*, and \*\*\* indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.
3. The figure in the parenthesis is standard deviation.
4. Vote number  $\in \{1, 2, 3, 4, 5\}$ .

**Table C.4:** Determinants of voting to penalize contributions to private vs. public account

Independent variable	Random Effects Probit		Probit		Logistic	
	(1)	(2)	(3)	(4)	(5)	(6)
Conditional Contribution	0.13 (0.11)	0.20* (0.11)	0.043 (0.027)	0.12*** (0.037)	0.074 (0.046)	0.21*** (0.066)
IQ	0.18 (0.20)	0.24 (0.19)	0.052 (0.047)	0.12* (0.064)	0.085 (0.080)	0.22* (0.12)
General (Political Orientation)	---	-0.083 (0.26)	---	-0.046 (0.088)	---	-0.084 (0.15)
Income (Inequality needed?)	---	0.26 (0.28)	---	0.083 (0.087)	---	0.12 (0.15)
Hard Work	---	0.32 (0.22)	---	0.15** (0.071)	---	0.24* (0.13)
Responsibility	---	-1.18*** (0.43)	---	-0.59*** (0.11)	---	-1.00*** (0.19)
Female	-0.70 (0.99)	0.65 (0.87)	-0.29 (0.22)	0.41 (0.31)	-0.51 (0.39)	0.67 (0.55)
Vote number	0.020 (0.13)	0.0097 (0.13)	-0.0018 (0.078)	-0.0051 (0.096)	0.00 (0.14)	0.00 (0.17)
Constant	0.59 (1.85)	1.35 (1.78)	0.34 (0.46)	0.98 (0.69)	0.56 (0.81)	1.76 (1.29)
Number of observations	175	175	175	175	175	175
Log likelihood	-53.17	-42.89	-84.62	-54.46	-84.69	-55.00
Wald chi2	2.66	9.45	---	---	---	---
LR chi2	---	---	5.89	66.22	5.76	65.15
Prob > chi2	0.616	0.306	0.207	0.0000	0.218	0.218
Pseudo R2	---	---	0.034	0.378	0.0329	0.3720

*Note:*

1. The dependent variable equals 1 if the subject voted to penalize contributions to the private accounts, 0 if s/he voted to penalize contributions to the public account.
2. \*, \*\*, and \*\*\* indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.
3. The figure in the parenthesis is standard deviation.
4. Vote number  $\in \{1, 2, 3, 4, 5\}$ .

**Table C.5:** Determinants of votes on a and b

Independent Variable	Initial vote		2nd to 5th vote	
	(1) Vote on <i>a</i>	(2) Vote on <i>b</i>	(3) Vote on <i>a</i>	(4) Vote on <i>b</i>
Conditional Contribution	1.57** (0.66)	1.94** (0.82)	0.55 (1.08)	0.71 (1.08)
IQ	1.34 (1.06)	1.38 (1.28)	-0.42 (1.73)	-0.78 (1.72)
(Last-voted group <i>a</i> )	---	0.30 (0.59)	0.85 (0.36)	0.54 (0.42)
Previous group <i>b</i>	---	---	0.26 (0.61)	1.73** (0.73)
General (Political Orientation)	0.65 (1.54)	0.88 (1.80)	-1.60 (2.62)	0.0003 (2.67)
Income (Inequality needed?)	-0.53 (1.32)	-0.57 (1.54)	-1.46 (2.29)	-1.67 (2.32)
Destiny	0.38 (1.24)	-1.00 (1.49)	---	---
Female	-11.1* (5.56)	-8.71 (6.49)	-13.8 (9.28)	-10.0 (9.12)
Constant	-0.65 (12.6)	-0.50 (16.3)	29.1 (21.3)	5.64 (22.0)
Number of observations	35	35	135	135
Log likelihood	-73.12	-71.68	-172.0	-166.3
LR chi2	12.07	11.67	---	---
Wald chi2	---	---	10.56	9.36
Prob > chi2	0.0603	0.1121	0.1591	0.228
Pseudo R2	0.0763	0.0752	---	---

Note: 1. Tobit regression (columns (1) and (2)) and Tobit regression with random effects (columns (3) and (4)).

2. Number in parenthesis is standard deviation.

3. \* and \*\* indicate significance at the .10 level and the .05 level, respectively.

4. In regression (3), *a* is the value chosen in the previous vote, while in regressions (2) and (4), *a* is the value selected in the previous voting step of the current vote process.

5. The numbers of left-censored and right-censored observations of *a* (i.e. *a* = 0 and 20, respectively) are 4 and 16, respectively, out of 35 observations for the first vote, and 20 and 85, respectively out of 135 observations for votes 2 – 5. Likewise, the numbers of left-censored and right-censored observations of *b* (i.e. *b* = 0 and 20, respectively) are 6 and 15, respectively, out of 35 observations for the first vote, and 17 and 91, respectively out of 135 observations for votes 2 – 5.



**Table C.6:** Determinants of votes on a and b

Independent Variable	Initial vote		2nd to 5th vote	
	(1) Vote on <i>a</i>	(2) Vote on <i>b</i>	(3) Vote on <i>a</i>	(4) Vote on <i>b</i>
Conditional Contribution	1.51** (0.65)	1.84** (0.74)	0.31 (0.91)	0.35 (0.83)
IQ	1.35 (1.03)	1.15 (1.08)	-0.041 (1.44)	-0.29 (1.27)
(Last-voted group <i>a</i> )	---	0.50 (0.52)	0.94*** (0.36)	0.66 (0.41)
Previous group <i>b</i>	---	---	0.19 (0.59)	1.54** (0.67)
General (Political Orientation)	1.20 (1.54)	2.05 (1.59)	0.23 (2.21)	2.39 (2.19)
Income (Inequality needed?)	0.40 (1.40)	1.22 (1.45)	1.69 (2.19)	2.40 (2.05)
Destiny	0.99 (1.28)	0.30 (1.33)	---	---
Responsibility	-2.60 (1.64)	-5.15*** (1.86)	-7.19*** (2.46)	-8.72*** (2.47)
Female	-10.8* (5.38)	-7.19 (5.53)	-10.6 (7.73)	-4.68 (6.99)
Constant	-0.46 (12.2)	-2.65 (14.1)	33.2 (18.4)	10.2 (17.2)
Number of observations	35	35	135 <sup>4</sup>	135
Log likelihood	-71.75	-67.18	-167.5	-159.2
LR chi2	14.81	20.68	---	---
Wald chi2	---	---	18.06	19.18
Prob > chi2	0.039	0.008	0.021	0.014
Pseudo R2	0.0936	0.1334	---	---

Note: 1. Tobit regression (columns (1) and (2)) and Tobit regression with random effects (columns (3) and (4)).

2. Number in parenthesis is standard deviation.

3. \* and \*\* indicate significance at the .10 level and the .05 level, respectively.

4. In regression (3), *a* is the value chosen in the previous vote, while in regressions (2) and (4), *a* is the value selected in the previous voting step of the current vote process.

5. The numbers of left-censored and right-censored observations of *a* (i.e. *a* = 0 and 20, respectively) are 4 and 16, respectively, out of 35 observations for the first vote, and 20 and 85, respectively out of 135 observations for votes 2 – 5. Likewise, the numbers of left-censored and right-censored observations of *b* (i.e. *b* = 0 and 20, respectively) are 6 and 15, respectively, out of 35 observations for the first vote, and 17 and 91, respectively out of 135 observations for votes 2 – 5.