FOR ON-LINE PUBLICATION

Appendix to Kamei, Putterman and Tyran, 2012 "State or Nature? Formal vs. Informal Sanctioning in the Voluntary Provision of Public Goods"

Overview

Appendix A: Instructions

[Note: instructions for all treatments began with the same instructions for completing a conditional contribution schedule and playing a VCM without punishment opportunities or formal sanction scheme. In Baseline treatment, subjects were informed that basic VCM interaction would continue for 24 periods, with 40-second breaks after every four periods, and there were no further instructions. In the 3-Vote treatments, subjects were informed that such interaction would last for 4 periods and be followed by further instructions. In the 6-Vote treatments and the Exogenous IS Comparison Treatment, subjects were informed that such interaction would be for one period only and be followed by further instructions. The preliminary and first written- instructions that follow are for all treatments except where differences for the 3-Vote and 6-Vote treatments are indicated in square brackets, in which case the version shown prior to the brackets is for the BASELINE treatment. In 3-Vote treatments, subjects learn about the conditions in four distinct sets of instructions. Before Phase 1, they learn about the VCM without sanctions; before Phase 2, they learn about either the IS or the FS condition, depending on order; and before Phase 3, they learn about the remaining condition. Before Phase 4, they see a brief set of instructions informing them about the voting that will take place at the beginning of each of the remaining three phases. In 6-Vote treatments, subjects learn about the VCM without sanctions before their initial one-period phase, then receive the remaining instructions about IS, FS, and votes between the two before their first four-period phase. The instructions read by subjects in the 6-Vote treatments, shown below, refer to the phases by the numbers 1 – 7, but in the paper we use the numbers 0 – 6 for better alignment of phases 1 – 6 with those of the 3-Vote treatments.]

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 [in treatments other than BASELINE, 6-C "Fuller Info" Variant and Exog IS "Fuller Info" Variant: "two-and-a-half hours"]. The main experiment is divided into six phases of four periods each. So, in total, there are 24 periods. [In 6-Vote treatments and Exogenous IS Comparison Treatment: The main experiment is divided into 7 phases, where

phase 1 consists of one regular period and one additional period and phases 2 – 7 consist of six sets of 4 periods. So, in total, there are 25 periods.] We will now read the instructions for the main part of today's experiment. [In 3-Vote treatments: We will now read the instructions for the first four periods. Once phase 1 is over you will receive further instructions.] [In 6-Vote treatments and the Exogenous IS Comparison Treatment: We will now read the instructions for the first phase. 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:

34 points = $1

This means each point will exchange for just under 3 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 six phases each consisting of 4 periods (in total, 24 periods).
[In 3-Vote treatments, add here: The following instructions explain the details of phase 1. The details of the subsequent phases will be explained later.]
[In 6-Vote treatments and the Exogenous IS Comparison Treatment, this paragraph reads: The experiment has seven phases, where phase 1 consists of one regular period and one additional period and phases 2 – 7 consist of six sets of 4 periods (in total, 24 periods in phases 2 - 7). The following instructions explain the details of phase 1. The details of the subsequent phases will be explained after phase 1.]

Instructions

In the experiment, each participant is randomly assigned to a **group 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. [In 6-

Vote treatments: Phase 1 consists of one regular period and one additional period. In the regular period, each group member, yourself included, will be given an **endowment of 20 points**, and you will have to make a decision on how to allocate the endowment between two accounts.]

Your decision

You and the four others in your group 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. Only integers between 0 and 20 are allowed for this purpose. The remaining points will automatically be allocated to your 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 it. That is, **for each point you allocate to your 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 others in your group.

Your earnings from the group account equal the **sum** of points allocated to the group account by all 5 group members multiplied by 0.4. **For each point you allocate to the group account you and all others in your group each get 0.4 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 of the others in your group from the group account are equal to 12 points.

Your earnings can be calculated with the following formula:

20 – (points you allocated to the group account) + 0.4 * (sum of points allocated by all group members to the group account)

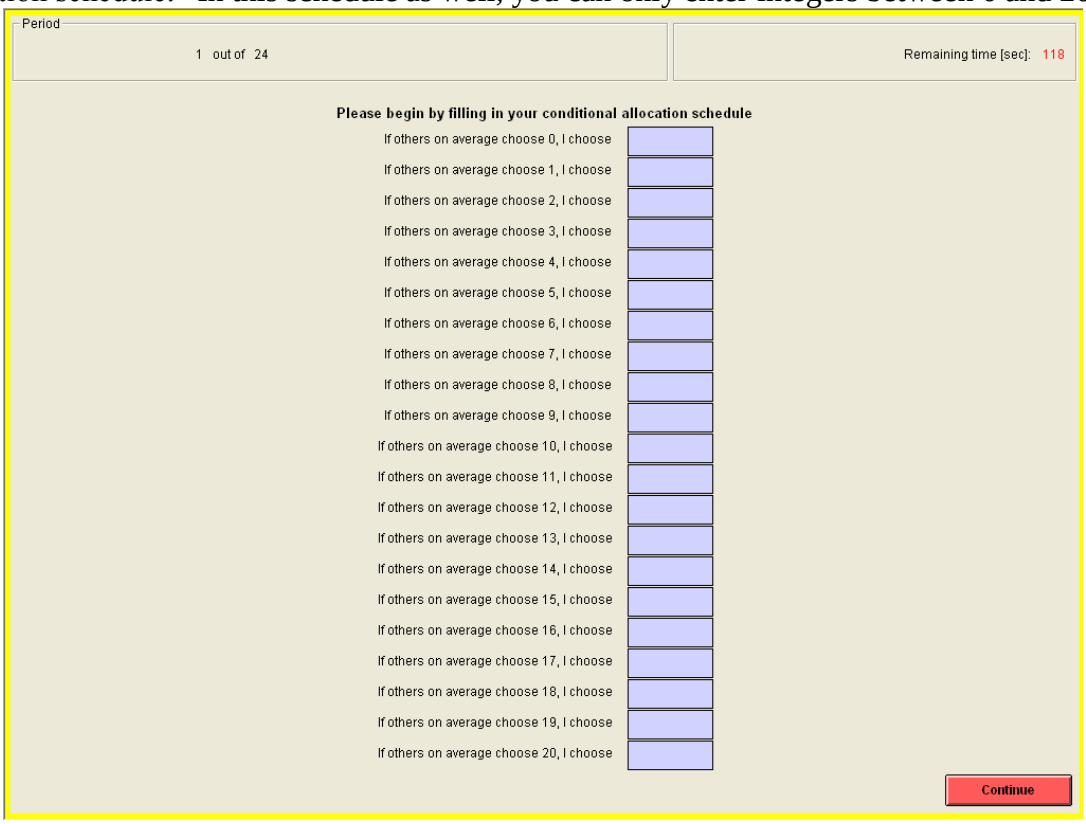
Note that you get 1 point as earnings for each point you allocate to your private account. If you instead allocate 1 extra point to the group account, your earnings from the group account increase by 0.4 * 1 = 0.4 points and your earnings from your private account decrease by 1 point. However, by allocating 1 extra point to the group account, the earnings of each of the other 4 group members also increase by 0.4 points. Therefore, the total group earnings increase by 0.4 * 5 = 2 points. Note that you also obtain earnings from points allocated to the group account by others. You obtain 0.4 * 1 = 0.4 points for each point allocated to the group account by another 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 individuals allocate 0 points each. In this case, the sum of points in the group account is 15 + 20 + 20 + 0 + 0 = 55 points. Each group member gets earnings of 0.4 * 55 = 22 points from the group account.
Your total earnings are: 20 – 15 + (0.4 * 55) = 5 + 22 = 27 points.
The second and third members' earnings are: 20 – 20 + (0.4 * 55) = 0 + 22 = 22 points.
The fourth and fifth members' earnings are: 20 – 0 + (0.4 * 55) = 20 + 22 = 42 points.

An additional decision

There is an additional decision for you to make in this part of the experiment that may also impact your earnings. At the start of the experiment, 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 allocation schedule." In this schedule as well, you can only enter integers between 0 and 20.



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 others in 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 period between period 1 and period 2 in which the payment is determined by one randomly selected group member's conditional allocation schedule and the other four individuals' ordinary first-period allocations.

For example, suppose that you allocate 5 to the group account in period 1 and that the others in your group allocate 0, 10, 15, and 20, respectively. Also suppose that you are the group member who is randomly selected as the one whose conditional allocation schedule is used. Then, the average unconditional allocation decisions by the four others is 11 (rounded from 11.25). Suppose that your conditional allocation schedule says that if others allocate an average of 11, you will allocate 6. Then, your payment in the extra period is (20 - 6) + 0.4*(6+0+10+15+20) = 14 + 20.4 = 34.4. On the other hand, the others in your group earn (20 - 0) + 0.4*(0+6+10+15+20) = 20 + 20.4 = 40.4, (20-10) + 20.4 = 30.4, (20-15) + 20.4 = 25.4 and (20-20) + 20.4 = 20.4, respectively. As you can see, the others' earnings in the extra period are determined by their first period decisions and by your conditional allocation schedule given their first period decisions. Note that each individual in the group has the same likelihood of being the one whose conditional allocation schedule is used. The extra period between periods 1 and 2 is the only period in the experiment in which earnings are affected by one of the schedules that you or another person in your group submits in this additional decision task.

[In BASELINE treatment only: The first phase will be followed by a 40 second break and then by five phases, each separated by a break of the same duration, and each having the same structure, except that the additional decision part is not repeated.]

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 individuals in your group allocate 0 points to the group account.

a) How much do you earn? _____

b) How much do the others each earn? _____

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

a) How much do you earn? _____

b) How much do the others each earn? _____

3. Suppose the others in your group 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? _____

4. In how many periods of this experiment will conditional allocation schedules affect earnings? _____

[When the comprehension questions were reached, the experimenter asked the subjects to try to answer on their own and said 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. When subjects appeared to have finished answering the comprehension questions, the experimenter briefly explained the answers using the front board, then invited subjects to ask questions of clarification regarding the instructions while indicating that questions of experiment motivation and subject strategy would not be entertained, then answered any clarification questions publicly. The same procedure was followed after each further instruction portion and before commencing play, in treatments with multiple instruction segments.

[Following Phase 1, in 3-Vote and 6-Vote treatments, the experimenter began to read aloud additional instructions, of which the subjects were also given printed copies. Instructions on the formal sanction scheme were given before Phase 2 in 3-FI treatments and 6-Vote treatments, and before Phase 3 in 3-IF treatments. Instructions on the informal sanction scheme were given before Phase 3 in 3-FI treatments, before Phase 2 in 3-IF treatments, and immediately after the instructions on the formal sanction scheme and still before Phase 2 in the 6-Vote treatments. Instructions on voting between the informal sanction scheme and the formal sanction scheme were given before Phase 4 in the 3-Vote treatments and as the last part of the instructions before Phase 2 in the 6-Vote treatments. Instructions in the Exogenous IS Comparison Treatment resemble those in 6-Vote treatments except that subjects were informed that one of the two schemes would be assigned to them at the end of the break between each four period phase, with either scheme possibly being assigned for any given phase. Instructions differ between N and C treatments only with respect to mention or not of the fixed administrative cost under the formal sanction scheme. To conserve space, we present here the elements common to all treatments using the formal, then informal ordering, indicating parenthetically specific differences between treatments. Separate versions of each treatment's instructions are available on request]

Instructions for Phase 2 [3-FI treatments]

Instructions for Phase 3 [3-IF treatments]

Instructions for Phases 2 – 6 [6-Vote treatments]

[3-FI instructions begin: The next four periods are like the previous four in that you continue to interact with the same four individuals and in each period you make a decision about allocating

20 points to either a private account or a group account. The earnings consequences of your decisions are also as before.] [6-Vote instructions begin: The next six phases each consist of 4 periods resembling period 1 of Phase 1. You will continue to interact with the same four individuals and in each period you will make a decision about allocating 20 points to either a private account or a group account, with the same immediate payment consequence (you earn 1 point for each point you allocate to your private account, and each group member earns 0.4 points for each point you or another member allocates to the group account). But this time, there is no additional period in which the conditional schedule plays a role, and there is a significant difference in that each period consists of two stages. In the first stage, you make your allocation decision and learn the decisions of the other group members along with your earnings. In the second stage, your earnings from the allocation stage can be reduced. [3-Vote instructions say here: Whether or not your earnings are reduced and the amount of the reduction is determined by a fine rule that your group decides through voting. Your group chooses a rule by voting at the beginning of each period. When a rule is in place, the fines specified are automatically imposed, dependent on your allocation to the group account. Here is how it will work.] [6-Vote and Exogeous IS Comparison Treatment instructions say here: There are two possible schemes governing the second stage of each period, which will be explained to you in these instructions. At the beginning of each phase, your group {6-Vote: will determine by majority vote; Exogenous IS: will be informed} which of the two schemes will be used during the four periods of that phase. {6-Vote: You can select different schemes in different phases.} {Exogenous IS: There will be a pause lasting 40 seconds between each pair of phases, followed by the information just mentioned. You may be using a different scheme in a phase than was used in the previous one, or the same scheme in several or all phases.} At the end of these six phases (24 periods), the main part of today's experiment will be over.

Your allocation decision in stage 1 of each period is exactly as before, so we will focus now on the two schemes one of which you will choose to have in place for the second stage of each period.

Of the two possible schemes that your group may choose from, one is a scheme in which the group votes on the rules of a fine (which will be referred to on the voting screen as "**Group-determined fines**"); the other is a scheme in which individuals can reduce others' earnings after learning of their allocations (which will be referred to on the voting screen as "**Individual reduction decisions**").

Scheme (1): Group-determined fines In this scheme, earnings from the allocation stage can be reduced by *a fine rule* that your group chooses by voting *at the beginning of each period*. When a rule is in place, the fines specified are automatically imposed when triggered by an allocation decision, as explained presently.

A fine rule consists of two parts. The first part is a decision on whether it is allocations to the **private** account or to the **group** account that are subject to a fine. The second part is a decision on the amount of the **fine per point** allocated to the account in question. Possible fine rates are 0, 0.4, 0.8 and 1.2 points per point allocated.

For each point that is lost by a subject who is fined, the group also incurs a cost of 1/3 point to impose that fine. For example, if an individual is fined a total of 3 points, this costs the group 1 point, with each group member (including the fine recipient) being charged 0.2 points (1/5 of 1

point) as his or her share of that cost. More generally, for each 1 point of fines imposed on any group member, each group member pays (1/3)*(1/5) = one fifteenth of a point as his or her per capita cost of imposing the fine. In the example of an individual fined 3 points, that individual thus loses both the 3 points and his or her per capita share of the cost, 0.2 points, for a total loss of 3.2 points. Notice that since the person fined loses a total of 3.2 points while the other group members pay 0.8 points in the aggregate (i.e., 4x0.2), the ultimate cost ratio is 1:4 (= 0.8:3.2).

[In treatments with administrative cost of formal sanctions and Exogenous IS Comparison treatment, the instructions add here: In addition to the fines dependent on a rule that your group chooses, at the end of a period, a fixed cost of 5 points is also deducted from the earnings of each group member. This can be thought of as the fixed administrative cost of having a fine scheme in operation, a cost that doesn't depend on how frequently or infrequently fines are in fact imposed.]

Fines in the present phase cannot bring an individual's earnings for a period to less than zero. However, the per capita share of the cost of imposing fines is always fully born, even if it brings one's earnings for the period to less than zero.

This means that your earnings for a period can be calculated as follows:

Part 1: Earnings from the allocation stage minus your fine, or 0 if the latter is negative

-- minus --

Part 2: Your part of the cost of administering the fine scheme = your per capita share of (1/3)*total fines imposed = (1/15)*(total fines imposed)[#].

Note that you incur the cost of Part 2 even if it causes your net earnings for the period to be negative.

Restated, your earnings are:

{the greater of **[**20 – (points you allocate to group account) + 0.4 * (sum of points allocated by all group members to group account) – the fine paid by you**]** and 0**}**
- [(1/15)*(total fines imposed)][##]

[in admin. cost treatments and Exogenous IS Comparison treatment, the line followed by marker # is replaced by: Your part of the cost of administering the fine scheme = fixed cost of 5 points + your per capita share of (1/3)*total fines imposed = 5 + (1/15)*(total fines imposed)[#].]

[in admin. cost treatments and Exogenous IS Comparison treatment, the line followed by marker ## is replaced by: [(5 points + (1/15)*(total fines imposed)]]

Your group selects which allocations are subject to fine by majority vote (3 votes or more). The fine rate selected will be the median of the preferred levels entered by individual group members. For example, if individuals enter choices of 0, 0, 0.4, 0.4 and 1.2 as their preferred

fine rates, the group's choice is 0.4. If choices entered are 0, 0, 0, 0.8 and 1.2, the group's choice is 0.

Note that there is effectively no fine if your group chooses a fine rate of 0. Also, if the fine rate is positive, earnings at the end of a period may be unchanged from those at the end of the allocation stage if no member allocates points to the account that is subject to a fine. [In administrative cost treatments, the corresponding statement says "only the 5 point fixed administrative charge may be deducted from each individual's earnings at the end of a period if no member allocates points to the account that is subject to a fine".]

In each period of this phase, your group will first vote on which account (**group** or **private**) will be subject to a fine. You will then see a report regarding which option was chosen, and will vote on the fine rate. You will know both parts of the rule before making your decision on allocating points to your private or group account.

[At this point in 3-FI treatments, subjects answered comprehension questions on their own, answers were reviewed aloud, and Phase 2 play began. Since the questions are essentially the same as those included in the 6-Vote treatment, we defer them to the end of the instructions corresponding to that treatment.]

Instructions for Phase 3 [3-FI treatments]

Instructions for Phase 2 [3-IF treatments]

Continuation of **Instructions for Phases 2 – 6** [6-Vote treatments and Exogenous IS Comparison treatment]

[In 3-FI treatments, instructions for Phase 3 begin: The four periods of Phase 3 are like the previous eight periods in that you continue to be grouped with the same four individuals and each period begins with an allocation phase having the same consequences for your earnings. As in Phase 2, your earnings from the allocation stages of the periods in Phase 3 can be reduced. This time, however, the reductions depend on decisions made by individuals in you group. In the first stage, you make your allocation decision and learn the decisions of the other group members along with your earnings. In the second stage, you have an opportunity to reduce the earnings of others in your group at a cost to your own earnings. Here is how it will work.]

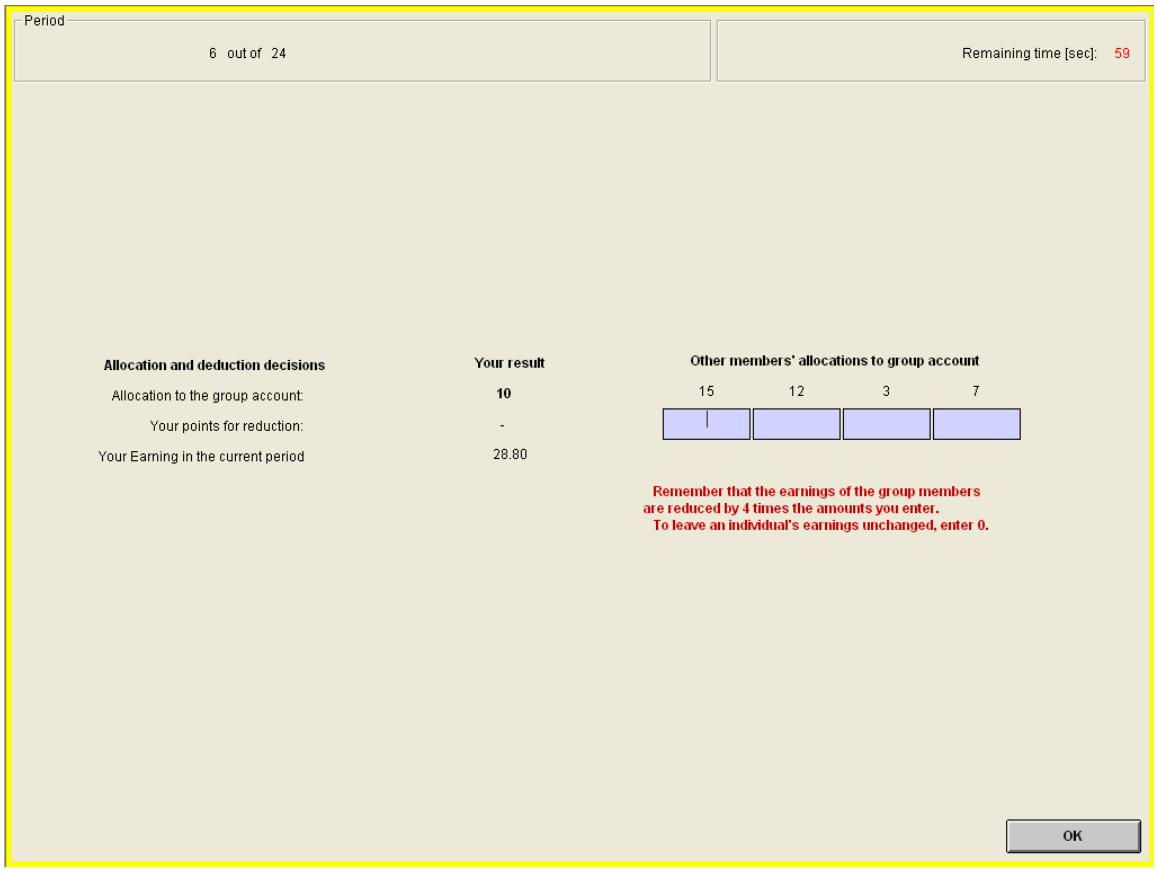
[In 3-IF treatments, instructions for Phase 2 begin: The next four periods are like the previous four in that you continue to interact with the same four individuals and in each period you make a decision about allocating 20 points to either a private account or a group account. The earnings consequences of your decisions are also as before. But this time, there is no additional period in which the conditional schedule plays a role, and there is a significant difference in that each period consists of two stages. In the first stage, you make your allocation decision and learn the decisions of the other group members along with your earnings. In the second stage,

you have an opportunity to reduce the earnings of others in your group at a cost to your own earnings. Here is how it will work.]

[In 6-Vote treatments, the instructions continue with: **Scheme (2): Individual reduction decisions** In this scheme, you have an opportunity in stage 2 of each period to reduce the earnings of others in your group at a cost to your own earnings.]

[In Exogenous IS Comparison treatment, the instructions continue with: **Scheme (2): Individual reduction**]

[In treatments except the Exogenous IS Comparison treatment, after the first stage of each period, you will be shown the amount allocated to the group account by each of the others in your group, **in a random order**, and in a box below that information you will be asked to enter a whole number of points (if any) that you wish to use to reduce the earnings of the individual who made that allocation decision (see below).] [In Exogenous IS comparison treatment: In this scheme, you have an opportunity in stage 2 of each period to reduce the earnings of others in your group at a cost to your own earnings. After you and others in your group make an allocation decision, you will see your earnings in the allocation stage and the amount allocated to the group account by each of the others in your group in a random order. Then, in boxes below the information on others' allocations you will be asked to enter the whole number of points (if any) that you wish to use to reduce the earnings of each individual (see below).] Each point you allocate to reducing another's earnings **reduces your own earnings by 1 point** and **reduces that individual's earnings by 4 points**. Your own earnings can be reduced in the same way by the decisions of others in your group. You are free to leave any or all others' earnings unchanged by entering 0's in the relevant boxes.



Note: Numbers shown are for illustration only.

Earnings Reductions directed at you in the present phase (Phase 2) cannot bring your earnings for the period to less than zero. However, the cost of giving reductions to others is always fully born even if it makes your period earnings negative. (If you lose points in a period, they are deducted from those you accumulate in other periods.) Thus, earnings in each period of this phase can be calculated as follows:

Part 1: Earnings from the allocation stage minus reductions by others in your group, or 0 if the latter is negative

-- minus --

Part 2: Points you use to reduce others' earnings

Note that you incur the cost in Part 2 even if it causes your net earnings for the period to be negative.

Restated, your earnings are:

{the greater of [20 – (points you allocate to group account) + 0.4*(sum of points allocated by all in group to group account) –

4*(sum of reduction points directed at you by others in your group)**]** and 0**}**
- points you use to reduce others' earnings.

For example, suppose that you use 0 points to reduce the earnings of the first and second group members whose allocations appear on the screen, you use 1 point to reduce the earnings of the third, and you use 2 points to reduce the earnings of the fourth. Suppose further that these individuals use 0, 1, 0 and 3 points to reduce your earnings. Then the third and fourth individuals' earnings for the period will be reduced by 4 and by 8 points, respectively, in addition to any reductions due to the decisions of others, although these reductions cannot bring their earnings below zero. Your own earnings for the period will be reduced by 3 points, your cost to impose reductions on others, plus (1x4)+(3x4)=16 points, the reductions imposed on your earnings by others. At the end of the reduction stage, you will learn that others decided to reduce your earnings by a total of 16 points although your actual earnings reduction will be less if your allocation stage earnings are less than 16, but you will not be told which individuals reduced your earnings or by how much any given individual reduced your earnings. Others will also not know who in particular reduced their earnings by how much.

In addition to the fact that earnings from the allocation stage and reductions received cannot go below zero, the earnings reduction process is subject to two limits. First, your reduction points must be an integer. Second, you cannot assign more than 10 reduction points to any one individual in your group.

Remember that if no reductions are imposed (the reduction boxes are filled in with 0's), earnings after the reduction stage are the same as those before it.

[In 3-Vote treatments, there were now a separate set of comprehension questions concerning the operation of the informal sanctions scheme. Since the questions are essentially the same as those included in the 6-Vote treatment, we defer them to the end of the instructions corresponding to that treatment.]

[The following instructions were read after Phase 3 in all 3-Vote treatments:**]**

"We've just completed Phase 3. There is one final set of instructions which cover phases 4, 5 and 6. These will now be distributed and I ask you to read along with me as before."

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

Instructions for Phases 4, 5 and 6 [3-Vote treatments]

The next three phases of the experiment, which will also be the last phases of the main portion of the experiment, will resemble either Phase 2 or Phase 3, depending on which of the two schemes your group chooses to follow in each phase. You will remain in a group with the same four others and will make four allocation decisions in a given phase. At the beginning of each phase, you will vote on whether to use the scheme in which the group votes on the rules of a fine

(which will be referred to on the voting screen as "Group-determined fines") or the scheme in which individuals can reduce others' earnings after learning of their allocations (which will be referred to on the voting screen as "Individual reduction decisions"). Whichever scheme gets the most votes will be in effect for four periods of allocation decisions. You can select different schemes in different phases (4 periods = a phase).

The way to calculate your earnings is exactly the same as in Phases 2 or 3, depending on which scheme your group chooses.

[At this point, there were a set of comprehension questions concerning the voting process, which subjects were asked to answer on their own, after which the answers were reviewed and subjects were invited to ask other questions.]

(Conclusion, 6-Vote Treatments Instructions)

[In 6-Vote treatments, the instructions before Phase 2 were concluded with the following:]

(3) Summary of phases 2 – 7
The following is a summary of phases 2 – 7.

The 1st decision: At the beginning of the first period in every 4 period phase, you will vote on two schemes:

"Group-determined fines" versus "Individual reduction decisions"

Whichever scheme gets the most votes (≥ 3 votes) will be in effect for four periods.
[In Exogenous IS Comparison treatment: At the beginning of the first period in every 4 period phase, you will be informed which of two schemes, "Group-determined fines" or "Individual reduction decisions," will be in effect in your group in that phase. (There will be a pause lasting 40 seconds in between each pair of phases, and the announcement will come at the end of that pause.) You may be using a different scheme in a phase than was used in the previous one, or the same scheme in several or all phases. We cannot tell you on what basis the scheme you are to use will be decided, but we can assure you that which scheme you will use in a given phase is unaffected by your own and your group's behaviors during the previous phase or phases.]

(i) When Group-determined fines is chosen
[In Exogenous IS Comparison treatment: (i) When the Group-determined fines scheme is in effect]

In each period,
first, you will vote on whether it is allocations to the private account or to the group account that are subject to a fine.
Second, you will vote on the amount of the fine per point allocated to the account in question.
Third, under a chosen fine rule, you will make your decision on allocating points to your private or group account, and see earnings consequences along with fines and costs as well as the amount allocated to the group account by each of the others in your group in a random order. Your group will vote on which allocation is subject to a fine and on the choice of fine rate in each of the four periods of each phase in which this scheme is used.

(ii) When Individual reduction decision is chosen
[In Exogenous IS Comparison treatment: (ii) When Individual reduction decision is in effect]
In each period,

first, you will make your decision on allocating points to your private or group account and see your earnings consequences along with the amount allocated to the group account by each of the others in your group in a random order.

Second, you will make a decision about whether to reduce the earnings of others or not and by what amount you reduce them if so. Each point you spend on reducing another's earnings reduces that person's earnings by four points.

Under both schemes, the earnings in a period due to the allocation stage and to any fines or reductions received cannot fall below zero. However, your share of the group cost of imposing fines, in Scheme (1), and your cost to reduce others' earnings, in Scheme (2), are born by you even if they cause your earnings in a given period to fall below zero, with the deduction coming from your accumulated earnings from other periods.

You will vote 6 times in total on the scheme to be used by your group—once for each of phases 2 – 7. [Instructions in the Exogenous IS Comparison treatment do not have this sentence.]

[The following are the comprehension questions asked in the 6-Vote treatment instructions for Phases 2 – 7. Most elements were also included in the sets of comprehension questions at the end of the separate instruction periods in the 3-Vote treatments.]

Comprehension questions

Please answer the 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. About voting between the two schemes:

a) How many periods are left in the main portion of the experiment? _____

b) How many times do you have the opportunity to vote on which scheme is used?

_____

[In the Exogenous IS Comparison treatment: b) How many times do you receive information about which scheme is going to be used for the next four periods?]

c) If your group selects the scheme of group-determined fines in Phase 3 (that means, periods 10 – 13), can it select a different scheme in Phase 4 (that means, in periods 14 – 17)?

_____

[In the Exogenous IS Comparison treatment: c) If your group operates under the scheme of group-determined fines in Phase 3 (that means, periods 10 – 13), can it end up operating under a different scheme in Phase 4 (that means, in periods 14 – 17)?]

2. Suppose that the scheme of group-determined fines is in place.

a) What is the fixed charge each period for operating the fine scheme? _____
(Remember that this charge is deducted from earnings at the end of the period, so you still have 20 points to allocate to your group and private accounts.)
[question a) is only for **C** treatments]

b) Suppose the votes in your group are :
Step 1: Group, Private, Group, Private, Group

Which allocations are subject to a fine? Allocations to the _____ account

c) Suppose the votes in your group are:
Step 2: 0.4, 1.2, 0.8, 0.4, 0.8

What is the fine per point in your group? _____

d) Suppose that your group votes to fine allocations to the private accounts at a rate of 1.2 points per point allocated, and suppose you allocate 15 points to the group account. How many points will you lose in the form of a fine*? _____ points
* Note: do not include your share of the cost of imposing this fine in your answer.

e) Suppose that the fine scheme of c) is in place and that a group member allocates 20 points to the private account.
i) How much will that individual be fined? _____points.
ii) What will be your share of the cost of imposing that fine? _____ points

3. Suppose that the scheme of individual reduction decisions is in place.

a) How much does it cost you to reduce the earnings of another group member by 8 points? _____ points

b) Suppose that an individual earns 10 points from the allocation stage, spends 2 points on reducing others' earnings, and incurs no earnings reductions from others. What are the individual's earnings for this period? _____ points

c) Suppose that an individual earns 14 points from the allocation stage, spends 1 point on reducing others' earnings, and that others spend a total of 4 points to reduce her earnings. What are the individual's earnings for this period?

_____

[In both in the **6-N** and **6-C** treatments, then, experimenter said: "If you have any questions about phases 2 – 7, please raise your hand. If not, we'll begin Phase 2 now."]

[In 3-Vote treatments, then, experimenter said: "If you have any questions about phases 4 – 6, please raise your hand. If not, we'll begin Phases 4 - 6 now."]

A.2. Intelligence test

[After Phase 6 (7) of the main part of experiments in the BASELINE and 3-Vote treatments (6-Vote treatment) and the Exogenous IS Comparison treatment, the following instructions were read:]

"We will now hand out and read the instructions for the second part of today's experiments. As before, you are not allowed to communicate with other participants during this portion of the experiment."

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

Instructions

In this experiment you will have to solve 15 tasks in which you can earn points (34points = $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.

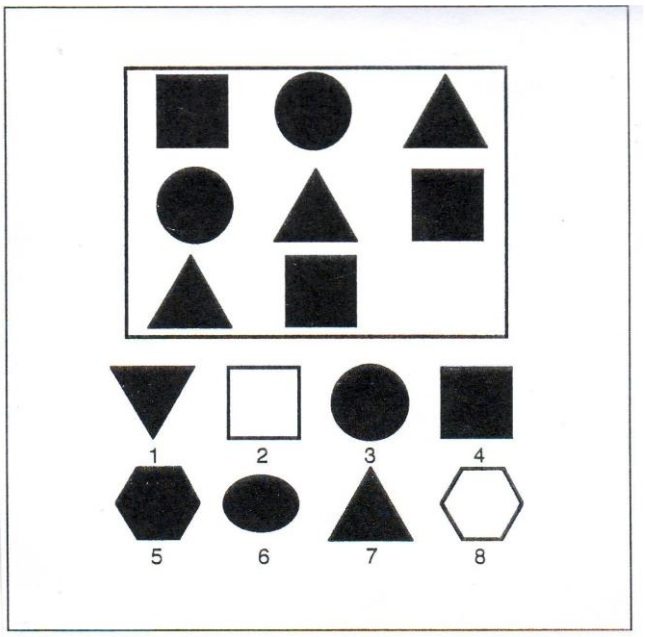
For each task you can choose between 8 possible symbols. Once you have located the symbol you think should be the next in the series, you indicate the number on your screen and continue to the next task. Once an answer is submitted you cannot go back and change your answer. All questions must be answered. If you fail to answer a question and confirm your answer within 40 seconds, this question will be counted as a wrong answer. You will have 40 seconds 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.



[When there was no question, experiment teams started to hand out the questions for the test. Then, the experimenter said: "Please turn over your questionnaire and begin."]

A.3. Political Questionnaire, Exit and Open-ended questions

[After the intelligence test the following instructions were read:]

This is the final task for today. Please listen to the instructions before beginning to answer the questions on your computer screen. 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 written on the left side of the screen; 10 means you agree completely with the statement on the right side of the screen; and if your views fall somewhere in between, you can choose any number in between, but, you can only choose integers between 1 and 10. There are 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 10 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, nationality 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. Any questions? Please begin.

[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.

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 — Competition is harmful. It brings out the worst in people

1 2 3 4 5 6 7 8 9 10

In the long run, hard work usually brings a better life — Hard work doesn't generally brings success – it's more a matter of luck and connections

1 2 3 4 5 6 7 8 9 10

People can only get rich at the expense of others — Wealth can grow so there's enough for everyone

1 2 3 4 5 6 7 8 9 10

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

Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair? Please show your response in the spectrum between 0 and 10, where 1 means that "people would try to take advantage of you," and 10 means that "people would try to be fair"

People would try to take advantage of you									People would try to be fair
1	2	3	4	5	6	7	8	9	10

How important is it for you to live in a country that is governed democratically? On this scale where 1 means it is "not at all important" and 10 means "absolutely important" what position would you choose?

Not at all important									Absolutely important
1	2	3	4	5	6	7	8	9	10

For the following organizations, how much confidence do you have in them: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all?

1) The police

A great deal	Quite a lot	Not very much	None at all
1	2	3	4

2) The courts

A great deal	Quite a lot	Not very much	None at all
1	2	3	4

3) The government

A great deal	Quite a lot	Not very much	None at all
1	2	3	4

4) Charitable or humanitarian organizations

A great deal	Quite a lot	Not very much	None at all
1	2	3	4

Exit Question

1) Please indicate your concentration or concentrations.

2) How many semesters of college or university have you completed?

3) How many economics courses have you taken?

4) What is your nationality?

5) Gender

Open-ended Questions in the BASELINE treatment

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?

Open-ended Questions in the 3-Vote treatment

1) Please explain briefly what your strategy was in deciding how much to allocate to your group account.

2) Please explain briefly your votes between the scheme of group-determined fines and the scheme of individual reduction decisions. Did your voting choices change much over time, and if so how and why?

3) When the scheme of group-determined fines was in place, on what basis did you decide how to vote regarding (a) whether allocations to the private or to the group account should be fined? (b) what the per unit fine rate should be?

4) When the scheme of individual reduction decisions was in place, how did you decide whose earnings, if any, to reduce?

5) Were the instructions clear enough?

Open-ended Questions in the 6-Vote treatment

1) Please explain briefly what your strategy was in deciding how much to allocate to your group account.

2) Please explain briefly your votes between the scheme of group-determined fines and the scheme of individual reduction decisions. Did your voting choices change much over time, and if so how and why?

3) When your group chose the group-determined fines, what kinds of strategies did you choose in deciding what to vote for in the fine scheme? (If your group never chose this scheme, please leave this question blank.)

4) When your group chose the individual reduction scheme, how did you decide whose earnings, if any, to reduce? (If your group never chose this scheme, please leave this question blank.)

5) Were the instructions clear enough?

Open-ended Questions in the Exogenous IS Comparison treatment

1) Please explain briefly your strategy in deciding how much to allocate to your group account.

2) When the individual reduction scheme was in place, how did you decide whose earnings, if any, to reduce? (If this scheme was never in place, please leave this question blank.)

3) When you received reductions from the other individuals, how did you make allocation and reduction decisions in the next period? (If the individual reduction scheme was never in place, please leave this question blank.)

4) When the group-determined fines were in place, what were your strategies in deciding what to vote for in the fine scheme? (If this scheme was never in place, please leave this question blank.)

5) Were the instructions clear enough?

Appendix B: Additional Tables and Figures

***Table B.1*:** Results of voting choice (account to be fined, fine rate) under formal scheme

(a) 3-(FI)-N treatment

		Group 9			Group 10			Group 11			Group 12		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
2	5	--------	Private	1.2	--------	Private	1.2	--------	Private	1.2	--------	Private	0.8
	6		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	7		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	8		Private	1.2		Private	1.2		Private	0.8		Private	1.2
4	13	Formal	Private	1.2	Formal	Private	1.2	Informal	----	----	Formal	Private	1.2
	14		Private	1.2		Private	1.2		----	----		Private	1.2
	15		Private	1.2		Private	1.2		----	----		Private	1.2
	16		Private	1.2		Private	1.2		----	----		Private	1.2
5	17	Formal	Private	1.2	Formal	Private	1.2	Informal	----	----	Formal	Private	1.2
	18		Private	0.0		Private	1.2		----	----		Private	1.2
	19		Private	1.2		Private	1.2		----	----		Private	1.2
	20		Private	1.2		Private	1.2		----	----		Private	1.2
6	21	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	22		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	23		Private	0.0		Private	1.2		Private	1.2		Private	0.8
	24		Private	1.2		Private	1.2		Private	1.2		Private	1.2

		Group 13			Group 14			Group 15		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
2	5	--------	Private	1.2	--------	Private	0.4	--------	Private	1.2
	6		Private	1.2		Private	1.2		Private	1.2
	7		Private	1.2		Private	1.2		Private	1.2
	8		Private	1.2		Private	1.2		Private	1.2
4	13	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	14		Private	1.2		Private	1.2		Private	1.2
	15		Private	1.2		Private	1.2		Private	1.2
	16		Private	1.2		Private	1.2		Private	1.2
5	17	Formal	Private	1.2	Informal	----	----	Formal	Private	1.2
	18		Private	1.2		----	----		Private	1.2
	19		Private	1.2		----	----		Private	1.2
	20		Private	1.2		----	----		Private	1.2
6	21	Informal	----	----	Informal	----	----	Formal	Private	1.2
	22		----	----		----	----		Private	1.2
	23		----	----		----	----		Private	1.2
	24		----	----		----	----		Private	1.2

(b) 3-(IF)-N treatment

		Group 16			Group 17			Group 18			Group 19		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
3	9	--------	Private	0.4	--------	Private	1.2	--------	Private	0.8	--------	Private	1.2
	10		Private	0.4		Private	1.2		Private	0.8		Private	1.2
	11		Private	0.8		Private	1.2		Private	1.2		Private	1.2
	12		Public	0.0		Private	1.2		Private	1.2		Private	1.2
4	13	Formal	Public	0.0	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	14		Public	0.0		Private	1.2		Private	1.2		Private	1.2
	15		Public	0.0		Private	1.2		Private	1.2		Private	1.2
	16		Private	0.4		Private	1.2		Private	1.2		Private	1.2
5	17	Formal	Public	0.0	Formal	Private	1.2	Formal	Private	1.2	Informal	----	----
	18		Public	0.0		Private	1.2		Private	1.2		----	----
	19		Public	0.0		Private	1.2		Private	1.2		----	----
	20		Public	0.0		Private	1.2		Private	1.2		----	----
6	21	Informal	----	----	Formal	Private	1.2	Formal	Private	0.0	Formal	Private	1.2
	22		----	----		Private	1.2		Private	1.2		Private	1.2
	23		----	----		Private	1.2		Private	1.2		Private	1.2
	24		----	----		Private	1.2		Private	1.2		Private	1.2

		Group 20			Group 21			Group 22			Group 23		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
3	9	--------	Private	1.2	--------	Private	1.2	--------	Private	0.8	--------	Private	1.2
	10		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	11		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	12		Private	1.2		Private	1.2		Private	1.2		Private	1.2
4	13	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	14		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	15		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	16		Private	1.2		Private	1.2		Private	1.2		Private	1.2
5	17	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	18		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	19		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	20		Private	1.2		Private	1.2		Private	1.2		Private	1.2
6	21	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	22		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	23		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	24		Private	1.2		Private	1.2		Private	1.2		Private	1.2

(c) 3-(FI)-C treatment

		Group 24			Group 25			Group 26			Group 27		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
2	5	--------	Private	0.8	--------	Private	1.2	--------	Private	0.8	--------	Private	1.2
	6		Private	0.0		Private	1.2		Private	1.2		Private	1.2
	7		Private	0.8		Private	1.2		Private	1.2		Private	1.2
	8		Private	0.8		Private	1.2		Private	1.2		Private	1.2
4	13	Informal	----	----	Informal	----	----	Informal	----	----	Informal	----	----
	14		----	----		----	----		----	----		----	----
	15		----	----		----	----		----	----		----	----
	16		----	----		----	----		----	----		----	----
5	17	Informal	----	----	Informal	----	----	Informal	----	----	Informal	----	----
	18		----	----		----	----		----	----		----	----
	19		----	----		----	----		----	----		----	----
	20		----	----		----	----		----	----		----	----
6	21	Formal	Private	0.0	Informal	----	----	Informal	----	----	Informal	----	----
	22		Private	0.8		----	----		----	----		----	----
	23		Private	0.8		----	----		----	----		----	----
	24		Private	0.4		----	----		----	----		----	----

		Group 28			Group 29			Group 30			Group 31		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
2	5	--------	Private	1.2	--------	Private	1.2	--------	Private	1.2	--------	Private	0.8
	6		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	7		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	8		Private	1.2		Private	1.2		Private	1.2		Private	1.2
4	13	Formal	Private	1.2	Informal	----	----	Informal	----	----	Formal	Private	1.2
	14		Private	1.2		----	----		----	----		Private	1.2
	15		Private	1.2		----	----		----	----		Private	1.2
	16		Private	1.2		----	----		----	----		Private	1.2
5	17	Formal	Private	1.2	Informal	----	----	Informal	----	----	Informal	----	----
	18		Private	1.2		----	----		----	----		----	----
	19		Private	1.2		----	----		----	----		----	----
	20		Private	1.2		----	----		----	----		----	----
6	21	Formal	Private	1.2	Informal	----	----	Informal	----	----	Informal	----	----
	22		Private	1.2		----	----		----	----		----	----
	23		Private	1.2		----	----		----	----		----	----
	24		Private	1.2		----	----		----	----		----	----

(d) 3-(IF)-C treatment

		Group 32			Group 33			Group 34			Group 35		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
3	9	--------	Private	0.4	--------	Private	0.4	--------	Private	0.8	--------	Private	1.2
	10		Private	0.4		Private	0.4		Private	0.8		Private	1.2
	11		Private	0.4		Private	0.4		Private	0.8		Private	1.2
	12		Private	1.2		Private	0.8		Private	0.8		Private	1.2
4	13	Informal	----	----	Formal	Private	0.8	Formal	Private	1.2	Informal	----	----
	14		----	----		Private	0.8		Private	1.2		----	----
	15		----	----		Private	0.8		Private	1.2		----	----
	16		----	----		Private	0.8		Private	1.2		----	----
5	17	Informal	----	----	Informal	----	----	Informal	----	----	Informal	----	----
	18		----	----		----	----		----	----		----	----
	19		----	----		----	----		----	----		----	----
	20		----	----		----	----		----	----		----	----
6	21	Informal	----	----	Informal	----	----	Informal	----	----	Informal	----	----
	22		----	----		----	----		----	----		----	----
	23		----	----		----	----		----	----		----	----
	24		----	----		----	----		----	----		----	----

		Group 36			Group 37			Group 38			Group 39		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
3	9	--------	Private	0.8	--------	Private	1.2	--------	Private	0.0	--------	Private	0.8
	10		Private	0.8		Private	1.2		Private	1.2		Private	0.4
	11		Private	1.2		Private	1.2		Private	1.2		Private	1.2
	12		Private	1.2		Private	1.2		Private	1.2		Private	0.0
4	13	Informal	----	----	Informal	----	----	Informal	----	----	Formal	Private	0.8
	14		----	----		----	----		----	----		Private	0.4
	15		----	----		----	----		----	----		Private	1.2
	16		----	----		----	----		----	----		Private	1.2
5	17	Informal	----	----	Informal	----	----	Informal	----	----	Formal	Private	1.2
	18		----	----		----	----		----	----		Private	0.8
	19		----	----		----	----		----	----		Private	1.2
	20		----	----		----	----		----	----		Private	1.2
6	21	Informal	----	----	Informal	----	----	Informal	----	----	Formal	Private	1.2
	22		----	----		----	----		----	----		Private	1.2
	23		----	----		----	----		----	----		Private	1.2
	24		----	----		----	----		----	----		Private	0.0

(e) 6-N treatment

		Group 40			Group 41			Group 42		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
2	2	Formal	Private	0.0	Formal	Private	0.8	Formal	Private	0.0
	3		Private	0.0		Private	1.2		Private	0.0
	4		Private	0.4		Private	1.2		Private	0.4
	5		Private	1.2		Private	1.2		Private	0.0
3	6	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	7		Private	1.2		Private	1.2		Private	1.2
	8		Private	1.2		Private	1.2		Private	1.2
	9		Private	1.2		Private	1.2		Private	1.2
4	10	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	11		Private	1.2		Private	1.2		Private	1.2
	12		Private	1.2		Private	1.2		Private	1.2
	13		Private	1.2		Private	1.2		Private	1.2
5	14	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	15		Private	1.2		Private	1.2		Private	1.2
	16		Private	1.2		Private	1.2		Private	1.2
	17		Private	1.2		Private	1.2		Private	1.2
6	18	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	19		Private	1.2		Private	1.2		Private	1.2
	20		Private	1.2		Private	1.2		Private	1.2
	21		Private	1.2		Private	1.2		Private	1.2
7	22	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	23		Private	1.2		Private	1.2		Private	1.2
	24		Private	1.2		Private	1.2		Private	1.2
	25		Private	1.2		Private	1.2		Private	1.2

		Group 43			Group 44			Group 45			Group 46		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
2	2	Formal	Private	1.2	Formal	Private	0.4	Formal	Private	1.2	Formal	Private	0.0
	3		Private	0.0		Private	0.4		Private	1.2		Private	0.0
	4		Private	1.2		Private	0.8		Private	1.2		Private	0.0
	5		Private	1.2		Private	1.2		Private	1.2		Private	0.0
3	6	Formal	Private	1.2	Formal	Private	1.2	Formal	Public	0.0	Informal	----	----
	7		Private	1.2		Private	1.2		Private	1.2		----	----
	8		Private	1.2		Private	1.2		Private	1.2		----	----
	9		Private	1.2		Private	1.2		Private	1.2		----	----
4	10	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2	Informal	----	----
	11		Private	1.2		Private	1.2		Private	1.2		----	----
	12		Private	1.2		Private	1.2		Private	1.2		----	----
	13		Private	1.2		Private	1.2		Private	1.2		----	----
5	14	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2	Informal	----	----
	15		Private	1.2		Private	1.2		Private	1.2		----	----
	16		Private	1.2		Private	1.2		Private	1.2		----	----
	17		Private	1.2		Private	1.2		Private	1.2		----	----
6	18	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2	Informal	----	----
	19		Private	1.2		Private	1.2		Private	1.2		----	----
	20		Private	1.2		Private	1.2		Private	1.2		----	----
	21		Private	1.2		Private	1.2		Private	1.2		----	----
7	22	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2	Informal	----	----
	23		Private	1.2		Private	1.2		Private	1.2		----	----
	24		Private	1.2		Private	1.2		Private	1.2		----	----
	25		Private	1.2		Private	1.2		Private	1.2		----	----

(f) 6-C treatment

		Group 47			Group 48			Group 49			Group 50		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
2	2	Informal	----	----	Informal	----	----	Informal	----	----	Informal	----	----
	3		----	----		----	----		----	----		----	----
	4		----	----		----	----		----	----		----	----
	5		----	----		----	----		----	----		----	----
3	6	Informal	----	----	Informal	----	----	Informal	----	----	Formal	Private	0.4
	7		----	----		----	----		----	----		Private	0.4
	8		----	----		----	----		----	----		Private	0.8
	9		----	----		----	----		----	----		Private	1.2
4	10	Informal	----	----	Informal	----	----	Informal	----	----	Informal	----	----
	11		----	----		----	----		----	----		----	----
	12		----	----		----	----		----	----		----	----
	13		----	----		----	----		----	----		----	----
5	14	Informal	----	----	Informal	----	----	Informal	----	----	Informal	----	----
	15		----	----		----	----		----	----		----	----
	16		----	----		----	----		----	----		----	----
	17		----	----		----	----		----	----		----	----
6	18	Informal	----	----	Informal	----	----	Informal	----	----	Informal	----	----
	19		----	----		----	----		----	----		----	----
	20		----	----		----	----		----	----		----	----
	21		----	----		----	----		----	----		----	----
7	22	Informal	----	----	Informal	----	----	Informal	----	----	Informal	----	----
	23		----	----		----	----		----	----		----	----
	24		----	----		----	----		----	----		----	----
	25		----	----		----	----		----	----		----	----

		Group 51			Group 52			Group 53			Group 54		
Phase	Period	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate	Formal or Informal	Public or Private	fine rate
2	2	Informal	----	----	Informal	----	----	Formal	Private	1.2	Formal	Private	0.4
	3		----	----		----	----		Private	0.8		Private	0.4
	4		----	----		----	----		Private	1.2		Private	0.4
	5		----	----		----	----		Private	1.2		Private	0.4
3	6	Informal	----	----	Formal	Public	0.0	Formal	Private	1.2	Formal	Private	0.4
	7		----	----		Public	0.0		Private	1.2		Private	0.4
	8		----	----		Public	0.0		Private	1.2		Private	0.4
	9		----	----		Private	0.4		Private	1.2		Private	0.4
4	10	Informal	----	----	Informal	----	----	Formal	Private	1.2	Formal	Private	0.4
	11		----	----		----	----		Private	1.2		Private	0.4
	12		----	----		----	----		Private	1.2		Private	0.4
	13		----	----		----	----		Private	1.2		Private	0.4
5	14	Informal	----	----	Formal	Private	0.0	Formal	Private	1.2	Formal	Private	0.4
	15		----	----		Private	0.8		Private	1.2		Private	0.4
	16		----	----		Private	1.2		Private	1.2		Private	0.8
	17		----	----		Private	1.2		Private	1.2		Private	1.2
6	18	Informal	----	----	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	19		----	----		Private	1.2		Private	1.2		Private	1.2
	20		----	----		Private	1.2		Private	1.2		Private	1.2
	21		----	----		Private	1.2		Private	1.2		Private	1.2
7	22	Informal	----	----	Formal	Private	1.2	Formal	Private	1.2	Formal	Private	1.2
	23		----	----		Private	1.2		Private	1.2		Private	1.2
	24		----	----		Private	1.2		Private	1.2		Private	1.2
	25		----	----		Private	1.2		Private	1.2		Private	1.2

***Table B.2*: Analysis of voting behavior**

(a) Percentage of group outcomes and individual votes for formal (vs. informal) sanction scheme[1]

Treatment	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phases 4-6
3(FI)-N	n.a.	n.a.	n.a.	86, 71	71, 63	71, 63	76, 66
3(IF)-N	n.a.	n.a.	n.a.	100, 85	88, 75	88, 78	92, 79
6-N	100, 80	86, 80	86, 80	86, 71	86, 74	86, 74	86, 73
Overall, no admin cost	100, 80	86, 77	86, 80	91, 76	82, 71	82, 72	85, 73
3(FI)-C	n.a.	n.a.	n.a.	25, 33	13, 20	25, 23	21, 25
3(IF)-C	n.a.	n.a.	n.a.	38, 33	13, 23	13, 25	21, 26
6-C	25, 43	50, 48	25, 33	38, 35	38, 38	38, 30	38, 34
Overall, admin Cost	25, 43	50, 48	25, 33	33, 33	17, 27	25, 26	25, 29
Overall	60, 60	67, 61	53, 55	61, 54	50, 48	52, 48	54, 50

(b) Tests of difference in proportions of group outcomes and individual votes for formal sanction scheme, by phase[2]

Treatment	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phases 4-6
3(FI)-N vs. 3(FI)-C	n.a.	n.a.	n.a.	.019, .001	.020, .000	.072, .000	.000, .000
3(IF)-N vs. 3(IF)-C	n.a.	n.a.	n.a.	.007, .000	.003, .000	.012, .000	.000, .000
3(FI)-N vs. 3(IF)-N	n.a.	n.a.	n.a.	.269, .152	.438, .255	.438, .165	.153, .024
3(FI)-C vs. 3(IF)-C	n.a.	n.a.	n.a.	.590, 1.00	1.00, 1.00	.522, .592	1.00,.768
Overall, 3-Vote treatment	n.a.	n.a.	n.a.	.000, .000	.000, .000	.000, .000	.000, .000
6-N vs. 6-C	.003, .001	.143, .009	.019, .000	.057, .002	.057, .001	.057, .000	.000, .000
Overall	---	---	---	.002, .000	.000, .000	.002, .000	.000, .000

Notes: The pairs of numbers in each cell of panel (a) indicate the percentage of groups choosing FS (left) and the percentage of individuals voting for FS (right). The remaining votes are for IS. See Table 1 for the absolute number of groups and individuals in the respective treatment. Panel (b) reports *p*-values for two-sided equality of proportion z-tests for difference in proportion of group outcomes and of individual votes for formal sanction scheme. The pairs of numbers in each cell indicate results for group outcome (left) and those for individual votes (right).

(c) Regressions of group voting trends on which contribution should be penalized under FS

	3-N		3-C		6-N	6-C
	Exogenous	Endogenous	Exogenous	Endogenous		
Period = {1, 2, …, 24}	-0.02 (0.020)	-0.00030 (0.00032)	----	----	0.0011 (0.0011)	0.0099 (0.011)
Constant	1.156*** (0.17)	0.96*** (0.0058)	1.000 (----)[#]	1.000 (----)[#]	0.98*** (0.014)	0.82** (0.16)
# of observations	60	152	64	200	148	68
F	0.98	0.90	----	----	1.02	0.77
Prob > F	.3383	.3592	----	----	.3502	.4441
R-squared	.0367	.0117	----	----	.0072	.0466

Notes: Group fixed effects linear regressions. The dependent variable equals 1 if the subject voted to penalize contributions to the private accounts, 0 otherwise. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.
[#] All groups chose to penalize contributions to their private account.

Results: We find no significant trends in the voting outcomes, which almost always favor penalizing contributions to the private accounts.

(d) Regressions of group voting outcomes on the sanction rate under FS when contributions to private accounts are sanctioned

	3-N		3-C		6-N	6-C
	Exogenous	Endogenous	Exogenous	Endogenous		
Period = {1, 2, …, 24}	0.042** (0.018)	-.0059 (0.0043)	0.065** (0.028)	0.000 (0.015)	0.017*** (0.0029)	0.030*** (0.0049)
Constant	0.76*** (0.15)	1.28*** (0.080)	0.42* (0.24)	1.02*** (0.26)	0.86*** (0.043)	0.53*** (0.076)
# of observations	59	145	64	40	147	325
F	5.48	1.93	5.26	0.00	34.36	36.51
Prob > F	.0240	.1676	.0264	1.000	0.000	0.000
R-squared	.0018	.0076	.0454	.0502	.2311	.2779

Notes: Group fixed effects linear regressions. The dependent variables are sanction rates $\in \{0.0, 0.4, 0.8, 1.2\}$. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Results: In the 6-N and 6-C treatments, groups learned to choose higher sanction rates over the periods. In the 3-Vote treatment having gradual learning opportunities, groups learned to choose higher sanction rates over the exogenous periods; and they chose higher sanction rates in the endogenous periods (in phases 4 to phase 6), regardless of periods.

Table B.3: Determinants of voting to penalize contributions to private vs. public account under the formal scheme

	3N				3C				6-N	6-C
	Exogenous		Endogenous		Exogenous		Endogenous			
Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Avg. Conditional Contribution	0.16*	0.20**	0.20**	0.23*	0.047	0.066	0.21	0.096	0.090	-0.011
	(0.082)	(0.093)	(0.092)	(0.12)	(0.084)	(0.094)	(0.19)	(0.22)	(0.080)	(0.15)
IQ	0.22	0.20	0.33*	0.28	0.014	0.018	0.082	-0.15	0.14	0.17
	(0.17)	(0.17)	(0.19)	(0.18)	(0.13)	(0.14)	(0.26)	(0.36)	(0.18)	(0.26)
Gender (Female = 1)	0.14	-0.17	1.99**	1.78*	-0.34	-0.23	0.25	0.11	0.58	-0.90
	(0.72)	(0.72)	(0.99)	(0.98)	(0.71)	(0.75)	(1.31)	(1.68)	(0.77)	(1.10)
General Political Orientation	0.15	0.20	0.15	0.20	-0.50**	-0.49*	0.49	1.03	-0.38	-0.11
	(0.23)	(0.23)	(0.25)	(0.27)	(0.24)	(0.26)	(0.71)	(0.85)	(0.24)	(0.28)
Gave Perverse Punishment	---	-3.19**	---	-3.32**	---	-3.50**	---	-6.95***	---	---
		(1.31)		(1.33)		(1.42)		(2.17)		
Received Perverse Punishment	---	0.50	---	-0.68	---	12.6	---	17.8	---	---
		(1.17)		(1.15)		(1936)		(1376)		
Period = {1, 2, …, 24}	-0.21	-0.21	-0.019	-0.019	-0.066	-0.0063	-0.027	-0.021	0.0079	0.17***
	(0.14)	(0.14)	(0.036)	(0.036)	(0.14)	(0.14)	(0.090)	(0.095)	(0.015)	(0.030)
FI order dummy	---	-0.46	2.85**	1.80*	0.60	0.52	0.98	0.82	---	---
		(0.98)	(1.25)	(1.05)	(0.90)	(0.93)	(1.33)	(1.52)		
Constant	1.75	2.08	-1.32	-0.79	5.48***	4.94**	1.15	0.50	2.49	0.33
	(2.11)	(2.08)	(2.40)	(2.24)	(2.13)	(2.20)	(3.13)	(3.43)	(1.80)	(2.70)
Number of observations	300	300	760	760	320	320	200	200	740	340
Log likelihood	-73.9	-70.4	-119.4	-116.4	-75.3	-69.8	-37.1	-33.9	-118.3	-76.0
Wald chi^2	7.03	9.64	7.06	11.64	5.56	10.31	2.46	15.24	4.43	34.83
Prob > chi^2	.3181	.2693	.3156	.1678	.4741	.2442	.8734	.0547	.4898	.0000

Notes: Random effects probit regressions. The dependent variable equals 1 if the subject voted to penalize contributions to the private accounts, 0 otherwise. FI order dummy equals 1 for subjects in treatments with formal sanction scheme in phase 2 and informal sanction scheme in phase 3. The numbers in the parenthesis are standard deviation. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Table B.4: Determinants of voting on sanction rates, when contributions to the private account were penalized under the FS

	3N				3C				6-N	6-C
	Exogenous		Endogenous		Exogenous		Endogenous			
Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Avg. Conditional Contribution	0.22**	0.24**	0.23*	0.26*	0.014	0.0074	0.14	0.010	0.11	-0.090
	(0.11)	(0.11)	(0.13)	(0.14)	(0.057)	(0.057)	(0.13)	(0.15)	(0.11)	(0.17)
IQ	0.27	0.26	0.53*	0.50	0.069	0.065	0.32*	0.30	0.73***	0.60*
	(0.21)	(0.20)	(0.31)	(0.30)	(0.096)	(0.095)	(0.18)	(0.20)	(0.28)	(0.33)
Gender (Female = 1)	0.012	-0.12	2.41	2.38	0.11	0.19	-0.25	0.54	-0.94	0.47
	(0.99)	(0.99)	(1.52)	(1.55)	(0.51)	(0.51)	(0.96)	(1.03)	(1.13)	(1.23)
General Political Orientation	-0.13	-0.098	-0.73	-0.70	-0.16	-0.15	0.29	0.12	-0.52	0.19
	(0.33)	(0.33)	(0.51)	(0.52)	(0.16)	(0.16)	(0.40)	(0.34)	(0.34)	(0.31)
Gave Perverse Punishment	---	-2.05	---	-5.67	---	-0.62	---	0.11	---	---
		(1.73)		(3.86)		(1.03)		(1.79)		
PervPunRecpt Dummy	---	0.35	---	-2.30	---	1.20	---	3.22**	---	---
		(1.64)		(2.35)		(0.90)		(1.56)		
Period = {2, 3, …, 24}	-0.85**	-0.81**	0.043	0.038	0.092	0.093	-0.066	-0.076	0.052*	0.11**
	(0.34)	(0.34)	(0.059)	(0.059)	(0.11)	(0.11)	(0.063)	(0.066)	(0.030)	(0.044)
FI order dummy	-2.82*	-3.00*	0.61	-0.70	1.53**	1.58**	1.90*	1.55	---	---
	(1.69)	(1.72)	(1.418)	(1.51)	(0.72)	(0.72)	(1.02)	(1.07)		
Previous sanction rate	3.07**	2.72*	-0.73	-0.98	-0081	-0.10	0.20	0.21	0.23***	1.33*
(={0.0, .4, .8, 1.2})	(1.48)	(1.48)	(0.93)	(0.94)	(0.38)	(0.38)	(0.52)	(0.52)	(0.63)	(0.69)
Constant	6.71*	6.84*	2.85	4.36	0.28	0.17	-1.78	-0.95	-2.59	-4.41
	(3.65)	(3.64)	(3.58)	(3.54)	(1.58)	(1.58)	(2.45)	(2.47)	(2.58)	(3.09)
Number of observations	225	225	570	570	240	240	150	150	555	340
Log likelihood	-134.2	-133.4	-219.4	-217.4	-181.6	-180.4	-69.4	-67.6	-262.4	-153.4
Wald chi^2	10.39	10.8	8.12	11.2	6.95	8.90	9.65	8.19	27.84	20.99
Prob > chi^2	.1676	.2899	.3217	.2645	.4344	.4465	.2093	.5155	.0001	.0018

Notes: Random effects Tobit regressions. The dependent variables are sanction rates $\in$ {0, .4, .8, 1.2}. Observations from the second to the fourth periods of the phases where the formal scheme prevailed are used. FI order dummy equals 1 for subjects in treatments having formal sanction scheme in phase 2 and informal sanction scheme in phase 3. Numbers in the parenthesis are standard deviation. See Appendix Figure B.5 for a figure of trends of individual votes on sanction rates. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively. The numbers of left-(right-) censored observations are 40(165) in columns (1) and (2), 106(434) in columns (3) and (4), 50(144) in columns (5) and (6), 35(96) in columns (7) and (8), 98(417) in column (9) and 64(164) in column (10).

Further notes for Sections 4(b) and (c) of paper, voting on formal scheme parameters

(i) For exogenous formal scheme only:

In the 3-Vote treatment, there were 124 periods in which groups voted on the parameters of an exogenous formal sanction scheme (phase 2 or 3), with 620 individual votes on whether to penalize contributions to the private or public account and the same number of individual votes for penalty rate 0.0, 0.4, 0.8 or 1.2 per point assigned to the account selected. Only 1 out of 124 group votes selected to penalize allocations to the public accounts (see Appendix Table B.1). A total of 34 out of the 155 subjects (21.9%) who had four opportunities to vote on the issue voted one or more times to penalize allocations to the public accounts, with 12.6% of individual votes (78 votes) cast being for this inefficient option.

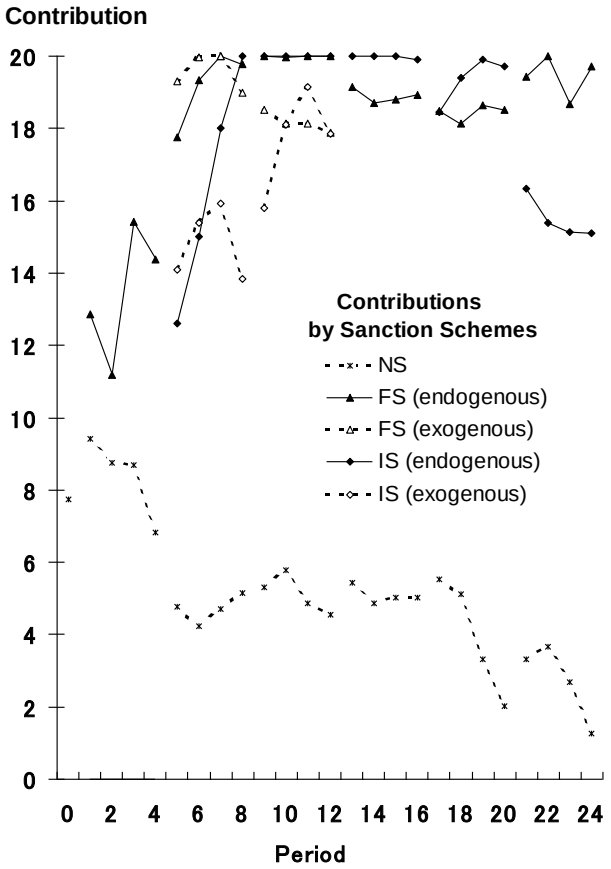
Following the 123 group votes for penalty rates under the rule of penalizing allocations to the private accounts, 27 groups chose penalty rate 1.2 (in total, 91 votes), 12 rate 0.8 (in total 19 votes), so that in 89.4 % of the 123 cases (88.7 % of the 124 group-periods with exogenous formal sanctions) a binding, efficient sanction was put in place. The non-binding 0.4 rate was selected in 10 cases, 0.0 in 3. Of the individual votes under exogenous formal sanctions for contributing to the private accounts (615 votes), 390 (63.4 %) were for 1.2, 60 (9.8 %) for 0.8, 43 (7.0 %) for 0.4 and 122 (19.8 %) for 0.0.

(ii) For endogenous formal scheme only:

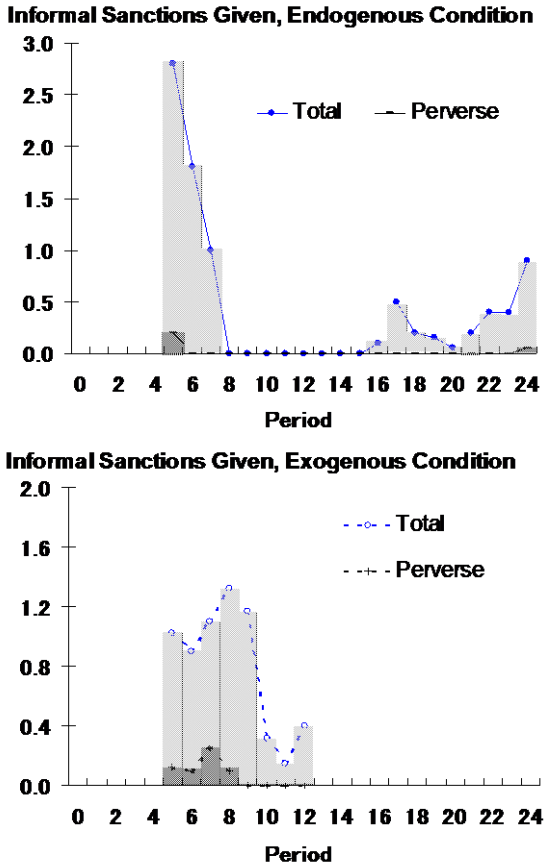
With 102 group votes in favor of formal sanctions, there were 408 periods in which groups voted on the parameters of a formal sanction scheme, with 2,040 individual votes on whether to penalize contributions to the private or public account and the same number of individual votes for penalty rate 0.0, 0.4, 0.8 or 1.2 per point assigned to the account selected. Only 11 out of 408 group votes selected to penalize allocations to the public accounts, and these inefficient choices were made by just 3 out of the 31 groups that chose to use formal sanctions some time in their session (see Appendix Table B.1). A total of 49 out of the 160 subjects (31%) who had at least four opportunities to vote on the issue voted one or more times to penalize allocations to the public accounts, with 13.6% of individual votes (277 votes) cast being for this inefficient option.

Following the 397 group votes for penalty rates under the rule of penalizing allocations to the private accounts, 28 groups chose penalty rate 1.2 (in total, 342 votes), 10 rate 0.8 (in total 15 votes), so that in 89.9 % of the 397 cases (87.5 % of the 408 group-periods with formal sanctions) a binding, efficient sanction was put in place. The non-binding 0.4 rate was selected in 24 cases, 0.0 in 16. Of the individual votes under formal sanctions for contributing to the private accounts (1,985 votes), 1,464 (73.8 %) were for 1.2, 79 (4.0 %) for 0.8, 73 (3.6 %) for 0.4 and 369 (18.6 %) for 0.0.

***Figure B.1*:** The trends of average contribution to the public account and average amount of informal sanctions given in treatments without administrative cost (combined)



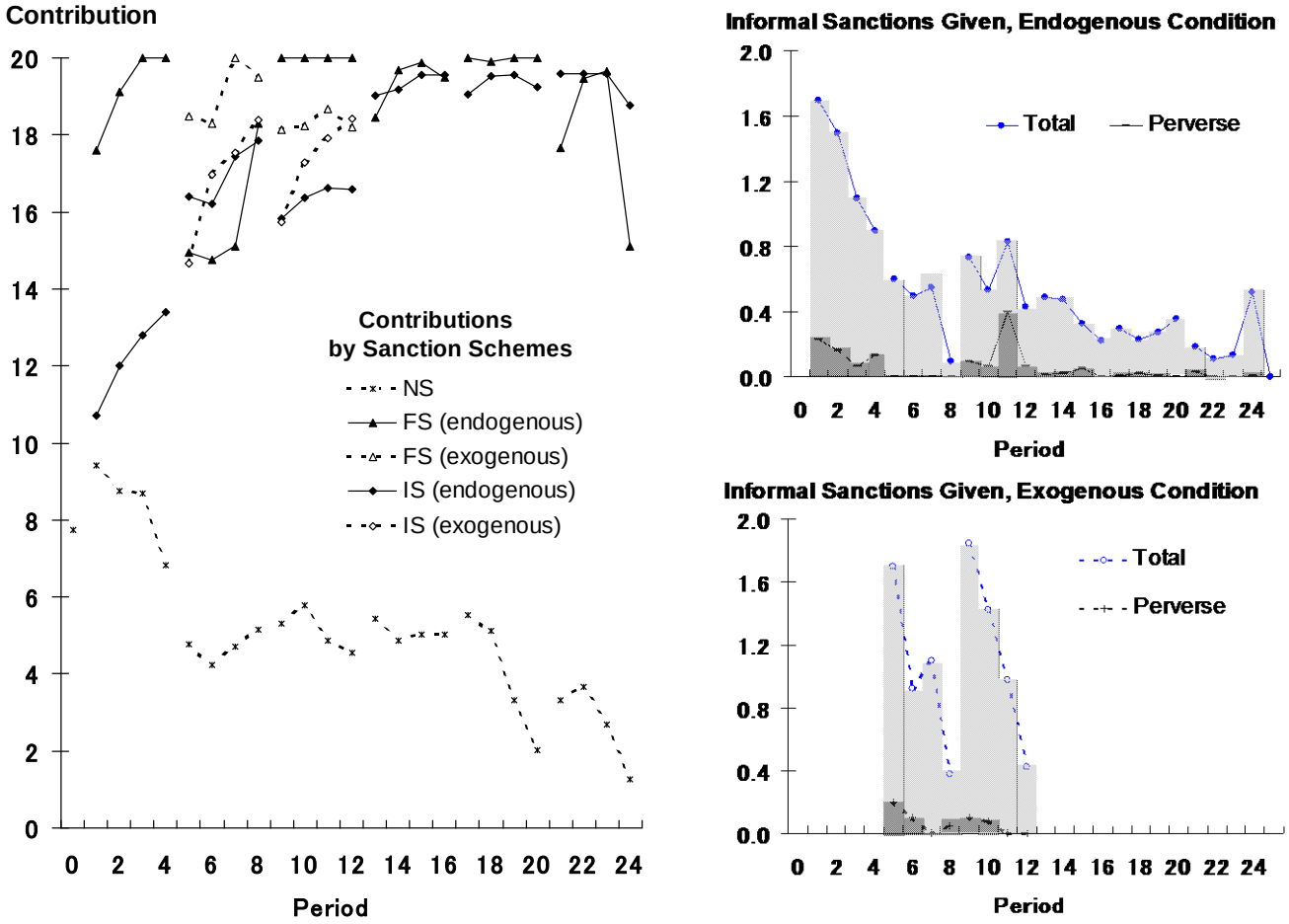
(a) Average Contribution



(b) Average Amounts of Informal Sanctions Given

Notes: NS in (a) is the average of contributions in the BASELINE treatment and those in periods 1 – 4 in the 3-(FI)-N, 3-(IF)-N, 3-(FI)-C and 3-(IF)-C treatments. No group chose informal scheme in phase 1 (periods 1 – 4) in the choice between formal vs. informal schemes.

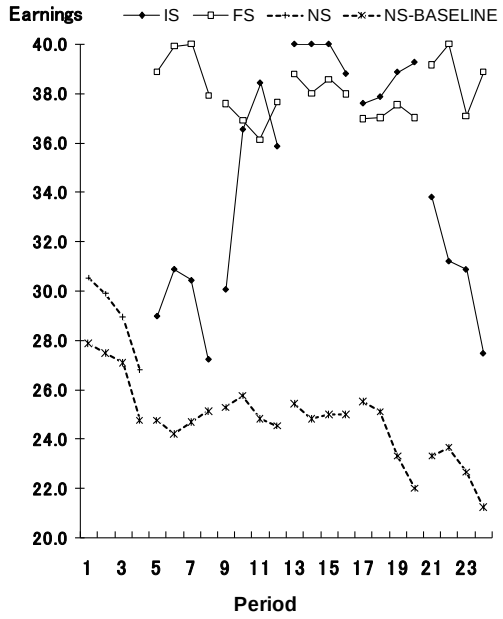
***Figure B.2*:** The trends of average contribution to the public account and average amount of informal sanctions given in treatments with administrative cost (combined)



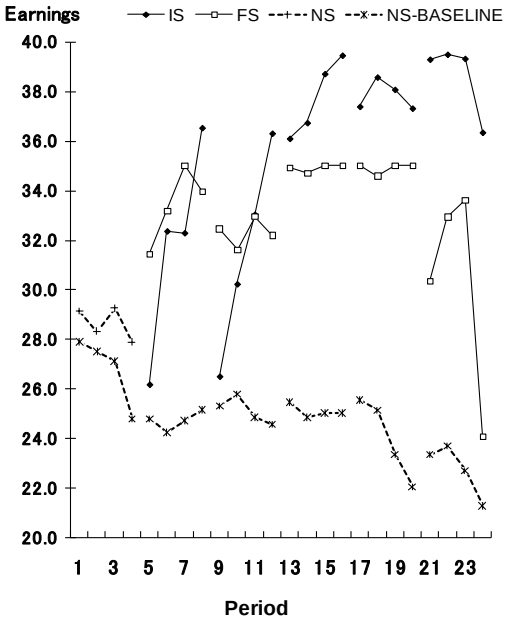
(a) Average Contribution (b) Average Amounts of Informal Sanctions Givens

Note: NS in (a) is the average of contributions in the BASELINE treatment and those in periods 1 – 4 in the 3-(FI)-N, 3-(IF)-N, 3-(FI)-C and 3-(IF)-C treatments.

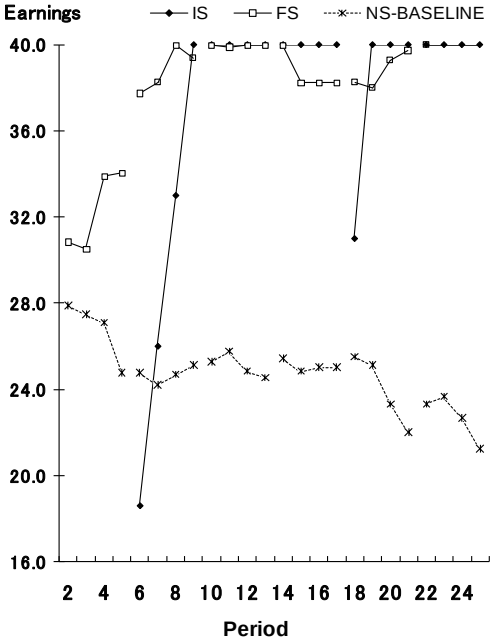
***Figure B.3*:** The trends of average earnings



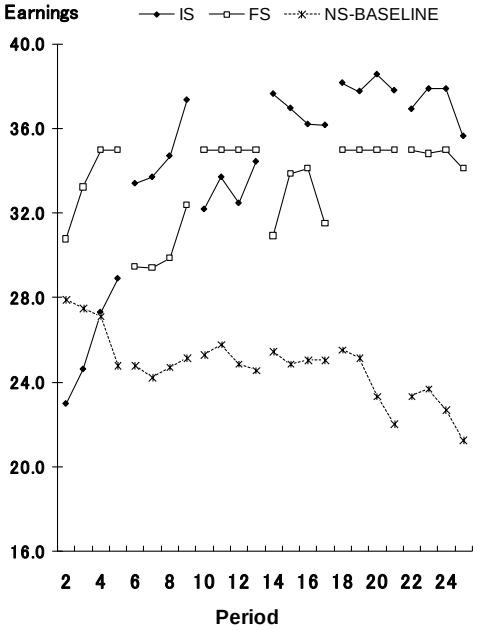
(a) 3-Vote without administrative cost



(b) 3-Vote with administrative cost[1]



(c) 6-N treatment[2]



(d) 6-C treatment

Notes:

1. In the 3-Vote with administrative cost, in phase 6 only 3 groups chose formal scheme, and one of them chose nonbinding sanction rate in periods 21 and 24 (See Appendix Table B.1).
2. In the 6-N treatment, no (1) group chose informal scheme in phase 1 (in phases 2 – 6).

***Table B.5*:** Group-level Phase-by-phase Mann-Whitney Tests of difference of contributions without sanction scheme and with sanction scheme

1) All 3-Vote and 6-Vote treatments vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS (endogenous)	14.73(9)	17.84(10)	19.99(8)	19.03(28)	18.77(23)	19.09(24)
p-value (2-tailed)	[0.0063]	[0.0008]	[0.0005]	[0.0000]	[0.0000]	[0.0000]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	---	4.71(8)	5.12(8)	---	---	---
Average Contribution, FS (exogenous)	---	19.30(15)	18.24(16)	---	---	---
p-value (2-tailed)	---	[0.0001]	[0.0001]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, IS (endogenous)	12.23(6)	16.86 (5)	16.88(7)	19.39(18)	19.35(23)	18.68(22)
p-value (2-tailed)	[0.0488]	[0.0034]	[0.0025]	[0.0000]	[0.0000]	[0.0000]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	---	4.71(8)	5.12(8)	---	---	---
Average Contribution, IS (exogenous)	---	15.85(16)	17.52(15)	---	---	---
p-value (2-tailed)	---	[0.0001]	[0.0001]	---	---	---

2) All 3-Vote and 6-Vote treatments without administrative cost vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS (endogenous)	13.46(7)	19.22(6)	19.99(6)	18.89(20)	18.44(18)	19.46(18)
p-value (2-tailed)	[0.0485]	[0.0017]	[0.0015]	[0.0000]	[0.0001]	[0.0000]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	---	4.71(8)	5.12(8)	---	---	---
Average Contribution, FS (exogenous)	---	19.57(7)	18.17(8)	---	---	---
p-value (2-tailed)	---	[0.0011]	[0.0011]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, IS (endogenous)	--- (0)	16.40(1)	20.00(1)	19.98(2)	19.36(4)	15.5(4)
p-value (2-tailed)	---	[0.1213]	[0.1213]	[0.0367]	[0.0066]	[0.0401]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	---	4.71(8)	5.12(8)	---	---	---
Average Contribution, IS (exogenous)	---	14.81(8)	17.73(7)	---	---	---
p-value (2-tailed)	---	[0.0016]	[0.0012]	---	---	---

3) All 3-Vote and 6-Vote treatments with administrative cost vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS (endogenous)	19.18(2)	15.78(4)	20.00(2)	19.38(8)	19.98(5)	17.98(6)
p-value (2-tailed)	[0.0182]	[0.0270]	[0.0361]	[0.0006]	[0.0030]	[0.0019]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	---	4.71(8)	5.12(8)	---	---	---
Average Contribution, FS (exogenous)	---	19.07(8)	18.31(8)	---	---	---
p-value (2-tailed)	---	[0.0008]	[0.0008]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, IS (endogenous)	12.23(6)	16.98(4)	16.36(6)	19.32(16)	19.34(19)	19.38(18)
p-value (2-tailed)	[0.0488]	[0.0066]	[0.0045]	[0.0001]	[0.0000]	[0.0000]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	---	4.71(8)	5.12(8)	---	---	---
Average Contribution, IS (exogenous)	---	16.89(8)	17.33(8)	---	---	---
p-value (2-tailed)	---	[0.0008]	[0.0008]	---	---	---

4) 3(FI)-N treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2 (FS)	Phase 3 (IS)	Phase 4	Phase 5	Phase 6
Average Contribution, NS	---	4.71(8)	5.12(8)	---	---	---
Average Contribution, FS or IS (exogenous)	---	19.57(7)	17.73(7)	---	---	---
p-value (2-tailed)	---	[0.0011]	[0.0012]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS or IS (endogenous)	---	---	---	19.99(7)	19.66(7)	19.29(7)
p-value (2-tailed)	---	---	---	[0.0008]	[0.0010]	[0.0010]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS (endogenous)	---	---	---	20.00(6)	19.54(5)	19.00(5)
p-value (2-tailed)	---	---	---	[0.0013]	[0.0030]	[0.0032]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, IS (endogenous)	---	---	---	20.00(1)	19.95(2)	20.00(2)
p-value (2-tailed)	---	---	---	[0.1213]	[0.0367]	[0.0361]

5) 3(IF)-N treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2 (IS)	Phase 3 (FS)	Phase 4	Phase 5	Phase 6
Average Contribution, NS	---	4.71(8)	5.12(8)	---	---	---
Average Contribution, FS or IS (exogenous)	---	14.81(8)	18.17(8)	---	---	---
p-value (2-tailed)	---	[0.0016]	[0.0011]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS or IS (endogenous)	---	---	---	17.61(8)	16.93(8)	17.15(8)
p-value (2-tailed)	---	---	---	[0.0056]	[0.0059]	[0.0028]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS (endogenous)	---	---	---	17.61(8)	15.58(7)	19.04(7)
p-value (2-tailed)	---	---	---	[0.0056]	[0.0102]	[0.0010]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, IS (endogenous)	---	---	---	--- (0)	18.55(1)	2.00(1)
p-value (2-tailed)	---	---	---	---	[0.1213]	[1.000]

6) 3(FI)-C treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2 (FS)	Phase 3 (IS)	Phase 4	Phase 5	Phase 6
Average Contribution, NS	---	4.71(8)	5.12(8)	---	---	---
Average Contribution, FS, or IS (exogenous)	---	17.33(8)	19.07(8)	---	---	---
p-value (2-tailed)	---	[0.0008]	[0.0008]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	---	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS or IS (endogenous)	---	---	---	19.87(8)	19.99(8)	19.02(8)
p-value (2-tailed)	---	---	---	[0.0006]	[0.0005]	[0.0006]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS (endogenous)	---	---	---	20.00(2)	20.00(1)	16.58(2)
p-value (2-tailed)	---	---	---	[0.0361]	[0.1213]	[0.0367]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, IS (endogenous)	---	---	---	19.83(6)	19.99(7)	19.83(6)
p-value (2-tailed)	---	---	---	[0.0019]	[0.0008]	[0.0015]

7) 3(IF)-C treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2 (IS)	Phase 3 (FS)	Phase 4	Phase 5	Phase 6
Average Contribution, NS	---	4.71(8)	5.12(8)	---	---	---
Average Contribution, IS (exogenous)	---	16.89(8)	18.31(8)	---	---	---
p-value (2-tailed)	---	[0.0008]	[0.0008]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS or IS (endogenous)	---	---	---	19.59(8)	19.24(8)	18.93(8)
p-value (2-tailed)	---	---	---	[0.0007]	[0.0008]	[0.0008]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS (endogenous)	---	---	---	19.90(3)	19.90(1)	15.00(1)
p-value (2-tailed)	---	---	---	[0.0141]	[0.1213]	[0.1213]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, IS (endogenous)	---	---	---	19.40(5)	19.14(7)	19.49(7)
p-value (2-tailed)	---	---	---	[0.0034]	[0.0012]	[0.0011]

8) 6-N treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS or IS (endogenous)	13.46(7)	18.81(7)	19.99(7)	19.57(7)	19.47(7)	20.00(7)
p-value (2-tailed)	[0.0485]	[0.0011]	[0.0008]	[0.0008]	[0.0010]	[0.0006]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS (endogenous)	13.46(7)	19.22(6)	19.99(6)	19.50(6)	19.55(6)	20.00(6)
p-value (2-tailed)	[0.0485]	[0.0017]	[0.0015]	[0.0015]	[0.0015]	[0.0013]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, IS (endogenous)	--- (0)	16.40(1)	20.00(1)	20.00(1)	19.00(1)	20.00(1)
p-value (2-tailed)	---	[0.1213]	[0.1213]	[0.1213]	[0.1213]	[0.1213]

9) 6-C treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS or IS (endogenous)	13.96(8)	16.38(8)	17.27(8)	18.56(8)	19.20(8)	19.14(8)
p-value (2-tailed)	[0.0055]	[0.0023]	[0.0015]	[0.0006]	[0.0005]	[0.0006]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, FS (endogenous)	19.18(2)	15.78(4)	20.00(2)	18.43(3)	20.00(3)	19.90(3)
p-value (2-tailed)	[0.0182]	[0.0270]	[0.0361]	[0.0141]	[0.0134]	[0.0141]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, NS	8.42(39)	4.71(8)	5.12(8)	5.09(8)	4.00(8)	2.73(8)
Average Contribution, IS (endogenous)	12.23(6)	16.98(4)	16.36(6)	18.64(5)	18.72(5)	18.68(5)
p-value (2-tailed)	[0.0488]	[0.0066]	[0.0045]	[0.0030]	[0.0030]	[0.0030]

Note: Numbers in parenthesis are the numbers of groups under the conditions in the first column of the corresponding row.

***Table B.6*:** Effects of informal sanction received at *t* on the change of contributions, C(*t*+1) – C(*t*).

(a) For combined data

Independent variable	All Periods	Exogenous informal scheme	Endogenous informal scheme
Informal sanction received in period *t*	0.20***	0.24**	0.20***
	(0.047)	(0.10)	(0.050)
(Informal sanction received)*(Below median dummy) in period *t*	0.090*	0.078	0.14
	(0.052)	(0.11)	(0.095)
(Informal sanction received)*(Above median dummy) in period *t*	-0.27***	-0.31*	-0.28***
	(0.067)	(0.16)	(0.067)
Below median dummy in period *t*	1.37***	2.41*	0.70
	(0.42)	(1.20)	(0.63)
Above median dummy in period *t*	-1.20***	-2.93**	-1.05**
	(0.40)	(1.20)	(0.40)
Period within phase	-0.29***	-0.70**	-0.11
	(0.10)	(0.30)	(0.083)
Constant	0.22	0.80	-0.075
	(0.21)	(0.76)	(0.18)
Test of joint effect, below median contributors[7] (p-value)	(0.000)	(0.000)	(0.000)
Test of joint effect, above median contributors[8]	(0.199)	(0.451)	(0.207)
Number of observations	1680	465	1215
F	28.18	33.94	19.83
Prob > F	0.0000	0.0000	0.0000

(b) For treatments with (without) administrative cost only

Independent variable	All treatments *without* administrative cost			All treatments *with* administrative cost		
	All periods	exogenous	endogenous	All periods	exogenous	endogenous
Informal sanction received at period *t*	0.32**	0.35**	0.49	0.16***	0.16*	0.16***
	(0.13)	(0.12)	(0.27)	(0.040)	(0.076)	(0.038)
(Informal sanction received)*(Below median dummy) at period *t*	-0.0085	-0.081	-0.27	0.12**	0.16*	0.18*
	(0.14)	(0.15)	(0.32)	(0.049)	(0.078)	(0.098)
(Informal sanction received)*(Above median dummy) at period *t*	-0.40**	-0.53***	1.67**	-0.22***	0.034	-0.28***
	(0.16)	(0.13)	(0.52)	(0.069)	(0.16)	(0.072)
Below median dummy at period *t*	1.51	1.13	4.14	1.29***	4.06***	0.50
	(1.29)	(1.78)	(2.05)	(0.42)	(1.36)	(0.63)
Above median dummy at period *t*	-2.04	-3.30	-9.27***	-1.10***	-3.53**	-0.80***
	(1.64)	(2.14)	(1.08)	(0.34)	(1.30)	(0.21)
Period within phase	-0.70*	-1.44**	0.17	-0.16*	0.056	-0.15
	(0.34)	(0.53)	(0.18)	(0.090)	(0.17)	(0.096)
Constant	0.95	2.65*	-0.61	0.0048	-1.00**	0.018
	(0.80)	(1.26)	(0.52)	(0.17)	(0.44)	(0.20)
Test of joint effect, below median contributors[7]	(.000)	(.003)	(.032)	(.000)	(.000)	(.001)
Test of joint effect, above median contributors[8]	(.537)	(.089)	(.000)	(.310)	(.167)	(.100)
Number of observations	405	225	180	1275	240	1035
F	33.68	89.46	10730	34.63	38.72	34.22
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes:

1. Fixed effects Linear regressions with robust standard error clustered by group. The dependent variable is the difference of contribution between t and t +1 while all independent variables are evaluated at period t. Data include both 3-Vote and 6-Vote treatments.
2. The number in the parenthesis is the standard deviation.
3. *, ** , and *** indicate significance at the .10 level, the .05 level and the .01 level, respectively.
4. Below (above) median dummy equals 1 if an individual's contribution is below (above) the median of his or her group.
5. Period within phase = {1, 2, 3}. No data in period within phase = 4 is not included since each phase has 4 periods.
6. This is a test of the hypothesis that the coefficient on Informal sanctions received in period t plus the coefficient on informal sanctions * below median dummy = 0.
7. This is a test of the hypothesis that the coefficient on Informal sanctions received in period t plus the coefficient on informal sanctions * above median dummy = 0.

***Table B.7*:** Group-level Phase-by-phase Mann-Whitney Tests between earnings without sanction scheme and with sanction scheme

1) All 3-Vote and 6-Vote treatments vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS (endogenous)	32.60(9)	35.43(10)	38.73(8)	37.19(28)	37.11(23)	37.52(24)
p-value (2-tailed)	[0.0335]	[0.0042]	[0.0006]	[0.0000]	[0.0001]	[0.0000]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	24.71(8)	25.12(8)	---	---	---
Average Earnings, FS (exogenous)	---	36.10(15)	34.69(16)	---	---	---
p-value (2-tailed)	---	[0.0001]	[0.0012]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, IS (endogenous)	25.95(6)	33.71(5)	34.17(7)	37.70(18)	37.96(23)	37.27(22)
p-value (2-tailed)	[0.1373]	[0.0084]	[0.0631]	[0.0002]	[0.0000]	[0.0001]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	24.71(8)	25.12(8)	---	---	---
Average Earnings, IS (exogenous)	---	30.60(16)	33.24(15)	---	---	---
p-value (2-tailed)	---	[0.0048]	[0.0016]	---	---	---

2) All 3-Vote and 6-Vote treatments without administrative cost vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS (endogenous)	32.34(7)	38.86(6)	39.98(6)	38.45(20)	37.71(18)	39.19(18)
p-value (2-tailed)	[0.0955]	[0.0017]	[0.0015]	[0.0000]	[0.0001]	[0.0000]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	24.71(8)	25.12(8)	---	---	---
Average Earnings, FS (exogenous)	---	39.19(7)	37.09(8)	---	---	---
p-value (2-tailed)	---	[0.0011]	[0.0115]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, IS (endogenous)	--- (0)	29.4(1)	40.00(1)	39.85(2)	38.24(4)	33.13(4)
p-value (2-tailed)	---	[0.2453]	[0.1213]	[0.0367]	[0.0066]	[0.1742]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	24.71(8)	25.12(8)	---	---	---
Average Earnings, IS (exogenous)	---	29.38(8)	35.22(7)	---	---	---
p-value (2-tailed)	---	[0.0742]	[0.0018]	---	---	---

3) All 3-Vote and 6-Vote treatments with administrative cost vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS (endogenous)	33.51(2)	30.30(4)	35(2)	34.05(8)	34.96(5)	32.49(6)
p-value (2-tailed)	[0.1155]	[0.1735]	[0.0361]	[0.0008]	[0.0030]	[0.0029]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	24.71(8)	25.12(8)	---	---	---
Average Earnings, FS (exogenous)	---	33.39(8)	32.29(8)	---	---	---
p-value (2-tailed)	---	[0.0011]	[0.0023]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, IS (endogenous)	25.95(6)	34.79(4)	33.20(6)	37.43(16)	37.90(19)	38.19(18)
p-value (2-tailed)	[0.1373]	[0.0108]	[0.1209]	[0.0003]	[0.0000]	[0.0000]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	24.71(8)	25.12(8)	---	---	---
Average Earnings, IS (exogenous)	---	31.83(8)	31.50(8)	---	---	---
p-value (2-tailed)	---	[0.0023]	[0.0209]	---	---	---

4) 3(FI)-N treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2 (FS)	Phase 3 (IS)	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	24.71(8)	25.12(8)	---	---	---
Average Earnings, FS or IS (exogenous)	---	39.19(7)	35.22(7)	---	---	---
p-value (2-tailed)	---	[0.0011]	[0.0018]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS or IS (endogenous)	---	---	---	39.96(7)	39.48(7)	38.31(7)
p-value (2-tailed)	---	---	---	[0.0008]	[0.0011]	[0.0011]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS (endogenous)	---	---	---	40.00 (6)	39.54 (5)	38.79 (5)
p-value (2-tailed)	---	---	---	[0.0013]	[0.0030]	[0.0032]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, IS (endogenous)	---	---	---	39.70(1)	39.33(2)	37.13(2)
p-value (2-tailed)	---	---	---	[0.1213]	[0.0367]	[0.0367]

5) 3(IF)-N treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2 (IS)	Phase 3 (FS)	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	24.71(8)	25.12(8)	---	---	---
Average Earnings, FS or IS (exogenous)	---	31.42(8)	39.54(8)	---	---	---
p-value (2-tailed)	---	[0.0742]	[0.0115]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS Or IS (endogenous)	---	---	---	37.10(8)	35.58(8)	36.22(8)
p-value (2-tailed)	---	---	---	[0.0105]	[0.0082]	[0.0105]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS (endogenous)	---	---	---	37.10(8)	35.44(7)	38.79(7)
p-value (2-tailed)	---	---	---	[0.0105]	[0.0142]	[0.0010]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, IS (endogenous)	---	---	---	--- (0)	36.55(1)	18.25(1)
p-value (2-tailed)	---	---	---	---	[0.1213]	[0.1213]

6) 3(FI)-C treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2 (FS)	Phase 3 (IS)	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	24.71(8)	25.12(8)	---	---	---
Average Earnings, FS, or IS (exogenous)	---	33.39(8)	31.50(8)	---	---	---
p-value (2-tailed)	---	[0.0011]	[0.0209]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS Or IS (endogenous)	---	---	---	37.62(8)	38.74(8)	37.24(8)
p-value (2-tailed)	---	---	---	[0.0007]	[0.0006]	[0.0010]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS (endogenous)	---	---	---	35.00(2)	35.00(1)	30.35(2)
p-value (2-tailed)	---	---	---	[0.0361]	[0.1213]	[0.0676]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, IS (endogenous)	---	---	---	38.49(6)	39.28(7)	39.54(6)
p-value (2-tailed)	---	---	---	[0.0019]	[0.0010]	[0.0017]

7) 3(IF)-C treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2 (IS)	Phase 3 (FS)	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	24.71(8)	25.12(8)	---	---	---
Average Earnings, IS (exogenous)	---	31.83(8)	32.29(8)	---	---	---
p-value (2-tailed)	---	[0.0023]	[0.0023]	---	---	---

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS or IS (endogenous)	---	---	---	36.10(8)	36.19(8)	36.84(8)
p-value (2-tailed)	---	---	---	[0.0008]	[0.0008]	[0.0008]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS (endogenous)	---	---	---	34.84(3)	34.79(1)	30.00(1)
p-value (2-tailed)	---	---	---	[0.0141]	[0.1213]	[0.1213]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	---	---	---	25.09(8)	24.00(8)	22.73(8)
Average Earnings, IS (endogenous)	---	---	---	36.85(5)	36.39(7)	37.81(7)
p-value (2-tailed)	---	---	---	[0.0034]	[0.0012]	[0.0011]

8) 6-N treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS or IS (endogenous)	32.34(7)	37.51(7)	39.98(7)	38.89(7)	38.68(7)	40.00(7)
p-value (2-tailed)	[0.0955]	[0.0016]	[0.0008]	[0.0008]	[0.0010]	[0.0006]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS (endogenous)	32.34 (7)	38.86(6)	39.98(6)	38.70(6)	38.83(6)	40.00(6)
p-value (2-tailed)	[0.0955]	[0.0017]	[0.0015]	[0.0015]	[0.0015]	[0.0013]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, IS (endogenous)	--- (0)	29.40(1)	40.00(1)	40.00(1)	37.75(1)	40.00(1)
p-value (2-tailed)	---	[0.2453]	[0.1213]	[0.1213]	[0.1213]	[0.1213]

9) 6-C treatment vs. BASELINE treatment (including Phase 1 in the 3-Vote treatment)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS or IS (endogenous)	27.84(8)	32.54(8)	33.65(8)	35.20(8)	36.92(8)	36.20(8)
p-value (2-tailed)	[0.6004]	[0.0156]	[0.0354]	[0.0081]	[0.0007]	[0.0007]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, FS (endogenous)	33.51(2)	30.30(4)	35.00(2)	32.62(3)	35.00(3)	34.74(3)
p-value (2-tailed)	[0.1155]	[0.1735]	[0.0361]	[0.0244]	[0.0134]	[0.0141]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, NS	28.42(39)	24.71(8)	25.12(8)	25.09(8)	24.00(8)	22.73(8)
Average Earnings, IS (endogenous)	25.95(6)	34.79(4)	33.20(6)	36.74(5)	38.07(5)	37.08(5)
p-value (2-tailed)	[0.1373]	[0.0108]	[0.1209]	[0.0377]	[0.0030]	[0.0032]

Note: Numbers in parenthesis are the numbers of groups under the conditions in the first column of the corresponding row.

***Table B.8*:** Group-level Phase-by-phase Mann-Whitney Tests between efficiency (a. average contribution, b. Average earnings) with formal sanction scheme and with informal sanction scheme

(a) Average contribution

1) All 3-Vote and 6-Vote treatments (combined)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, IS (endogenous)	12.23(6)	16.86 (5)	16.88(7)	19.39(18)	19.35(23)	18.68(22)
Average Contribution, FS (endogenous)	14.73(9)	17.84(10)	19.99(8)	19.03(28)	18.77(23)	19.09(24)
p-value (2-tailed)	[.1949]	[.1290]	[.0534]	[.1546]	[.3866]	[.9462]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, IS (exogenous)	---	15.85(16)	17.52(15)	---	---	---
Average Contribution, FS (exogenous)	---	19.30(15)	18.24(16)	---	---	---
p-value (2-tailed)	---	[.0001]	[.1086]	---	---	---

2) All 3-Vote and 6-Vote treatments without administrative cost

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, IS (endogenous)	--- (0)	16.40(1)	20.00(1)	19.98(2)	19.36(4)	15.5(4)
Average Contribution, FS (endogenous)	13.46(7)	19.22(6)	19.99(6)	18.89(20)	18.44(18)	19.46(18)
p-value (2-tailed)	---	[.0979]	[.6831]	[.4838]	[.2772]	[.7280]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, IS (exogenous)	---	14.81(8)	17.73(7)	---	---	---
Average Contribution, FS (exogenous)	---	19.57(7)	18.17(8)	---	---	---
p-value (2-tailed)	---	[.0042]	[.0419]	---	---	---

3) All 3-Vote and 6-Vote treatments with administrative cost

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, IS (endogenous)	12.23(6)	16.98(4)	16.36(6)	19.32(16)	19.34(19)	19.38(18)
Average Contribution, FS (endogenous)	19.18(2)	15.78(4)	20.00(2)	19.38(8)	19.98(5)	17.98(6)
p-value (2-tailed)	[.0455]	[.7715]	[.1554]	[.3982]	[.3969]	[.3990]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, IS (endogenous)	---	16.89(8)	17.33(8)	---	---	---
Average Contribution, FS (exogenous)	---	19.07(8)	18.31(8)	---	---	---
p-value (2-tailed)	---	[.0100]	[.5984]	---	---	---

4) 3-Vote treatment without administrative cost

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, IS (endogenous)	---	---	---	19.95(1)	19.48(3)	14.40(3)
Average Contribution, FS (endogenous)	---	---	---	18.63(14)	17.88(12)	19.18(12)
p-value (2-tailed)	---	---	---	[.1807]	[.6252]	[.7311]

5) 3-Vote treatment with administrative cost

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, IS (endogenous)	---	---	---	19.63(11)	19.57(14)	19.65(13)
Average Contribution, FS (endogenous)	---	---	---	19.94(5)	19.95(2)	16.05(3)
p-value (2-tailed)	---	---	---	[.1511]	[.9302]	[.1192]

6) 6-N treatment

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, IS (endogenous)	--- (0)	16.40(1)	20.00(1)	20.00(1)	19.00(1)	20.00(1)
Average Contribution, FS (endogenous)	13.46(7)	19.22(6)	19.99(6)	19.50(6)	19.55(6)	20.00(6)
p-value (2-tailed)	---	[.0979]	[.6831]	[.6831]	[.2123]	[----]

7) 6-C treatment

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Contribution, IS (endogenous)	12.23(6)	16.98(4)	16.36(6)	18.64(5)	18.72(5)	18.68(5)
Average Contribution, FS (endogenous)	19.18(2)	15.78(4)	20.00(2)	18.43(3)	20.00(3)	19.90(3)
p-value (2-tailed)	[.0455]	[.7715]	[.1554]	[.8453]	[.4386]	[.8453]

(b) Average earnings

1) All 3-Vote and 6-Vote treatments (combined)

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, IS (endogenous)	25.95(6)	33.71(5)	34.17(7)	37.70(18)	37.96(23)	37.27(22)
Average Earnings, FS (endogenous)	32.60(9)	35.43(10)	38.73(8)	37.19(28)	37.11(23)	37.52(24)
p-value (2-tailed)	[0.0771]	[0.3866]	[0.3460]	[1.0000]	[0.9906]	[0.9330]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, IS (exogenous)	---	30.60(16)	33.24(15)	---	---	---
Average Earnings, FS (exogenous)	---	36.10(15)	34.69(16)	---	---	---
p-value (2-tailed)	---	[0.0044]	[0.3733]	---	---	---

1) All 3-Vote and 6-Vote treatments without administrative cost

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, IS (endogenous)	--- (0)	29.4(1)	40.00(1)	39.85(2)	38.24(4)	33.13(4)
Average Earnings, FS (endogenous)	32.34(7)	38.86(6)	39.98(6)	38.45(20)	37.71(18)	39.19(18)
p-value (2-tailed)	---	[0.0979]	[0.6831]	[0.4368]	[0.0856]	[0.0348]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, IS (exogenous)	---	29.38(8)	35.22(7)	---	---	---
Average Earnings, FS (exogenous)	---	39.19(7)	37.09(8)	---	---	---
p-value (2-tailed)	---	[0.0024]	[0.0366]	---	---	---

2) All 3-Vote and 6-Vote treatments with administrative cost

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, IS (endogenous)	25.95(6)	34.79(4)	33.20(6)	37.43(16)	37.90(19)	38.19(18)
Average Earnings, FS (endogenous)	33.51(2)	30.30(4)	35(2)	34.05(8)	34.96(5)	32.49(6)
p-value (2-tailed)	[0.1824]	[0.1465]	[0.4998]	[0.0068]	[0.0162]	[0.0008]

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, IS (endogenous)	---	33.39(8)	32.29(8)	---	---	---
Average Earnings, FS (exogenous)	---	31.83(8)	31.50(8)	---	---	---
p-value (2-tailed)	---	[0.3442]	[0.8336]	---	---	---

3) 3-Vote treatment without administrative cost

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, IS (endogenous)	---	---	---	39.70(1)	38.40(3)	30.83(3)
Average Earnings, FS (endogenous)	---	---	---	38.34(14)	37.15(12)	38.79(12)
p-value (2-tailed)	---	---	---	[0.1375]	[0.2104]	[0.0344]

4) 3-Vote treatment with administrative cost

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, IS (endogenous)	---	---	---	37.75(11)	37.84(14)	38.61(13)
Average Earnings, FS (endogenous)	---	---	---	34.90(5)	34.90(2)	30.23(3)
p-value (2-tailed)	---	---	---	[0.0334]	[0.1030]	[0.0062]

5) 6-N treatment

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, IS (endogenous)	--- (0)	29.4(1)	40.00(1)	40.00(1)	37.75(1)	40.00(1)
Average Earnings, FS (endogenous)	32.34(7)	38.86(6)	39.98(6)	38.70(6)	38.83(6)	40.00(6)
p-value (2-tailed)	---	[0.0979]	[0.6831]	[0.6831]	[0.2123]	[----]

6) 6-C treatment

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Average Earnings, IS (endogenous)	25.95(6)	34.79(4)	33.20(6)	36.74(5)	38.07(5)	37.08(5)
Average Earnings, FS (endogenous)	33.51(2)	30.30(4)	35.00(2)	32.62(3)	35.00(3)	34.74(3)
p-value (2-tailed)	[0.1824]	[0.1465]	[0.4998]	[0.1501]	[0.1416]	[0.2726]

Note: Numbers in parenthesis are the numbers of groups under the conditions in the first column of the corresponding row.

***Table B.9*:** The Relationship between Earnings and Contributions under informal sanction scheme

(1) Earnings and Contributions under informal sanction scheme

(a) For all treatments (combined)

Independent variable	All treatments	All treatments *without* administrative charge			All treatments *with* administrative charge		
		All periods	exogenous	endogenous	All periods	exogenous	endogenous
Contribution	0.95***	0.45***	0.57***	0.78*	1.18***	1.13***	1.11***
	(0.16)	(0.29)	(0.18)	(0.38)	(0.14)	(0.21)	(0.16)
Constant	18.1***	26.2***	22.9***	22.2**	13.9***	12.4***	15.8***
	(2.77)	(4.98)	(2.87)	(6.83)	(2.53)	(3.52)	(2.89)
Number of observations	2240	540	300	240	1700	320	1380
F	37.61	2.44	10.31	4.18	71.74	30.01	49.96
Prob > F	0.0000	0.1394	0.0063	0.0963	0.0000	0.0001	0.0000

(b) For 3-Vote treatments only

Independent variable	All treatments	All treatments *without* administrative charge			All treatments *with* administrative charge		
		All periods	exogenous	endogenous	All periods	exogenous	endogenous
Contribution	0.85***	0.31***	0.57***	-0.16	1.18***	1.13***	0.98***
	(0.20)	(0.29)	(0.18)	(0.098)	(0.19)	(0.21)	(0.22)
Constant	19.9***	28.1***	22.9***	38.2***	13.9***	12.4***	18.9***
	(3.65)	(4.85)	(2.87)	(1.68)	(3.58)	(3.52)	(4.28)
Number of observations	1520	440	300	140	1080	320	760
F	17.75	1.10	10.31	2.79	38.65	30.01	20.18
Prob > F	0.0002	0.3129	0.0063	0.1699	0.0000	0.0001	0.0006

(c) For 6-Vote treatments only

Independent variable	(1) All treatments	(2) 6-N treatment	(3) 6-C treatment
Contribution	1.18***	1.14***	1.19***
	(0.17)	(0.31)	(0.22)
Constant	14.2***	15.6***	14.0**
	(2.98)	(6.12)	(3.62)
Number of observations	720	100	620
F	46.01	13.66	30.48
Prob > F	0.0005	0.0004	0.0027

Notes:

1. Fixed effects Linear regressions with robust standard error clustered by group for all columns except the column (2) in the (c), and Fixed effect Linear regression with robust standard error in column (2) in the table (c); In column (2) in the table (c), error terms are not adjusted for clustering on group since robust covariance is not full rank if we use the clustering. Data include both 3-Vote and 6-Vote treatments.
2. The number in the parenthesis is the standard deviation.
3. *, ** and *** indicate significance at the .10 level, the 0.05 level and the .01 level, respectively.

(2) Earnings and the positive or negative deviation of contributions from group median of contributions under informal sanction scheme

(a) For all treatments (combined)

Independent variable	All treatments	All treatments *without* administrative charge			All treatments *with* administrative charge		
		All periods	exogen ous	endoge nous	All periods	exogen ous	endoge nous
Positive deviation from the median of contributions in his or her group	-1.42***	-1.09***	-1.26***	-0.61	-1.84***	-1.47***	-1.79***
	(0.24)	(0.25)	(0.23)	(0.34)	(0.20)	(0.32)	(0.26)
Negative deviation from the median of contributions in his or her group	1.17***	0.74***	0.72**	0.86***	1.35***	1.31***	1.25***
	(0.16)	(0.20)	(0.27)	(0.21)	(0.21)	(0.22)	(0.23)
Constant	36.2***	35.3***	34.3***	36.7***	36.6***	34.3***	37.0***
	(0.14)	(0.22)	(0.37)	(0.13)	(0.13)	(0.37)	(0.11)
Number of observations	2240	540	300	240	1700	320	1380
F	41.35	20.08	23.35	13.03	58.80	27.55	31.79
Prob > F	0.0000	0.0001	0.0000	0.0104	0.0000	0.0000	0.0000

Notes:

1. Fixed effects Linear regressions with robust standard error clustered by group. Data include both 3-Vote and 6-Vote treatments.
2. The number in the parenthesis is the standard deviation.
3. ** and *** indicate significance at the .05 level and the .01 level, respectively.

(b) For 3-Vote treatments only

Independent variable	All treatments	All treatments *without* administrative charge			All treatments *with* administrative charge		
		All periods	exogenous	endogenous	All periods	exogenous	endogenous
Positive deviation from the median of contributions in his or her group	-1.26***	-1.06***	-1.26***	-0.38***	-1.90***	-1.47***	-1.33**
	(0.25)	(0.24)	(0.23)	(0.085)	(0.33)	(0.32)	(0.49)
Negative deviation from the median of contributions in his or her group	1.09***	0.64***	0.72**	-0.18	1.25***	1.31***	0.98***
	(0.18)	(0.24)	(0.27)	(0.24)	(0.23)	(0.22)	(0.21)
Constant	36.5***	34.6***	34.3***	35.4***	37.3***	34.3***	38.4***
	(0.16)	(0.26)	(0.37)	(0.044)	(0.16)	(0.37)	(0.077)
Number of observations	1520	440	300	140	1080	320	760
F	31.14	16.98	23.35	11.78	34.01	27.55	19.17
Prob > F	0.0000	0.0002	0.0000	0.0211	0.0000	0.0000	0.0001

Notes:
1. Fixed effects Linear regressions with robust standard error clustered by group.
2. The number in the parenthesis is the standard deviation.
3. ** and *** indicate significance at the .05 level and the .01 level, respectively.

(c) For 6-Vote treatments only

Independent variable	(1) All treatments	(2) 6-N treatment	(3) 6-C treatment
Positive deviation from the median of contributions in his or her group	-1.86***	-3.75***	-1.83***
	(0.27)	(0.15)	(0.27)
Negative deviation from the median of contributions in his or her group	1.51***	1.03***	1.82***
	(0.33)	(0.33)	(0.43)
Constant	35.7***	38.4***	35.4***
	(0.18)	(0.44)	(0.22)
Number of observations	720	100	620
F	29.59	389.67	25.17
Prob > F	0.0008	0.0000	0.0025

Notes:

1. Fixed effects Linear regressions with robust standard error clustered by group (Column (1) and (3)) and Fixed effect Linear regression with robust standard error (Column (2)). In column (2), error terms are not adjusted for clustering on group since robust covariance is not full rank if we use the clustering.
2. The number in the parenthesis is the standard deviation.
3. *** indicate significance at the .01 level, respectively.

***Table B.10*:** Determinants of Votes between Formal and Informal Schemes in 3-Vote Treatments

(a) 3(FI)-N and 3(IF)-N, pooled

Independent variable	(1)	(2)	(3)	(4)	(5)
(Earning under formal scheme) /(earnings under informal scheme)	2.94**	3.08**	5.29***	2.18*	3.97**
	(1.19)	(1.27)	(1.71)	(1.16)	(1.57)
(CV under formal scheme)/(CV under informal scheme)	---	0.038	0.070	0.021	0.047
		(0.10)	(0.10)	(0.10)	(0.10)
Gave Perverse Punishment	---	---	-2.06**	---	-1.83**
			(0.92)		(0.84)
Received Perverse Punishment	---	---	-2.28**	---	-1.55
			(1.07)		(0.97)
Avg. Conditional Contribution	---	---	---	0.0012	0.016
				(0.040)	(0.040)
IQ	---	---	---	0.28***	0.22**
				(0.10)	(0.096)
Gender (Female = 1)	---	---	---	0.12	0.15
				(0.44)	(0.43)
General Political Orientation	---	---	---	0.22	0.25
				(0.16)	(0.16)
Vote number	-0.22	-0.23	-0.23	-0.23	-0.23
	(0.15)	(0.16)	(0.16)	(0.16)	(0.16)
FI order dummy	-0.21	-0.20	-0.65	-0.23	-0.56
	(0.48)	(0.48)	(0.50)	(0.44)	(0.45)
Constant	-1.86	-2.03	-4.07**	-3.66**	-5.16***
	(1.50)	(1.59)	(1.91)	(1.72)	(1.98)
Number of observations	225	225	225	225	225
Log likelihood	-103.8	-103.7	-98.5	-97.5	-93.7
Wald chi^2	9.13	9.01	13.9	16.3	18.8
Prob > chi^2	.028	.061	.031	.039	.043

(b) 3(FI)-C and 3(IF)-C, pooled

Independent variable	(1)	(2)	(3)	(4)	(5)
(Earning under formal scheme)/(earnings under informal scheme)	1.61***	1.41***	1.16***	1.44***	1.11**
	(0.46)	(0.48)	(0.52)	(0.46)	(0.51)
(CV under formal scheme)/(CV under informal scheme)	---	-0.15	-0.16	-0.36	-0.36
		(0.32)	(0.33)	(0.33)	(0.34)
Gave Perverse Punishment	---	---	0.72	---	0.78
			(0.81)		(0.77)
Received Perverse Punishment	---	---	0.61	---	0.79
			(0.62)		(0.61)
Conditional Contribution	---	---	---	0.0056	-0.011
				(0.040)	(0.043)
IQ	---	---	---	-0.18**	-0.19**
				(0.072)	(0.074)
Gender (Female = 1)	---	---	---	0.47	0.58
				(0.36)	(0.38)
General Political Orientation	---	---	---	-0.091	-0.077
				(0.12)	(0.12)
Vote number	-0.16	-0.16	-0.18	-0.16	-0.18
	(0.14)	(0.14)	(0.14)	(0.14)	(0.14)
FI order dummy	-0.41	-0.24	-0.12	-0.33	-0.19
	(0.38)	(0.38)	(0.40)	(0.36)	(0.38)
Constant	-2.26***	-1.95***	-1.82***	-0.57	-0.35
	(0.63)	(0.72)	(0.73)	(0.96)	(0.98)
Number of observations	240	225	225	225	225
Log likelihood	-111.5	-109.4	-108.7	-104.2	-103.0
Wald chi^2	14.6	12.8	13.3	20.4	20.2
Prob > chi^2	.002	.012	.039	.009	.028

Notes: 1. Random-effects Probit regressions. The dependent variable equals 1 if the subject voted for the use of the formal regime, 0 otherwise.

2. CV stands for coefficient of variation of earnings.

3. Gave Perverse Punishment equals 1 if a subject has ever punished a group member who contributed above the median contribution in the group during play under exogenous IS, 0 otherwise. Received Perverse Punishment equals 1 if a subject has received punishment when she contributed above the median amount in her group under exogenous IS, 0 otherwise.

4. General political Orientation $\in \{1, 2, 3, 4, 5, \ldots, 7\}$ takes a higher value for more conservative individuals.

5. FI order dummy equals 1 if subject was in treatment with formal sanctions in Phase 2, informal sanctions in Phase 30 if in treatment of opposite order. Vote number $\in \{1, 2, 3\}$.

6. Figures in parentheses are standard deviations.

7. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

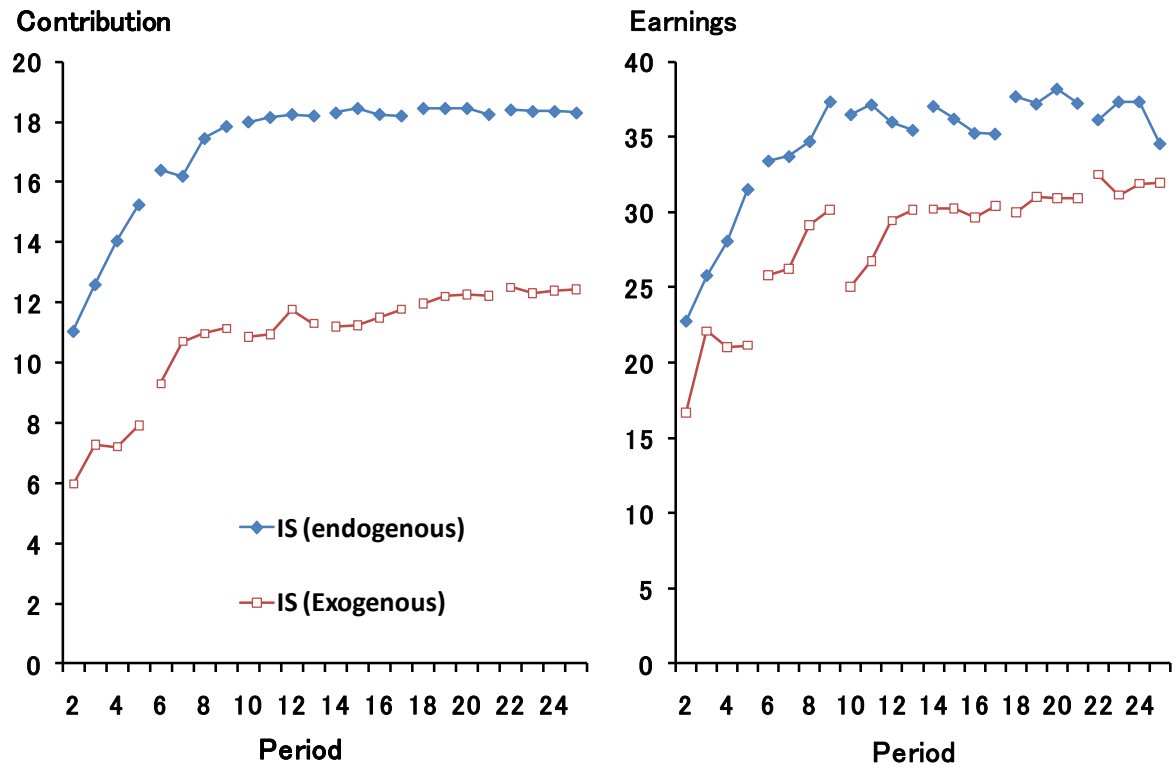
8. The number of observations is smaller in specifications (2) – (5) because observations in which the CV of earnings under informal sanctions is 0 are dropped in models that include the CV ratio.

Table B.11: Determinants of Votes between Formal vs. Informal Schemes, 6 Vote Treatments

Independent variable	6-N treatment			6-C treatment		
	(1) Pooled	(2) 1st vote	(3) 2nd-5th votes	(4) Pooled	(5) 1st vote	(6) 2nd-5th votes
Avg. Conditional Contribution	-0.033	-0.0071	-0.044	-0.086	-0.021	-0.16*
	(0.060)	(0.051)	(0.10)	(0.077)	(0.051)	(0.087)
IQ	0.27*	0.072	0.53*	0.0057	-0.023	0.030
	(0.15)	(0.12)	(0.30)	(0.15)	(0.10)	(0.15)
Gender [Female = 1]	-0.24	-0.42	0.13	0.47	0.43	0.41
	(0.61)	(0.53)	(1.01)	(0.68)	(0.46)	(0.69)
General Political Orientation	-0.13	-0.0033	-0.32	-0.0098	0.16	-0.15
	(1.39)	(0.15)	(0.31)	(0.16)	(0.12)	(0.17)
Fraction of IS (history)	---	---	-2.46**	---	---	-2.22***
			(1.21)			(0.67)
Vote number	-0.060	---	0.044	-0.14**	---	-0.27***
	(0.074)		(0.15)	(0.068)		(0.11)
Constant	0.63	0.70	0.12	0.19	-0.82	3.03
	(1.39)	(1.17)	(2.51)	(1.78)	(1.23)	(1.94)
Number of observations	210	35	175	240	40	200
Log likelihood	-84.2	-16.8	-50.5	-113.5	-25.1	-81.6
Wald (LR) chi^2	5.81	1.34	10.6	6.05	4.28	15.4
Prob > chi^2	.325	.855	.100	.301	.370	.017
Pseudo R^2	---	.0382	---	---	.0784	---

Notes: 1. Random-effects Probit Regressions (columns (1), (3), (4), (6)) and Probit Regressions (columns (2), (5)). The dependent variable equals 1 if the subject voted for the use of the formal regime, 0 otherwise.
2. General political Orientation $\in \{1, 2, 3, 4, 5, \ldots, 10\}$ takes a higher value for more conservative individuals.
3. Vote number $\in \{1, 2, 3\}$. The Fraction of IS (history) variable equals the number of group votes that chose IS divided by total voting opportunity; for example, the Fraction of IS (history) variable equals 0.5 in Phase 6 if a group chose FS in Phase 4 and IS in Phase 5.
4. The figure in the parenthesis is standard deviation.
5. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Figure B.4: Contributions and earnings in 6-N treatment groups selecting IS and in Exogenous IS Comparison Treatment groups playing under IS



(a) Average Contribution

(b) Average Earnings

Note: Diamonds for IS (endogenous) indicate the average for the four groups that voted to use IS in all phases.

Table B.12: Endogenous IS in the 6-C treatment vs. Exogenous IS in the Exogenous IS Comparison Treatment

(1) Average Contribution

	Phase 2[a]	Phase 2[b]	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7
Average Contribution, IS in the 6-C Treatment	12.2 (6)	13.2 (4)	16.5 (4)	18.2(4)	18.3(4)	18.40(4)	18.4(4)
Average Contribution, Exogenous IS Comparison Treatment	7.08 (6)	7.08 (6)	10.5 (6)	11.2(6)	11.4(6)	12.2(6)	12.4(6)
p-value (2-tailed)	[0.150]	[0.136]	[0.394]	[0.271]	[0.172]	[0.172]	[0.280]

(2) Average Earnings

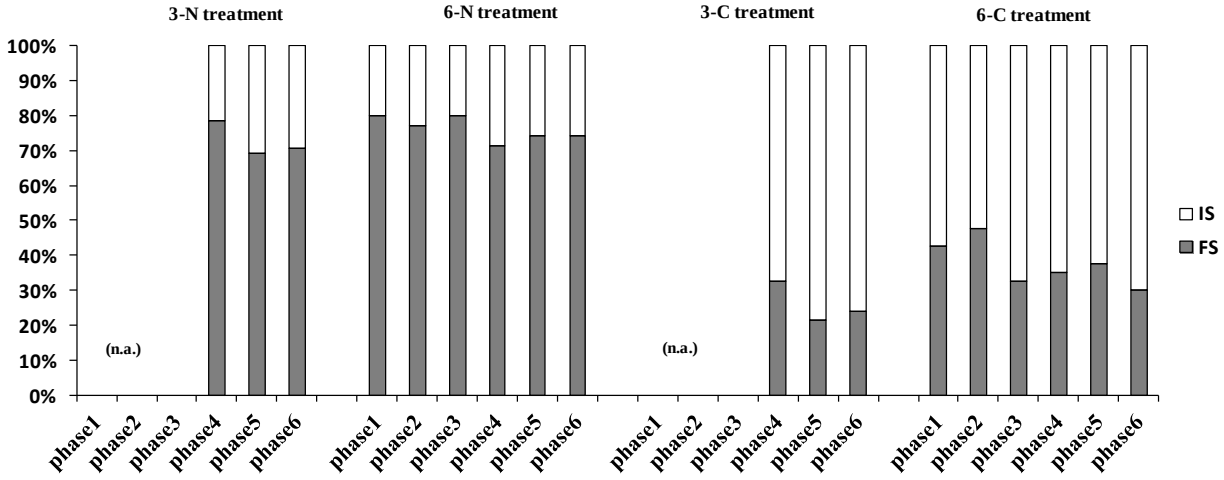
	Phase 2[a]	Phase 2[b]	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7
Average Earnings, IS in the 6-C treatment	25.9 (6)	27.0 (4)	34.8 (4)	36.3 (4)	35.9 (4)	37.6 (4)	36.4 (4)
Average Earnings, Exogenous IS Comparison Treatment	20.2 (6)	20.2 (6)	27.8 (6)	27.8 (6)	30.1 (6)	30.7 (6)	31.9 (6)
p-value (2-tailed)	[0.150]	[0.286]	[0.201]	[0.379]	[0.256]	[0.256]	[0.649]

Notes: *p*-values are those of group-level Mann-Whitney tests. Numbers in parenthesis are the numbers of groups under the conditions in the first column of the corresponding row. For phase 2, the 2[a] column is calculated including all 6 groups that voted for and used IS in that phase, while the 2[b] column's calculations are based only on groups that used IS over all 6 phases.

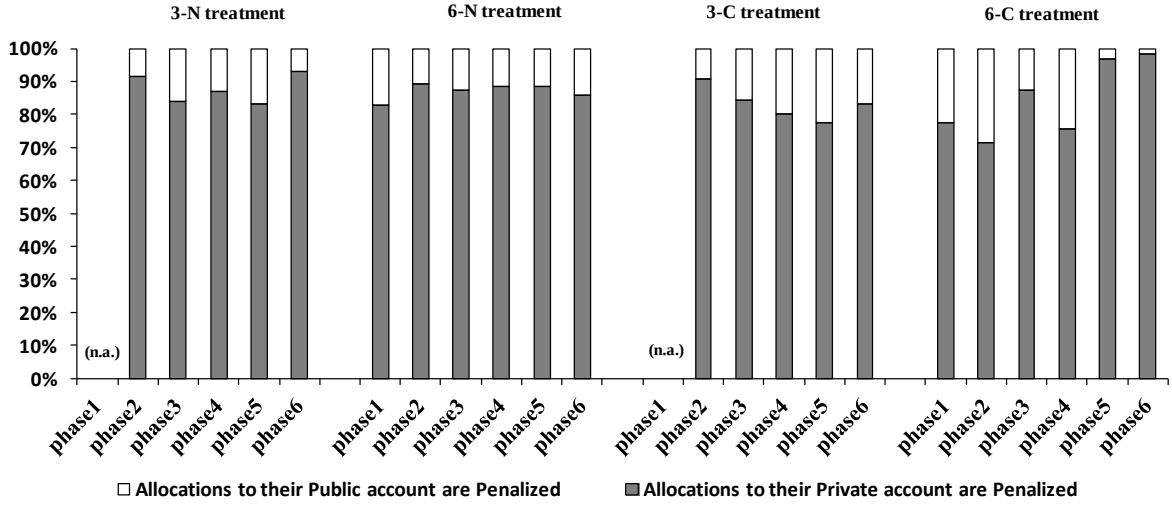
***Table B.*13**: Comparison of Individual Characteristics between Endogenous IS in the 6-C treatment vs. Exogenous IS in the Exogenous IS Comparison Treatment

	(a) 4 groups that chose IS for all phases in the 6-C treatment	(b) 6 groups in the Exogenous IS Comparison Treatment	p-value for 2-sided Mann-Whitney Test: (a) = (b)
(i) Average Period 1 Contribution	9.1	3.0	.019
(ii) Average Conditional Contribution	6.2	3.5	.055
(iii) Proportion of Female Subjects	0.65	0.47	.146
(iv) Average IQ score	6.35	6.37	.515

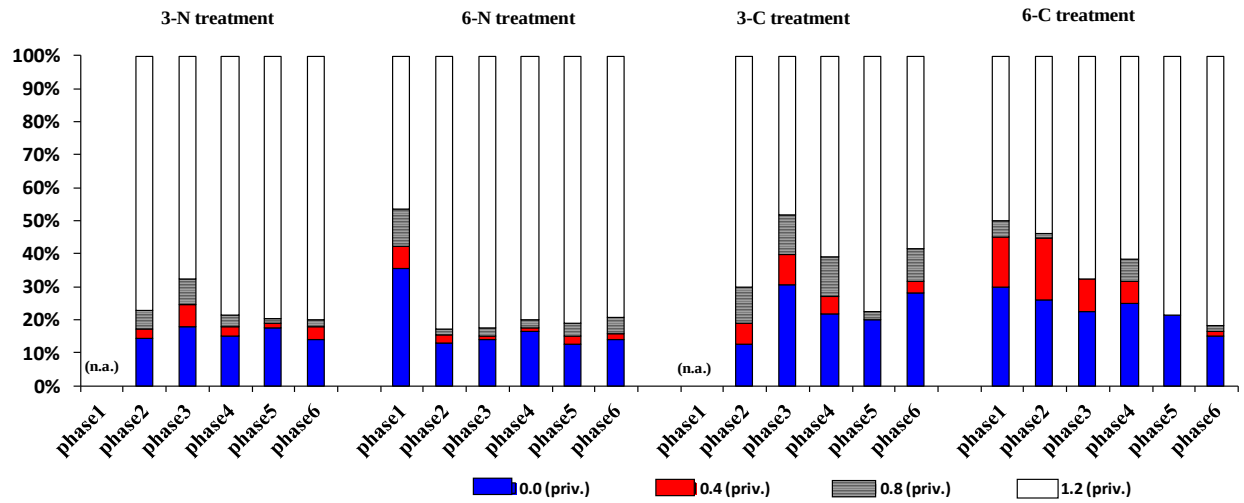
***Figure B.5*:** Share of individual votes for formal vs. informal sanctions, and for sanction rates, by phase



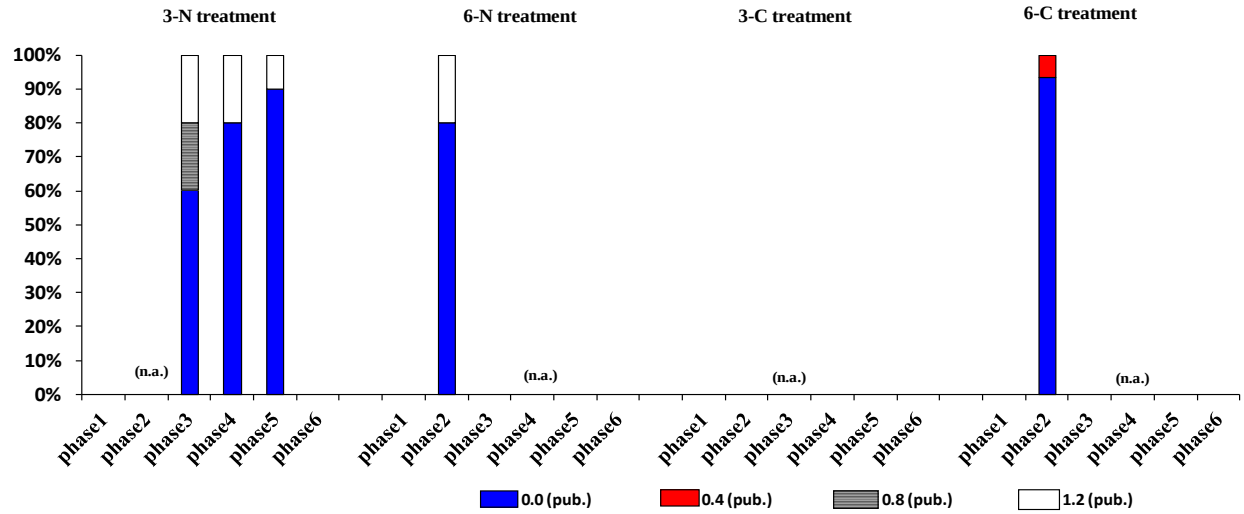
(a) Share of formal vs. informal scheme individual votes, by phase



(b) Shares of individual votes concerning which contributions should be penalized, by phase



(c) Shares of individual votes for penalty rates, by phase, when contributions to their private account were penalized



(d) Shares of individual votes for penalty rates, by phase, when contributions to their public account were penalized

Note: data are individual votes.

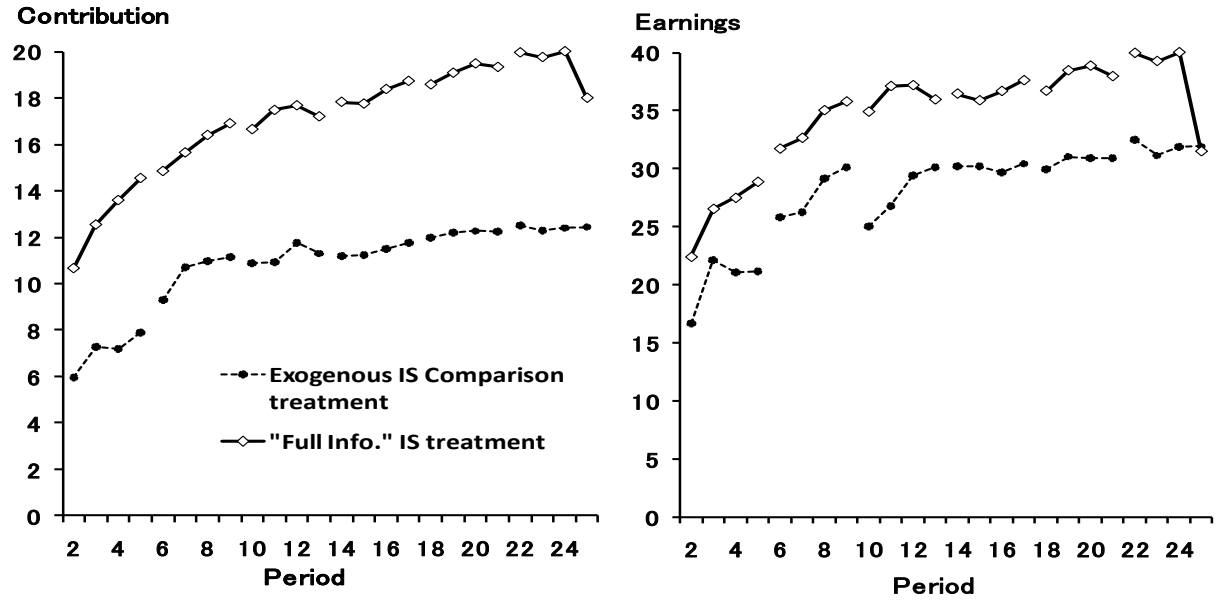
Appendix C: Tests of robustness to opportunities for counter-punishing ("fuller info" variant treatments)

As mentioned in the concluding section of the paper, we wondered whether similar results would be obtained in the IS condition if subjects were not to a degree shielded from the danger of counter-punishment by the fact that subjects learn the total reductions aimed at them but not which group member or members imposed those reductions. To investigate this, we designed a version of IS with complete information about who punished whom and by how much in past periods. Under this variant, the punishment stages of the second and later periods of IS play have two parts, an initial part in which subjects see one another's current period contributions to the public account and can select possible punishment amounts and a final part in which subjects are shown the contributions of the previous period and a matrix of punishments given and received in that period as well as the parallel information averaged over all earlier periods under IS. Subjects select their binding punishment levels after seeing this information by either modifying or leaving unchanged the provisional punishments they initially entered and clicking on "Submit." Subjects were truthfully informed that provisional punishment entries were never seen by other subjects and had no impact on their own and others' earnings unless they were left unchanged in the second part of the punishment stage. (In the first period under IS, the punishment stage has a single part only, since there is no history of past punishment to be shown and possibly taken into consideration.) Note that implementation of this scheme involves the assignment of fixed identifying numbers to group members in place of the absence of identification numbers and randomization of reporting position used in other treatments. The fixed numbers were in place whenever IS was used but dropped if FS was used.

We carried out two sessions each of two additional treatments using this fuller information version of IS. Apart from the difference in the punishment stage of each period when IS was used, the additional treatments were identical to the Exogenous IS Comparison Treatment and to the 6-C Treatment, respectively. Instructions were identical to those of the latter treatments, with the exception of the portions explaining the two part process of the second stage of the second and later periods under IS. This includes that in the counterpart to the Exogenous IS Comparison Treatment, subjects learned about both FS and IS and were told that they would be exogenously assigned one of those two schemes each phase, only finding themselves to be operating under IS in each phase as their session unfolded. Subjects were again Brown University undergraduates who had not participated in other treatments. An excerpt of the portion of the instructions describing the multi-part nature of the reduction stage is shown at the end of this appendix.

Figure C.1(a) shows average contributions and Figure C.1(b) average earnings by period in the Exogenous IS Comparison Treatment and in the counterpart Exogenous "Fuller Info" IS Treatment. Figures C.2(a) and C.2(b) do the same for the 6-C Treatment and the counterpart 6-C "Fuller Info" Variant, with only the observations of those 6-C Treatment groups that voted for IS over FS in all phases being included in the comparison.

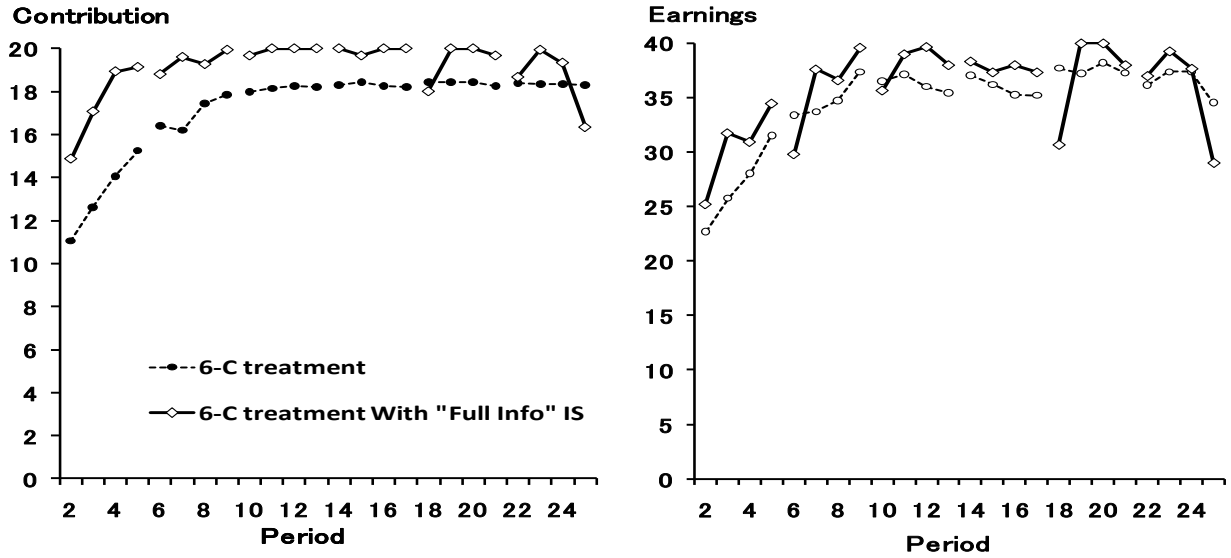
***Figure C.1*:** The trends of average contribution to the public account and average earnings in Exogenous IS Comparison Treatment and in the Exog. "Fuller Info" IS Variant



(a) Average Contribution

(b) Average Earnings

***Figure C.2*:** The trends of average contribution to the public account and average earnings in 6-C Treatment and in the 6-C "Fuller Info" Variant



(a) Average Contribution (b) Average Earnings

Note: Only the groups that always chose IS are used in this figure.

In Table C.1 and C.2, corresponding averages of contributions and earnings by phase and for the full 24 periods of the relevant sessions as wholes are shown, along with the *p*-values of two-tailed Mann-Whitney Tests of whether the group-level observations are drawn from the same or different distributions.

Table C.1(a) shows that average contribution to the public account was higher in all phases under Exogenous "Fuller Info" IS than under ordinary Exogenous IS, but the M-W test statistic is significant in two-tailed tests only in phases 2, 5, and 6 and only at the 10% level. The difference in average contributions for the six phases as a whole using group-level observations is insignificant in a two-tailed test ($p = 0.155$) although the one-tailed test *p*-value, being half that amount, would accordingly make the 10% cut-off level. Table C.1(b) shows that average earnings were also higher under "Fuller Info" IS than ordinary IS in all phases, but the difference is significant at the 10% level in a two-tailed test only in Phases 2 and 6, with the difference over all phases again being significant at the 10% level only in a one-tailed test.

Table C.2 uses only observations from those groups that voted for IS in all six votes so as to avoid possible confounding effects of experience with FS coming in different phases for some than for other groups. Accordingly, the numbers of group-level observations for each treatment are small. Table C.2(a) shows that average contributions were higher in the "Fuller Info" IS version of the 6-C Treatment than in the ordinary IS version in all phases, but the difference is statistically significant at the 10% level in a two-tailed Mann-Whitney test only in Phase 2. Table C.2(b) shows that average earnings were higher in the "Fuller Info" than in the ordinary IS version of 6-C Treatment in phases 2 – 5 but not in phases 6 and 7, and that the differences in earnings between the two versions of 6-C are statistically significant in no phase.

Table C.3 focuses on votes for formal versus informal sanctions in the "Fuller Info" IS version of the 6-C Treatment. Part (a) shows that the proportion of group outcomes and individual votes for using FS rather than IS began at a little over 50% in Phase 2 but quickly fell, with no group outcomes and less than 15% of individual votes favoring FS during the last four phases. Part (b) shows the *p*-values of two-sided equality of proportion z-tests of whether the proportions of group outcomes and of individual votes favoring FS differed significantly as between the "Fuller Info" IS version of 6-C and the original 6-C treatment. The test results indicate that significantly fewer group outcomes (individual votes) favored FS at the beginnings of the last three (five) phases in the "Fuller Info" IS version of the treatment, with no significant difference in earlier phases.

We also investigated whether either the total amount of punishment given or the share of punishment that was given to above-median contributors was different in the "fuller info" versus the original treatments. For the two exogenous IS treatments, Mann-Whitney tests find no difference in total punishment using group level observations for periods 2 – 13 as a whole, periods 14 – 25 as a whole, or periods 2 – 25 combined. (M-W tests find (weakly) significant differences in three individual periods, 12, 24 and 25, but these go in different directions.) Parallel tests of Endogenous IS in the two versions of the 6-C treatment find no significant differences in any period or group of periods.

With regard to the proportion of sanctions going to above-median contributors, a Mann-Whitney test finds this to be higher during periods 2 – 13 as a whole in the exogenous "fuller Info" IS than in ordinary exogenous IS, significant at the 10% level. The test shows no difference for periods 14 – 25 of those treatments but a difference significant at the 10% level for periods 2 – 25 pooled. The difference is consistent with the possibility that there is somewhat more punishing of high contributors due to counter-punishment in the "full information" variant. No difference is seen in this regard for the endogenous 6-C treatment observations, however.

Finally, we used regressions to investigate the degree to which subjects engaged in counter-punishment and in third party punishing of others' punishment decisions ("punishment enforcement"). Table C.4 shows the relevant regressions for the two exogenous IS treatments. In the first row, we see that the higher is subject *j*'s contribution relative to the group average, the less punishment does *j* receive, as is commonly found, and this relationship is always highly significant. The variable entered in the second row allows us to pick up any tendency for subject *i* to punish subject *j* more if *j* punished *i* more last period: counterpunishment; the results indicate that there was indeed a significant presence of this tendency. The third explanatory variable, included in specifications (4), (6) and (7), should have a negative (positive) sign if those who were punished when an above-median contributor retaliate less (more) than others. The actual coefficient is positive in the three specifications but only marginally significant in column (4) only. The fourth variable tests for a difference in counter-punishment by those who were their group's lowest contributor when punished. This variable obtains negative insignificant coefficients, indicating that lowest contributors did not counter-punish more than others. The fifth variable looks for retaliatory or counter-punishment of *i* by *j* when *j* had given *i* more punishment in periods prior to period $t - 1$. The coefficients on it are positive, highly significant, and of very similar magnitude to those on punishment in period $t - 1$ itself, indicating that earlier punishment is counter-punished to a similar degree as is the most recent punishment. Finally, the last explanatory variable is entered to look for indications of "punishment enforcement": do subjects who gave more punishment to higher contributors in period $t - 1$ receive more or less punishment, after controlling for the other variables? A positive significant coefficient would indicate that "perverse punishers" tend to be punished in turn by third party group members. But in the event, the coefficient is negative and quite insignificant.

Table C.5 consists of parallel regressions for the IS phases played endogenously in the "Fuller Info" variant of treatment 6-C. Results are qualitatively similar to those in Table 4.4 which the exceptions that (a) the variable capturing counter-punishment for period $t - 1$ punishing is significant in three initial but insignificant in three later specifications, and (b) the interaction variables indicate that both subjects who were punished when high contributors and those who were punished when their group's lowest contributor do significantly more counter-punishing than do others.

In sum, the regressions show indications that counter-punishment for both the most recent period's and earlier periods' punishing did occur in our "fuller info" treatments. And we

find no evidence of "punishment enforcement." Yet there was not significantly more overall punishing in the "fuller info" than in the main treatments of our experiment, and the share of punishment given to above-median contributors was higher with fuller information only in one pair of treatments and only in a subset of periods. Given that contributions and earnings were higher, not lower, in the "fuller info" treatments, it seems that counter-punishment was on the whole a minor problem, and possibly the overall pattern of punishing mainly low contributors had a larger upward effect on contributions in the "fuller info" variants due to the greater transparency of general trends. That is, the clearer indication that most punishment went to low contributors rather than being capriciously aimed at oneself only may have convinced low contributors more quickly and decisively to raise their contributions.

In any case, our motivation for conducting the "fuller info" treatments was to check the robustness of results obtained with less information and thus greater difficulty of counter-punishing. Our results provide reassurance that the information obstacle to counter-punishing is not a contributor to the efficiencies groups obtain when using IS in our main treatments. Furthermore, the two "fuller info" treatments can be compared to one another as were the original 6-C and Exogenous IS Comparison treatment, and this comparison reaffirms that IS is used more effectively when implemented endogenously than when assigned exogenously.

***Table C.1*:** Group-level Phase-by-phase Mann-Whitney Tests between contributions (earnings) with the standard IS and with the fuller-info IS, Exogenous IS Treatments

(a) Average Contribution

	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	All 6 phases
Original IS	7.08(6)	10.5(6)	11.2(6)	11.4(6)	12.2(6)	12.4(6)	10.8(6)
"Fuller Info" IS	12.8(8)	16.0(8)	17.3(8)	18.2(8)	19.1(8)	19.4(8)	17.1(8)
p-value (2-tailed)	[.071]	[.300]	[.322]	[.086]	[.063]	[.544]	[.155]

(b) Average Earnings

	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	All 6 phases
Original IS	20.2(6)	27.8(6)	27.8(6)	30.1(6)	30.7(6)	31.9(6)	28.1(6)
"Fuller Info" IS	26.3(8)	33.8(8)	36.3(8)	36.7(8)	38.0(8)	37.7(8)	34.8(8)
p-value (2-tailed)	[.070]	[.300]	[.296]	[.215]	[.086]	[.692]	[.156]

***Table C.2*:** Group-level Phase-by-phase Mann-Whitney Tests between contributions (earnings) with the standard IS and with the "Fuller info" IS, 6-C Treatments (six votes with fixed cost of formal sanction scheme)

(a) Average Contribution

	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	All 6 phases
Original IS	13.2(4)	17.0(4)	18.2(4)	18.3(4)	18.4(4)	18.4(4)	17.2(4)
"Fuller Info." IS	17.5(3)	19.4(3)	19.9(3)	19.9(3)	19.4(3)	18.6(3)	19.1(3)
p-value (2-tailed)	[.077]	[.285]	[.697]	[1.00]	[.559]	[.559]	[0.480]

(b) Average Earnings

	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	All 6 phases
Original IS	27.0(4)	34.8(4)	36.3(4)	35.9(4)	37.6(4)	36.4(4)	34.7(4)
"Fuller Info." IS	30.6(3)	35.9(3)	38.0(3)	37.8(3)	37.2(3)	35.7(3)	35.9(3)
p-value (2-tailed)	[.289]	[.285]	[.697]	[1.00]	[.554]	[.714]	[.724]

Notes: Numbers in parenthesis are the numbers of groups under the conditions in the first column of the corresponding row. Only the groups that always chose IS are used in this analysis.

***Table C.3*:** Group outcomes and individual votes for formal (vs. informal) sanction scheme in the 6-C "Fuller Info" Variant

(a) Percentage of group outcomes and individual votes for formal sanction scheme

	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phases 2-7
Group Outcomes	57	14	0	0	0	0	12
Individual Votes	51	26	14	11	9	11	20

Notes: The numbers in each cell of this table indicate the percentage of groups choosing FS (in the first row) and the percentage of individuals voting for FS (in the second row). The remaining votes (i.e. 100% - number indicated) are for IS. The total number of groups is 7, and the total number of individual votes per phase is 35.

(b) Tests of difference in proportions of group outcomes and individual votes for formal sanction scheme in 6-C "Fuller Info" Variant versus original 6-C treatment, by phase

	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phases 2-7
Group Outcomes	.205	.143	.155	.070	.070	.070	.0096
Individual Votes	.439	.052	.065	.017	.0034	.050	.0001

Note: Panel (b) reports *p*-values for two-sided equality of proportion z-tests for difference in proportion of group outcomes and of individual votes for formal sanction scheme

***Table C.4*:** Determinants of Informal Sanctions Given under IS in the Exogenous IS "Fuller Info" Variant

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
C_j – median of C in period t	-0.053***	-0.061***	-0.063***	-0.063***	-0.063***	-0.063***	-0.063***
	(0.0025)	(0.0027)	(0.0028)	(0.0028)	(0.0028)	(0.0028)	(0.0028)
#1: Informal Sanctions Given by individual j to individual i in period $t-1$	---	0.19***	0.15***	0.15***	0.17***	0.15***	0.15***
		(0.016)	(0.017)	(0.018)	(0.023)	(0.025)	(0.025)
Interaction between term #1 and a dummy for C_i > median of C in period $t-1$	---	---	---	0.19*	---	0.17	0.17
				(0.10)		(0.11)	(0.11)
Interaction between term #1 and a dummy for C_i = min. $_{\text{all } k}$ $\{C_k\}$ in period $t-1$	---	---	---	---	-0.052	-0.026	-0.025
					(0.056)	(0.058)	(0.058)
Average Informal Sanctions Given by individual j to individual i in period 2 to $t-2$	---	---	0.16***	0.16***	0.16***	0.16***	0.16***
			(0.024)	(0.025)	(0.025)	(0.025)	(0.025)
Sum of (C_k – median of C) * (Informal Sanctions Given by individual j to individual k in period t-1) over $k \neq i$,j	---	---	---	---	---	---	-.00011
							(.00087)
Constant	0.11***	0.79***	0.039***	0.040***	.040***	.040***	0.040***
	(0.0078)	(0.0078)	(0.0091)	(0.0091)	(0.0091)	(0.0091)	(0.0092)
Number of observations	3840	3680	3520	3520	3520	3520	3520
F	429.1	273.0	206.7	155.9	155.2	124.74	103.9
Prob > F	.000	.000	.000	.000	.000	.000	.000
R^2	.088	.119	.182	.184	.183	.184	.184

Notes: Fixed-Effects Linear Regression with robust standard error clustered by subjectid. The dependent variable is the informal sanctions given by individual i to individual j in period t.

***Table C.5*:** Determinants of Informal Sanctions Given under Endogenous IS in the 6-C with "Fuller Info" Variant

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
C_j – median of C in period t	-0.097***	-0.097***	-0.097***	-0.097***	-0.099***	-0.098***	-0.099***
	(0.0038)	(0.0039)	(0.0042)	(0.0042)	(0.0042)	(0.0042)	(0.0042)
#1: Informal Sanctions Given by individual j to individual i in period $t-1$	---	0.12***	0.11***	0.11***	0.017	0.0031	0.0031
		(0.017)	(0.019)	(0.019)	(0.025)	(0.026)	(0.026)
Interaction between term #1 and a dummy for C_i > median of C in period $t-1$	---	---	---	0.67*	---	0.98***	0.99***
				(0.35)		(0.35)	(0.35)
Interaction between term #1 and a dummy for C_i = min. $_{\text{all } k}$ $\{C_k\}$ in period $t-1$	---	---	---	---	0.48***	0.51***	0.52***
					(0.084)	(0.085)	(0.085)
Average Informal Sanctions Given by individual j to individual i in period 2 to $t-2$	---	---	0.20***	0.20***	0.19***	0.19***	0.19***
			(0.025)	(0.25)	(0.025)	(0.025)	(0.025)
Sum of (C_k – median of C) * (Informal Sanctions Given by individual j to individual k in period t-1) over $k \neq i, j$	---	---	---	---	---	---	-0.00073
							(0.0012)
Constant	0.066***	0.040***	0.0055	0.0061	0.00048	0.0010	0.00050
	(0.010)	(0.0096)	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Number of observations	2960	2820	2680	2680	2680	2680	3520
F	639.4	355.4	244.5	184.5	193.7	156.9	130.8
Prob > F	.000	.000	.000	.000	.000	.000	.000
R^2	.164	.207	.259	.259	.272	.274	.274

Notes: Fixed-Effects Linear Regression with robust standard error clustered by subjectid. The dependent variable is the informal sanctions given by individual i to individual j in period t.

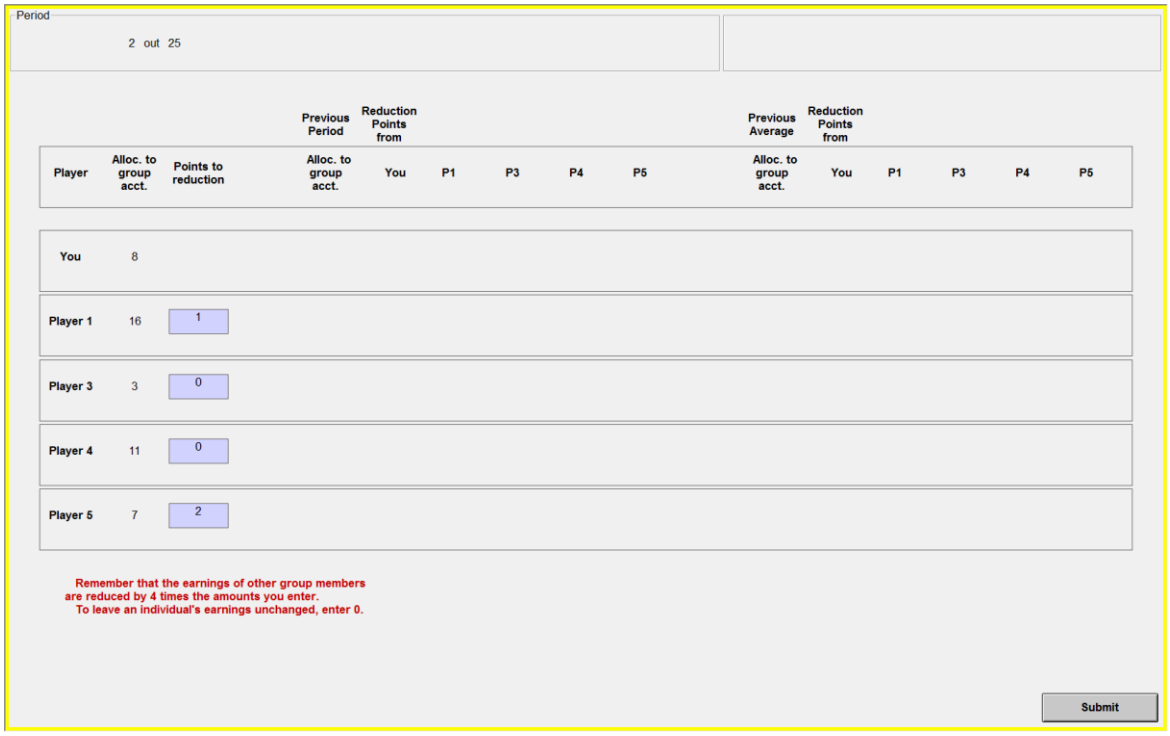
Amended Instruction Segment for Phases 2 – 7, "Fuller Info" IS Treatments

[In these variants of the 6-C Treatment and of the Exogenous IS Comparison Treatment, instructions were exactly as in the original versions of those treatments with the exception of the portion of the instructions describing the individual reduction decisions scheme.[1] That portion of the instructions read as follows:]

Scheme (2): Individual reduction decisions
In this scheme, you have an opportunity in stage 2 of each period, which we'll call the reduction stage, to reduce the earnings of others in your group at a cost to your own earnings. Under this scheme, you are given an identification number from player 1, player 2, …, player 5; this assigned identification number is the same across all periods in which this scheme is in place. After you and others in your group make an allocation decision, you will see your earnings in the allocation stage. Then, in stage 2, in boxes next to the information on others' allocations you will be asked to enter the whole number of points (if any) that you wish to use to reduce the earnings of each individual (see below). Each point you allocate to reducing another's earnings **reduces your own earnings by 1 point** and **reduces that individual's earnings by 4 points**. Note that the ratio between the costs incurred by the person whose earnings are reduced and the costs to others (in this case, to the individual choosing to impose the reduction) is exactly the same as that in the "Group-determined fines" scheme—4:1. Your own earnings can be reduced in the same way by the decisions of others in your group. You are free to leave any or all others' earnings unchanged by entering 0's in the relevant boxes.

FIGURE 1. A Screen Shot in stage 2 of Period 2

[1] Note that the IQ test and questionnaire on political attitudes were left out of the variant treatments in order to compensate for the greater time needed for instructions.



Note: Numbers shown are for illustration only.

Earnings reductions directed at you in stage 2 cannot bring your earnings for the period to less than zero. However, the cost of giving reductions to others is always fully born even if it makes your period earnings negative. (If you lose points in a period, they are deducted from those you accumulate in other periods.) Thus, your earnings can be thought of as having two parts:

Part 1: Earnings from the allocation stage minus reductions by others in your group, or 0 if the latter is negative

-- minus --

Part 2: Points you use to reduce others' earnings

Note that you incur the cost in Part 2 even if it causes your net earnings for the period to be negative.

Restated, your earnings are:

{the greater of **[**20 – (points you allocate to group account) + 0.4*(sum of points allocated by all in group to group account) – 4*(sum of reduction points directed at you by others in your group)**]** and 0**}**

– points you use to reduce others' earnings.

For example, suppose that you use 0 points to reduce the earnings of the first and second individuals whose allocations appear on the screen, you use 1 point to reduce the earnings of the third, and you use 2 points to reduce the earnings of the fourth. Suppose further that

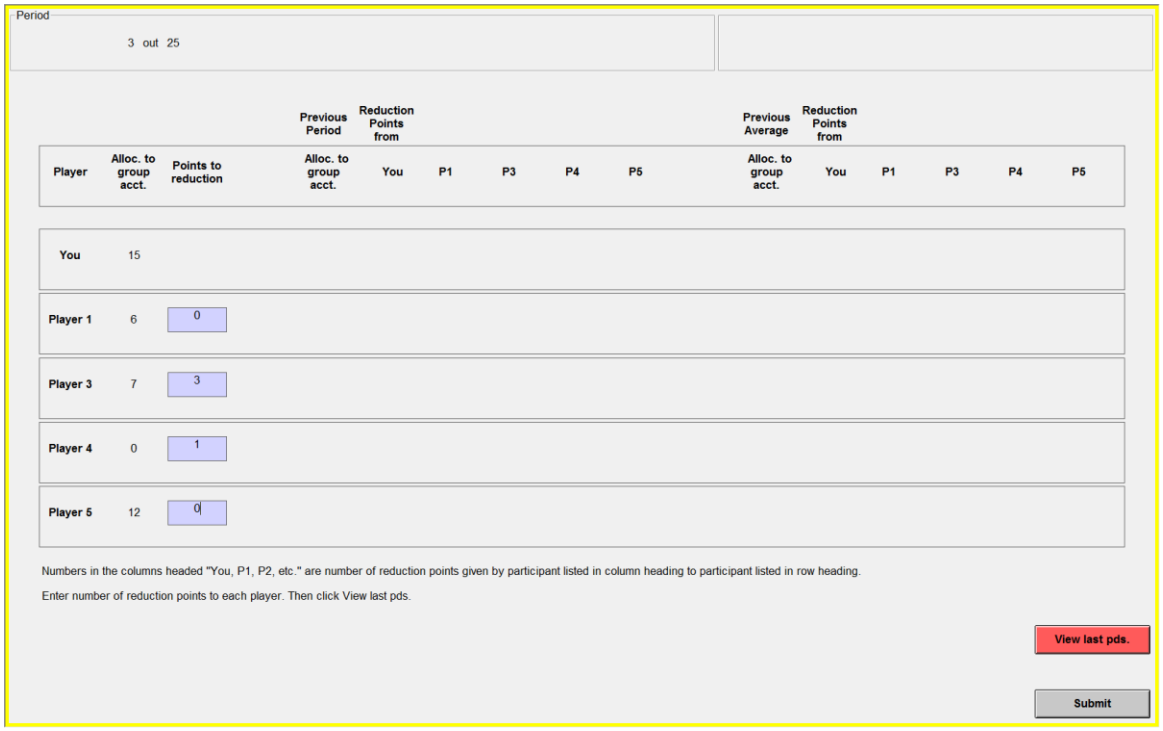
these individuals use 0, 1, 0 and 3 points to reduce your earnings. Then the third and fourth individuals' earnings for the period will be reduced by 4 and by 8 points, respectively, in addition to any reductions due to the decisions of others, although these reductions cannot bring their earnings below zero. Your own earnings for the period will be reduced by 3 points, your cost to impose reductions on others, plus (1x4)+(3x4)=16 points, the reductions imposed on your earnings by others. At the end of the reduction stage, you will learn that others decided to reduce your earnings by a total of 16 points although your actual earnings reduction will be less if your allocation stage earnings are less than 16.

In addition to the fact that earnings from the allocation stage and reductions received cannot go below zero, the earnings reduction process is subject to *two* limits. First, your reduction points must be an integer. Second, you cannot assign more than 10 reduction points to any one individual in your group.

Remember that if no reductions are imposed (the reduction boxes are filled in with 0's), earnings after the reduction stage are the same as those before it.

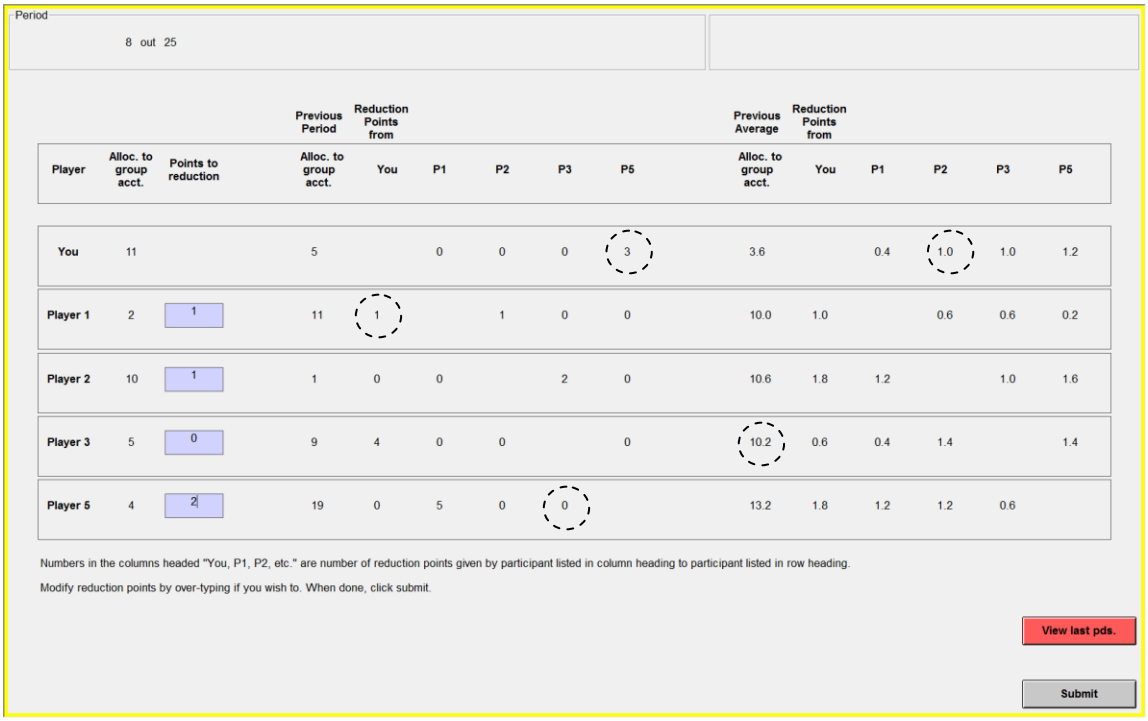
A chance to reconsider your reduction choices

Although the reduction stage consists only of the completion of the screen just shown, during the first period in which your groups uses this scheme, in later periods in which your group uses it the reduction stage will consist of two parts rather than only one. In the first part of the reduction stage, you will enter provisional numbers of reduction points on a screen like the one above, then press the **View last periods** button.



After you click on that button in Stage 2 of the second period using this scheme, a new set of numbers will appear in the middle portion of the screen as shown in the figure below.

In later periods using the scheme, not only the middle but also the right block of the screen will contain information after you click on the **View last pds**. button, as shown below.



Note: numbers are for illustration only, and dashed circles don't appear on actual screen but are here to help you locate examples referred to in what follows.
The new information concerns actions in previous periods, with the block of numbers in the middle reflecting the most recent period only, and the block of numbers on the right reflecting any periods before that. Consider the left-most of the new columns in the middle block. As the heading suggests, it shows the amount each group member allocated to the group account during the previous period. The remaining columns of the middle block show the number of reduction points each player gave to each other group member in that period. For example, the 1 in the second column, second row indicates that You (column heading) gave 1 reduction point to Player 1 (row heading) last period. Player 5 (column heading) gave 3 reduction points to You (row heading) last period. The number 0 on the right end of the bottom row indicates that Player 3 gave 0 reduction points to Player 5 last period.

During the third and later periods under the scheme, the right block will contain corresponding information for periods before the most recent period. For example, suppose that your group is using Individual Reduction Decisions for the seventh time. (This applies even if four periods of this scheme were followed by four periods of the other scheme and then this scheme returns to use later on due to you're group's voting choice.) The middle block will reflect what happened during the sixth period using the scheme, while the right block will reflect average actions during the first through fifth periods using the scheme. As shown in the example, the number 10.2 in the first column of the right block in the Player 3 row means that that group member assigned an average of 10.2 points to the group account during the first through fifth periods. The 1.0 in the Player 2 column and the row labeled You means that Player 2 assigned an average of 1.0 reduction points to you during the first five periods.

When relevant, both blocks of information will appear on your screen together in the second part of the reduction stage. Once this information appears, you have the opportunity to modify your reduction decisions, or you can leave them as they are. The provisional decisions you entered in the first part of the stage are not seen by other subjects and don't affect your earnings, while the decisions that are in the reduction boxes are final and will reflect their earnings and yours once you click **Submit**, ending the second part of the reduction stage. The final decisions that you make will be known by other individuals in the next period.

[The description of the Individual Reduction Decisions scheme in the Summary portion of the instructions also differs in these additional treatments by inclusion of the following sentence:]

In later periods, the second stage will have a first part in which you enter provisional reductions before seeing additional history information, and a second part in which you see information on past allocations and reduction decisions and can modify your provisional reduction decisions before submitting them.