# Supporting Online Material

(*For Online Publication Only*)

# Cooperation and Norm Enforcement - The Individual-Level Perspective


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## Content



## I Instructions

Below you find a set of the instructions, translated into English, as they were handed out and read aloud (in German) to the subjects. The first part of the instructions describes the C-game, the second the P- and the third part the R-game ($R^P$ and $R^S$ respectively).

## General Instructions for Participants

You are about to take part in an economic experiment. If you read the following instructions carefully, you can earn a considerable amount of money, depending on your decisions and the decisions of the other participants. It is therefore important that you read these instructions carefully and understand them well.

**During the experiment, communication is absolutely forbidden.** If you have any questions, please ask only us. Raise your hand and we will come to you. Disobeying this rule will lead to exclusion from the experiment and from all payments.

This experiment consists of several independent parts. You will be randomly matched into groups of four in each part. **The make-up of your group of four will change as each new part begins.** Participants cannot be identified beyond the individual parts, and you do *not* interact with the same participants in each part of the experiment.

For your participation today, you will initially receive a show-up fee of 5€. This amount increases by your earnings from the individual parts of the experiment. During the experiment, however, we will not speak of Euro, but of Token. Your total earnings are therefore initially calculated in Token. The total amount of Token you earn in the course of the experiment will be converted into Euro at the end and paid to you in cash. The exchange rate of Token to Euro will be told to you at the beginning of each part.

Now you will receive a description of the first part. You will receive the descriptions for the other parts later.

**General Information on the First Part of the Experiment**

In the first part of the experiment, the exchange rate from Euro to Token is: 5 Token = 1€.

The first part of the experiment consists of **one period only**. At the beginning of the first part, you will be assigned randomly to a group of four participants. Your group therefore consists of three other participants.

Each participant receives 20 Token. It is your task to decide how you will use your 20 Token. You can contribute all or part of your 20 Token to a **project**, or else put them in a **private account**. Each Token that you do not put towards to the project is automatically put in your private account by you. For instance, if your contribution to the project is 5 Token, then 15 Token remain in your private account.

<u>Income from the private account:</u>

For every Token that you put into your private account, you will earn exactly 1 Token. For example, if you put 20 Token in your private account (thus contributing nothing to the project), you will earn exactly 20 Token from the private account. If, for example, you contribute 12 Token to the project (thus putting 8 Token in your private account), you will earn 8 Token from your private account. *Nobody except you receives earnings from your private account.*

<u>Income from the project:</u>

For every Token that you or another participant from your group contributes to the project, *you and all other participants in your group* will earn 0.4 Token each. The income of each participant in your group from the project is therefore determined as follows:

*Income from the project = Sum of contributions to the project * 0.4*

Examples: If the sum of the contributions to the project by all participants from your group is 20 Token (e.g., if you and the three other participants each contribute 5 Token), you and all the other participants in your group receive 20 * 0.4 = 8 Token from the project. If the sum of the contributions to the project is 10 Token in total, then you and all the other participants earn 10 * 0.4 = 4 Token from the project.

Your income from the first part is the sum of your income from your private account and your earnings from the project. Therefore:

*Income from your private account (= 20 – Contribution to the project)*
*+ Income from the project (= 0.4 * Sum of contributions to the project)*
*Income from the first part of the experiment*

The calculations can be illustrated easily with an example:

You contribute 15 Token to the project, as do the other three participants. The total sum of contributions to the project is therefore 15 + 15 + 15 + 15 = 60 Token. Your income in the example would be:

<u>5 Token</u> from your private account <u>+ 0.4 * 60 Token</u> from the project = 5 + 24 = <u>29 Token.</u>

However, if you contributed 0 Token to the project, for example, the total sum of contributions to the project would be 15 + 15 + 15 + 0 = 45 Token. Your income would therefore be:

20 Token from your private account + 0.4 * 45 Token from the project = 20 + 18 = 38 Token.

The earnings for the other participants are calculated in the same way.

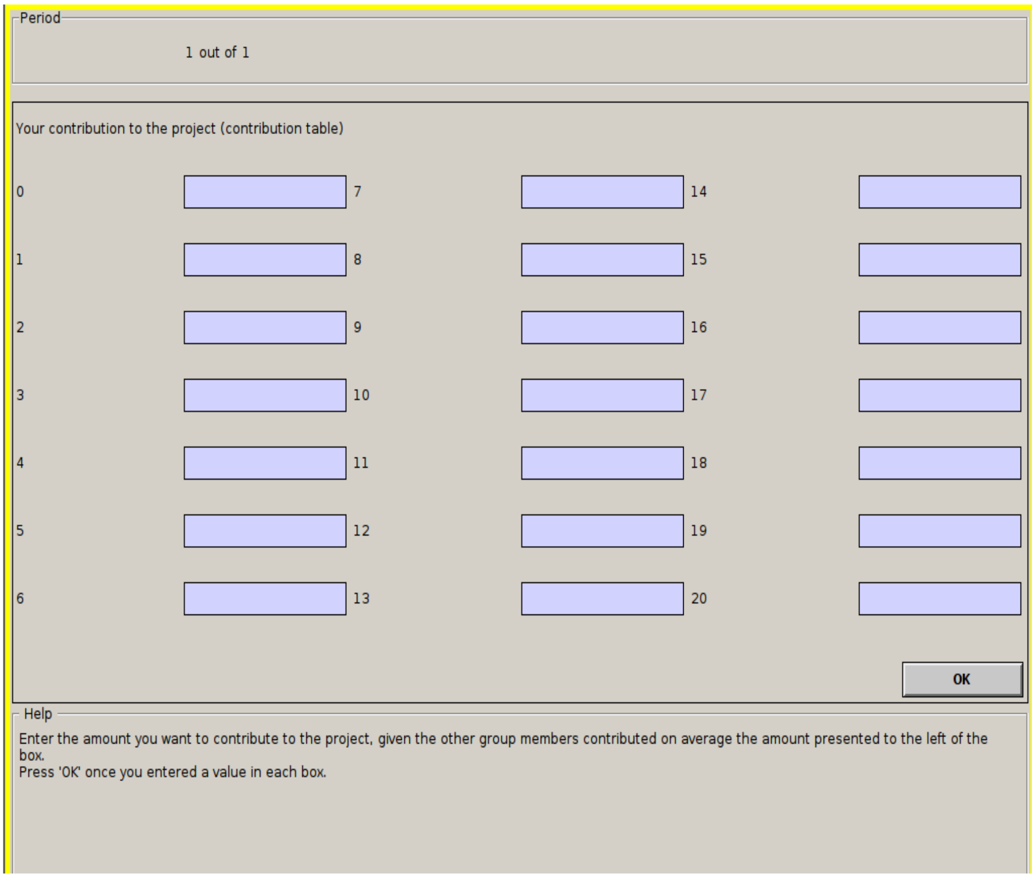
*Do you have questions?*

## Additional Instructions for the First Part of the Experiment

You make your contribution decision as follows in the first part of the experiment:

First, you have to decide how many Token you wish to contribute to the project. From this point on, we will call this the **unconditional contribution**.

Afterwards you have to fill in a **contribution table**. In the contribution table, you have to **enter how many Token you want to contribute to the project for every possible** (rounded) **average contribution of the <u>other</u> participants in your group**. So you can decide how many Token you want to contribute, depending on how many Token the others have contributed on average. To understand this better, please take a look at the following screen. It will appear directly after you have made you unconditional contribution decision.




The numbers to the left of the blue input fields on the screen present the potential rounded average contributions to the project by the **other** participants in your group. Now, simply enter, into every input field, how many Token **you** wish to contribute to the project – assuming that the other participants have contributed on average the depicted amount. **You have to make an entry into each input field.** You have to enter, for example, how many Token you contribute to the project if the other participants of your group contribute on average 0 Token to the project; how many Token you contribute if the others contribute on average 1, 2, or 3 Token, and so forth. You can enter **all** whole numbers from 0 to 20 into each field.

**After** all participants have made their unconditional contribution decision and filled in the contribution table, one participant is chosen at random from each group. For the **randomly chosen participant** only the completed **contribution table** is relevant for both the decision and the payoff. For the **other three participants** in your group, who have not been chosen randomly, only the **unconditional contribution** is relevant for both the decision and the payoff. An example illustrates this:

**Example:** Assume that **you have been chosen randomly, so that your contribution table is relevant for your decision**. Thus, for the other three participants, only the unconditional contribution decision is relevant. Assume this is given by 0, 2, and 4. The average contribution of these three participants is therefore 2.

If you have stated in your contribution table that you will contribute 1 in case the others contribute 2 on average, then the total group contribution to the project is 0 + 2 + 4 + 1 = 7. All participants in your group thus earn 0.4 * 7 = 2.8 Token from the project, plus the individual earnings from each private account.

On the other hand, if you stated in your contribution table that you would contribute 19, in case the others contribute 2 on average, the total contribution to the project is 0 + 2 + 4 + 19 = 25. All participants in your group thus earn 0.4 * 25 = 10 Token from the project, plus the individual earnings from each private account.

Only at the end of the third part of the experiment do you learn whether the contribution table or the unconditional contribution was relevant for you and how high your payoff is from this first part.

Do you have questions? If you do, please raise your hand now.

**General Information on the Second Part of the Experiment**

In the second part of the experiment, the exchange rate from Euro to Token is: 5 Token = 1€.

The second part of the experiment consists of **one period only**. At the beginning of the second part, you are once again assigned randomly to a group of four participants.

The decision situation is similar to the situation in part one; however, **<u>in this part, an additional stage is introduced</u>**. The process is now as follows:

In the first stage, as before, you have to decide how many Token you wish to contribute to a project.

Your income at the end of stage one is the sum of your income from the private account and your income from the project. Therefore:

| |
|---|
| *Income from your private account (= 20 – Contribution to the project)* |
| + *Income from the project (= 0.4 * Sum of contributions to the project)* |
| *Income from the first part of the experiment* |

**STAGE 2**

At the beginning of stage 2, you will learn how many Token the other participants in your group have contributed to the project. You will then have the opportunity to **reduce** the stage 1 earnings of **each one** of the other participants in your group. The other participants can similarly reduce **your** earnings, if they choose to.

To reduce the earnings of a specific participant, you can assign so-called **points** to this participant.
<u>For each point that you assign to a participant in your group, you reduce the earnings of this participant by 3 Token.</u> Thus, if you assign 1 point to a participant, you reduce the earnings of this participant by 3 Token. If you assign 2 points to this participant, you reduce this participant's earnings by 6 Token, etc. If you do not want to reduce the earnings of a participant, assign 0 points to this participant.

The more points you assign to a participant, the larger is the reduction in the earnings of this participant. However, your own earnings are also reduced with every point that you assign to a participant. <u>For each point that you assign, your earnings are reduced by 1 Token.</u> For example, if you assign 2 points to a participant, you will incur costs of 2 Token; if you assign 4 points to a participant, you will incur costs of 4 Token; if you assign 0 points to a participant, you will incur no costs for this.

You decide for **each** participant in your group by how many Token you want to reduce his earnings. You may assign a maximum of 10 points to each participant.

If and how many Token in total are deducted from a participant's earnings depends not only on how many points you assigned to this participant, but also the other participants' points. For example, if a participant receives 1, 0, and 2 points, respectively, from the other three participants in the group, his earnings are reduced by (1 + 0 + 2) * 3 = 9 Token. Simultaneously, the earnings of the other participants are reduced because of the costs incurred by assigning the points by 1, 0, and 2 Token.

### YOUR PAYOFF

Your payoff is thus determined as follows:

*Earnings from stage 1*

− *3 x (The number of points from stage 2 that have been assigned to you)*
− *The number of points from stage 2 that you have assigned to others*

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*Payoff*

## Additional Instructions for the Second Part of the Experiment

You make your decisions in the second part of the experiment as follows:

First, you decide *once* how many Token you want to contribute to the project in the first stage.

In stage 2, you are confronted with a number of decision situations. In each decision situation, a combination of **possible** contributions by the other participants in your group is presented. Above, we pointed out that you will learn the precise contributions of the other three participants in your group in stage 2 – and after that you can assign points to each participant. However, in this part of the experiment, the three presented contributions <u>might possibly be fictitious</u> and do not represent the actual contributions of the other three participant.

After you decided about the assignment of points to the presented contributions, you will be presented with another (possibly fictitious) combination of contributions by the other participants in your group. For this decision situation, you also have to decide how many points you want to assign to each participant.

In total, you will be presented with **eleven** decision situations. Ten of these eleven decision situations are fictitious. In **exactly one** situation, you will be presented with the **actual** contributions of the other three participants in your group. How many points you assign to the other three participants in your group, and how large your payoff will be, will only be determined by the decisions in this one decision situation. The chosen assignment of points in the fictitious situations has no influence on your payoff or on that of the other participants. When deciding on the assignment of points in a decision situation, you will not know if the presented contributions are the actual contributions. <u>Therefore you have to consider your assignment of points in every decision situation, as every situation might be relevant for you.</u>

You will learn which situation was the actual situation and how big your earnings are from the second part of the experiment at the end of the third part of the experiment.

Do you have questions? If so, please raise your hand now.

**General Information for the Third Part of the Experiment**

In the third part of the experiment, the exchange rate from Euro to Token is: 50 Token = 1€.

The third part of the experiment consists of **ten periods**. At the beginning of the third part, you will again be assigned randomly to a group of four participants. The composition in all ten periods stays the same, which means **you will interact with the same participants in each of the 10 periods**.

The general decision situation is the same as in the second part of the experiment in each period, i.e., you will decide, in stage 1, how many Token you wish to contribute to a project; in the second stage, you can assign points to the other participants in your group. For each point that you assign to a participant, you reduce the earnings of this participant by 3 Token, and your own earnings by 1 Token.

In the **first period**, you will be confronted with eleven decision situations in stage 2. Ten out of the eleven decision situations are made-up. In exactly one situation, you will be presented with the actual contributions of the other three participants. Your payoff from the first period will only be determined by the decisions in this one decision situation (you know this already from the previous part of the experiment).

At the end of the first period, all participants in your group will learn how many points they have received from the other participants.

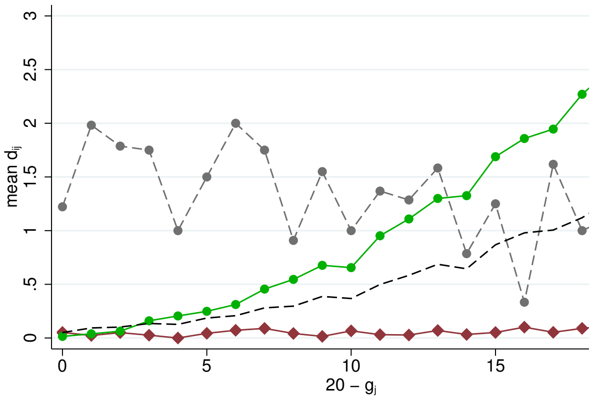
In the **subsequent nine periods**, and this is different from the previous part of the experiment, you will interact another nine times with the **same** participants. However, in the subsequent nine periods, you will **only be confronted with the actual** decision situation in stage 2.

After each of the ten periods, each participant will learn how many points he has received from the other participants in the group. Further, he will learn his payoff from this period. After this, each participant is given a new, randomly drawn number. You are therefore always with the same participants in one group, but cannot identify the individual participants from round to round.

Do you have questions? If so, please raise your hand now.

## II Sensitivity of Type Classification Approaches

Figure S.1: Punishment Patterns and Punishment Types – Sensitivity Analysis




| Type | N | % |
|---|---|---|
| Pun | 296 | 47.1 |
| NPun | 316 | 50.3 |
| APun | 16 | 2.6 |
| Total | 628 | 100.00 |

*Notes:* Primary type distribution and average punishment patterns (in the $20-g_j$-space) for different punishment types: pro-social punishers (*Pun*), non-punishers (*NPun*), anti-social punishers (*APun*). In contrast to our main approach, *NPun* is here classified as those with insignificant (rather than exact zero-) coefficients: $\hat{\alpha}_i \approx \hat{\beta}_i \approx 0$. With this alternative definition of *NPun*, *all* subjects that were classified as *NCL* in Figure 1 now fall into the extended *NPun* definition.

Table S.1: Primary Punishment Classification using Spearman's $\rho$

| Type | N | % |
|---|---|---|
| Pun | 307 | 48.9 |
| NPun | 253 | 40.3 |
| APun | 6 | 0.9 |
| NCL | 62 | 9.9 |
| Total | 628 | 100.00 |

*Notes:* Primary punishment type classification applying Spearman's rank correlation in line with the conditional cooperation classification proposed by Fischbacher et al. (2001). *Pun* are classified as positive $\rho$ with $p \leq 0.01$. Subjects are $NPun$ if all peer punishment decisions $d_{ij} = 0$. $APun$ are classified as negative $\rho$ with $p \leq 0.01$. All subjects that are not classified as one of the previous three, are classified as $NCL$.

Table S.2: Comparing Primary Punishment Classifications: Spearman's $\rho$ vs. OLS estimates

| | OLS | | | | Sum |
|---|---|---|---|---|---|
| Spear. $\rho \downarrow$ | *Pun* | *NPun* | *APun* | *NCL* | ($N$) |
| Pun | 293 | 0 | 0 | 14 | 307 |
| NPun | 0 | 253 | 0 | 0 | 253 |
| APun | 0 | 0 | 6 | 0 | 6 |
| NCL | 3 | 0 | 10 | 49 | 62 |
| Total | 296 | 253 | 16 | 63 | 628 |

*Notes:* Comparison of our primary peer punishment classification using Spearman's $\rho$ and the OLS estimates. The classification based on Spearman's $\rho$ shows only minor differences to our classification approach from the main text.

Table S.3: Contribution Type Classification using Spearman's $\rho$

| Type | N | % |
|---|---|---|
| CC | 388 | 61.8 |
| FR | 130 | 20.7 |
| TC | 54 | 8.6 |
| NC | 56 | 8.9 |
| Total | 628 | 100.00 |

*Notes:* Contribution type classification applying Spearman's $\rho$ as proposed by Fischbacher et al. (2001). *CC* are classified as positive $\rho$ with $p \leq 0.01$. Subjects are *FR* if all 21 conditional contribution decisions $g_i = 0$. *TC*-types initially show a positive relation to the average contributions and a decreasing slope in the latter part of the graph and are classified via eyeballing.

Table S.4: Comparing Contributor Classification Spearman's $\rho$ and OLS

| | OLS | | | | Sum |
|---|---|---|---|---|---|
| Spear. $\rho\downarrow$ | *CC* | *FR* | *TC* | *NC* | ($N$) |
| CC | 381 | 0 | 0 | 7 | 388 |
| FR | 0 | 130 | 0 | 0 | 130 |
| TC | 0 | 0 | 54 | 0 | 54 |
| NC | 1 | 0 | 0 | 55 | 56 |
| Total | 382 | 130 | 54 | 62 | 628 |

*Notes:* Comparison of individual conditional cooperation classification using Spearman's $\rho$ and our approach (based on OLS estimates). The Spearman's $\rho$ based classification shows only minor differences compared to our classification approach from the main text.

Table S.5: Comparing P- & R-game Punishment Classification

| | R-game | | | | Sum |
|---|---|---|---|---|---|
| P-game↓ | Pun | NPun | APun | NCL | ($N$) |
| Pun | 177 | 16 | 4 | 99 | 296 |
| NPun | 45 | 105 | 5 | 98 | 253 |
| APun | 2 | 2 | 5 | 7 | 16 |
| NCL | 18 | 12 | 3 | 30 | 63 |
| Total | 242 | 135 | 17 | **234** | 628 |

*Notes:* Within subject comparison of primary punishment type classifications using P- vs. R-game data. Here we apply our classification approach (based on estimating the equation $d_{ij} = \alpha_i + \beta_i(20 - g_j) + \varepsilon_i$) to the observational data on cooperation and punishment in the repeated game (R-game). The two approaches show strong deviations in classification outcomes. Based on the R-game data, 234 subjects (more than a third of all) remain unclassified and get labeled as $NCL$.

## III Group Composition and Payoffs in the Repeated Game

Figure S.2 replicates Figure 4 for the average group *payoffs*. The exercise delivers similar patterns as those discussed above. It is remarkable to note that the gains from higher contributions that groups with many *Pun*-types manage to achieve, are hardly offset by the costs from having more punishment. These findings concur with the seminal work of Fehr and Gächter (2000) and Gächter et al. (2008). In groups with 3 or 4 *Pun*-types the average payoff over all periods is 27.7 tokens, with an impressive average of 29.2 during the last five periods. (Keep in mind that the achievable maximum group payoff is 32 tokens.) Groups with 3 or 4 *CC*-types, in contrast, end up with an average payoff of 26.8, and 27.7 during the last five periods. Groups with many pro-socially punishing subjects thus end up with higher payoffs than groups with many conditional contributors. This difference in payoffs is significant at the 10 percent level for a two-sided t-test.

Next we run regressions to explore the role of *Pun*-types for a group's average payoff. We build on equation (5) and use a (matching-)group's average payoff, $\bar{\pi}_{\ell t}$, as an alternative dependent variable. Estimation results for the partner and the stranger design are presented in Panel A of Table S.6. Consistent with the positive effect of *CC*-types on group contributions, column (1) shows positive and highly significant coefficients. In column (2), we find still positive but smaller coefficients for the *Pun*-type dummies. Only the dummy for 3 or 4 *Pun*-types is statistically significant. The point estimates from columns (1) and (2) imply that a group with 3 or 4 *CC*- [*Pun*-] types achieves a payoff per period that is on average 5.3 [3.7] tokens higher than in a group with zero *CC*- [*Pun*-] types.

The data thus reveal a slightly different picture than the one from above: regarding average contributions, we have seen that having more subjects that punish pro-socially was unambiguously 'better' than having more conditional cooperators. For achieving higher payoffs, however, the positive role of *Pun*-types is limited by the fact that their (stronger) inclination to punish — which is instrumental for reaching high contribution levels — is costly and cet.par. lowers average group payoffs. This is why *CC*-types have a stronger positive effect on average payoffs, an observation that is further supported by the results from column (3).

Three things are worth noting. First, the results for the stranger design, which are presented in columns (4)–(6) of Panel A in Table S.6, show again a much more positive impact of *Pun*- as compared to *CC*- types. In fact, column (6) reveals statistically significant coefficients for the two *Pun* but not for the *CC* dummies. The relative costs from having more *Pun*-types therefore seem to be higher in stable groups of four (partner design) as compared to matching groups of eight — a point we will return to below.

Second, similar as above, the specification from column (2) outperforms the one from column (1), and the one from column (5) does better than the one from (4) in terms of explanatory power ($R^2$) and information criteria. Thus, knowledge about the prevalence of *Pun*-types is still crucial for explaining variation in payoffs across heterogenous groups. Thirdly, when we replicate the estimates from column (1)–(3) for the last five periods of the $R_p$-game, we observe again larger and more precisely estimated positive coefficients on the *Pun* dummies for the partner

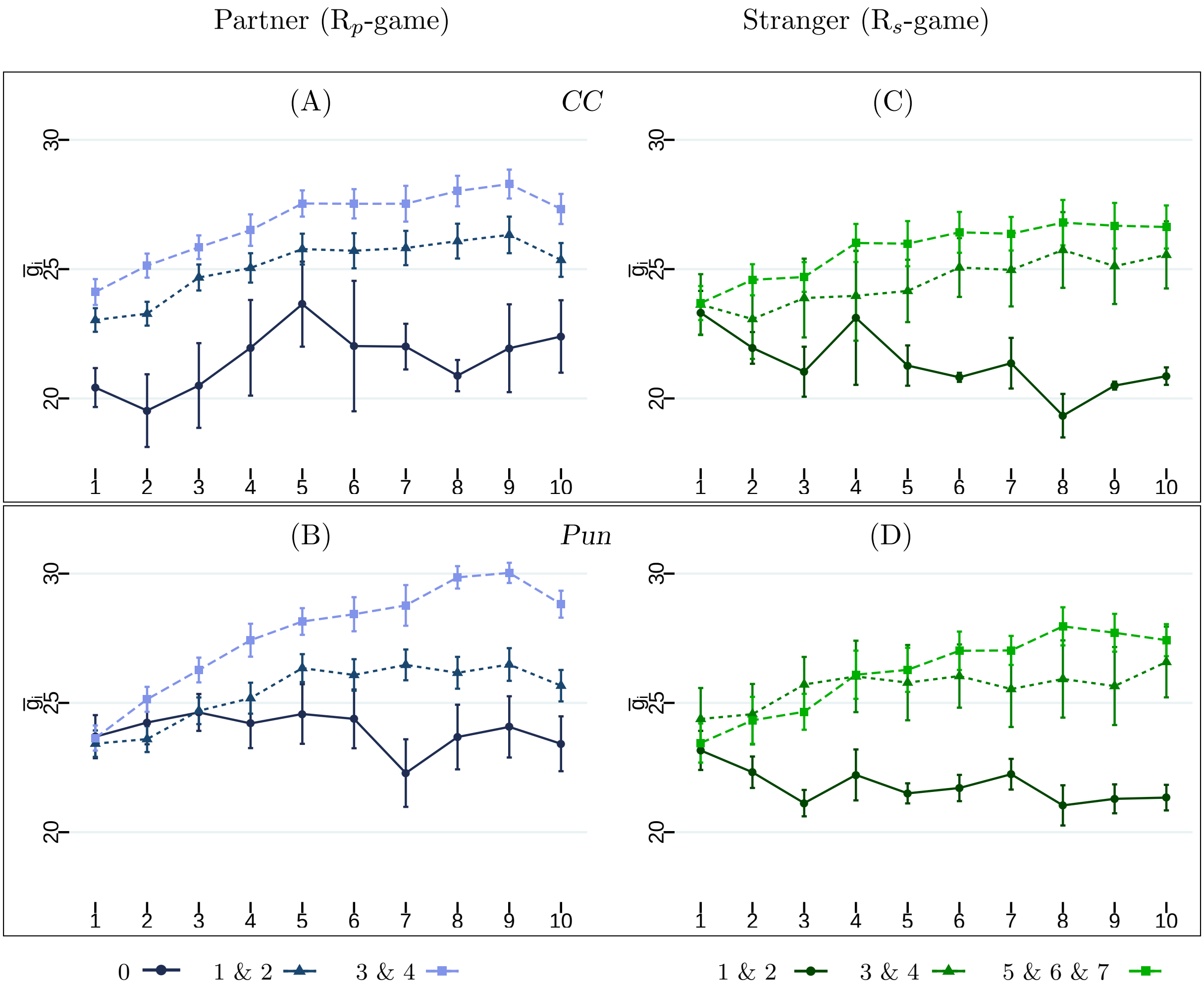
Table S.6: Group Composition and Average Payoffs

| | Panel A. All 10 Periods | | | | | | |
|---|---|---|---|---|---|---|---|
| | *Partner Design* | | | | *Stranger Design* | | |
| | (1) | (2) | (3) | | (4) | (5) | (6) |
| $CC^{few}$ | 3.580*** | | 2.989** | $CC^{few}$ | 3.158** | | −0.112 |
| | (1.159) | | (1.351) | | (1.274) | | (1.137) |
| $CC^{many}$ | 5.254*** | | 4.367*** | $CC^{many}$ | 4.431*** | | 1.150 |
| | (1.137) | | (1.333) | | (0.818) | | (0.882) |
| $Pun^{few}$ | | 1.493 | 1.026 | $Pun^{few}$ | | 3.826*** | 3.954*** |
| | | (1.011) | (1.074) | | | (1.221) | (1.200) |
| $Pun^{many}$ | | 3.734*** | 3.051*** | $Pun^{many}$ | | 4.401*** | 3.803*** |
| | | (0.965) | (1.054) | | | (0.716) | (0.900) |
| Obs. | 1,130 | 1,130 | 1,130 | Obs. | 220 | 220 | 220 |
| $R^2$ | 0.135 | 0.146 | 0.189 | $R^2$ | 0.224 | 0.371 | 0.394 |
| AIC | 6472 | 6457 | 6402 | AIC | 1103 | 1057 | 1052 |
| | **Panel B. Last 5 Periods** | | | | | | |
| | (1) | (2) | (3) | | (4) | (5) | (6) |
| $CC^{few}$ | 4.008*** | | 3.166* | $CC^{few}$ | 4.714*** | | 1.205 |
| | (1.305) | | (1.624) | | (1.234) | | (1.122) |
| $CC^{many}$ | 5.889*** | | 4.537*** | $CC^{many}$ | 6.006*** | | 1.769** |
| | (1.265) | | (1.590) | | (0.791) | | (0.734) |
| $Pun^{few}$ | | 2.605** | 2.137 | $Pun^{few}$ | | 4.423*** | 3.979*** |
| | | (1.237) | (1.338) | | | (1.363) | (1.381) |
| $Pun^{many}$ | | 5.612*** | 4.920*** | $Pun^{many}$ | | 5.906*** | 5.137*** |
| | | (1.184) | (1.298) | | | (0.794) | (0.904) |
| Obs. | 565 | 565 | 565 | Obs. | 110 | 110 | 110 |
| $R^2$ | 0.0795 | 0.149 | 0.190 | $R^2$ | 0.268 | 0.499 | 0.515 |
| AIC | 3339 | 3294 | 3270 | AIC | 556 | 514 | 514 |

*Notes:* Estimates from linear random-effects models. Dependent variable: average (matching-)group payoff per period. Columns (1)–(3) for the $R_p$-game, columns (4)–(6) for the $R_s$-game. Panel A considers all 10 periods, the lower Panel B only the last 5 periods of the game. Dummies with superscript '*few*' indicate that one or two [three or four], and dummies with '*many*' indicate that three or four [five, six, or seven] subjects in the respective [matching]-group in models 1 to 3 [4 to 6] are *CC*- or *Pun*-type. In columns (1)–(3) the number of observations is $N = 1,130$ (Panel A) and $N = 565$ (Panel B; 113 groups of the partner design × 10 and 5 periods, respectively). In columns (4)-(6) it is $N = 220$ and $N = 110$ (22 matching-groups of the stranger design × 10 or 5 periods, respectively). All specifications include a constant and a full set of period-fixed effects (coefficients not reported). Standard errors, clustered at the (matching-)group level, are in parentheses; *** / ** / * indicate significance at the 1%-, 5%-, and 10%-level, respectively.

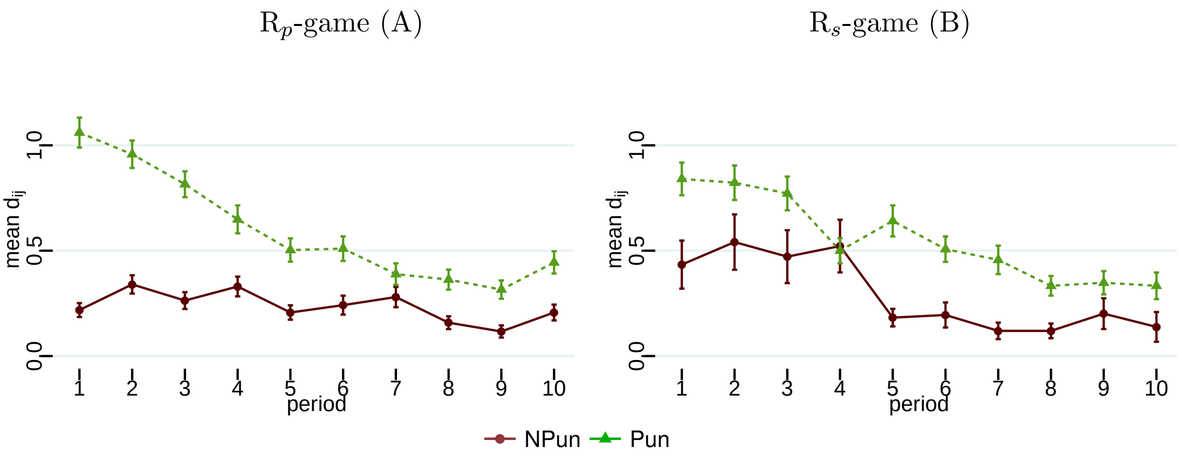
design. (These estimates are presented in Panel B of Table S.6.) Hence, excluding the early periods — where most punishment occurs (see Figure S.3) — the regressions capture again the beneficial, cooperation inducing effect of having more pro-social punishers in a group.

Figure S.2: Average (Matching)-Group Payoffs by Type Prevalence




*Notes:* Panels A and B [C and D] show the average payoff per period among the [matching]-groups for varying frequencies of *CC*- (panel A and C) and *Pun*-types (B and D). Panels A and B consider the groups of four subjects from the partner design ($R_p$), panel C and D are based on the eight-player matching groups from the stranger design ($R_s$). The underlying variation of types across (matching-)groups is presented in Table A1.

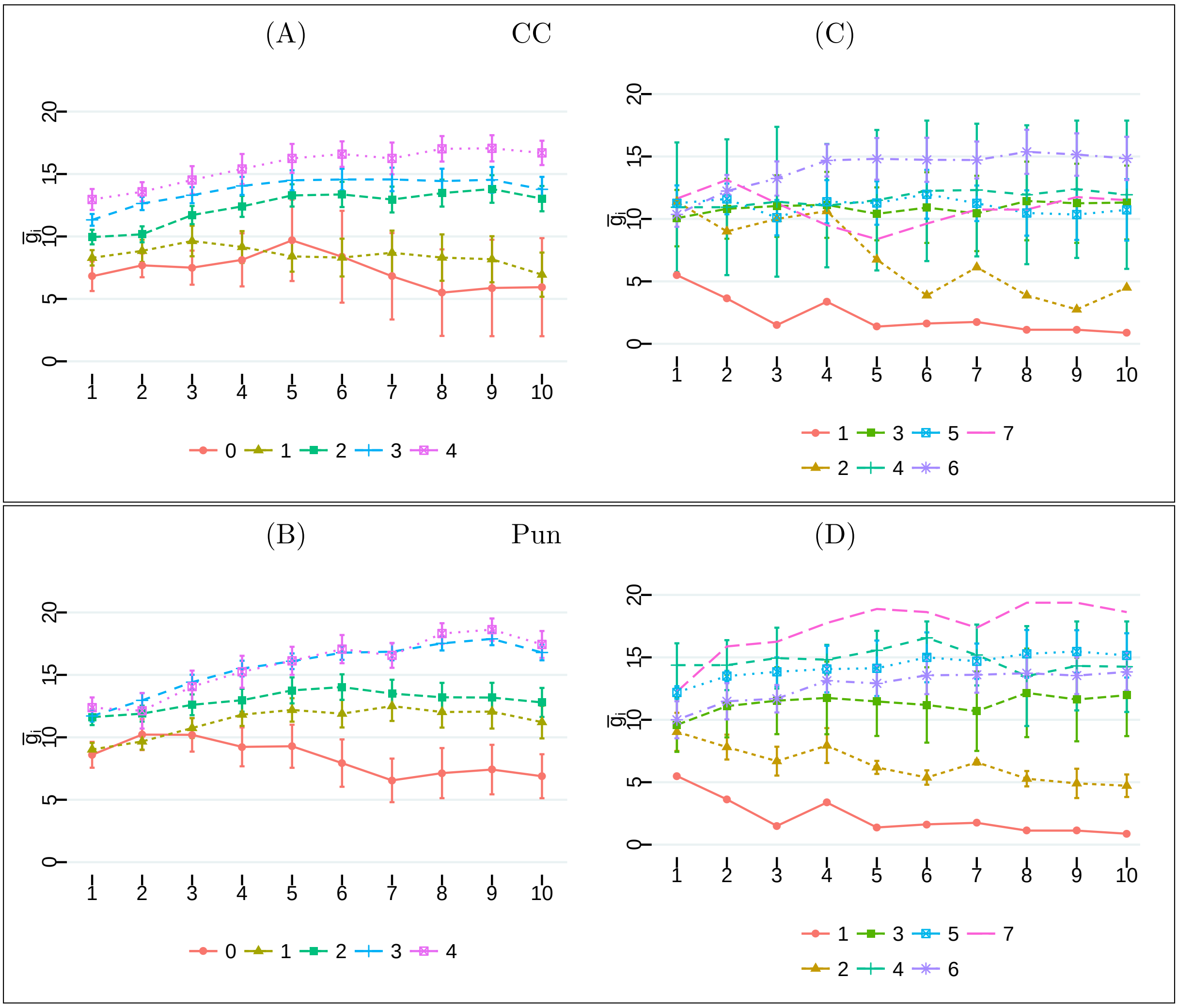
Figure S.3: Mean Observed Punishment per Period for Pun- & NPun- Types




*Notes:* Mean observed punishment by Pun and NPun over the 10 periods of the R-game.

Figure S.4: Average (Matching)-Group Contributions by Type Prevalence

Partner ($R_p$-game) Stranger ($R_s$-game)




*Notes:* Graphs depict the average individual contribution per period averaged over all (matching)-groups containing the corresponding number of subjects of a respective type (CC; Pun). Given the distribution of (matching) group compositions (See table A1.) the graph contains average contribution levels of single groups.

# IV Complementary Tables

Table S.7: Group Composition and Group Contributions: Tobit Estimates (Partner Design)

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| $\text{CC}^{few}$ | 4.395 | | 3.353 | 3.384 |
| | (2.829) | | (2.620) | (2.749) |
| $\text{CC}^{many}$ | 7.645*** | | 5.853** | 6.044** |
| | (2.806) | | (2.614) | (2.915) |
| $\text{Pun}^{few}$ | | 4.356*** | 3.551** | 3.646* |
| | | (1.498) | (1.466) | (1.876) |
| $\text{Pun}^{many}$ | | 7.937*** | 6.838*** | 7.184*** |
| | | (1.618) | (1.594) | (2.339) |
| $\text{Pun}\times\text{CC}^{few}$ | | | | −0.183 |
| | | | | (1.690) |
| $\text{Pun}\times\text{CC}^{many}$ | | | | −0.662 |
| | | | | (2.711) |
| AIC | 5361 | 5352 | 5347 | 5350 |

*Notes:* Estimates from random-effects Tobit models (with a lower bound at zero (23 obs.) and an upper bound at 20 (186 obs.)). Dependent variable: average group contribution per period. The observational unit is a group (of 4 subjects) per period. Dummies with superscripts '*few*' indicate one or two, with superscripts '*many*' three or four *CC*, *Pun*, and *Pun*×*CC* type subjects per respective group. Number of observations: $N = 1,130$ (113 groups of the partner design × 10 periods). All specifications include a constant and a full set of period-fixed effects (coefficients not reported). Standard errors in parentheses; *** / ** / * indicate significance at the 1%-, 5%-, and 10%-level, respectively.

Table S.8: Group Composition and Group Contributions: Tobit Estimates (Stranger Design)

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| $CC^{few}$ | 6.602** | | 1.053 | 0.134 |
| | (3.318) | | (3.270) | (3.364) |
| $CC^{many}$ | 8.221*** | | 2.130 | −0.101 |
| | (3.072) | | (3.074) | (3.719) |
| $Pun^{few}$ | | 6.867*** | 6.517*** | 5.631** |
| | | (2.024) | (2.416) | (2.447) |
| $Pun^{many}$ | | 8.193*** | 7.224*** | 5.520** |
| | | (1.803) | (2.196) | (2.377) |
| $Pun{\times}CC^{few}$ | | | | 2.690 |
| | | | | (2.926) |
| $Pun{\times}CC^{many}$ | | | | 5.166 |
| | | | | (3.646) |
| AIC | 972 | 963 | 967 | 968 |

*Notes:* Estimates from random-effects Tobit models (with a lower bound at zero (0 obs.) and an upper bound at 20 (5 obs.)). Dependent variable: average matching-group contribution per period. Dummies with superscript '*few*' indicate that three or four, and dummies with '*many*' indicate that five, six, or seven subjects in the respective matching-group are *CC*- or *Pun*-type. For two-dimensional types superscripts '*few*' indicate two or four and '*many*' five or six *Pun*×*CC* per respective matching-group. The observational unit is a matching group (8 subjects) per period. Number of observations: $N = 220$ (22 matching-groups of the stranger design × 10 periods). All specifications include a constant and a full set of period-fixed effects (coefficients not reported). Standard errors in parentheses; *** / ** / * indicate significance at the 1%-, 5%-, and 10%-level, respectively.