

Supplementary material for:

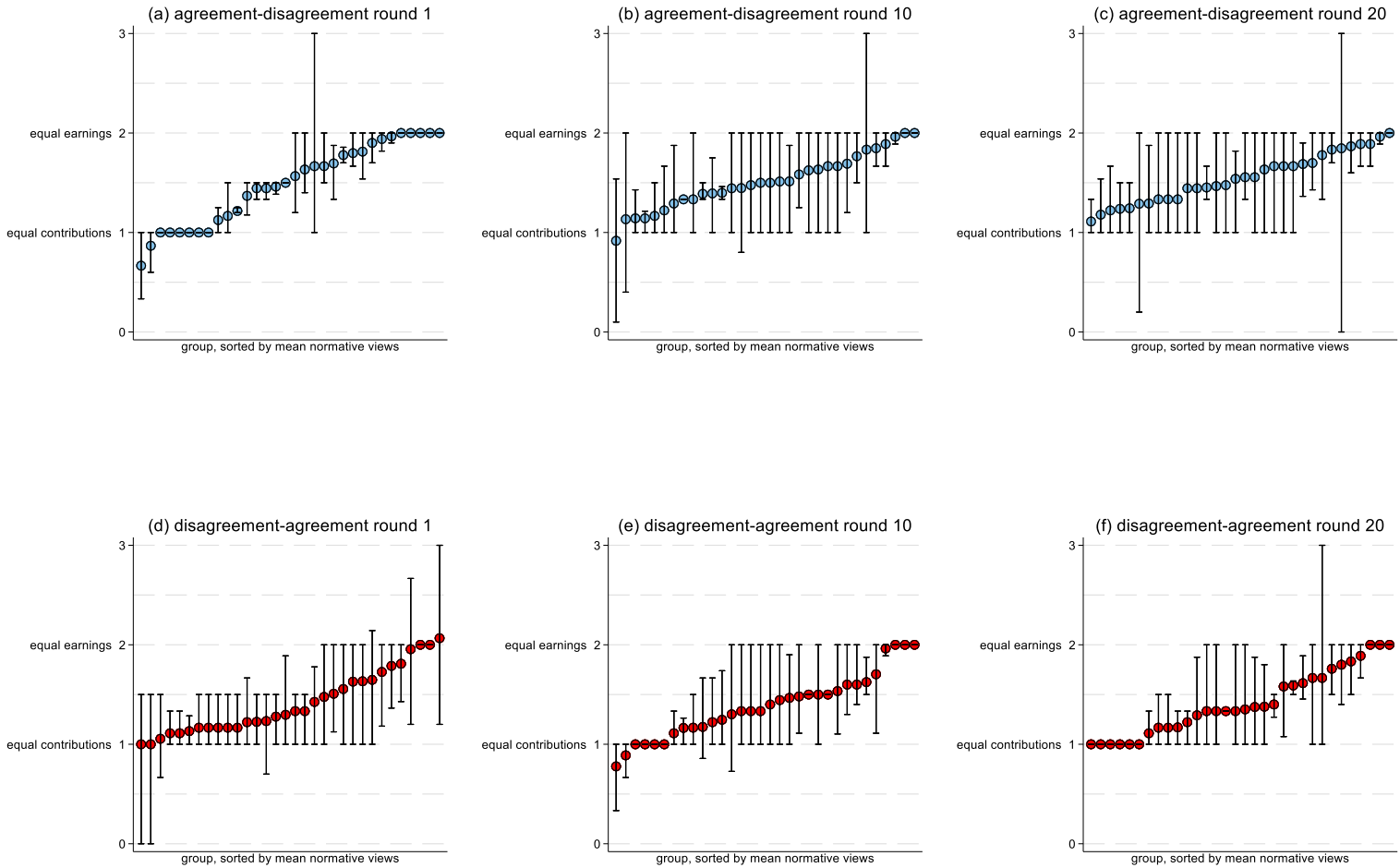
Cooperation between newcomers and incumbents: The role of normative disagreements

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S1. Distribution and disagreement of normative views

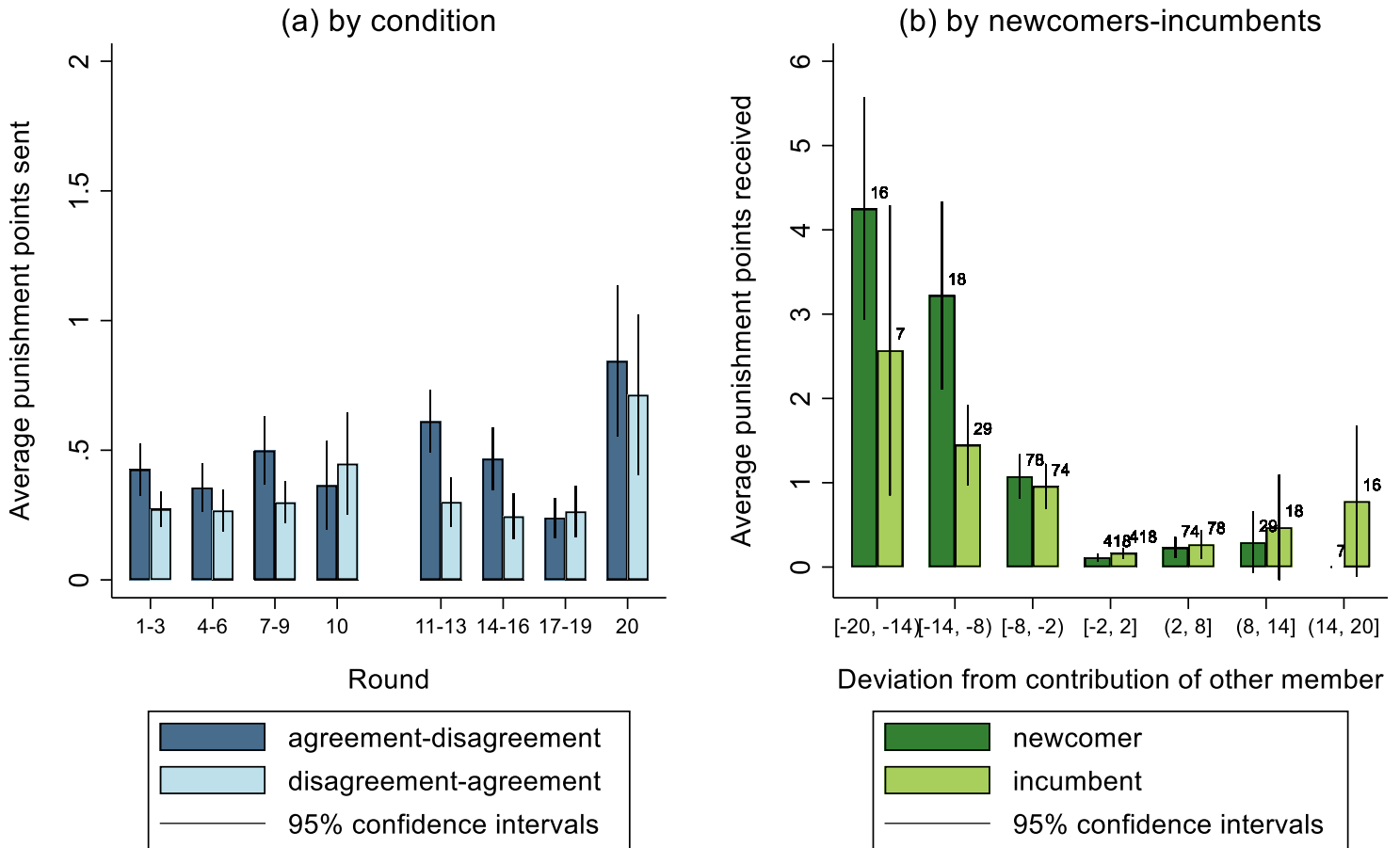
Figure S1a-f. Distribution of normative views



Note: Each participant reported on the appropriate contribution that a high-return member should make and the appropriate contribution that each of the low-return members should make. We divide the participant's appropriate contribution for the high-return member by the participant's average appropriate contribution for the low-return members to achieve a ratio that indicates the participant's position on the equal-contributions to equal-earnings spectrum on the y-axis. With the return distribution in our experiment, high-return members should contribute twice as much as low-return members to equalize earning. Participants supporting equal-earnings therefore have a ratio of 2, while participants supporting equal-contributions have a ratio of 1. Each circle represents a group, and the groups are sorted on the x-axis based on their mean ratio. The circle provides the group-mean ratio, and the capped spikes provide the range between the group-min and group-max ratio (i.e., the extent of group-disagreement). There are 32 groups in each condition, and we show the ratios for both conditions at the three measurement moments, i.e., before round 1, before round 11, and after round 20. We see that almost all group-average normative views fall within the spectrum of equal-contributions ($y = 1$) to equal-earnings ($y = 2$). Both before and after membership change (first measurement vs second and third measurement), there is considerable variation between groups in the average normative views; several groups support equal-contributions, several groups support equal-earnings, and several groups support a balance between these two rules. Comparison of the capped spikes in Figure S1a and Figure S1d corroborates that within-group normative disagreement is larger in condition disagreement-agreement before membership change. Comparison of the capped spikes in Figure S1b-c and Figure S1e-f corroborates that within-group normative disagreement is larger in condition agreement-disagreement after membership change.

S2. Punishment comparison between conditions and for newcomer vs. incumbent

Figure S2. Punishment by condition and newcomer-incumbent division



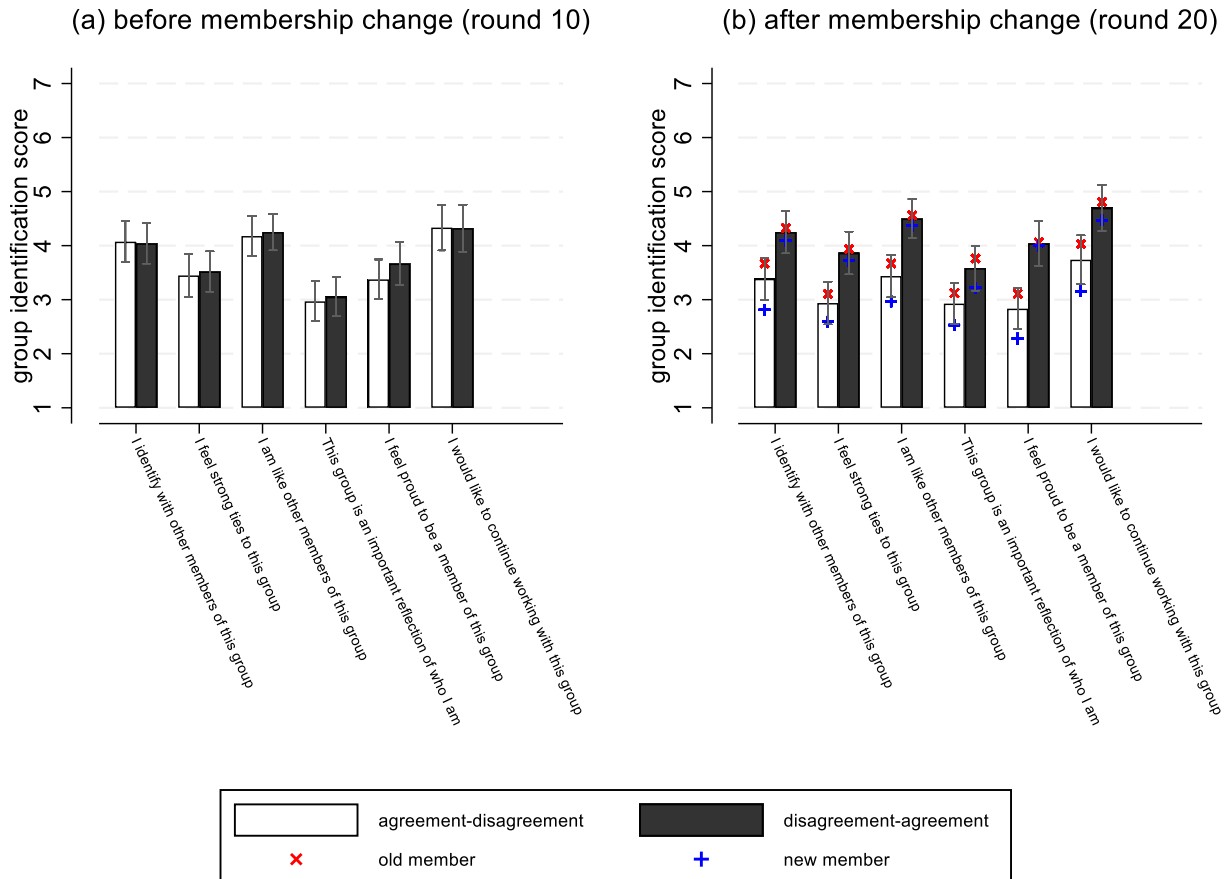
Note:

(a) The number of observations per round is 192, leading to a total of 3840 observations (20 rounds x 192 participants). We see that before membership change (rounds 1-10), there are no discernible differences between conditions in punishment levels. After membership change, punishment is considerably higher in condition agreement-disagreement in the early rounds (11-16). However, the difference disappears for the final rounds (17-20).

(b) We examine punishment as a function of how much the newcomer deviates from the low-return incumbent's contribution and vice versa. We only compare the contributions of the low-return newcomer with those of the low-return incumbent, i.e., we leave out the contributions of high-return incumbents. This is to prevent confounding of newcomer-incumbent differences with return-rate differences, as we know that many normative views prescribe higher contributions for high-return members. The numbers above the bars indicate the number of observations underlying the bars. For example, newcomers deviated between -20 and -14 points from the contribution of the low-return incumbent in 16 cases. We see that newcomers are more strongly punished for negatively deviating from the incumbents' contribution than the other way around. This holds for large deviations (more than 8 contribution points), but not for smaller deviations (between 8 and 2 points deviation).

S3. Group identification

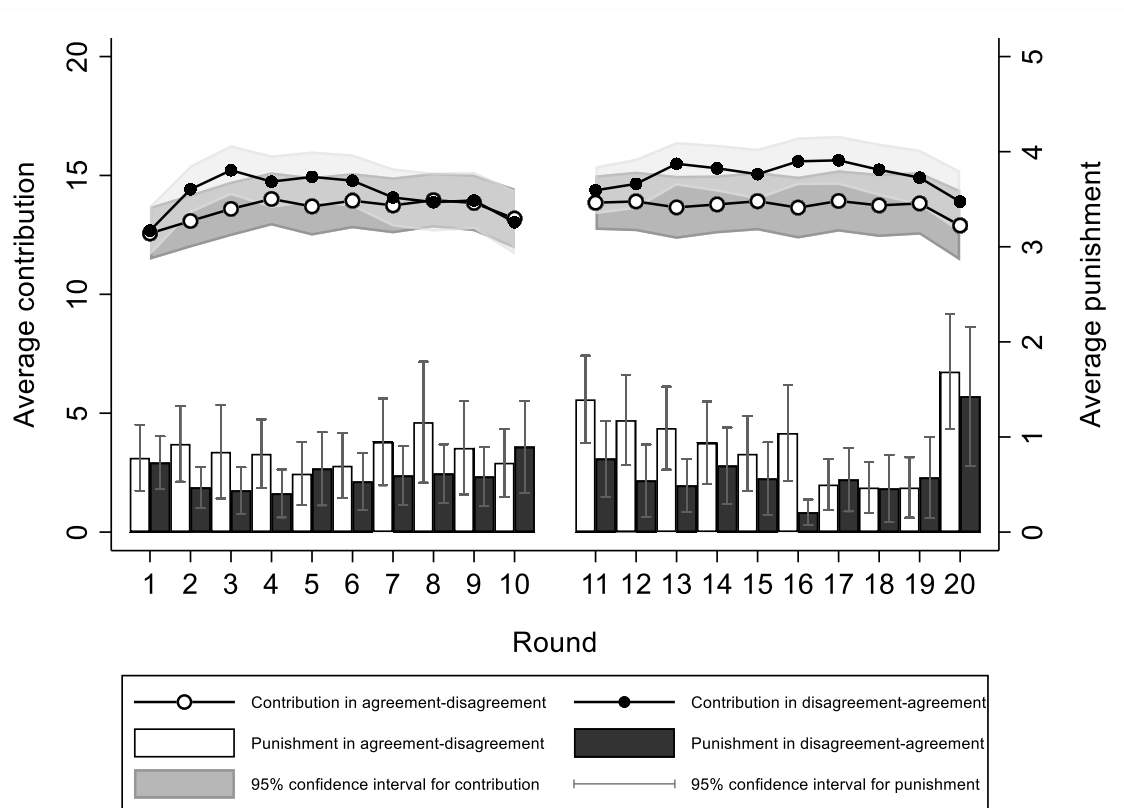
Figure S3. Group identification by condition before and after membership change for each item



Note: We see that there are no differences by condition in the scores on the group identification items before membership change (panel a). We see that there is a consistent difference by condition in the scores on the group identification items after membership change (panel b), with lower scores for condition agreement-disagreement. We furthermore see that new members score lower on the group identification items than old members. The 95% confidence intervals are included via capped spikes.

S4. Contributions and population-averaged model tests of hypothesis

Figure S4. Average contribution and punishment per round and condition



Note: We see that both before (rounds 1-10) and after membership change (rounds 11-20), there is hardly a difference in contribution levels between conditions. Although in rounds 11-20, the contribution level seems to be slightly lower in condition agreement-disagreement (which is consistent with our hypothesis that contribution levels are lower when newcomers and incumbents are in normative disagreement), the confidence intervals of both conditions overlap in all rounds, and the difference is already discernible before membership change. Average punishment points received per round and condition are also included (for each participant the punishment is the combined punishment points received from both other group members).

Table S1. Population-averaged model tests of hypothesis

	(1) ind. all rounds	(2) ind. first rounds	(3) ind. end rounds	(4) group. all rounds	(5) group. first rounds	(6) group. end rounds
Condition & time period						
a. agreement-disagreement before membership change	13.652*** (.428)	12.562*** (.540)	13.188*** (.679)	13.561*** (.689)	12.563*** (.582)	13.187*** (.905)
b. agreement-disagreement after membership change	14.181*** (.453)	13.854*** (.540)	12.896*** (.679)	13.715*** (.689)	13.854*** (.582)	12.896*** (.905)
c. disagreement-agreement before membership change	14.168*** (.428)	12.677*** (.540)	13.031*** (.679)	14.170*** (.689)	12.677*** (.582)	13.031*** (.905)
d. disagreement-agreement after membership change	15.041*** (.453)	14.375*** (.540)	13.896*** (.679)	15.014*** (.689)	14.375*** (.582)	13.896*** (.905)
Hypothesis						
(c – d) – (a – b) < 0	-.344	-.406	-1.156	-.691	-.406	-1.156
chi2(1)	.881	.332	1.218	5.364	.332	.687

We take the contribution decision as the dependent variable and as independent variable a factor indicating whether the decision was made in (a) condition agreement-disagreement before membership change, (b) condition disagreement-agreement before membership change, (c) condition agreement-disagreement after membership change, or (d) condition disagreement-agreement after membership change. This allows us to estimate whether the change in contribution levels before and after membership change differs significantly by experimental condition. Across six models, we vary whether the contribution level is on the individual-level (models 1-3) or group-level (models 4-6) and whether we include as observations all rounds (models 1 & 4), only the first rounds (round 1 before membership change and round 11 after membership change, models 2 & 5), or only the last rounds (round 10 before membership change and round 20 after membership change, models 3 & 6). Regardless of which model is used, we find no significant difference in the change in contribution levels before and after membership change between conditions according to conventional standards: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Bonferroni-adjusted $p/6$, two-tailed tests). Coefficients are predictive margins. Standard errors in parentheses. The within-subject working correlation matrix is unstructured in all models except for model 4, where results do not converge with the unstructured matrix and the exchangeable matrix is used instead.

Table S2. Effects of social norm and group identification on contributions

	(1) contribution	(2) contribution
Group identification ^a	1.37 (.78)	
Social norm ^a		4.62 (2.34)
Intercept	9.31** (2.95)	11.89*** (1.36)

^a Instrument: Experimental condition.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Bonferroni-adjusted $p/2$, two-tailed tests).

$N = 1920$ (192 participants times 10 contribution decisions after membership change). Group identification ranges from 1 (strongly disagree on all six items) to 7 (strongly agree on all six items). Social norm ranges from 0 (none of the participant's guesses on others' normative views are the same as the group members' guesses) to 1 (all of the participant's guesses on others' normative views are the same as the group members' guesses).

S5. Predicting contribution levels

To examine what alternatively predicts contribution levels after membership change, and how that differs between newcomers and incumbents, we use ordinary least square (OLS) regression models. We account for repeated measures within participants by estimating cluster-robust standard errors. In Model 1 of Table S3, we run a regression with the contribution decision as dependent variable and the participants' own normative view (as measured just before membership change) and the lagged average contribution of their group members as predictors. The normative view was shown to be an important predictor of behavior in the study on the first part of the experiment (Otten et al., 2020) and the group members' average contribution is a main predictor of behavior in research on public goods games (Chaudhuri, 2011). Recall that there is one low-return newcomer, one low-return incumbent, and one high-return incumbent in every group. We only compare the contributions of the low-return newcomer with those of the low-return incumbent, i.e., we leave out the high-return incumbents. This is to prevent confounding of newcomer-incumbent differences with return-rate differences (but we will show that results also hold when comparing the newcomer to the high-return incumbent).

We see that the two predictors, the participants' own normative view and the lagged contribution of their group members, together explain more than half of the variation in contribution levels, for both newcomers and incumbents. We see that newcomers are more influenced by the contribution of others than incumbents. A one-point increase in the contribution of others increases one's own subsequent contribution by .77 points for newcomers and by .53 for incumbents (Wald test for difference between incumbents and newcomers, $p = .001$). We furthermore find that incumbents contribute more in line with their own normative view than newcomers. A one-point increase in what the participants themselves think they should contribute (i.e., their own normative view) increases their contribution by .15 points for newcomers and by .43 points for incumbents (Wald test for difference between incumbents and newcomers, $p = .015$). Thus, newcomers seem to be predominantly influenced by the contribution of others while incumbents are influenced both by the contribution of others and their own normative view.

In Model 2 of Table S3, we add as predictors the participant's own punishment received in the prior round, the own contribution decision in the prior round, and the interaction between these two variables. The variables are uncentered, meaning that the effect of the punishment received is the effect of punishment when the participant did not contribute to the public good (and vice

versa, the effect of one's prior contribution is the effect when no punishment was received in the prior round). We see that punishment received in the prior round has a significant positive effect on the subsequent contribution when the participant did not contribute to the public good. In this case, every punishment point received increases the newcomer's subsequent contribution by .79 points and the incumbent's subsequent contribution by .60 points (the difference between newcomers and incumbents does not reach significance: Wald test, $p = .59$). There is a significant negative interaction between received punishment and own contribution. This means that the positive effect of punishment decreases as the own contribution increases. Already when the participant contributed 10 points, the received punishment no longer has a significant effect on subsequent contributions (incumbents: coefficient = .26, $p = .08$; newcomers: coefficient = .12, $p = .54$), nor does the effect reach conventional significance values ($p < .05$) for higher contribution levels.

The negative interaction between the punishment received and the own contribution also implies that the effect of one's own contribution decreases as the received punishment increases. The participant's own prior contribution is a strong predictor of the current contribution when received punishment is zero (coefficient = .67 and .66 for newcomers and incumbents respectively). The participant's own prior contribution only weakly predicts the current contribution when received punishment is 10 (coefficient = .07 and .35 for newcomers and incumbents respectively). Whether participants deviate from their own contribution thus strongly depends on the punishment they receive. The three newly added predictors in Model 2 add about 20 percent explained variance to Model 1, making the total explained variance about 70 percent for both newcomers and incumbents.

Table S3. Predictors of contribution levels for newcomers and low-return incumbents

	Model 1		Model 2	
	Newcomer	Incumbent	Newcomer	Incumbent
own normative view	.15* (.06)	.43*** (.09)	.01 (.04)	.13** (.04)
contribution of others ^a	.77*** (.06)	.53*** (.07)	.32*** (.07)	.22*** (.05)
received punishment ^a			.79** (.25)	.60* (.24)
own contribution ^a			.67*** (.08)	.66*** (.07)
own contribution ^a × received punishment ^a			-.07** (.02)	-.03* (.02)
Number of observations	576	576	576	576
R ²	.52	.59	.67	.73

* $p < .05$, ** $p < .01$, *** $p < .001$

^a lagged.

We account for repeated measures within participants by estimating cluster-robust standard errors. Standard errors are in parentheses. The newcomer has a low-return rate from the public good, one incumbent has the same low-return rate, and another incumbent has a high-return rate. We only compare the newcomer with the low-return incumbent, i.e., we leave out the high-return incumbents. This is to prevent confounding of newcomer-incumbent differences with return rate differences. The variable ‘contribution of others’ refers to the contribution of the newcomer for the low-return incumbent and refers to the contribution of the low-return incumbent for the newcomer. The variable ‘own normative view’ indicates what the participants think members with a return like themselves should contribute, i.e., how much they think low-return members should contribute if they have a low-return themselves; how much high-return members should contribute if they have a high-return themselves.

The results are robust to alternative model specifications. In Table S4, we show that results remain when controlling for differences between members that may have developed in the first 10 rounds of the experiment (before membership change). We do this by estimating the difference-in-differences for the coefficients of own normative view and the contribution of others. That is, we estimate the difference between newcomers and incumbents in the difference in the coefficients between the first and last 10 rounds of the game (before and after membership change). In Table S5, we show that the results also remain when comparing newcomers with high-return incumbents. Results do not substantively differ when subdividing by experimental condition, see Table S6.

Table S4. Predictors of contribution levels for newcomers and incumbents when controlling for potential differences developed before membership change

	newcomer			incumbent			Wald test dif-in-dif
	R1-10	R11-20	dif	R1-10	R11-20	dif	
own normative view	.21** (.07)	.15* (.06)	-.06	.27*** (.07)	.43*** (.09)	.16	-.22#
contribution of others ^a	.58*** (.07)	.77*** (.06)	.19*	.58*** (.06)	.53*** (.07)	-.05	.24*
Number of observations	576	576		576	576		-
R ²	.39	.52		.50	.59		-

$p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

^a lagged.

R1-10 = rounds 1-10. R11-20 = rounds 11-20. We account for repeated measures within participants by estimating cluster-robust standard errors. Standard errors are in parentheses. The newcomer has a low-return rate from the public good, one incumbent has the same low-return rate, and another incumbent has a high-return rate. We only compare the newcomer with the low-return incumbent, i.e., we leave out the high-return incumbents. This is to prevent confounding of newcomer-incumbent differences with return rate differences. The variable ‘contribution of others’ refers to the contribution of the newcomer for the low-return incumbent and refers to the contribution of the low-return incumbent for the newcomer.

Table S5. Predictors of contribution levels for newcomers and high-return incumbents

	Model 1		Model 2	
	Newcomer	Incumbent	Newcomer	Incumbent
own normative view	.23* (.11)	.66*** (.10)	.00 (.05)	.14** (.05)
contribution of others ^a	.57*** (.09)	.25** (.08)	.15** (.04)	.09** (.03)
received punishment ^a			1.13*** (.24)	.58* (.27)
own contribution ^a			.85*** (.05)	.77*** (.05)
own contribution ^a × received punishment ^a			-.08*** (.02)	-.03** (.01)
N observations	576	576	576	576
R ²	.29	.51	.65	.72

* $p < .05$, ** $p < .01$, *** $p < .001$

^a lagged.

We account for repeated measures within participants by estimating cluster-robust standard errors. Standard errors are in parentheses. The newcomer has a low-return rate from the public good, one incumbent has the same low-return rate, and another incumbent has a high-return rate. We here compare the newcomer with the high-return incumbent, i.e., we leave out the low-return incumbents. The variable ‘contribution of others’ refers to the contribution of the newcomer for the high-return incumbent and refers to the contribution of the high-return incumbent for the newcomer.

Table S6. Predictors of contribution levels for newcomers and incumbents by condition

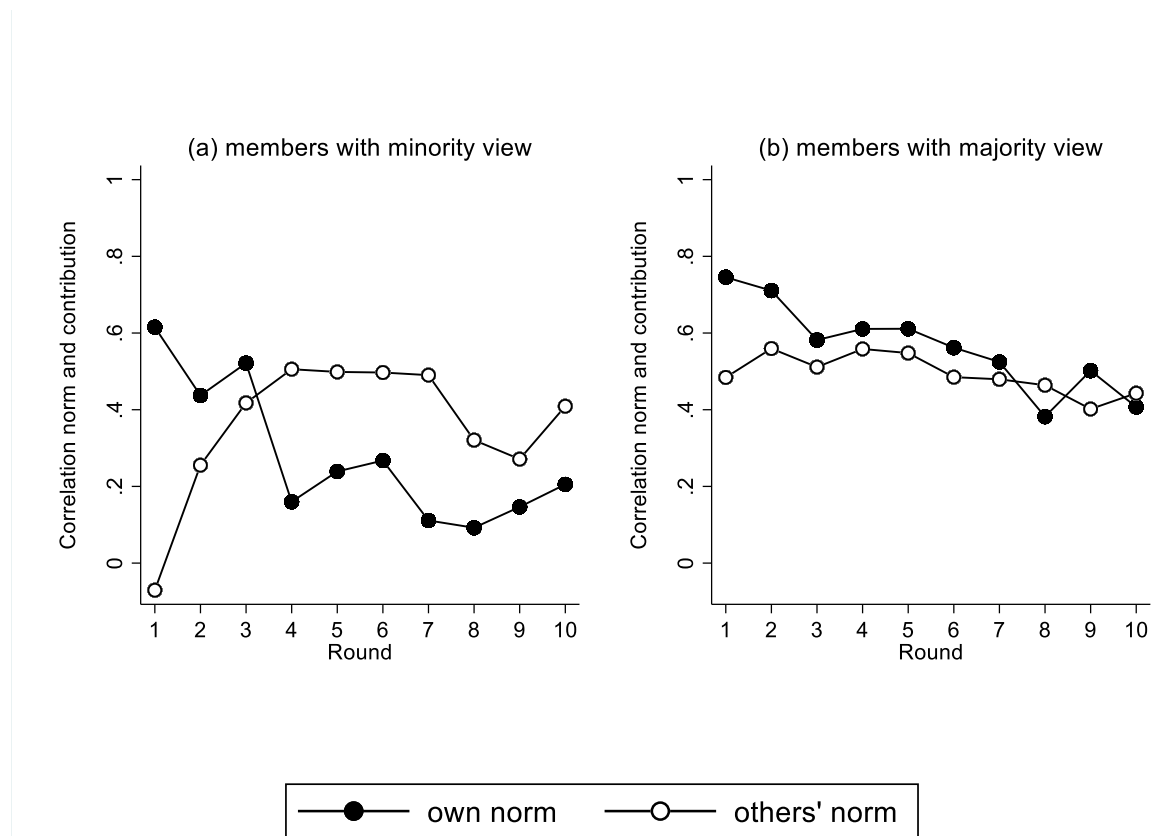
	Newcomer				Incumbent			
	Model 1		Model 2		Model 1		Model 2	
	con. 0	con. 1	con. 0	con. 1	con. 0	con. 1	con. 0	con. 1
own normative view	.18*	.15	.08	-.05	.48**	.40***	.11#	.17*
	(.08)	(.12)	(.05)	(.05)	(.15)	(.11)	(.06)	(.06)
contribution of others ^a	.83***	.71***	.38***	.25*	.57***	.46***	.21***	.23**
	(.07)	(.11)	(.10)	(.10)	(.08)	(.11)	(.06)	(.08)
received punishment ^a			.74*	.83*			.84***	.35
			(.31)	(.32)			(.20)	(.34)
own contribution ^a			.60***	.75***			.73***	.56***
			(.12)	(.11)			(.07)	(.11)
own contribution ^a × received punishment ^a			-.03	-.10***			-.05***	-.01
			(.02)	(.02)			(.01)	(.03)
<i>N</i> observations	288	288	288	288	288	288	288	288
R2	.56	.48	.67	.72	.63	.54	.79	.65

$p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

^a lagged.

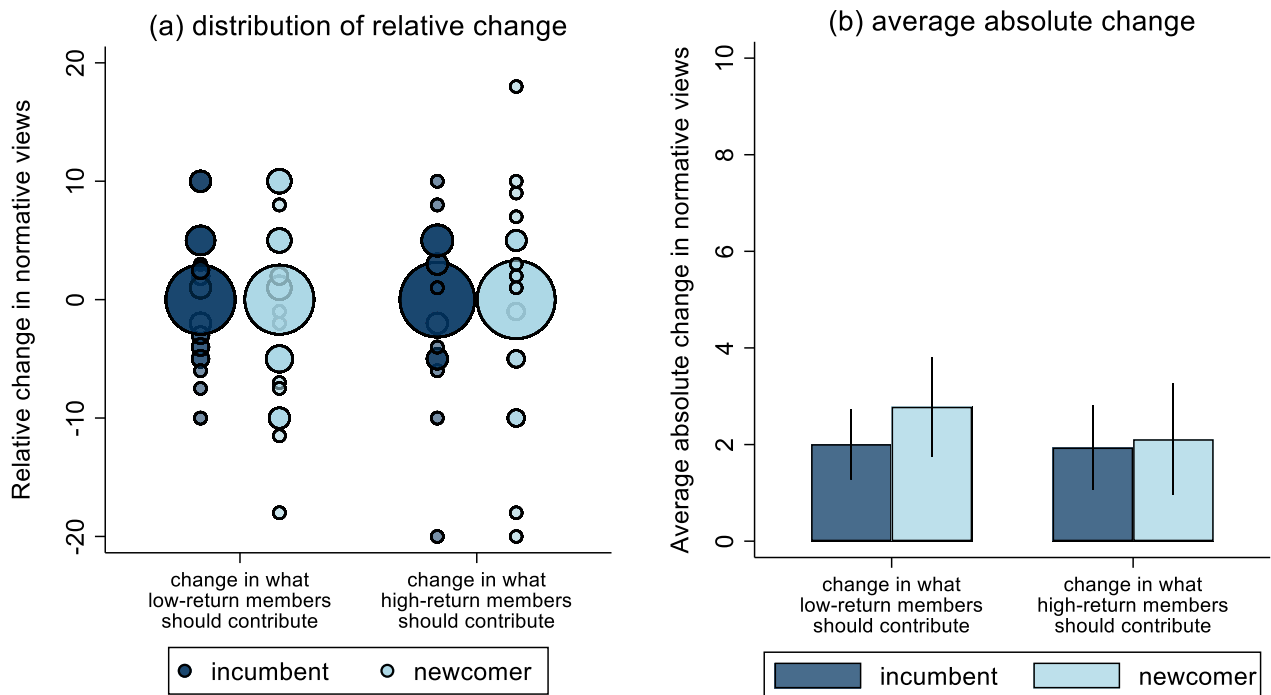
con. 0 = condition agreement-disagreement. con. 1 = condition disagreement-agreement. We account for repeated measures within participants by estimating cluster-robust standard errors. Standard errors are in parentheses. The newcomer has a low-return rate from the public good, one incumbent has the same low-return rate, and another incumbent has a high-return rate. We only compare the newcomer with the low-return incumbent, i.e., we leave out the high-return incumbents. This is to prevent confounding of newcomer-incumbent differences with return rate differences. The variable ‘contribution of others’ refers to the contribution of the newcomer for the low-return incumbent and refers to the contribution of the low-return incumbent for the newcomer.

Figure S6a-b. Correlation between contribution and own or others' normative views before membership change



Note: All participants provided their normative view on the appropriate contribution that a high-return member should make and the appropriate contribution that each of the low-return members should make. We examine if participants contribute in line with their normative view on how much they themselves should contribute (i.e., if they have a low-return, how much they think low-return members should contribute; if they have a high-return, how much high-return members should contribute) or in line with how much their group members think they should contribute. We look at condition disagreement-agreement before membership change, i.e., at newly formed groups with normative disagreement. This means there are no incumbent-newcomer divisions yet, and per group one member disagrees with two other members. We show how the participants' contribution correlates with their own normative views and with their group members' view. We separate participants holding a minority view in their group (panel a) and participations holding a majority view in their group (panel b). We use the normative views as measured just before the start of the game (round 1).

FigureS7a-b. Change in normative views for incumbents and newcomers



Note: We compare low-return incumbents with (low-return) newcomers. For each of the four categories (change for views on low- or high-return members x relative or absolute change), the number of observations is 128 (64 low-return incumbents and 64 newcomers). Marker size is weighted by the number of observations in panel (a).

S6. Screens and experimental instructions

Figure S8a-b. Screenshots of experimental normative view measurement

(a) before calculating the payoff consequences of one's normative view

Remaining time 285

In the table below, you see a hypothetical group of three members: A, B, and C. Each member has to decide how much of their budget of 20 points he/she wants to contribute to the group account. The returns are randomly assigned as follows: member A has a return of the group account from .75, and member B and C each have a return of .50 from the group account.

Your view

According to you, what is the appropriate amount that each member should contribute to the group account?

Please type your answers in the table below. To see how your decision affects the income of each group member, click the 'Calculate' button. You can do this multiple times. Once you are sure about your decision, click on 'Continue'.

Member	Return	Contribution	Private account income	Group account income	Total income
A	0.75	<input style="width: 50px;" type="text"/>	?	?	?
B	0.50	<input style="width: 50px;" type="text"/>	?	?	?
C	0.50	<input style="width: 50px;" type="text"/>	?	?	?

(b) after calculating the payoff consequences of one's normative view

Remaining time 266

In the table below, you see a hypothetical group of three members: A, B, and C. Each member has to decide how much of their budget of 20 points he/she wants to contribute to the group account. The returns are randomly assigned as follows: member A has a return of the group account from .75, and member B and C each have a return of .50 from the group account.

Your view

According to you, what is the appropriate amount that each member should contribute to the group account?

Please type your answers in the table below. To see how your decision affects the income of each group member, click the 'Calculate' button. You can do this multiple times. Once you are sure about your decision, click on 'Continue'.

Member	Return	Contribution	Private account income	Group account income	Total income
A	0.75	<input style="width: 50px; background-color: #e0e0ff;" type="text" value="15"/>	5	26	31
B	0.50	<input style="width: 50px; background-color: #e0e0ff;" type="text" value="10"/>	10	18	28
C	0.50	<input style="width: 50px; background-color: #e0e0ff;" type="text" value="10"/>	10	18	28

The instructions can be found in the next page. Yellow text are comments from the authors about the instructions and were not presented to the participants



- Instructions -

Welcome

Welcome to this experiment and thank you for coming. Please read the following instructions carefully. These instructions are the same for all participants. The instructions state everything you need to know in order to participate in the experiment. If you have any questions, please raise your hand. One of the experimenters will approach you and answer your question.

The experiment is about group decision making. You can earn money by means of earning points during the experiment. The number of points that you earn depends on your own choices, the choices of other participants in your group, and chance. At the end of the experiment, the total number of points that you earned will be exchanged at a rate of:

70 points = 1 Euro

The money you earn will be rounded up to whole euros and paid out in cash at the end of the experiment. There is a minimum payment of 5 euros, and a maximum payment of 23 euros. Other participants will not see how much you have earned. During the experiment you are not allowed to communicate with other participants. Please turn off your mobile phone. You may only use functions on the computer screen that are necessary to carry out the experiment.

First, we introduce the decision situation in which you will interact. You will learn about the procedure of the experiment later. **A decision situation consists of 2 stages: a contribution stage followed by a review stage.** In the contribution stage, you decide how many points you contribute to a group account. In the review stage, you learn how much the other members of your group contributed to the group account. We will first explain the contribution stage.

Contribution stage

You are a member of a group of **3 participants**. You and the two other members of your group are **each given 20 points**. Each of you can **choose how many points to keep for yourself in a private account and how many points to contribute to a group account**.

Your points from the private account

You will earn 1 point for each point you keep in your private account.

For example, if you keep all 20 points into your private account (and therefore do not contribute to the group account), your income will amount to exactly 20 points out of your private account. If you keep 6 points into your private account, your income from this account will be 6 points. **No one except you earns something from your private account.**

Your income from the group account

Each group member will profit from points you contribute to the group account. You will also profit from the other group members' contributions. Just like in real life, some persons profit more from contributions to the group account than others.

For each point contributed to the group account (by you and the other members):
1 member earns 0.75 points and 2 members earn 0.50 points each.

Whether you are a member with a return of 0.50 or 0.75 from the group account will be randomly determined at the start of the experiment, and will stay the same for the entire duration of the experiment.

For example, if the 3 members combined contribute in **total 40 points to the group account**,

1 member receives: **0.75 times 40 = 30 points** from the group account,
 2 members each receive: **0.50 times 40 = 20 points** from the group account.

Your total income from the private account and group account

Each member can choose any number of points to contribute to the group account, from 0 to 20 points. Every point a member does not contribute to the group account will automatically remain in his/her private account. **Each member’s total income from the contribution stage is the combined income from his/her private account and the group account.**

Table 1 gives an arbitrary example of how each member’s income from the private account, group account, and the total income are calculated when the total contributions to the group account are 40 (15+15+10).

Table 1 – example

Member	Return	Contribution	Private account income	Group account income	Total income
A	0.75	15	5	30	35
B	0.50	15	5	20	25
C	0.50	10	10	20	30

Review stage

Each contribution stage is followed by a review stage. In the review stage, everyone in the group will see how much each of the other group members contributed to the group account as well as their income from the contribution stage. Then, all group members have a chance to **decrease** the income of each other group member. You can decide if you want to spend points to decrease the income of the other two group members, for example because you disagree with how much they contributed or earned.

If you want to decrease another member’s income you do that by assigning deduction points. **Every deduction point assigned to another group member reduces his/her income by 3 points, and your own income by 1 point.** Similarly, every deduction point that one of your group members assigns to you decreases your income by 3 points and costs the group member 1 point. Note that this might imply that you or other participants lose income in a particular round. If you do not want to decrease the income of a group member, you must assign him/her

0 deduction points. Every participant can assign up to a maximum of 10 deduction points to each group member, regardless of the income from the contribution stage. For example, if you assign 2 deduction points to a group member this costs you 2 points and reduces the group member's income by 6 points (2 times 3). Another example: if one of your group members assigns 3 deduction points to you, this reduces the group member's income by 3 points and your income by 9 points (3 times 3).

After everyone has made a decision, you will see how many deduction points were assigned to you by the other group members and also what your total income for the round is. You will not see which individual participant assigned deduction points to you, you can only see the total number of deduction points assigned to you and how that affected your income. Similarly, if you assigned deduction points to one or more of your group members, they will not see that you are the one who assigned the points.

Overview of the Session

The experiment consists of **2 parts**, and in total lasts about **1 hour and 45 minutes**.

In the 1st part you will play 10 rounds of the decision situation (10 contribution and 10 review stages).

Before you play these 10 rounds, we will first ask you to answer some questions about the decision situation. These questions concern:

- your understanding of the decision situation,
- your view on the appropriate amount that each group member should contribute to the group account,
- your guess of what the other participants think are appropriate contributions.

Some questions appear multiple times throughout the experiment. You do not have to be consistent with your answers to these questions. Your answers may or may not have changed during the experiment. Similarly, what you view as appropriate contributions may or may not be the same as what the other participants think are appropriate contributions.

After this 1st part in which you answer questions about the decision situation and play 10 rounds of it, **you will receive new instructions on your computer screen for the 2nd part of the experiment.** The 2nd part of the experiment is of similar length to the 1st part.

Because you play together with other persons, you will sometimes have to wait until the other persons have made their decision. These waiting times are incorporated in the total expected duration of 1 hour and 45 minutes for the experiment.

After reading these instructions, participants were presented with a quiz about the instructions and answered questions about their normative views and expectations (see Figure S6). Before the start of the first 10 decision rounds, we provided participants with the following information on their computer screen:

Next part of the experiment [on screen only]

You will now play **10** rounds of the decision situation yourself.

Each round consists of a contribution stage followed by a review stage. In the contribution stage you decide how much you contribute to the group account. In the review stage you learn the contributions of your group members and can assign them deduction points.

Every group receives a colour.

4 groups received colour **blue** and **4** groups received colour **orange**. You and your two group members are in a **blue group**.

In your group, the returns from the group account are randomly assigned as follows:

You: 0.50

Member 1: 0.50

Member 2: 0.75

Your return will remain the same for the entire experiment.

You will play with the same two group members all 10 rounds.

Once you are ready, please click 'Continue'.

Note that this is an example of a participant in a blue group. The blue text was replaced by orange text and vice versa if the participant's group was orange. In the example, the participant was assigned a return of 0.50. If the participant was assigned a return of 0.75, the returns assigned for Member 1 and Member 2 would be 0.50.

After completing the ten rounds, participants again answered questions about their normative views and expectations, and the group identification items described in the methods. We then presented them with the information for the second part of the experiment. We will present the instructions both for incumbents and newcomers.

Incumbent instructions [on screen only]:

2nd part of the experiment

The 2nd part of the experiment starts now. You will play another set of **10** rounds of the decision situation.

Remember that there are **4** groups in the room with colour **blue** and **4** groups in the room with colour **orange**.

So far you have been playing in a group with colour **blue**.

One group member will now leave your group, and be replaced by a new member from a group with colour orange.

Group member 1 remains the same. **The new group member receives number 2.**
The returns from the group account are as follows:

You: 0.50

Member 1: 0.75

Member 2: 0.50

You will play with this group all next 10 rounds.

Before we continue to the 10 rounds of the decision situation, we will ask you:

One question about the new member's view on the appropriate amount that each member in a group should contribute to the group account.

After the 10 rounds of the decision situation, we ask you to complete 4 final tasks and to fill in a questionnaire. Once you are ready, please click 'Continue'.

Note that this is an example of a participant coming from a blue group. The blue text was replaced by orange text and vice versa if the participant's group was orange. In the example, the participant was assigned a return of 0.50. If the participant was assigned a return of 0.75, the returns assigned for Member 1 and Member 2 would be 0.50. The 4 final tasks refer to post-experiment measures (e.g., social value orientation), and can be found in the experiment's pre-registration and in the openly available dataset.

Newcomer instructions [on screen only]:

2nd part of the experiment

The 2nd part of the experiment starts now. You will play another set of **10** rounds of the decision situation.

Remember that there are **4** groups in the room with colour **blue** and **4** groups in the room with colour **orange**.

So far you have been playing in a group with colour **blue**.

You will now enter a group with colour orange, and therefore play with two new group members.

These two group members have played the past 10 rounds together, but you have not interacted with them yet.

The returns from the group account are as follows:

You: 0.50

Member 1: 0.50

Member 2: 0.75

You will play with this group all next 10 rounds.

Before we continue to the 10 rounds of the decision situation, we will ask you:

One question about the view of your two new members on the appropriate amount that each member in a group should contribute to the group account.

After the 10 rounds of the decision situation, we ask you to complete 4 final tasks and to fill in a questionnaire. Once you are ready, please click 'Continue'.

Note that this is an example of a participant coming from a blue group. The blue text was replaced by orange text and vice versa if the participant's group was orange. In the example, the participant was assigned a return of 0.50. If the participant was assigned a return of 0.75, the returns assigned for Member 1 and Member 2 would be 0.50

References

- Chaudhuri, A. (2011). Sustaining cooperation in laboratory public goods experiments: A selective survey of the literature. *Experimental Economics*, *14*(1), 47–83. <https://doi.org/10.1007/s10683-010-9257-1>
- Otten, K., Buskens, V., Przepiorka, W., & Ellemers, N. (2020). Heterogeneous groups cooperate in public good problems despite normative disagreements about individual contribution levels. *Scientific Reports*, *16702*, 1–12. <https://doi.org/10.1038/s41598-020-73314-7>