Conditional Rewarding Behaviour: An Experiment

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Abstract

Both peer-to-peer punishments and rewards can be effective in increasing cooperation in dilemma situations. We follow Kamei's experimental design [2014, Economics Letters 124, pp.199-202], except we use a reward option instead of a punishment one. Consistent with Kamei (2014), decisions to reward are on average positively proportional to the others' reward to the same recipient. We classify the rewarding types in a similar fashion and find fewer anti-social types.

Keywords: experiment, dilemma, cooperation, rewarding

JEL classification codes: C92, C70, D70, H41

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1. Introduction

Coexistence in society means individuals commonly face a choice between behaving in a prosocial manner and a selfish one. That choice is often modelled in social dilemma games, such as a Voluntary Contribution Mechanism ('VCM'), also known as a public goods game. Much literature suggests rewarding (Sutter, Haigner and Kocher, 2010) and punishment (Fehr and Gächter, 2000) mechanisms help sustain cooperation in this setup. It is worth noting that punishments or rewards are usually costly for an individual to initiate, both in economic experiments and reality. That forms a second-order free-rider problem, although literature finds people do engage in both costly rewards and costly punishments (Fehr and Gächter, 2000; Kamei, 2014; Kamei, 2017).

There are two important findings in Sutter, Haigner and Kocher (2010). The first has to do with the endogenous choice of the institution. They allowed a group to vote on the sanctioning institution for the forthcoming VCM game: for a punishing institution, a rewarding one, or none. In some cases, the institution was assigned exogenously. They find higher contribution rates when an institution was selected by vote. The result holds regardless of the institution type, or whether sanctioning itself takes place or not, suggesting that mere presence of participation rights improves cooperation.[1] The second important finding is that given endogenous choice, groups commonly vote for rewarding option and the rewarding institution is found to increase cooperation. However, the presence of punishment institution increases it even further.

There is enough evidence to suggest people might base their dilemma choices on the choices of others in their group. Fischbacher, Gächter and Fehr (2001) confirmed the presence of 'conditional cooperator' types, i.e. people who are willing to contribute more to a public good when others contribute more. Such findings make one wonder if people exhibit the same conditional attitude towards post-interaction sanctioning, overcoming the free-riding. Kamei (2014) studied a VCM game with incentive-compatible unconditional and conditional punishment decisions, finding that conditional punishment opportunities can promote cooperation. He finds (a) the most common punishment type in the population to be a conditional punishment type and (b) conditional punishment types to be the second largest fraction in the group, following free-riders. The conditional punisher is found willing to pay a cost to punish a non-cooperator if others do the same, regardless of how big a disparity in

[1] A similar finding was observed in Dal Bó, Foster and Putterman (2010).

payoffs may arise.[2] Further Kamei (2014) finds only 23.1% of subjects to be conditional punishers. Notably, only 2/3 of conditional punishers do not punish cooperative types, while the remaining 1/3 punish both cooperative and non-cooperative types. Non-cooperators tend to conditionally punish both cooperative and non-cooperative types to a similar extent, while cooperators assign more punishment points to non-cooperative types than to cooperative ones.

Kamei (2017) builds on that further by comparing conditional punishment behaviour in England and the United States. His main finding in 2014, which took place in the US, was also found to be true in 2017, this time in England, that average conditional punishment decisions are proportional to those of the other group members regardless of the type of punished player. However, in England cooperators conditionally punish non-cooperators more severely than non-cooperators do.

We want to examine conditional rewarding behaviour in a VCM setting for two reasons. The rewarding mechanism has received less attention in the literature than its punishment counterpart, yet the significant presence of conditional types has been confirmed regarding both decisions in public goods provision and sanctioning choices. Additionally, the rewarding option might be more socially desirable.

2. Experimental design

Our design is very similar to Kamei (2014; 2017). However, after making a classic VCM decision, subjects are asked to decide on adding points to other individuals, instead of deducting. Each subject is given an initial endowment of 10 points and randomly assigned into a group of four. Then subjects proceed to play two phases of the experiment. In the first phase, the subject makes a binary choice pertaining to their allocation. They may choose to allocate 10 points to either a private or a group account. If they choose to allocate 10 points to the private account, their payoff will be 10 points. Should they choose to allocate it to a public account, each member of the group, including them, will receive 5 points. In other words, the marginal per capita return is 0.5 in this setting. In the second phase of the experiment, subjects are shown the allocation decisions made by their peers in the first phase, and then asked whether they want to increase they payoff of any group member. This action decreases their own payoff by 1 point, but increases the targeted group member's payoff by 3

[2] Such conditional willingness to punish a norm violator is also observed for the case of third-party punishment (Kamei, 2020).

points. We call these 'unconditional addition decisions'. Secondly, subjects are asked how many additional points they would assign to a cooperative and non-cooperative group member, given that the remaining two group members on average assign {0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0} to that member. Since there are 9 possibilities of an average payoff and two types of player in question (cooperator and non-cooperator), each player has to make 18 (9×2) decisions. We refer to those decisions individually as 'conditional addition decisions', and jointly to all made by the same player as a 'conditional addition schedule'. After all four members decide on their conditional schedules, one is randomly selected for conditional execution within the group, thus making such a decision incentive-compatible.

Standard theory predicts private account allocation and no rewarding, while social preference models can predict that some people will allocate endowment to the group account, and some reward cooperators (see Fehr and Schmidt, 1999; Sefton, Shupp, and Walker, 2007).

3. Results

The experiment was conducted at the University of York in June 2017. A total of 52 undergraduate students participated in the experiments. All experiments had neutrally framed instructions and decisions screens and were conducted using zTree experimental software (Fischbacher, 2007). No subject participated in more than one session. The experiments lasted around 45 minutes on average. The average per-subject payment (including a £3 participation fee) was £13.82.

Figure 1 and Table 1 report the total average conditional reward schedules. The total average conditional rewards towards a cooperator significantly increase in the other group members' average rewarding decisions. Significance holds regardless of the rewarding cooperator status. Such rewarding choices made by a cooperator cannot be explained though a model of self-interest, neither can they be rationalized through a straightforward inequality aversion between the decision-maker and the target player. Since a target player already made a cooperative choice and allocated endowment to the group account, their payoff cannot be more than that of the decision-maker. This instead suggests that the decision-maker: (a) does not base their rewarding decision on how big the payoff cooperator obtains, but (b) does base their decision on similar decisions made by group members. This result is very similar to Kamei's (2014; 2017) where decision-makers did not take into account the payoff of the target, but rather disparity between themselves and the group.

Result 1. The total average conditional rewarding decisions are positively proportional to the other group members' rewarding decisions, if the reward recipient is a cooperator.

Another conclusion from Figure 1 and Table 1 is that cooperators are significantly more rewarded overall, as one would intuitively expect. The sizes of the rewards given by cooperators and non-cooperators, however, differ. We find that cooperators allocated statistically fewer reward points than non-cooperators when the recipient in question was a non-cooperator. We do not have statistical power to confirm the same when the recipient in question was a cooperator (see Table 1). Further, we find that cooperators receive significantly more points than their non-cooperating counterparts, regardless of the reward source's own allocation action.

Result 2. The non-cooperator receives fewer reward points from a cooperator on average, while cooperators on average receive more reward points from both cooperative types.

Following the logic and definitions of Kamei (2014), we classify the conditional rewarder types. We define a free-rider as a subject who does not reward anyone, no matter how many reward points the other two members assign to any specific person. We define a pro-social (antisocial) conditional rewarder as a subject whose Spearman's ρ between his conditional reward points to a cooperator and the remaining members' average reward points to a cooperator is significantly positive at the 5% level and whose conditional reward decisions to a non-cooperator are (are not) always 0. For the rest of the subjects, we define the 'other' pro-social (anti-social) rewarder as a subject who conditionally rewards a cooperator but whose Spearman's ρ is not significantly positive at the 5% level, unlike conditional rewarders whose conditional reward decisions to a non-cooperator are (are not) always 0. Similar to Kamei's (2014) findings on punishment, our subjects' rewarding schedules are also heterogeneous.

Please see Table 2 for classification results. We find most of our subjects (57.5%) constitute the other 'pro-social' type, with second largest group (30%) being 'pro-social conditional rewarder'. We do not confirm the presence of any pure 'anti-social conditional rewarder' type in the Kamei (2014) sense. Other anti-social rewarding types are rare (7%), as well as free-riding (5%). Both free-rider types did not cooperate in the allocation stage of the game. Other non-cooperators showed pro-social rewarding schedules overall.

Result 3. The vast majority of subjects (87.5%) exhibit pro-social rewarding motives, with free-riding and anti-social motives being minimal (12.5%). Out of the aforementioned 87.5% pro-social rewarders, 1/3 do so in a significantly conditional manner.

4. Conclusion

This note reports that subjects' total average conditional rewarding decisions are positively proportional to the other group members' rewarding decisions towards that recipient, significantly so if that recipient is a cooperator. This is captured in Result 1 and is consistent with Kamei (2014; 2017) where the punishment decisions of an individual closely follow those of the group, regardless of the recipient's public account allocating decision.

One important comparison we have to make is between Result 2 in this note and Result 2 in Kamei (2014). In both settings, non-cooperative individuals punished (rewarded) other group members with similar strength, regardless of that member's past action. In a punishing setting such behaviour could initially be explained by 'spiteful preferences', in reference to Levine (1998). However, in a rewarding setup, non-cooperators switched from spiteful to altruistic with a desire to reward everyone. That suggests that non-cooperative types: (a) may not care about encouraging a cooperative or a non-cooperative outcome of a social dilemma, but (b) may care to use a reward (punishment) mechanism since it is present. Another important question is whether non-cooperators' rewarding (punishing) strength is positively proportional to that of the group. Kamei (2014; 2017) finds it to be the case with punishment, however we cannot confirm significance with our reward data and suggest that further study is required on rewarding behaviours.

We find heterogeneous schedules, however not to the same extent as with punishing setups (Result 3). Let us try to rationalise this by supposing that some people use rewards and punishments to distinguish and encourage certain behaviours, while others do not make a distinction. The reason why anti-social types (as defined in Kamei 2014) are less present in our data might have something to do with non-distinguishing mentality of some players, as discussed in the previous paragraph. These two mindsets could be loosely interpreted as 'I do not care, thus I punish everyone' and 'I do not care, thus I reward everyone', which at heart are anti-social and pro-social respectively. That leads all non-distinguishers to be classified as pro-social in this note, however they might be driven by other motives. On a side note, reward-related free-riding is present, as one would intuitively expect, as some individuals choose to abstain from spending extra money or expending additional effort.

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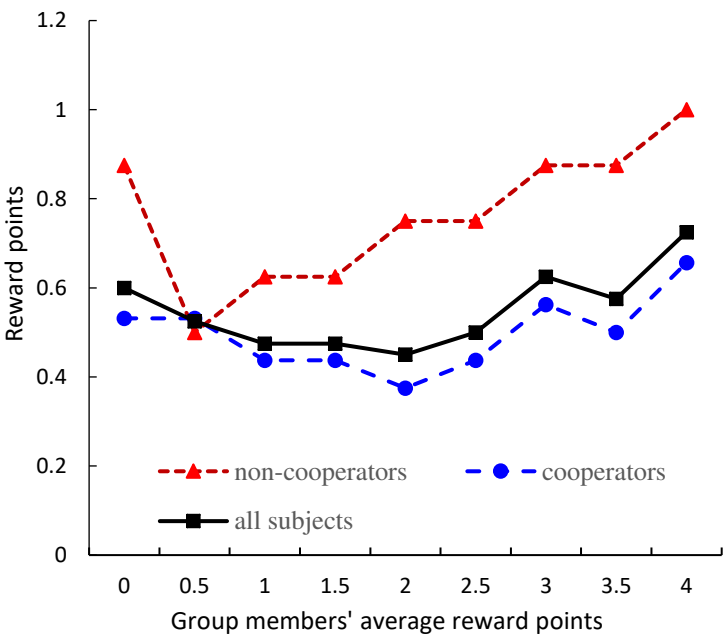
Figure 1. *Average conditional reward schedules.*

(a) Decisions towards a non-cooperator



(b) Decisions towards a cooperator

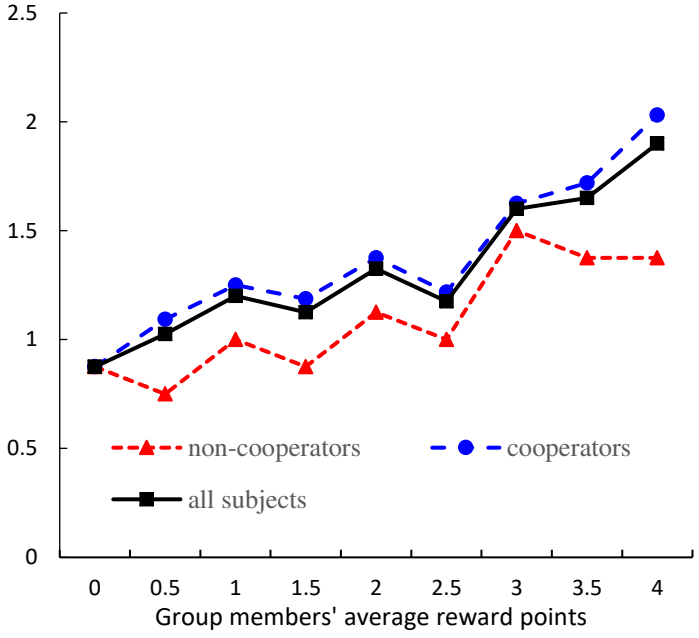


Table 1. *Average conditional reward schedules.*

Group allocation	Towards N		Towards C	
	By N	By C	By N	By C
(1)	(2)	(3)	(4)	(5)
0	0.875	0.531	0.875	0.875
0.5	0.500	0.531	0.750	1.094
1	0.625	0.438	1.000	1.250
1.5	0.625	0.438	0.875	1.188
2	0.750	0.375	1.125	1.375
2.5	0.750	0.438	1.000	1.219
3	0.875	0.563	1.500	1.625
3.5	0.875	0.500	1.375	1.719
4	1.000	0.656	1.375	2.031
Spearman's ρ, between columns	(1) and (2) ρ = 0.633	(1) and (3) ρ = 0.264	(1) and (4) ρ = 0.852***	(1) and (5) ρ = 0.917***
Mann–Whitney U, for columns	(2) and (3) z = -2.95 p = 0.003***		(4) and (5) z = 1.589 p = 0.112	
	(2) and (4) z = -2.561 p = 0.010**		(3) and (5) z = -3.532 p = 0.0004***	

Notes: Columns (2) - (5) contain average reward points, conditional on the respective average group reward allocations from (1). N stands for Non-cooperator, C for Cooperator. *, **, and *** indicate significance at the .10 level, at the .05 level and at the .01 level, respectively.

Table 2. *: Classification of conditional rewarding types.*

Conditional rewarder type	**All subjects**	**Cooperator**	**Non-cooperator**
Free-rider	2 (5%)	0	2 (25%)
Conditional rewarder, including:	12 (30%)	11 (34.4%)	1 (12.5%)
Pro-social conditional rewarder	12	11	1
Anti-social conditional rewarder	0	0	0
Other, including:	26 (65%)	21 (65.6%)	5 (62.5%)
Other pro-social rewarder	23	19	4
Other anti-social rewarder	3	2	1
Total	**40**	**32**	**8**

Notes: See Tables B1 and B2 in the appendix for detailed classification results.

NOT FOR PUBLICATION

Online Supplementary Appendix

Tables of Contents

Appendix A: Instructions

Instructions

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 £3 guaranteed for your participation. Please read the following instructions carefully.

During the experiment you are not allowed to communicate with other participants. Your earnings will be calculated in points. At the end of the experiment your points will be converted to U.K. pounds (rounded to the nearest 10 pence) at the following rate and will be paid to you:

1 point = 40 pence.

The experiment consists of two phases. In the experiment, participants are randomly divided into **groups of 4**. This means that you are in a group with 3 other participants. No one knows which other participants are in your group, and no one will be informed who was in which group after the experiment.

Phase 1

Each group member, including yourself, will be given an **endowment of 10 points**, and then simultaneously decides how to use the endowment. There are two possibilities:

1. **You can allocate the 10 points to a group account.**
2. **You can allocate the 10 points to a private account.**

Your earnings depend on (a) the total number of points in the group account, and (b) the number of points in your private account.

How to calculate your earnings:

If you allocate 10 points to the private account, **you get 10 points as your earnings**. The points you allocate to your private account do not affect the earnings of the other group members.

By contrast, if you allocate 10 points to the group account, you **get 5 points from that allocation**, which is less than 10 points. However, **each of the three other members in your group also gets 5 points**. Therefore, the total group earnings are $5 \times 4 = 20$ points, which is **greater than** 10 points. Note that you also obtain earnings from points allocated to the group account by other 3 members. You obtain 5 points if another member allocates 10 points to the group account.

Example 1: Suppose that all four members in a group allocate 10 points to the private account. In that case, each of the four members receive 10 points as their final earnings since they do not get anything from the group account.

Example 2: Suppose that all four members in a group allocate 10 points to the group account. In that case, each of the four members receive 20 (= 4×5) points form the group account, which is their final earnings.

Example 3: Suppose that you and another member allocate 10 points to the group account, and the two other members of your group each allocate 10 points to the private account. In this case, each group member receives 10 (= 2×5) points from the group account. Since you obtain 0 points from the private account, your total earnings are 0 + 10 = 10 points. Another member that allocates 10 points to the group account also obtains 10 points as his/her earnings. The two members that allocate 10 points to the private account each get 10 points from the private account, and 10 points from the group account; therefore their earnings are each 10 + 10 = 20 points.

If you have any questions so far, please raise your hand. When all questions are answered, we will move on to explaining Phase 2.

Instructions for Phase 2:

In Phase 2, you will be shown the amount allocated to the group account by each of the other members in your group. In a box set at the right of the allocation information screen, you will be asked to enter an integer that you wish to use to increase the earnings of the member who made that allocation decision at a private cost. Each addition point you allocate to increase someone's earnings **reduces your own earnings by 1 point** but **increases that individual's earnings by 3 points**. You can assign addition points from {0, 1, 2, 3, 4}. These decisions are unconditional. Your group members also decide whether to increase your earnings in the same way. You are free to leave any or all others' earnings unchanged by entering 0's in the relevant boxes.

Your earnings are calculated as:

(i) Your earnings in Phase 1 plus extra earnings due to your received additional points

minus

(ii) The cost of assigning addition points to other members

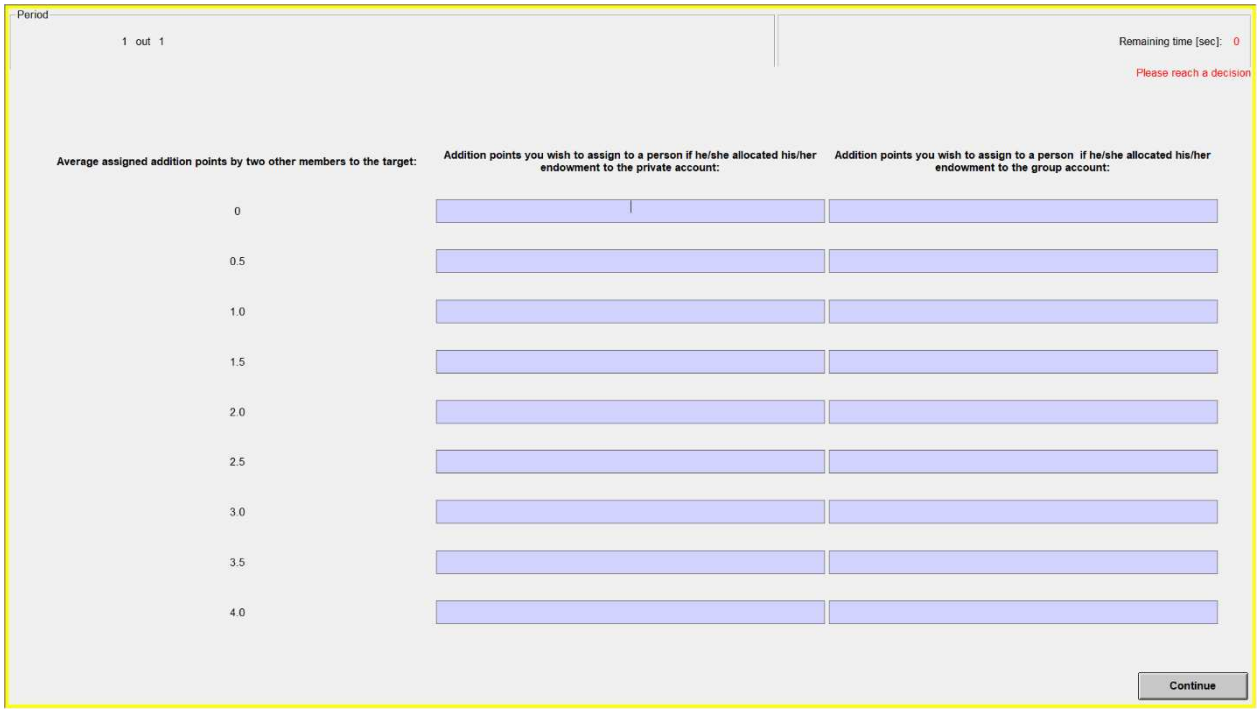
Here, "extra earnings due to your received addition points" are three times the total addition points you received from the other three members. In case your total earnings are negative due to

your cost of assigning addition points (part (ii)), you earnings are set to zero.

An example of your screen (Note: Numbers shown are for illustration only):

There is another decision you are asked to make. Before you are informed of other members' allocation decisions and decide how many addition points to assign to each of them, you will be asked to enter numbers, from {0, 1, 2, 3, 4}, into a form shown below. This form is called the "conditional addition schedule." In this form, you will indicate how many addition points you would like to assign to a member, assuming that the two remaining members in your group on average assign the addition points shown to that member. For example, in the screen image below in the top-left box, you'll enter the number of addition points you would like to assign to a member *j* (not you) that allocated 10 points to his private account if two other members do not assign any addition points to *j*; in the bottom-right box, the number of addition points you want to assign to a member *j* (not you) that allocated 10 points to the group account in the allocation stage, if the other two assign an average of 4 addition points (thus, 8 addition points in total) to *j*.

The addition points you enter in this form will affect your earnings in the following way: once you and the others in your group complete the conditional addition schedule, you are informed of Phase 1 allocation decisions by other members. Then, all members make unconditional addition decisions as mentioned above. After that, one out of the four members' conditional addition schedules is randomly selected to be used. The three members' unconditional addition decisions and the one member's conditional addition decision will determine their earnings in the way already described.



Comprehension Questions:

1. When you assign 1 addition point to another member, (a) how many points will be deducted from your earnings? [ ] (b) how many additional earnings will that member receive? [ ]

2. How many members' conditional addition schedules in a group are randomly selected to be used to determine their addition decisions? [ ]

Any questions? Once all questions are answered, we will move on to the experiment.

Appendix B: Additional Tables

Table B.1. *Individual Conditional Rewarding Schedules and Classification Results, subjects 1-20.*

Subject	Subject's conditional allocation towards N									Spearman's ρ	Subject's conditional allocation towards C									Spearman's ρ	**Type**
	0	**0.5**	**1**	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**		**0**	**0.5**	**1**	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**		
1	0	1	0	0	0	0	0	0	0	*ρ = -0.4107*	0	0	0	1	1	1	2	0	0	*ρ = 0.2236*	**C - OP**
2	0	0	0	0	0	0	0	4	4	*ρ = 0.7246***	0	0	0	0	0	0	0	4	4	*ρ = 0.7246***	**C - OP**
3	0	0	0	0	0	1	1	1	2	*ρ = 0.8944****	0	1	1	1	2	2	3	3	4	*ρ = 0.9747****	**C - OP**
4	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	1	1	1	2	2	2	3	3	4	*ρ = 0.9618****	**C - PC**
5	2	0	0	0	0	0	0	0	0	*ρ = -0.5477*	2	1	2	1	2	1	3	2	1	*ρ = 0.0183*	**N - OP**
6	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	2	2	2	2	2	0	0	0	0	*ρ = -0.8660****	**C - PC**
7	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	4	4	4	4	4	4	4	4	4	*ρ = -0.1369*	**C - OP**
8	4	4	4	4	4	4	4	4	4	*ρ = -0.1369*	1	2	1	1	1	1	1	1	1	*ρ = -0.4107*	**C - OA**
9	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	0	0	1	0	0	0	0	0	0	*ρ = -0.2738*	**C - OP**
10	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	1	1	1	1	1	1	1	1	1	*ρ = 0, p (2*	**C - OP**
11	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	**N - FR**
12	1	0	0	0	0	0	0	0	0	*ρ = -0.5477*	2	1	1	1	1	1	1	1	1	*ρ = -0.5477*	**C - OP**
13	1	0	0	0	0	0	0	0	0	*ρ = -0.5477*	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	**N - OA**
14	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	1	1	1	2	2	2	3	3	4	*ρ = 0.9618****	**C - PC**
15	4	4	3	3	2	2	1	1	0	*ρ = -0.9831****	0	0	1	1	2	2	3	3	4	*ρ = -0.9831****	**C - OP**
16	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	0	0	0	0	0	1	1	1	1	*ρ = 0.8660****	**C - PC**
17	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	1	1	1	1	1	1	1	1	1	*ρ = -0.2738*	**N - OP**
18	1	2	1	0	0	0	0	0	0	*ρ = -0.8067****	1	1	2	2	1	1	2	2	1	*ρ = 0.1732,*	**C - OP**
19	4	3	2	2	1	1	1	0	0	*ρ = -0.9746****	0	1	1	1	2	2	2	3	4	*ρ = 0.9661****	**C - OP**
20	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	1	1	1	1	1	1	0	0	0	*ρ = -0.8215****	**C - PC**

Notes: N stands for Non-cooperator, C for Cooperator, FR: Free-rider, PC: Conditional Prosocial, OP: Other Pro-social, OA: Other Anti-social. *, **, and *** indicate significance at the .10 level, at the .05 level and at the .01 level, respectively.

Table B.2. *Individual Conditional Rewarding Schedules and Classification Results, subjects 21-40.*

Subject	Subject's conditional allocation towards N									Spearman's ρ	Subject's conditional allocation towards C									Spearman's ρ	**Type**
	0	**0.5**	**1**	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**		**0**	**0.5**	**1**	**1.5**	**2**	**2.5**	**3**	**3.5**	**4**		
21	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	0	0	0	0	1	1	2	2	2	*ρ = 0.93541****	**C - PC**
22	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	0	1	1	2	2	2	3	3	4	*ρ = 0.97468****	**C - PC**
23	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	0	0	1	1	2	2	3	3	4	*ρ = 0.98319****	**C - PC**
24	0	0	1	1	1	1	2	1	2	*ρ = 0.83915****	0	1	1	1	1	1	2	2	2	*ρ = 0.89443****	**C - OP**
25	0	0	0	0	0	0	3	0	0	*ρ = 0.27386*	0	0	1	0	0	0	0	0	0	*ρ = 0.27386*	**C - OA**
26	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	**N - FR**
27	4	4	4	4	4	4	4	4	4	*ρ = -0.1369*	4	4	4	4	4	4	4	4	4	*ρ = -0.1369*	**N - OP**
28	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	0	1	0	0	0	0	0	0	0	*ρ = -0.4107*	**C - OP**
29	1	0	0	0	0	0	0	0	0	*ρ = -0.1369*	0	0	0	1	0	0	0	0	0	*ρ = -0.1369*	**C - OP**
30	0	0	1	1	2	2	3	3	4	*ρ = 0.98319****	0	0	1	1	2	2	3	3	4	*ρ = 0.98319****	**N - OP**
31	0	0	0	0	1	1	2	2	3	*ρ = 0.94868****	0	0	0	0	1	1	2	2	3	*ρ = 0.94868****	**C - OP**
32	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	0	0	0	0	0	0	1	1	1	*ρ = 0.82158****	**N - PC**
33	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	3	3	3	2	2	2	1	1	1	*ρ = -0.9486****	**C - PC**
34	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	0	0	1	1	2	2	3	3	4	*ρ = 0.98319****	**C - PC**
35	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	1	1	1	1	1	1	1	1	1	*ρ = -0.2738*	**C - OP**
36	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	4	4	4	2	2	1	3	1	4	*ρ = -0.4392*	**C - OP**
37	0	0	0	1	0	2	2	1	4	*ρ = 0.82571****	0	1	2	1	3	0	1	3	2	*ρ = 0.44655*	**C - OP**
38	0	1	1	1	1	1	1	1	1	*ρ = 0.54772*	0	1	1	1	1	1	1	2	2	*ρ = 0.83666****	**C - OP**
39	0	0	0	0	0	0	0	0	0	*ρ = -0.5477*	2	2	2	1	1	1	1	0	0	*ρ = -0.9354****	**C - PC**
40	2	2	2	2	2	1	1	1	1	*ρ = -0.8660****	4	4	4	4	3	3	3	3	3	*ρ = -0.8660****	**C - OP**

Notes: N stands for Non-cooperator, C for Cooperator, FR: Free-rider, PC: Conditional Prosocial, OP: Other Pro-social, OA: Other Anti-social. *, **, and *** indicate significance at the .10 level, at the .05 level and at the .01 level, respectively.