

Does relational quality in a group affect CPR management?

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Our Goal

To find out if the quality of the relationships that actors developed within a group influences the way in which in they manage a common pool resource

Novelty

Explicitly considering relationships, and their quality, as a constitutive element of collective decision-making processes

Relationships

Relationships are what tie people together in a social group

They refer to the links through which people and the surrounded world connect to each other and organize their actions (Scharmer and Kaufer 2013)

It is through the working of relationships, played out through formal and informal institutional arrangements in place, that actors define what is at stake, what must be done and what must be known

Relationships and communication

Relationships are not fixed, they **develop through interactions** among actors.

Relationships are not the same as communication: communication is the venue through which people share or exchange information, cues, feelings, from which relationships are formed.

So, relationships are an emergent characteristic of social interactions, and communication is a process that constitutes these relationships.

Experimental literature on the effect of relational quality and communication on CPR management

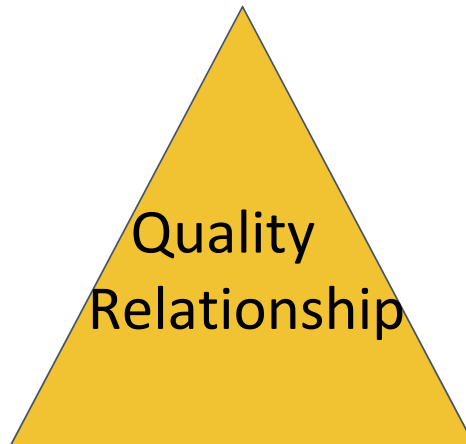
- Relational quality in a group:
 - Social approval and social familiarity to avoid free-riding in a PG (Gächter and Fehr, 1999).
 - Team building tasks and PG games (Charness, 2012), Group/individual decision-making (Charness and Sutter, 2012).
 - Group identity (painting preferences) and welfare maximization decisions in a group (Chen and Li, 2009).
- Communication:
 - Improvement of CPR management through communication (Ostrom, E., Walker, J., 1991; Ostrom 2000)
 - Roles of communication in a CPR (Cardenas and Ostrom, 2004): Problem clarification, type detection, moralization, reinforce group identity.
 - Communication, elicitation of social norms and group identity in social dilemmas experiments (Bicchieri, 2002).

We contribute to this literature by looking at: 1) if and how better relational quality perceived in a group improves CPR management, and 2) if and how communication influences the relational quality of a group.

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Analytical framework

PERCEPTIONS:
SELF TO OTHERS & OTHERS TO
SELF



Brugnach M., S. de Waard, D. Dubois and S. Farolfi.
Relational quality and uncertainty in common pool water
management: an exploratory lab experiment. *Scientific
Reports* volume 11, Article number: 15188 (2021)

CLOSENESS OF
RELATIONSHIPS

Gächter S, Starmer C, Tufano F (2015) Measuring
the Closeness of Relationships: A
Comprehensive Evaluation of the 'Inclusion of
the Other in the Self' Scale. *PLOS ONE* 10(6)

EMOTIONS

Kitayama, S., Mesquita, B., & Karasawa, M. (2006).
Cultural affordances and emotional experience: Socially
engaging and disengaging emotions in Japan and the
United States. *Journal of Personality and Social
Psychology*, 91(5), 890–903.

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Research Question

Does better relational quality in a group improve CPR management?

Hypotheses to be tested

H1: The rule of payment (individual, cooperation or competition) in the effort task creates different relational qualities between the group members. This can be in the positive sense or in the negative one.

H2: Better relational quality improves (respectively, worst relational quality worsens) cooperation in CPR dilemmas.

**To test these hypotheses,
we have developed some tools:**

Initial Task

Questionnaire on Quality of Relationships

Initial Task

- effort task where subjects must count the number of 1's in 10 x 10 grids
- all group members have the same grid
- group members can communicate during the task
- 3 conditions, which differ wrt to the rule of payment: *individual* (piece rate), *competition* (only the best score earns money), *cooperation* (all group members are paid according to the best score in the group)

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Remaining time : 0:30

Instructions

Select a grid by clicking on the corresponding button, count the number of 1's in the grid, enter the value in the input widget and click on "Check".

- If the number is correct, your score increases by 1 point and the corresponding grid/button is no longer available. Click on a new button to display a new grid.
- If the number is incorrect, a message appears to let you know. In this case, enter a new value or select another grid, as you wish.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

Score : 2 point(s)

Grid 1

0	1	0	1	1	0	0	1	0	0
1	1	1	0	0	1	1	0	1	1
0	0	1	0	0	1	0	0	1	1
1	1	0	1	0	1	1	1	0	1
0	1	1	0	0	1	0	0	0	1
1	1	1	0	1	0	1	0	1	1
1	0	0	0	0	1	0	1	0	1
0	1	0	1	0	1	1	0	1	0
0	0	0	1	0	1	1	0	0	1
1	0	1	1	1	0	0	1	0	0

Number of 1 in the grid:

Check

Below you can discuss with the other members of your group

Participant 4 (Me) 51 for grid 1

Send

Questionnaire Quality of Relationships

Part 1. PERCEPTIONS OF BEHAVIOR: SELF TO OTHERS & OTHERS TO SELF

Part 2. EMOTIONS

Part 3. CLOSENESS OF RELATIONSHIPS: BEING PART OF THE GROUP

Questionnaire Quality of Relationships

PART 1. PERCEPTIONS OF BEHAVIOR: SELF TO OTHERS & OTHERS TO SELF

Brugnach et al 2021

How players perceive the behavior of others?	How players perceive themselves behaving towards others?
Trustworthy	Trustworthy
Fair	Fair
Selfish	Selfish
Cooperative	Cooperative
Competitive	Competitive
Understanding	Understanding
Caring	Caring
Envious	Envious
Altruistic	Altruistic
Empathetic	Empathetic

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Questionnaire Quality of Relationships

PART 1. PERCEPTIONS OF BEHAVIOR: SELF TO OTHERS & OTHERS TO SELF -cont

In general, did the other players behave as you expected?

Please indicate in a scale from 0 to 5 (0 nothing, 5 max)

Did you feel you had influence over the behavior of others?

Please indicate in a scale from 0 to 5 (0 nothing, 5 max)

Did you feel reciprocated by the others?

Please indicate in a scale from 0 to 5 (0 nothing, 5 max)

In general, how would you rate the communication with other players?

Easy-Clear-Useful

Questionnaire Quality of Relationships

PART 2. EMOTIONS

(Positive engaging emotions)	(Positive dis-engaging emotions)	(Negative engaging emotions)	(Negative dis-engaging emotions)
Friendly Respectful Sympathy <i>Close feelings</i>	Proud Superior Self-esteem Top of the world	Guilty Indebted Ashamed	Disappointed Frustrated Angry Sad

Framework used: Kitayama et al 2006;

How are you feeling?

Please write down one to three emotions you are feeling right now.

Please indicate in a scale from 0 to 5 (0 nothing, 5 max) the degree to which you feel:

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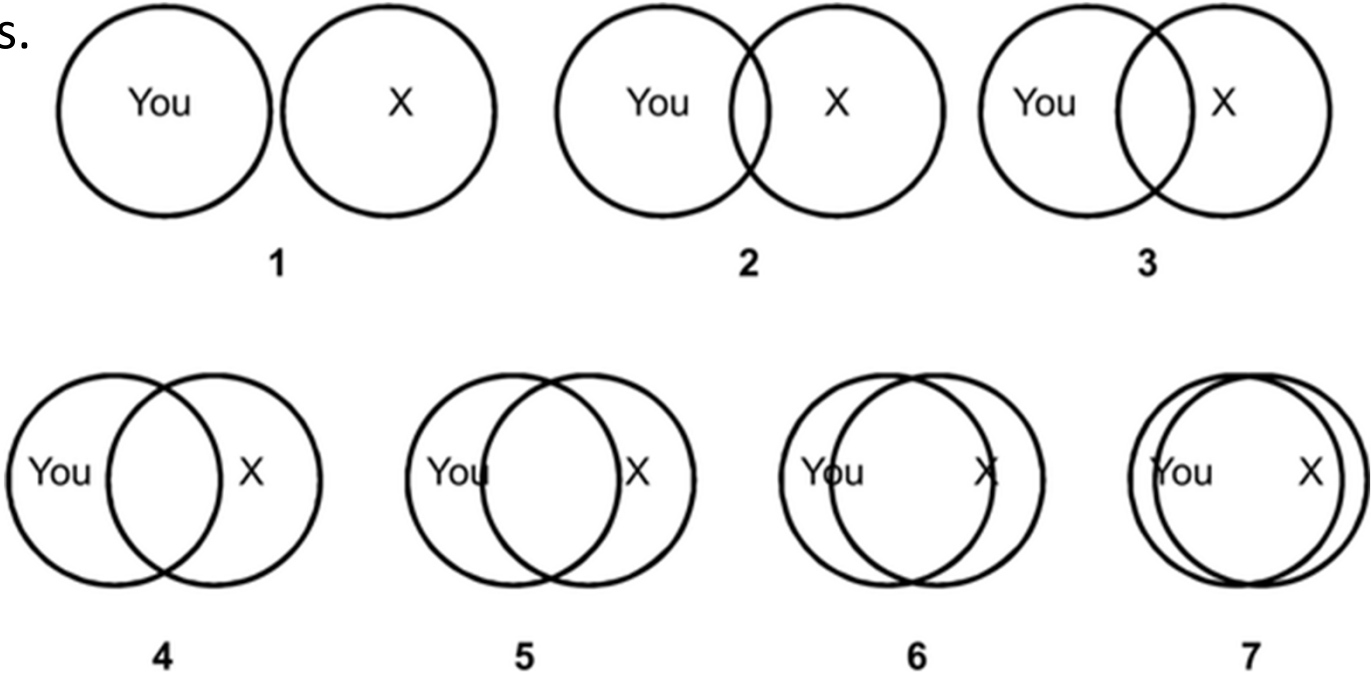
Questionnaire Quality of Relationships

PART 3. CLOSENESS OF RELATIONSHIPS

Did you feel part of the group? (scale from 0 to 5)

How close do you feel to others?

We used IOS: *Inclusive of Other in Ourselves Scale* to measure subjectively perceived closeness of relationships.



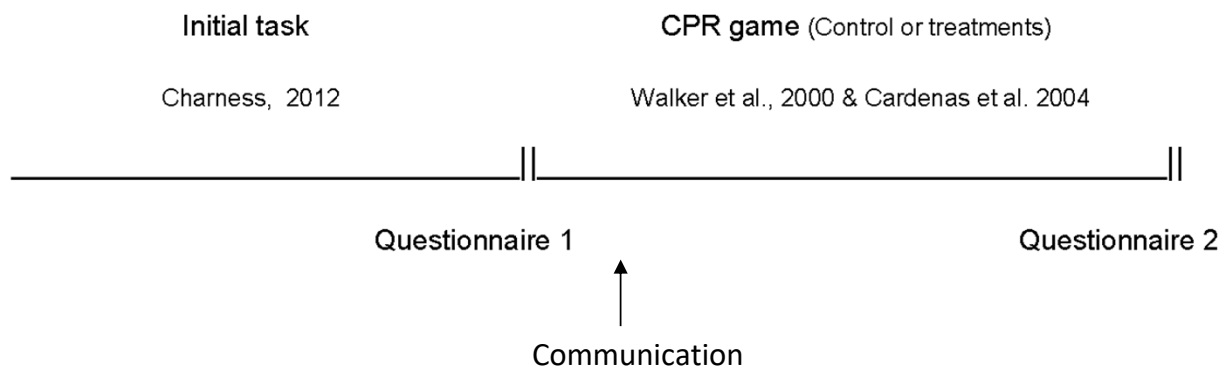
NASH	14
COOP	9

The CPR Game

- The Walker Herr Gardner Ostrom (2000) model was used, recalibrated on groups with $N=4$.
- Social Optimum: $x_i = 9$
- Nash: $x_i = 14$
- 1 session = 10 rounds
- Players could extract between 0 and 20 tokens

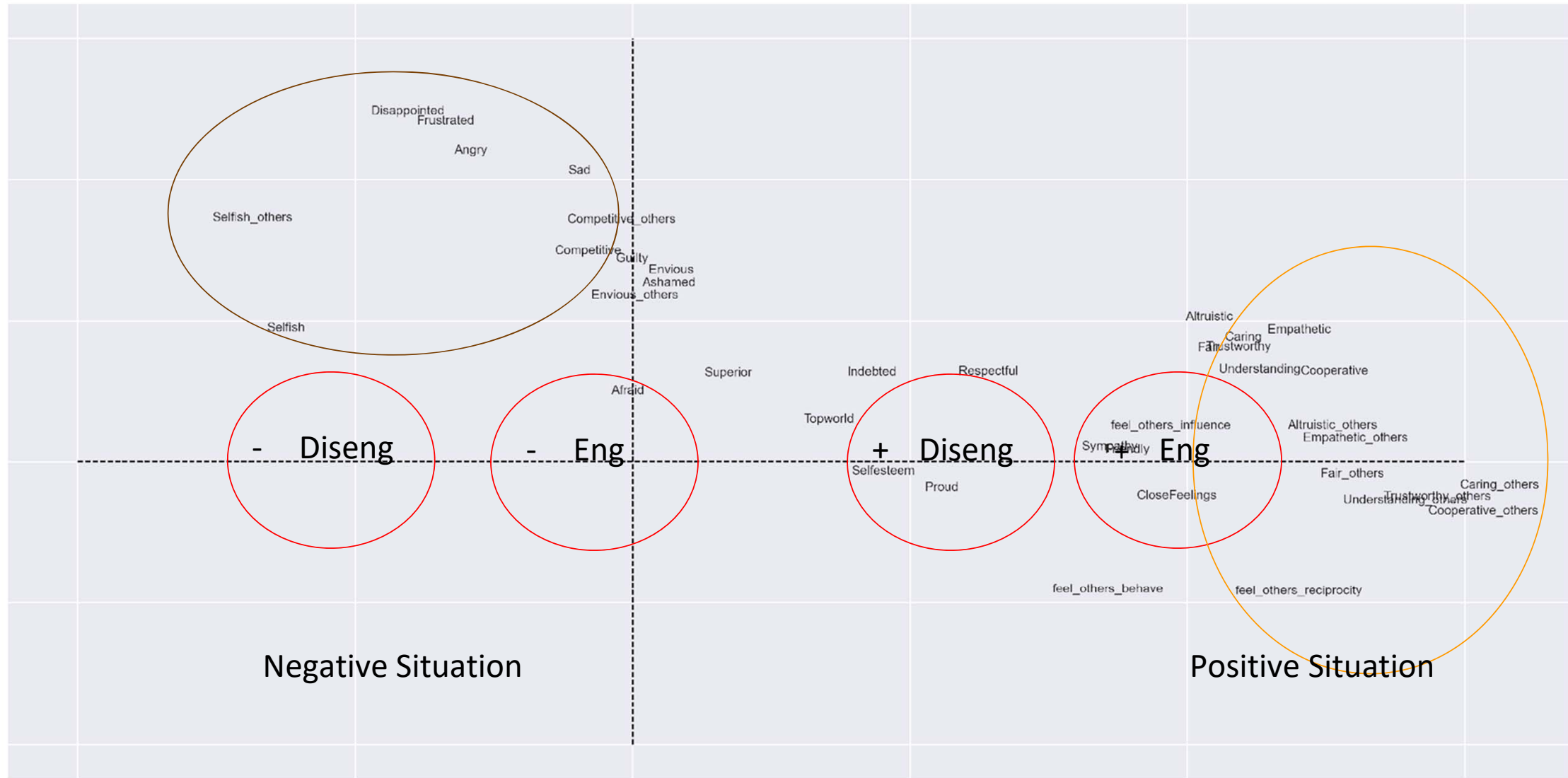
Treatments

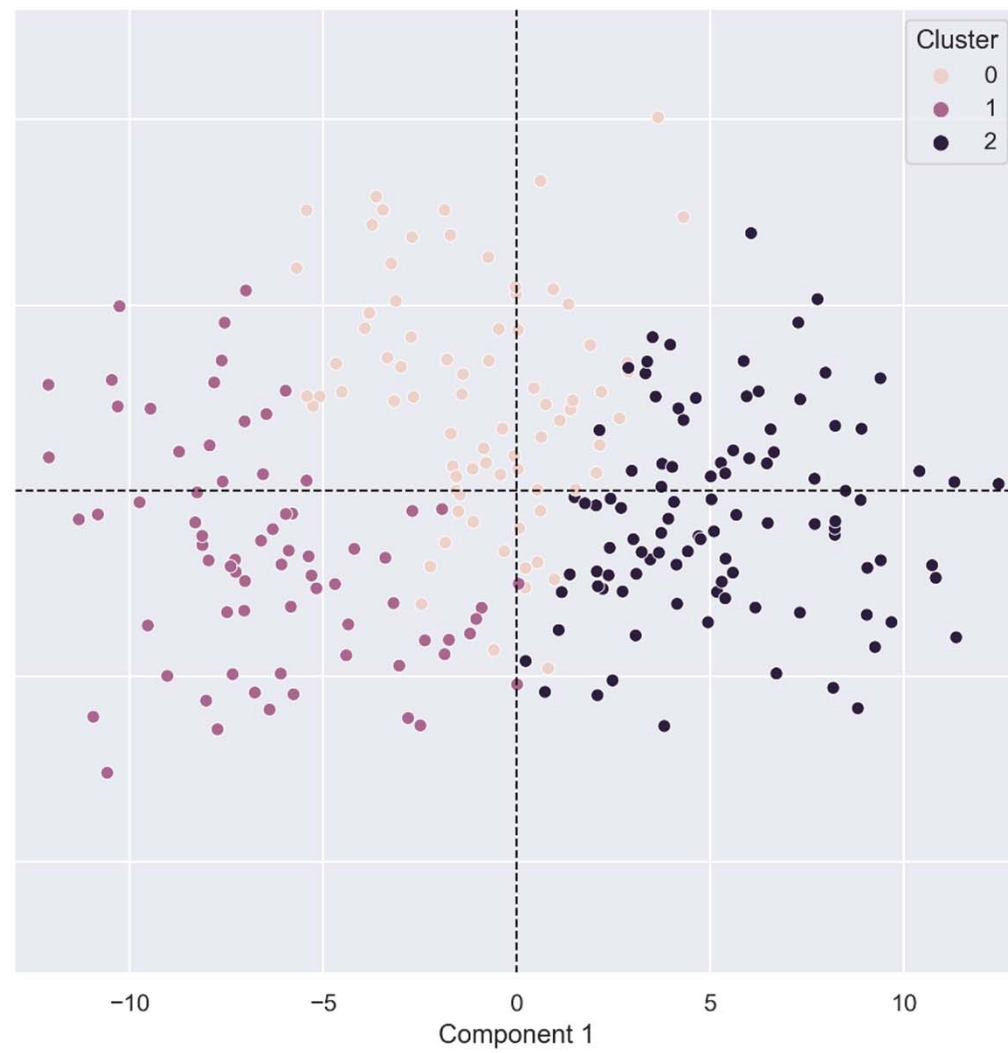
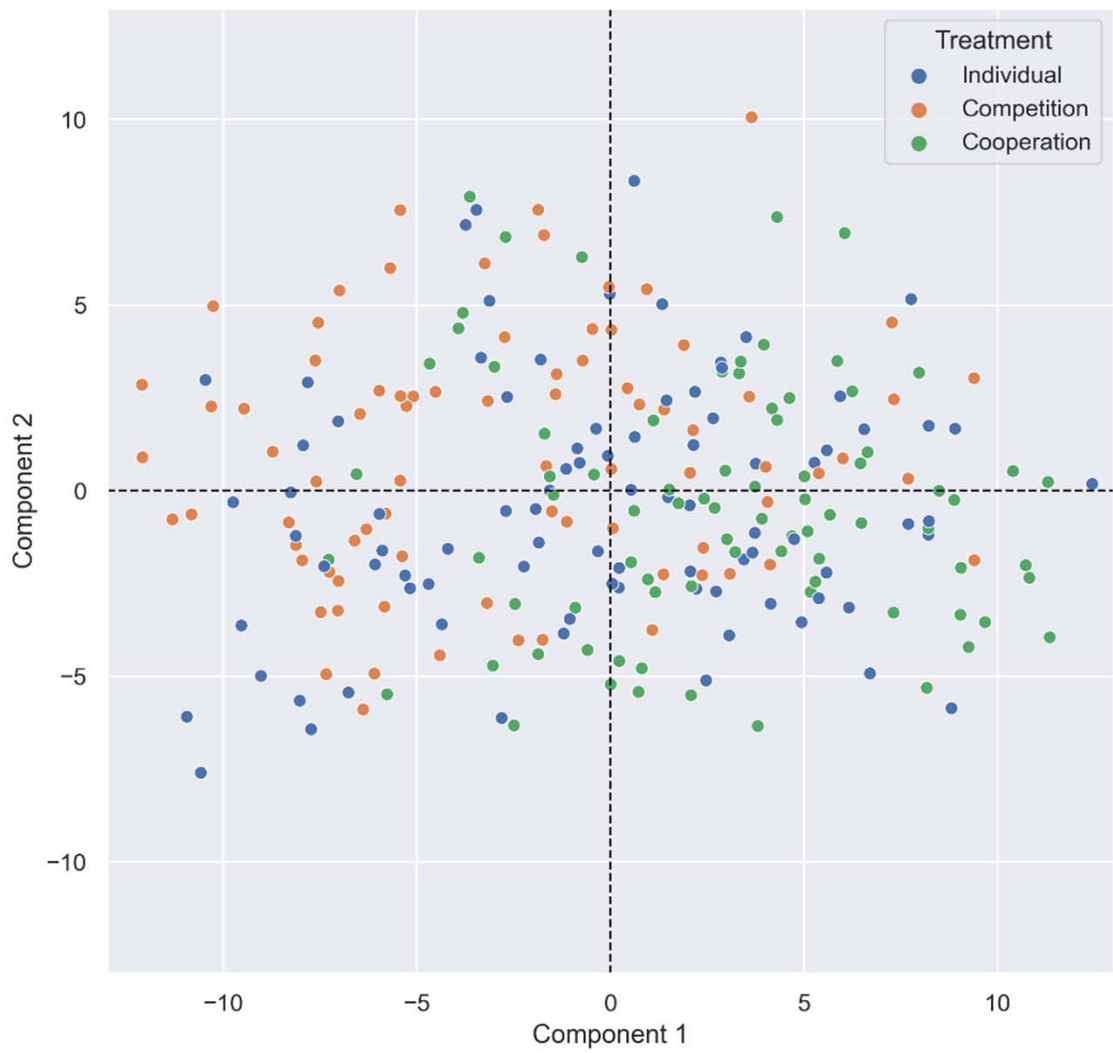
- T0 (Baseline) = individual initial task, no communication
- T1 = cooperative initial task, no communication
- T2 = competitive initial task, no communication
- T3 = individual initial task, communication
- T4 = cooperative initial task, communication
- T5 = competitive initial task, communication



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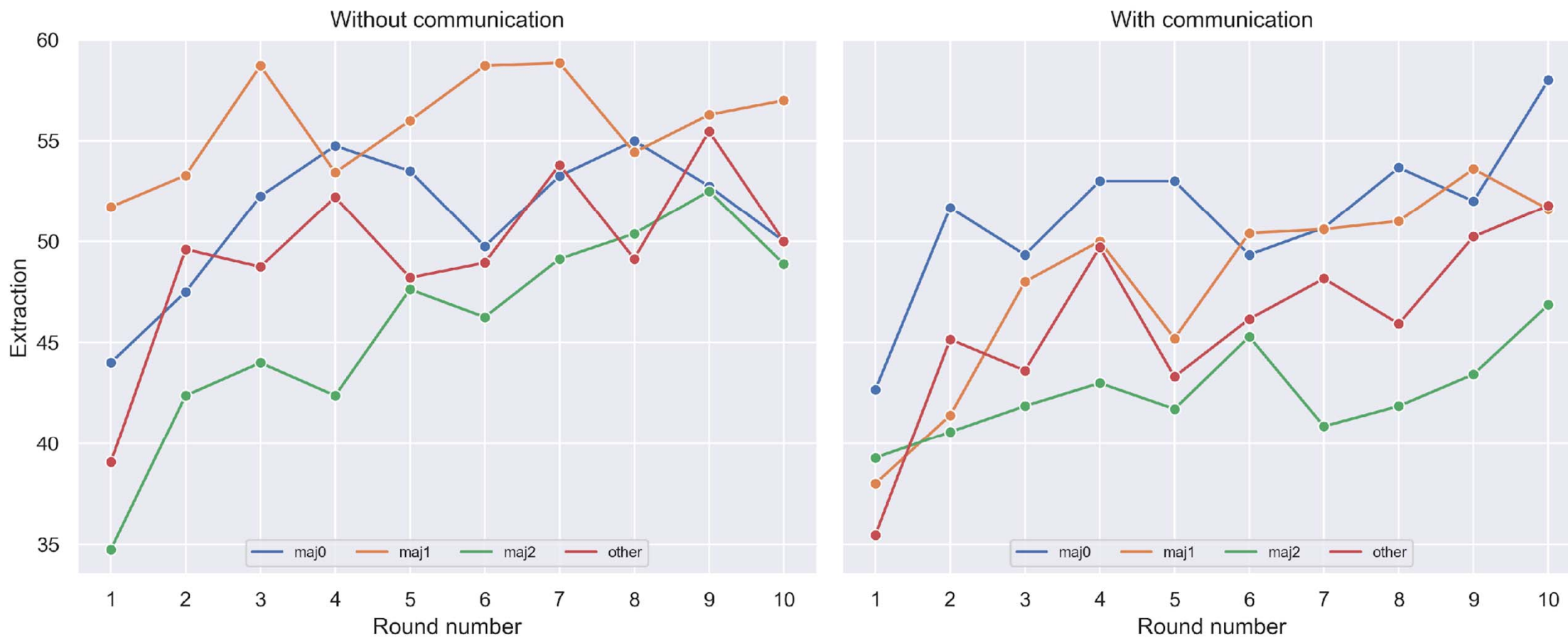
Results





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Results: Impact of relational quality in CPR



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Conclusions so far

- The quality of relationships matters in CPR management
- The initial task is able to prompt changes in quality of relationships developed among players (H1)
- Changes in the quality of the relations were accompanied with changes in extractions (H2)