

# Learning to be Competent Collaborators:

The impact of the Commons Systems in Building Collaborative Capacity through Enhanced Social Learning

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# Thesis

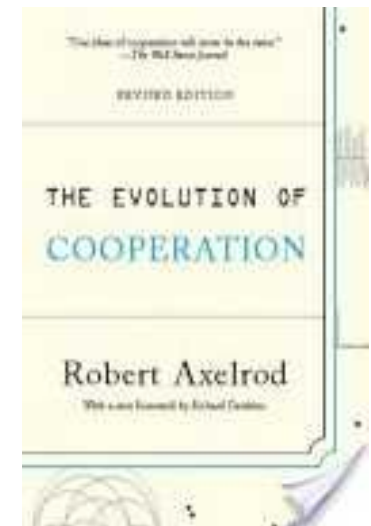
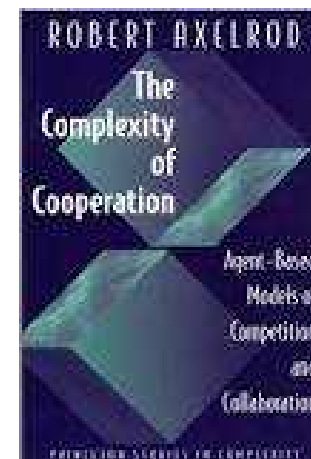
- The Commons systems can facilitate **collaborative capacity** through **social learning**  
not only for better collaboration  
but also for initiation of collaboration  
which involves **transformative**  
**(experiential) learning**

# Why Collaboration is Important?

## Social Dilemmas

- In prisoner's dilemma situation, people cannot realize social optimal and go for the second best strategies not the optimal strategies

- Axelrod, Robert (1984), *The Evolution of Cooperation*.
- Axelrod, Robert (1997), *The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration*



- Elinor Ostrom (1990) **Governing the Commons: The Evolution of *Institutions* for Collective Action**



The Evolution of Institutions  
for Collective Action



Public Economy  
of Institutions and Decisions

# The Commons Systems or Common-Pool Resource Systems (CPR)

- The collaborative resource governing (Ostrom, 1990).
- Both theoretically and empirically, it is found that they can work as an alternative to the market or hierarchical resource governance regime by dealing with social dilemmas with collective actions or collaboration (Ostrom, 1990; Wade, 1994; Gibson et al. (eds.), 2000; Agrawal & Ostrom, 2001; Ostrom & Nagendra, 2006).

# Examples

- communal grasslands
  - community forests
  - community restaurant
  - diverse forms of cooperatives
- 
- a collective resource governance system through which a group of individuals collaboratively produce, manage, and consume certain kinds of resources.

Cooperation

**Function:**

Exchange information/  
/ Behavioral Coordination without  
shared goals

**Interactions:**

Simple discontinuous communication  
flows

**Relationship:**

Loose short-term relationship with  
weak or moderate interdependency

**Input & Output:**

Low to medium/  
Limited means of input or contribution

Collaboration

**Function:**

Exchange information /  
Creation & Revision of common visions  
and collective actions  
Behavioral Coordination with shared  
goals and visions /  
Sharing Resources in the common-pool  
form

**Interactions:**

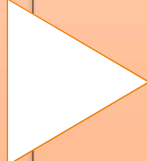
Multiple continuous communication  
flows (including informal chatting and  
institutionalized deliberation)/  
Active forms of interactions possible  
(including non materialistic social  
exchange like praise , criticism& indirect  
reciprocity, and persuasive social  
interactions)

**Relationship:**

Strongly long term relationship based  
on moderate to strong  
interdependency

**Input & Output:**

Medium to High/  
Diversified means of input or  
contribution is possible





# Questions are

- *Do the commons systems actually facilitate individuals' capacity to collaborate better?*
- No **comparison** of the collaborative capacity commons group and the non-commons group though an experimental game has been made.
- How the institutions for collaboration or collaborative regime would emerge.
- No games were able to describe **evolution of the institutions & capacity of collaboration** because of the absence of **communicative interaction** in the game settings

# Hypothesis

- **YES, Commons systems can facilitate collaborative capacity**

# Experimental Game

## Subject Groups

**1) The commons group:**

A group of active members of different grass-root community organizations in one municipal region

**2) The non-commons group:**

A group of graduate students who belong to the same department of Agricultural Economics

## - The Number of Participant

1) The commons group: 3 groups with 5 people in each group (15 people participants in total)

2) The non-commons group: 4 groups with 4 people in each group (16 people participants in total)

- **The Number of Rounds per Game:** 3 rounds

- **Duration:** 35 minutes or so (5 minutes per round)

## Game Rules

**: You get \$100 if you have someone to stand in front or behind your chair**

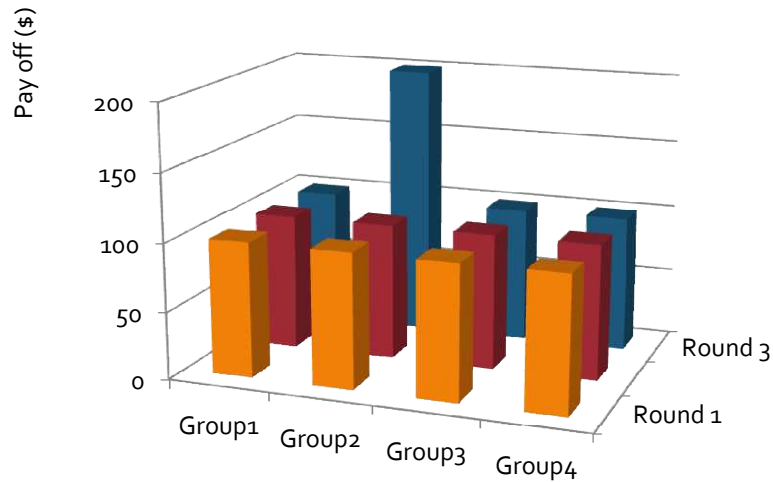
- 1) Participants who manage to make someone (including her or himself) stand in front or behind of their chairs through communication can get \$ 100 per person. No irrational or violent measures such as threatening are allowed.
- 2) Except changing the location of table and chairs, **any creative trials are allowed and encouraged**  
--> Give more control and freedom on game dynamics and results
- 3) Each group should **report the resulted process & outcome briefly to other groups after each round**  
--> Accelerate learning by allowing more information input on possible strategies

# Expected Results

- Better game results of the Commons Group (CG) as a group
- The sub-groups of the CG will show more creative and diverse ways to maximize the group results
- The sub-groups of the Non CG will show more smart ways to maximize the individual results & set competitive games to determine and legitimize creation of losers and winners

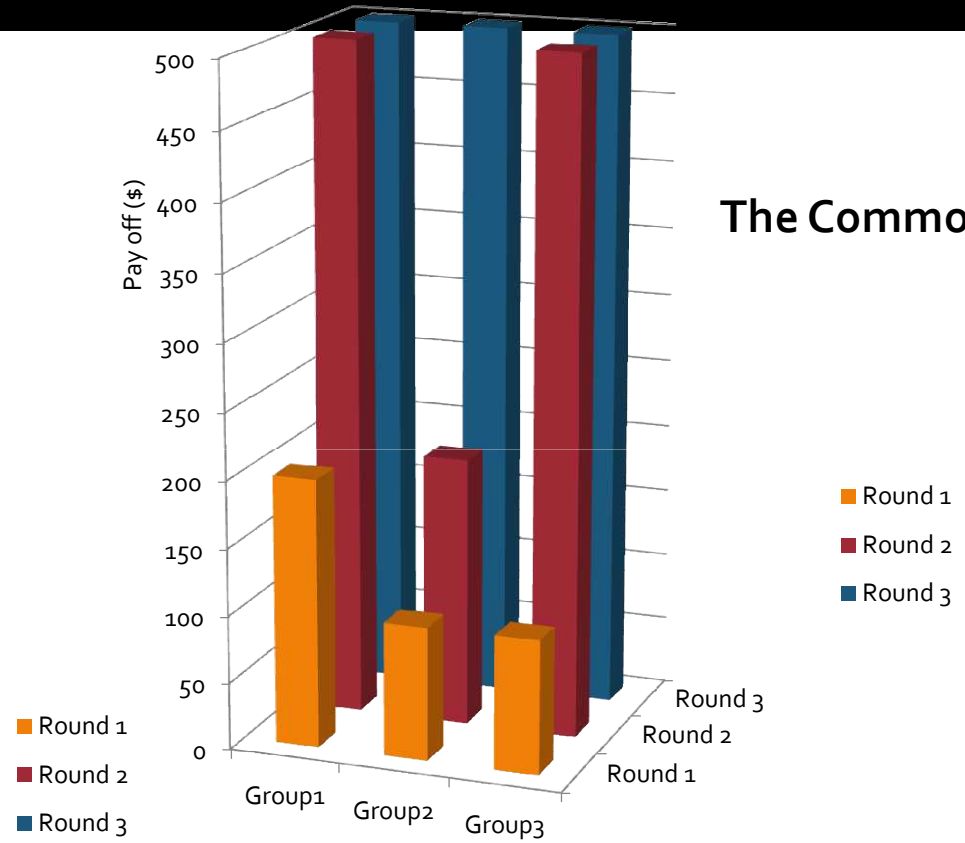
# The Group Pay-off per person

## The Non-commons



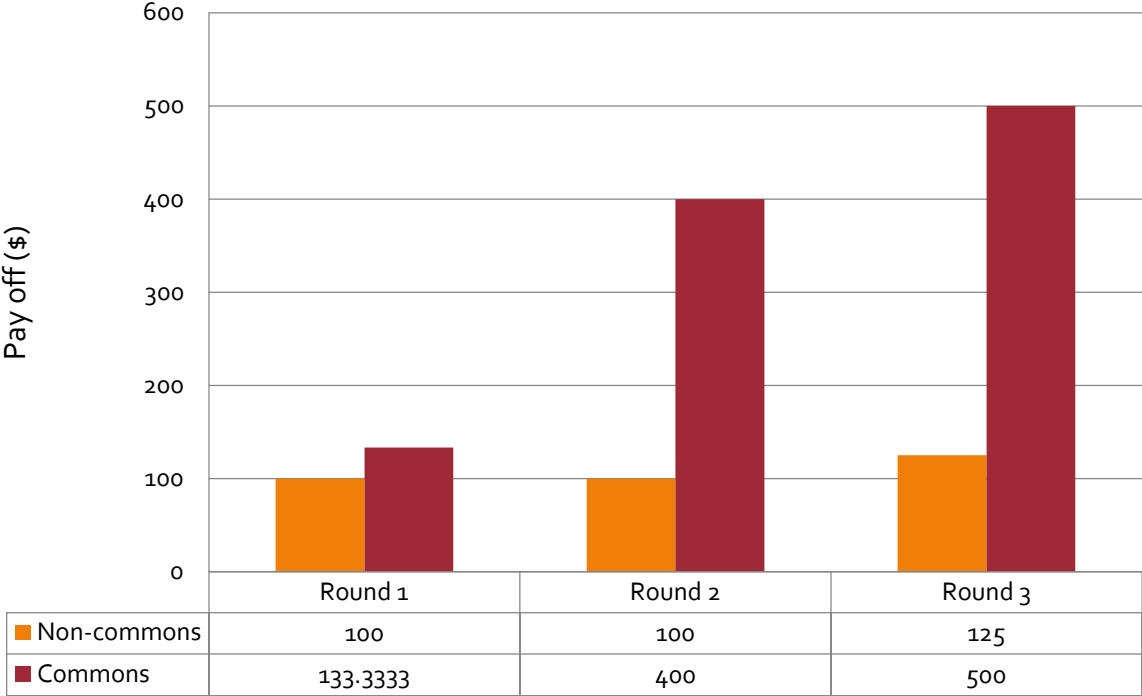
	Group1	Group2	Group3	Group4
Round 1	100	100	100	100
Round 2	100	100	100	100
Round 3	100	200	100	100

## The Commons



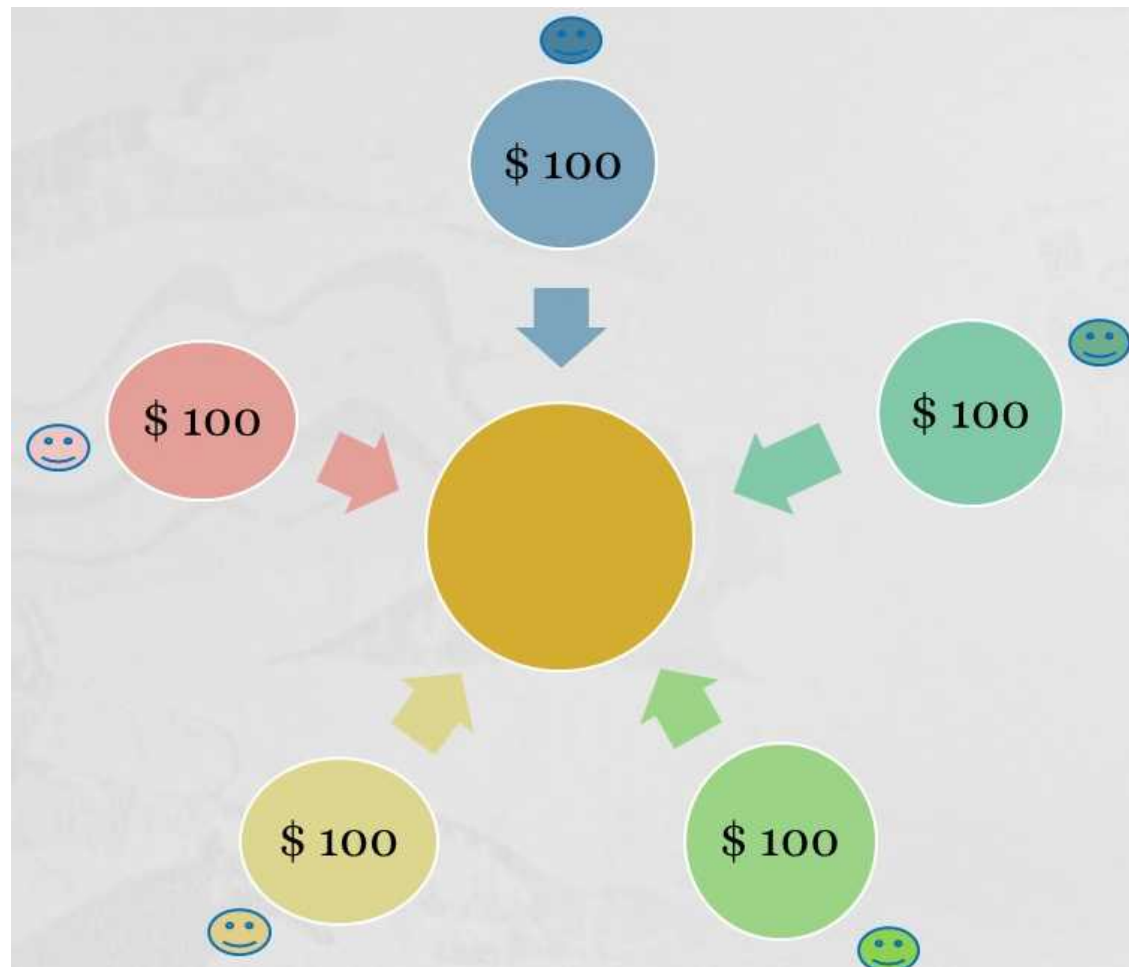
	Group1	Group2	Group3
Round 1	200	100	100
Round 2	500	200	500
Round 3	500	500	500

# Comparison of the Pay-off per capita of the Non Commons & Commons group



# Individual Paradigm – Homoeconomicus Version

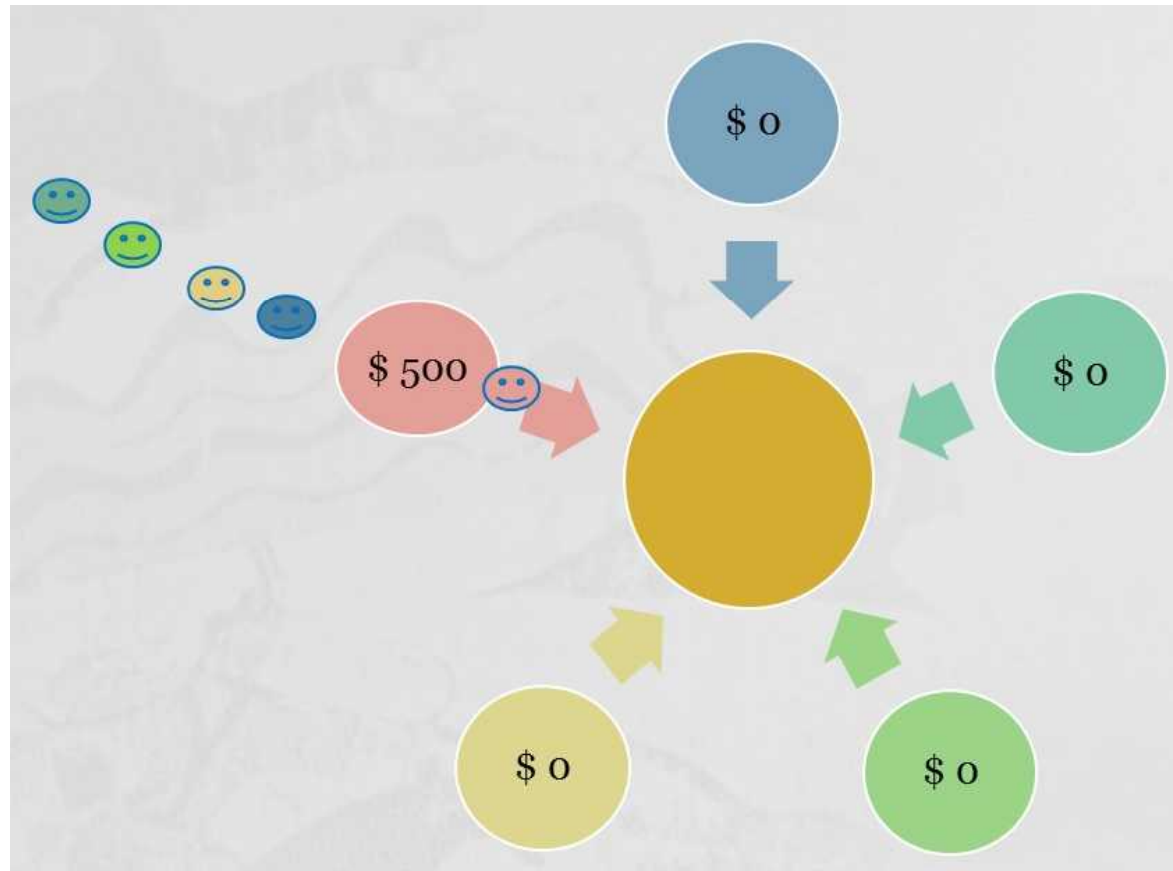
The total payoff of the group = \$ 500





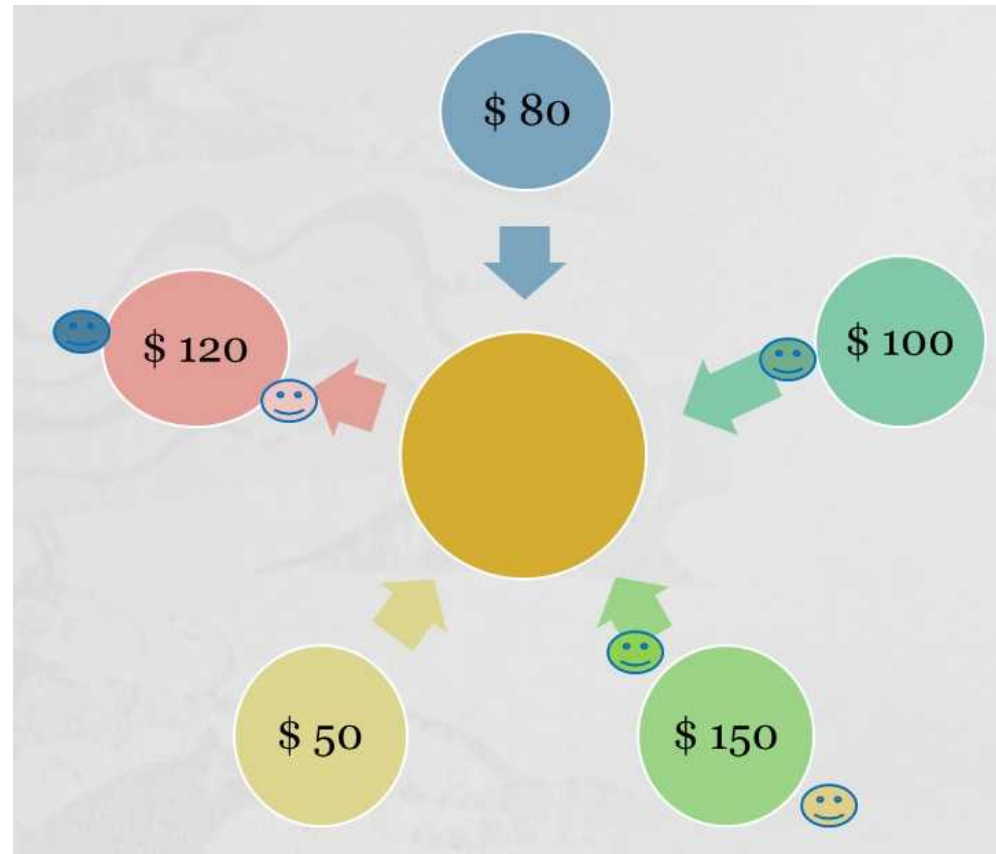
# Leadership-based Cooperative Paradigm – Pretty Social Homoeconomicus Version

The total payoff of the group=\$ 500



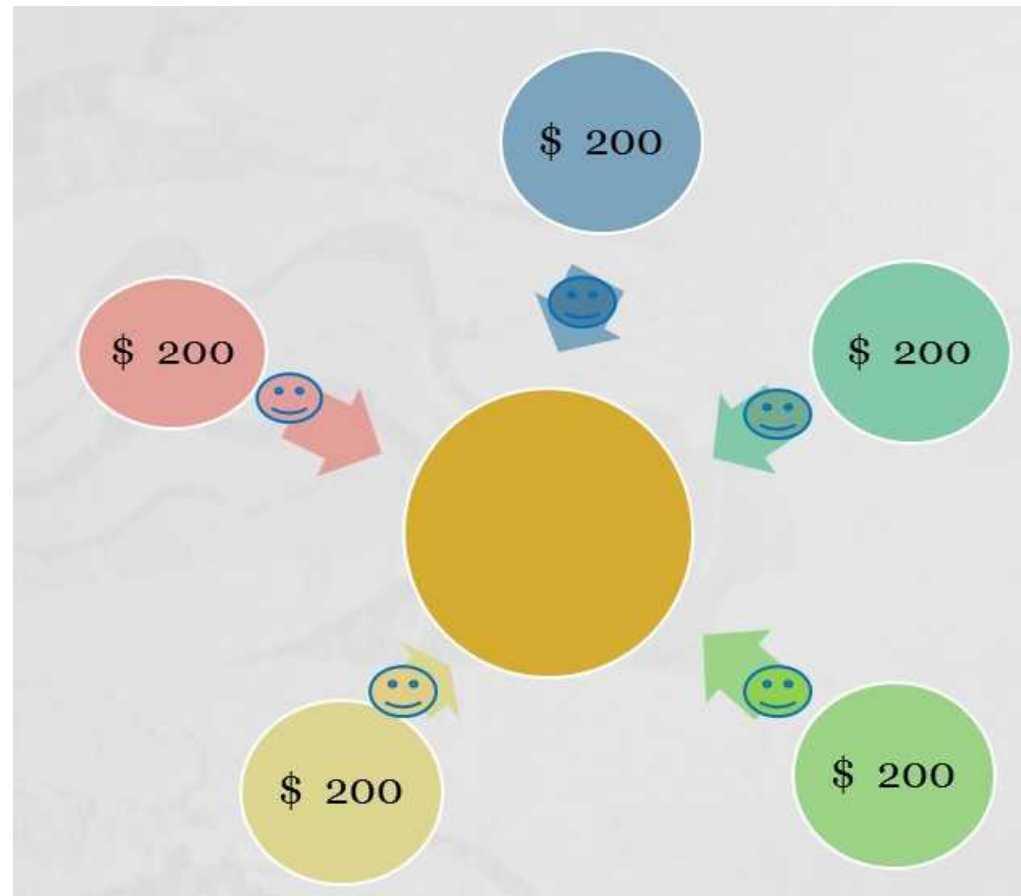
# Transactional Cooperative Paradigm – Social Homoeconomicus Version

The total payoff of the group=\$ 500



# Transactional Cooperative Paradigm - Strategic Social Homoeconomicus Version

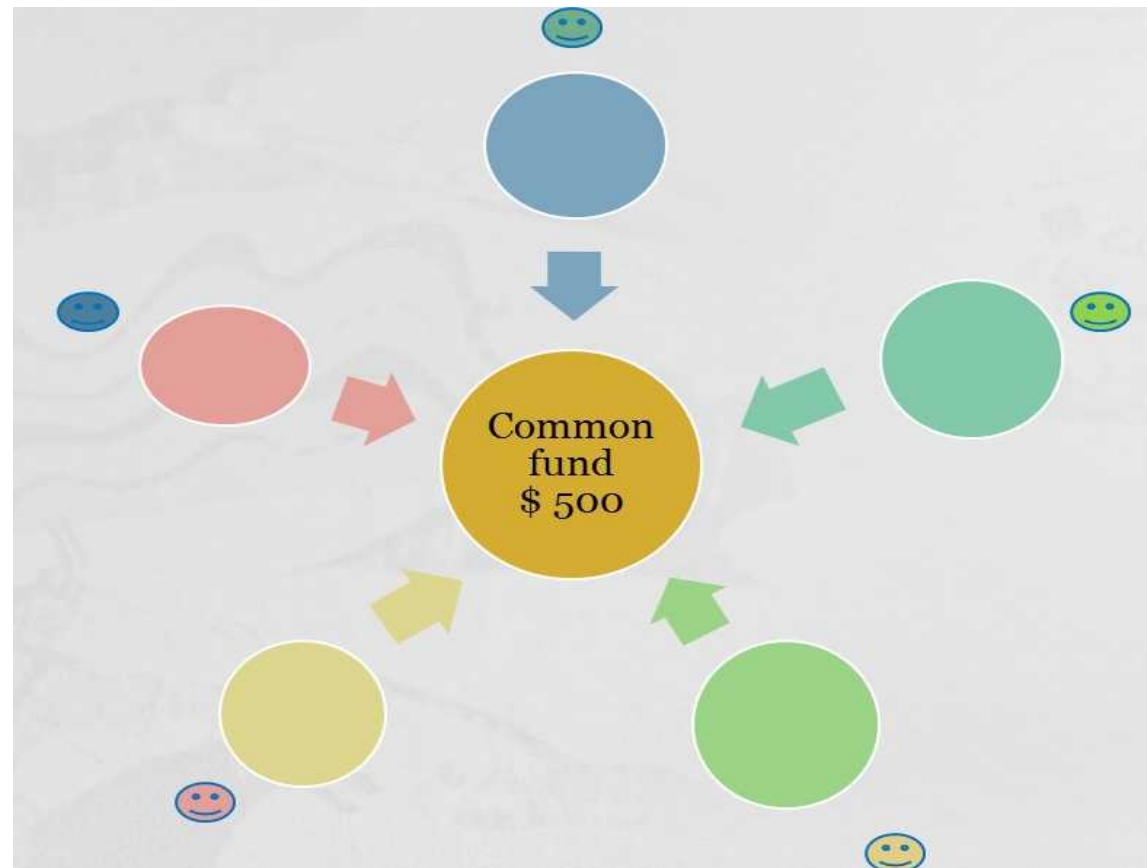
The total payoff of the group = \$ 1,000



*Each individual earns \$ 200 by standing in front of their own chair and counting the other person who is standing on the opposite side towards them*

# Collaborative Paradigm - Initial Version

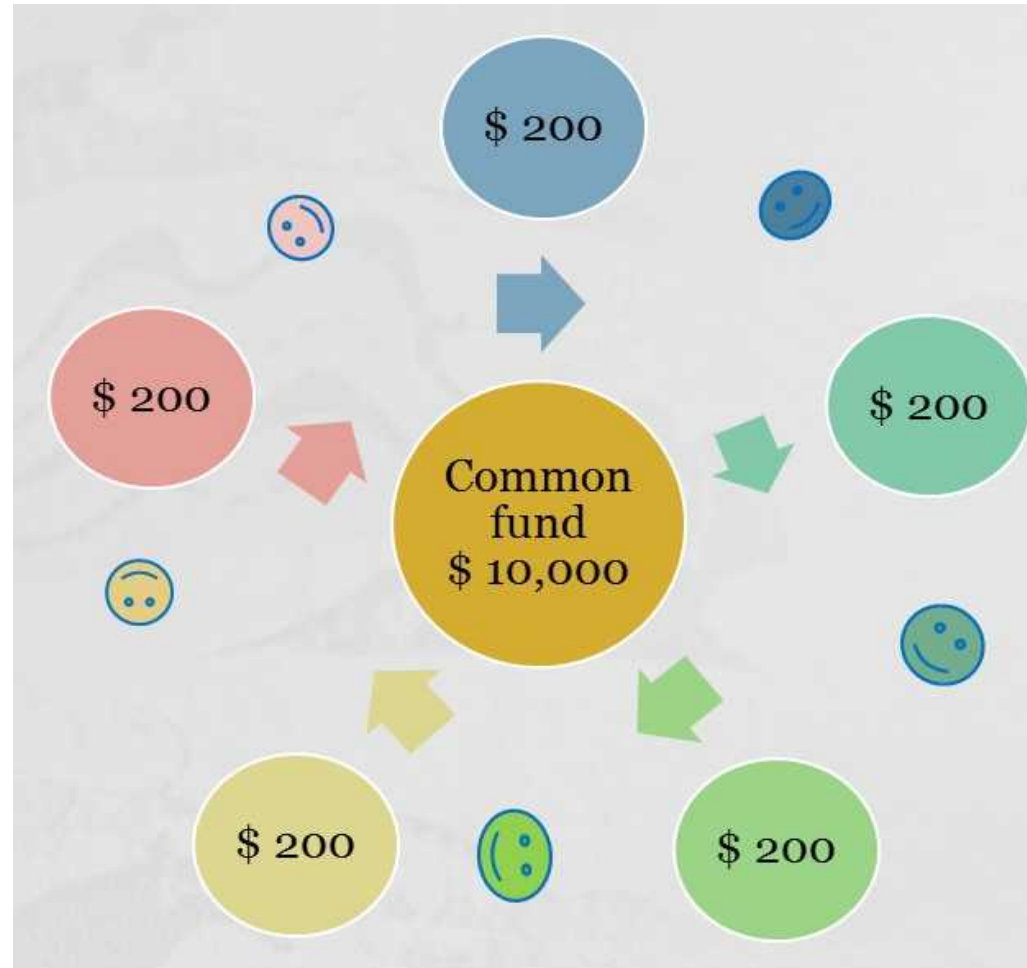
## The total payoff of the group=\$ 500



*In Collaborative Paradigm, more extensive informal institutional building and interactions can be observed e.g. The creation of common fund*

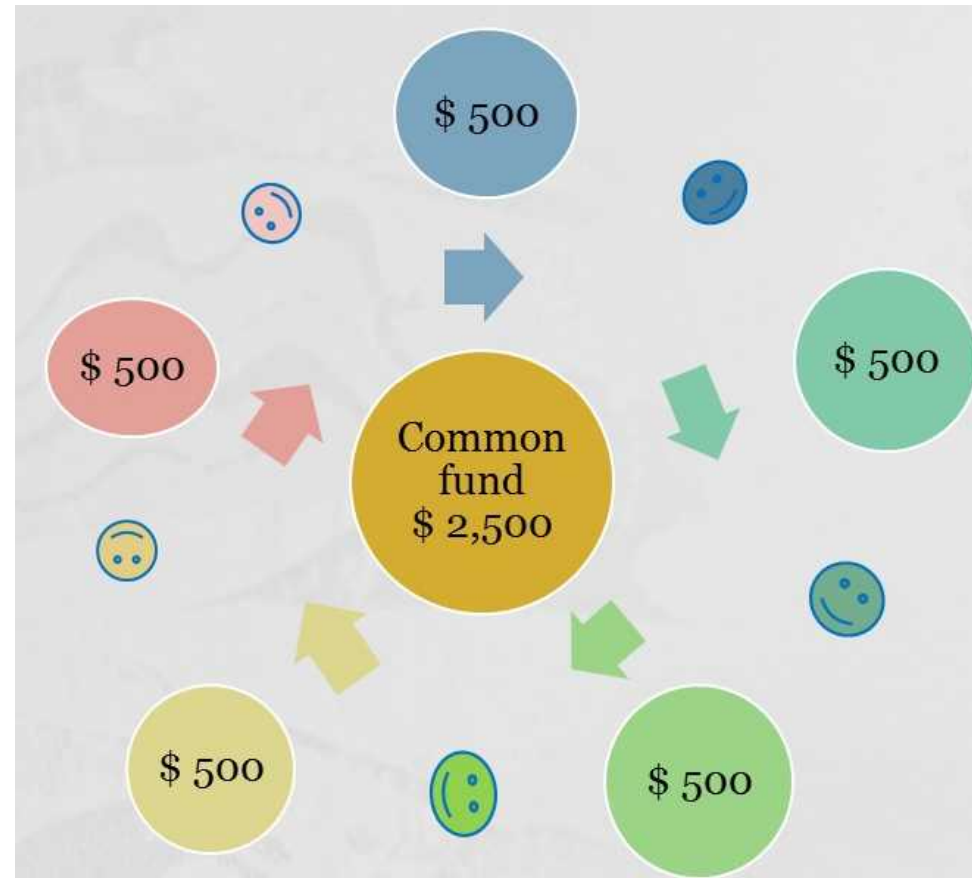
# Collaborative Paradigm – Simple Circle Version

The total payoff of the group=\$ 1,000



# Collaborative Paradigm – Extended Circle Version

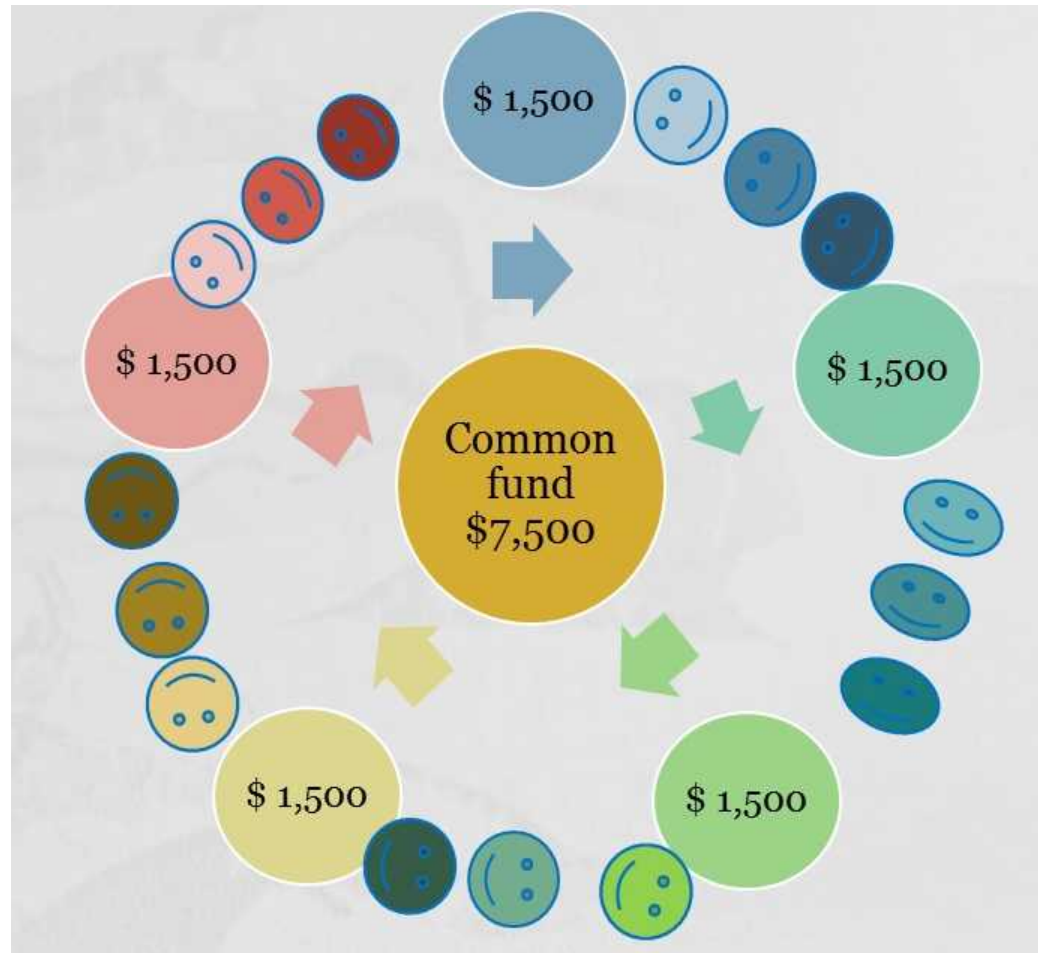
The total payoff of the group = \$ 2,500



*In this extended circle version, people become more creative players by counting all other members in the circle as standing behind their chair allowing \$ 5,000 payoff for each.*

# Network Collaborative Paradigm – Extended Circle

Version: The total payoff of the group=\$ 7,500



# Unexpected Results

- The non-commons group were not really selfish or competitive. In fact, they were very cooperative but could not be collaborative.
- The results of the two groups in the first round was not dramatically different (especially in terms of individual pay-offs) but the difference got huge in the next rounds

Why??? 3 differences



# Determining factors of Collaboration

**1) whether they perceived the game as zero-sum or non zero-sum**

**N-C:** zero-sum game - Winners & Losers

**C:** non zero-sum game - Collaborators

**2) whether they pooled resources or not**

**N-C:** Did not pooled \$ --> No common-pool resource to work together

**C:** -> Pooled \$ --> A common pool-resource system

**3) whether they interacted actively with each other (Deliberation and Collective experiment)**

## Determining factors of Collaboration

3) whether they interacted actively with each other (Deliberation and Collective experiment)

N-C: Few agents actively Communicating & No Deliberation

C: Agents are actively communicating & Deliberation - setting simple collaborative framework through deliberation

→ N-C did not get to *learn* how to establish institutions of collaboration

## Social learning through Deliberation & Collective experiment

3) whether they interacted actively with each other (Deliberation and Collective experiment)

N-C: No collaborative framework →

No experimental collective actions

C : Players Engaged in the proposing options & experimenting them

→ N-C did not get to *learn* how to develop institutions of collaboration

# To summarize the EG result

- CGs :

- 1) perceiving the game as zero-sum or non zero-sum

- 2) pooling pooled resources or not

- 3) interacting actively with each other  
(Deliberation and Collective experiment)

\* Qualitative differences resulting in  
Quantitative difference (Higher group pay-offs)  
through different level of *social learning*

# Conclusion

- Commons group tend to show higher **collaborative capacity** AND **social learning** for better collaborative capacity.
- **Perceptions** play a very important role in decision making process determining the **possibility of pooling resources** and thus **of creating a commons system**
- The Commons group could collaborate in the new environment from the very beginning while the non commons group couldn't even though they intended. Therefore, the triple-loop (experiential) learning by the commons systems

# Thesis

- The Commons systems can facilitate collaborative capacity through social learning not only for better collaboration but also for initiation of collaboration which involves transformative (experiential) learning

# Implications

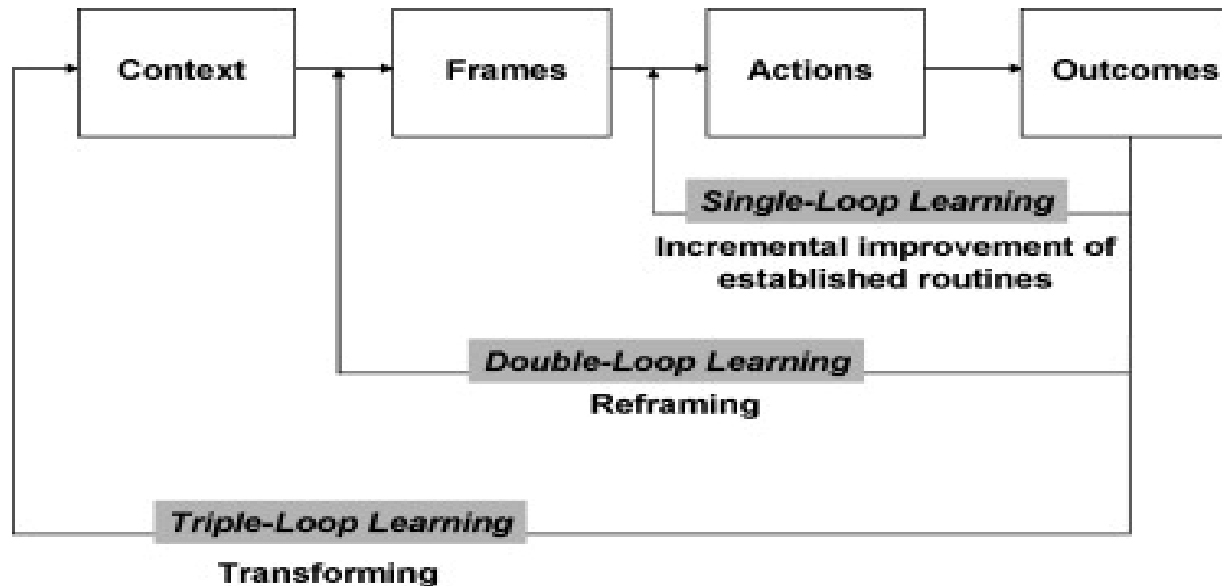
- *One need to go through experiential (transformative) learning in order to start collaborating and become better at it*
- The commons systems enable people to have better collaborative capacity even outside of the particular community

# Thank you!

Your questions and comments are very much appreciated 😊



# Triple-loop learning (Experiential Learning) Allows a Transformation



(Hargrove, 2003)

# Social Learning & Collaborative Capacity

- **Mutually Reinforcing Relationship**
  - **Social learning occurs**  
“when people *engage* one another, sharing diverse perspectives and experiences to develop a *common framework* of understanding and basis for *joint action*” (Schusler et al., 2003, p311, emphasis added).
  - through “the *collective action* and *reflection*” (Keen et al. , 2005, p 4, emphasis added).
- **Collaborative framework is required for social learning** as social learning is the learning through collaborative engagements (such as collective action and reflection)

# Social Learning & Collaborative Capacity

- The concept of “the communities of practice”  
: The capacity of social learning units or “the communities of practice” develops based on
  - 1) members bounded by the jointly formed understanding of the group identity  
in terms of vision and function, and accountability of individuals in terms of both responsibility and rights;
  - 2) proactive participation of members in establishing the learning units through collective engagement;
  - 3) the common pool of resources

(Wenger, 2000)

- **For collaborative systems** like the commons 2.0s, **enhanced social learning** enables further **development of collaborative capacity** of the systems.
- **Positive feedback loop of social learning and collaborative capacity**

# Social Interactions required for Social Learning

## The Means of Social Learning

- Interactions & Actions (Wenger, 1998)
- 1) **Communication** and collective action;  
2) **Innovation** and collective action  
(Ostrom, 1998, p 6)
- **Collective reflection** and **action**  
(Keen et al. , 2005, p 4)
- 1) **Deliberation** via Collaborative Process  
2) **Experiment** via Collaborative Process

# Need to be Further studied

- Whether the non-commons systems can develop collaborative capacity through social learning given more time? What can facilitate or hinder the process ?
- What would be the impact of heterogeneity on collaboration capacity