

System identity and autonomy of an international research team: a case study in self-observation

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The challenge

- **If socio-cybernetics wants to be an empirical science, then its concepts must be measured and tested**
- **what about self-organization, self-observation and organizational closure?**

Three main research questions

- 1) 1) How system autonomy and identity of an international research team does emerge and change?**
- 2) 2) How does it practice self-observation?**
- 3) 3) Which means of communication does it use?**

Forms of self-reference

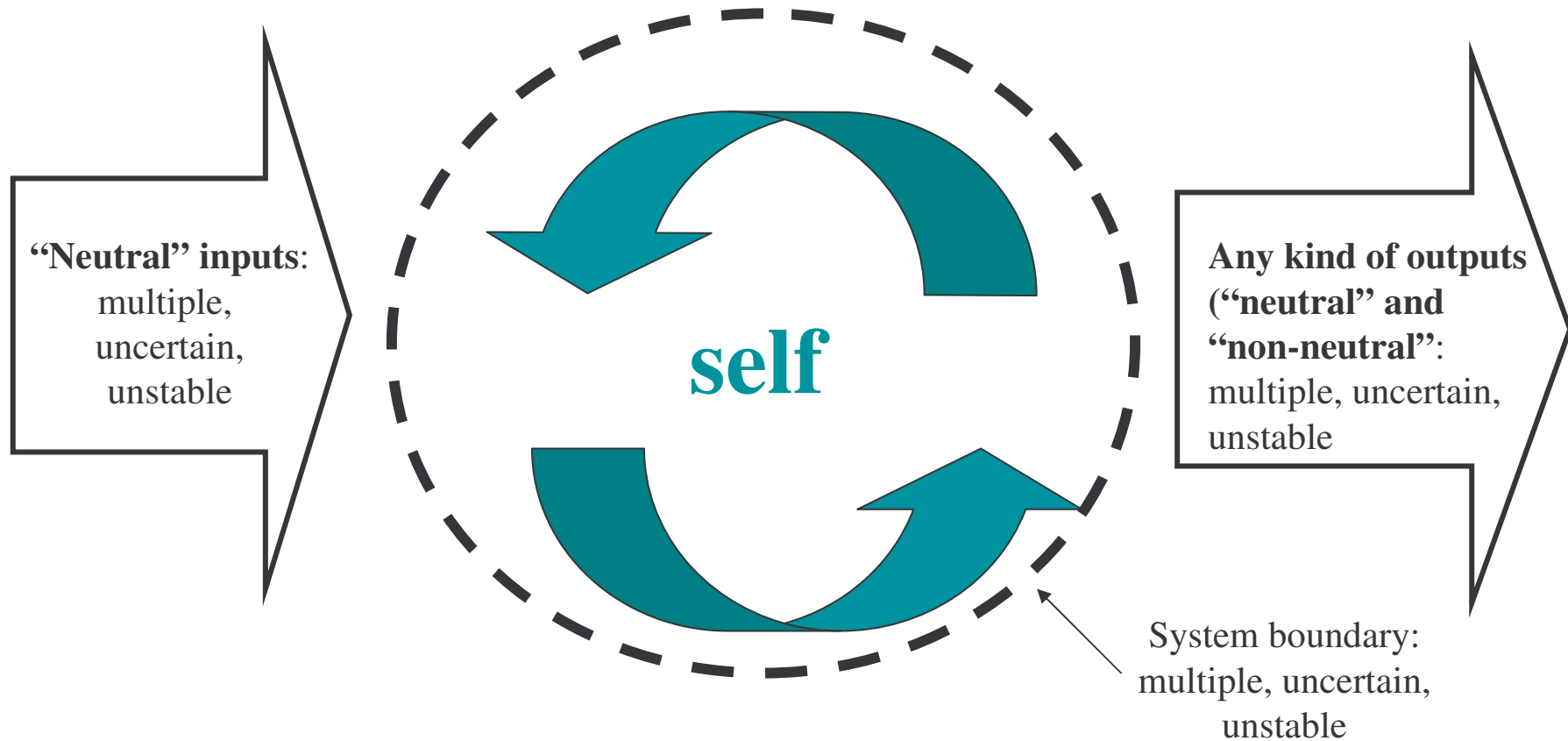


Differences between forms of self-reference

- Self-organization can take place without any cognition
- Self-observation implies cognitive ability
- If cognition is so complex to allow the recognition of the “self”, then self-observation implies (self-)consciousness, and it is called self-reflexivity
- Self-observation can be intentional or unintentional, formal or informal

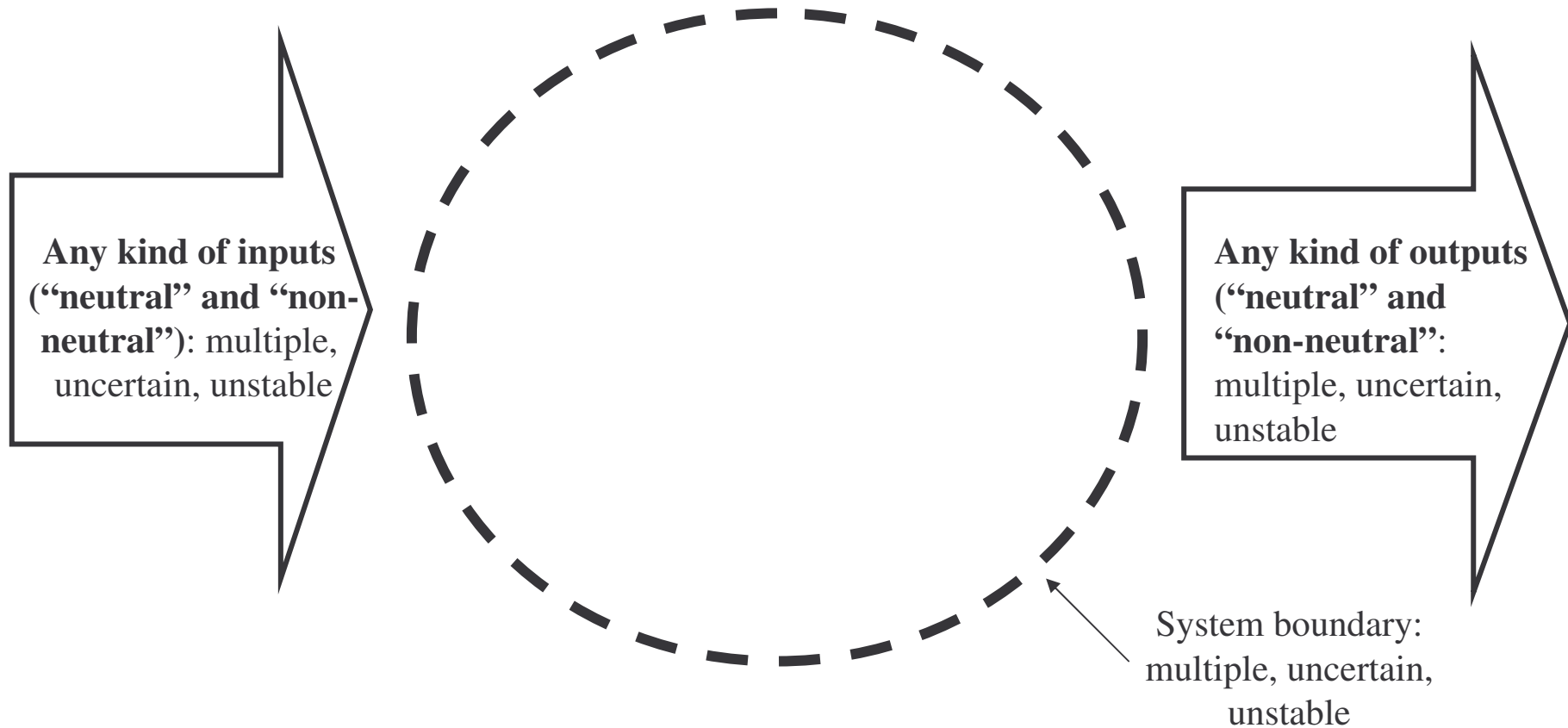
“Pure” self-organization

Neutral respect to the ability to affect organizational (operational) structure (network)



“Pure” hetero-organization

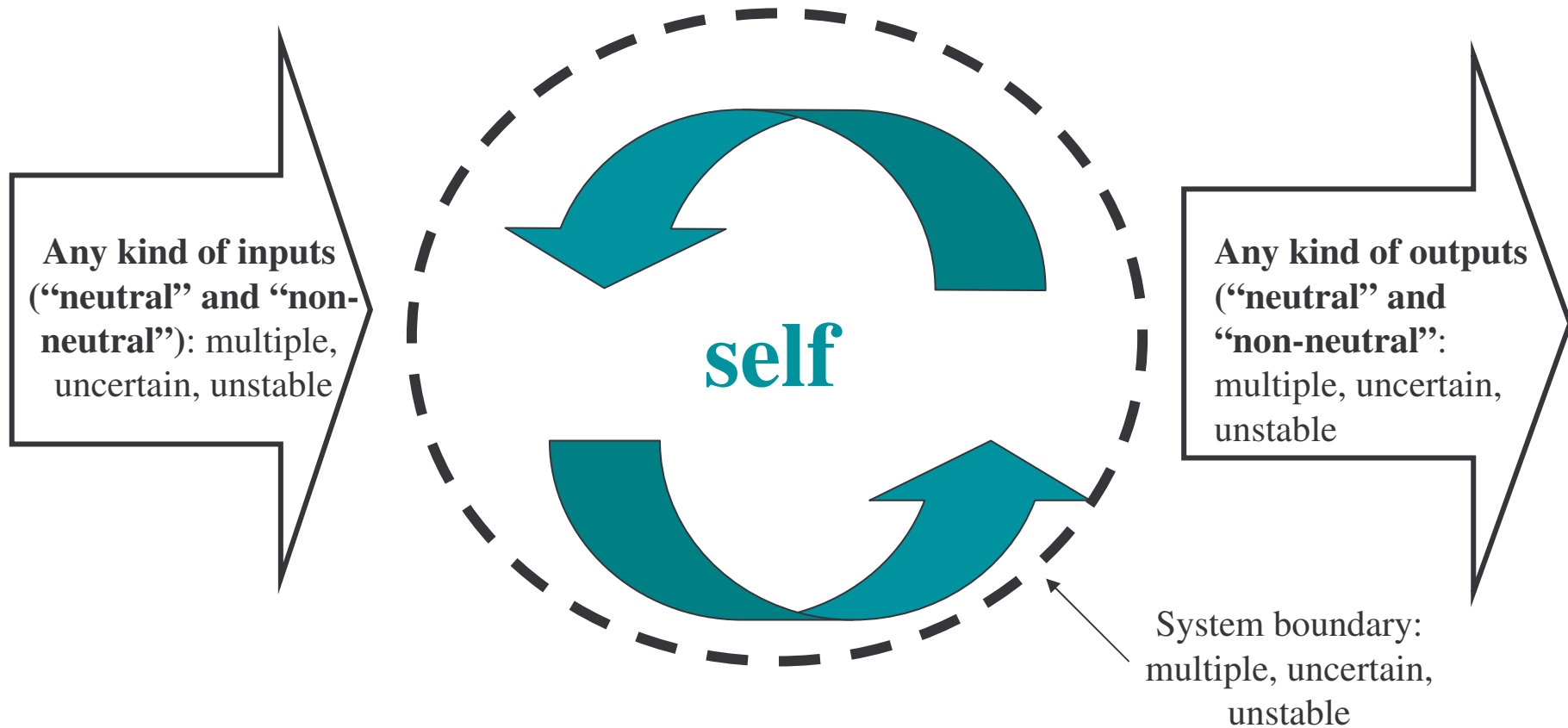
Neutral respect to the ability to affect organizational (operational) structure (network)



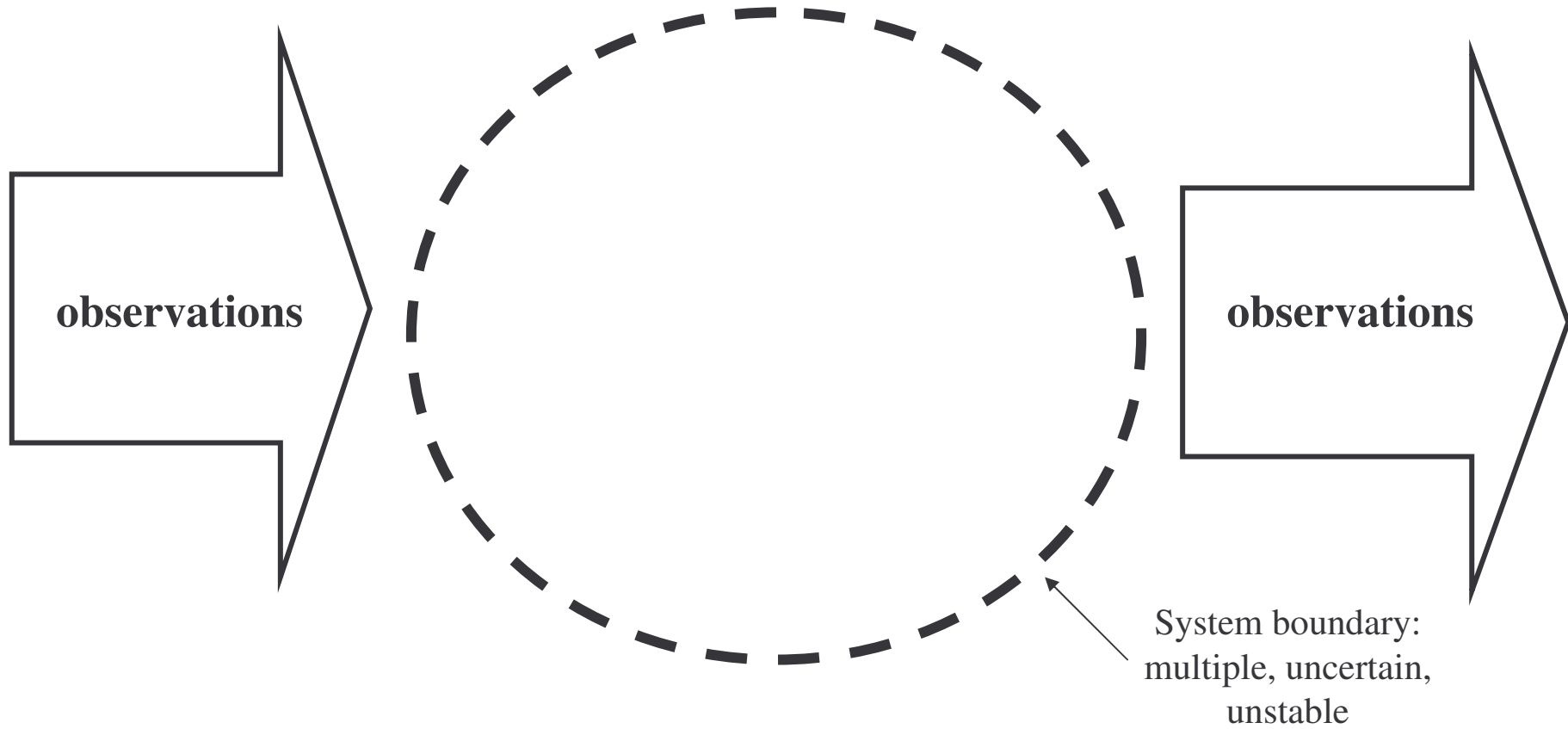
Hetero- and self-organization

self-organization as a matter of degree

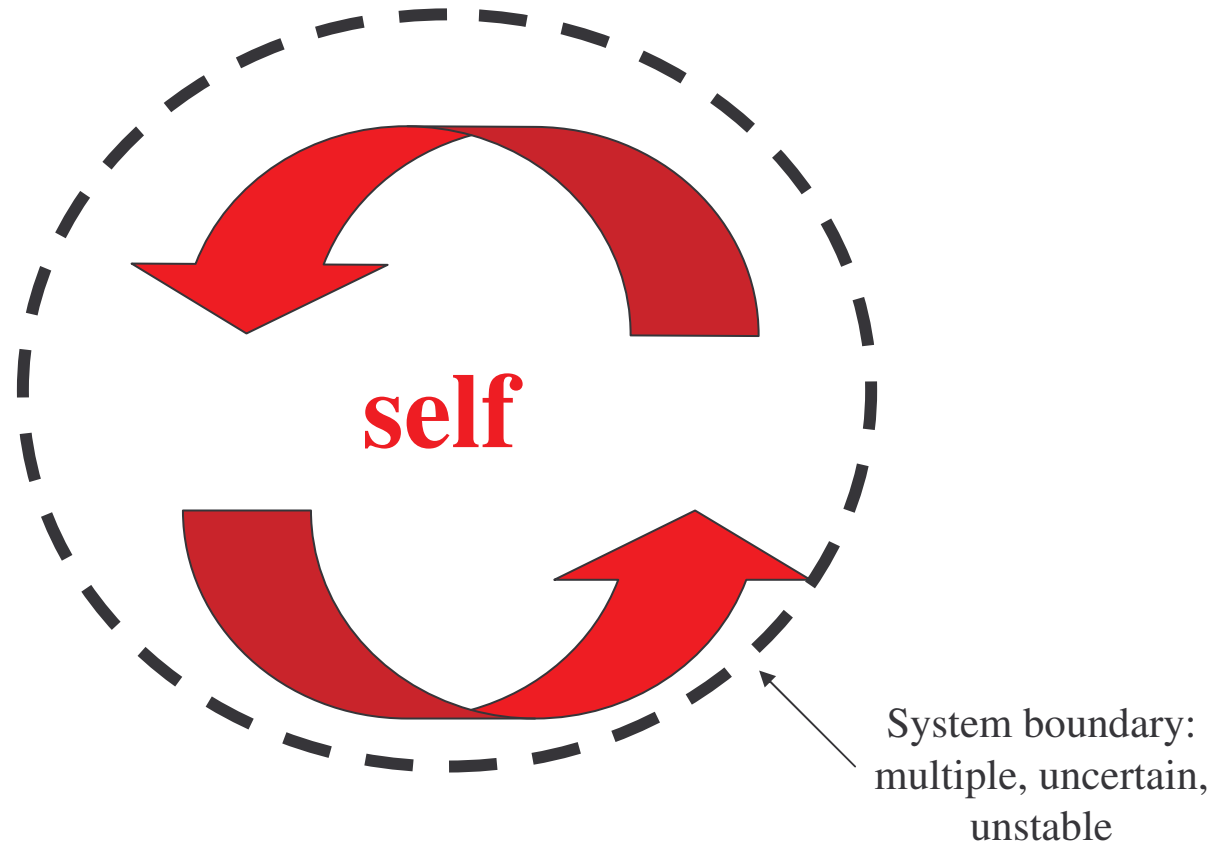
Neutral respect to the ability to affect organizational (operational) structure (network)



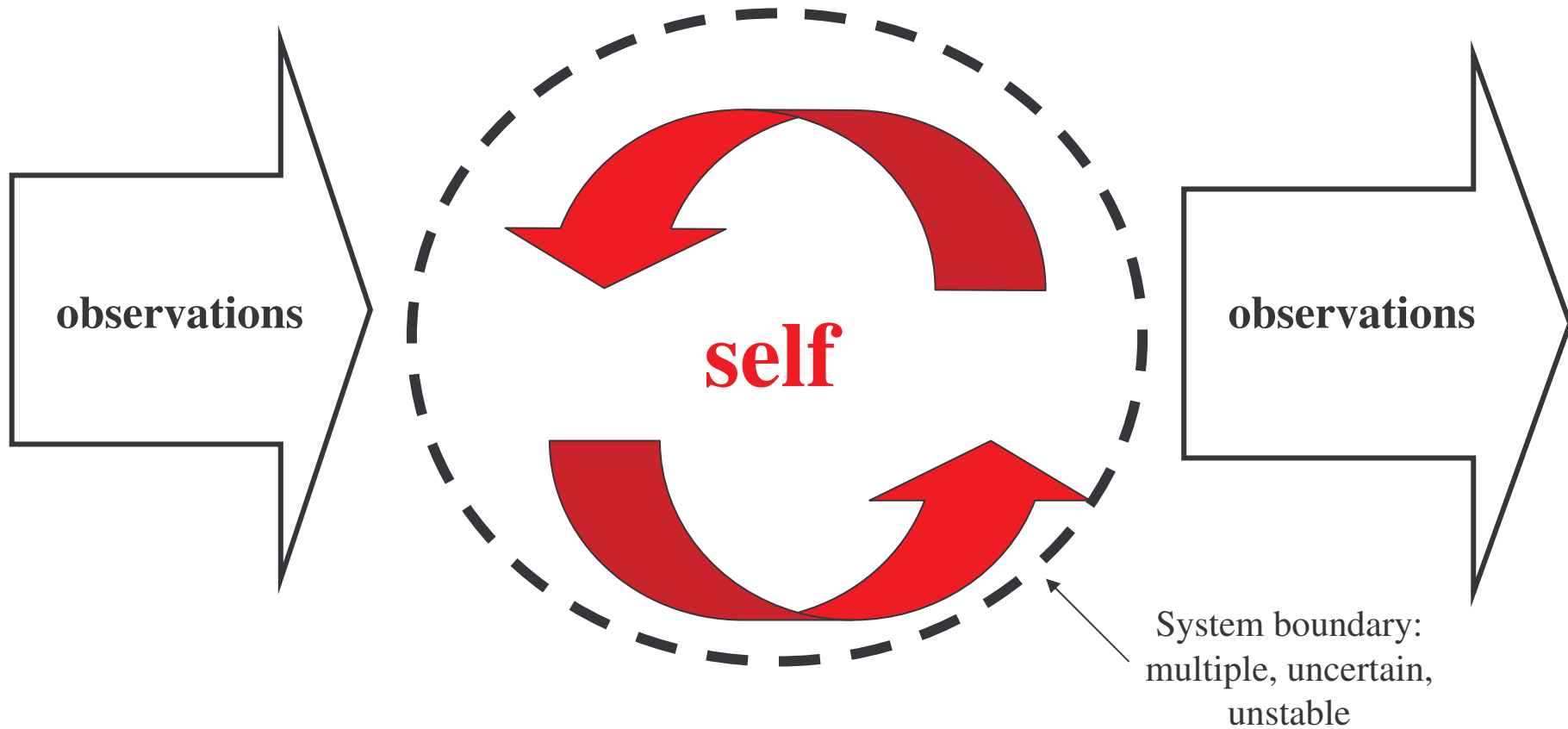
“Pure” hetero-observation



“Pure self-observation”



Hetero- and self-observation self-observation as a matter of degree



Hetero- and self-organization and -observation self-observation and self-observation as a matter of degree



The structure of the COMMORG Project

- project management (WP1),
- research design (WP2),
- preparation of the methodologies for the fieldwork (WP3),
- activities concerning fieldwork (WP4),
analysis of data (WP5),
- policy issues and implications (WP6),
- self-evaluation and assessment (WP7),
- dissemination and exploitation (WP8)

Main results

- CMC (mostly emailing list, and partly emails) can afford an effective communication, if it is punctuated by and grounded on periodic meetings
- the most participating members (in terms of the amount of emails) are not necessarily the most collaborative or most F2F participating
- very intensive (>2,2 emails per day) and democratic (all members) communication
- large space for social communication

follows...

- the group developed a rather high system identification
- self-organization, -reference, -observation, and trust, autonomy and identification can be operationalised and measured
- the system identification, the communication patterns, and the semiotic patterns are path dependent and recursively related to social (values and behaviors of the people) and structural (relevance and complexity of the activities) aspects

follows...

- within the system, even the autonomy of its sub-systems depends heavily on the social and structural characteristics of the corresponding activities
- the system identification, the communication patterns, and the semiotic patterns changed over time: emailings per day increased 10%, threads containing more than one email increased 14 points of percentage (from 59 to 73%), average number of emailings per thread increased 68% (from 3,1 to 5,2)

follows...

- the communication intensifies right before and after the scientific/management meetings
- a process of marginalization and polarization of the communication occurred: the emailings per communicant decreased from 38 to 24), the first three and first five communicants accounted respectively for 40% and 57% in the first period, 43% and 58% in the second period, and 50% and 67% in the third period

follows...

- in the composition, as during the last months there is no more trace of genre 1 (disagreement in reply messages)
- in the intensity of use of each genre: organic genres prevail in the first months while mechanic genre in the last ones

Form

Low formalization *High formalization*

Purpose	<i>Command-and-control</i>	2. <u>Task-oriented</u> genres: Genre 4	1. <u>Mechanic</u> genres: Genre 5
	<i>Participatory interaction</i>	3. <u>Organic</u> genres: Genre 1, 2 and Genre 3	4. <u>Formal participation</u> genres:

Tab. 1 Classification of the COMMORG genres

What does the Commorg case suggest?

- The group (system) is not completely closed in terms of information-knowledge
- The group (system) is able of a certain degree of self-organization
- The group (system) is able of a certain degree of self-observation
- Which implications for the hypothesis of organizational (operational) closure?

Commorg is a case of hetero- and self-organization and observation



Further remarks from Commorg case study

- **The type and mix of ICT devices, groupware, and CMC do affect evolutionary patterns of hetero- and self-organization and -observation**
- **Commorg group (system) co-evolve with its environment**

Final conclusions respect to the debate on social systems as autopoietic systems

- **Commorg group was not an autopoietic system because it was not operationally closed**
- **It was only limitedly self-referential (self-organizing and self-observing)**
 - It was a co-evolutionary system

Interesting methodological questions

- 1) How is it possible to operationalize, measure and test
- self-organization and self-observation
 - in social systems?
 - 2) Which are salient variables?
- 3) Which is the appropriate statistical methodology for multivariate analysis?

Variables used in the Commorg case

- Personal/professional data of each member
- Task (work) complexity
- “Internal” autonomy: “hierarchical distance” between members’ positions
- Members’ degree and type of communication with non-members about group issues
- Types and patterns of communication between group members

Variables used in the Commorg case

- Types and patterns of knowledge transfer between group members
- Types and degree of identification with the group
- Types and degree of trust between group members
- Evaluation of group performance and value

Methodological problems of uni- and multi-variate analysis

- **Standard multivariate analysis does not work**, because:
 - data are not independent
 - variables are not continuous
 - nothing guarantee that data distribution is normal (gaussian)
- Techniques of **data analysis** are requested

On some methodological questions

- Self-observation is hard to be recorded because groups tend to neglect or overlook that property
- If it concerns also the patterns and types of communication between group members, then the methodology of both hetero- and self-observation requires also a certain degree of trust
- Because of privacy issues text analysis is almost impossible to be done