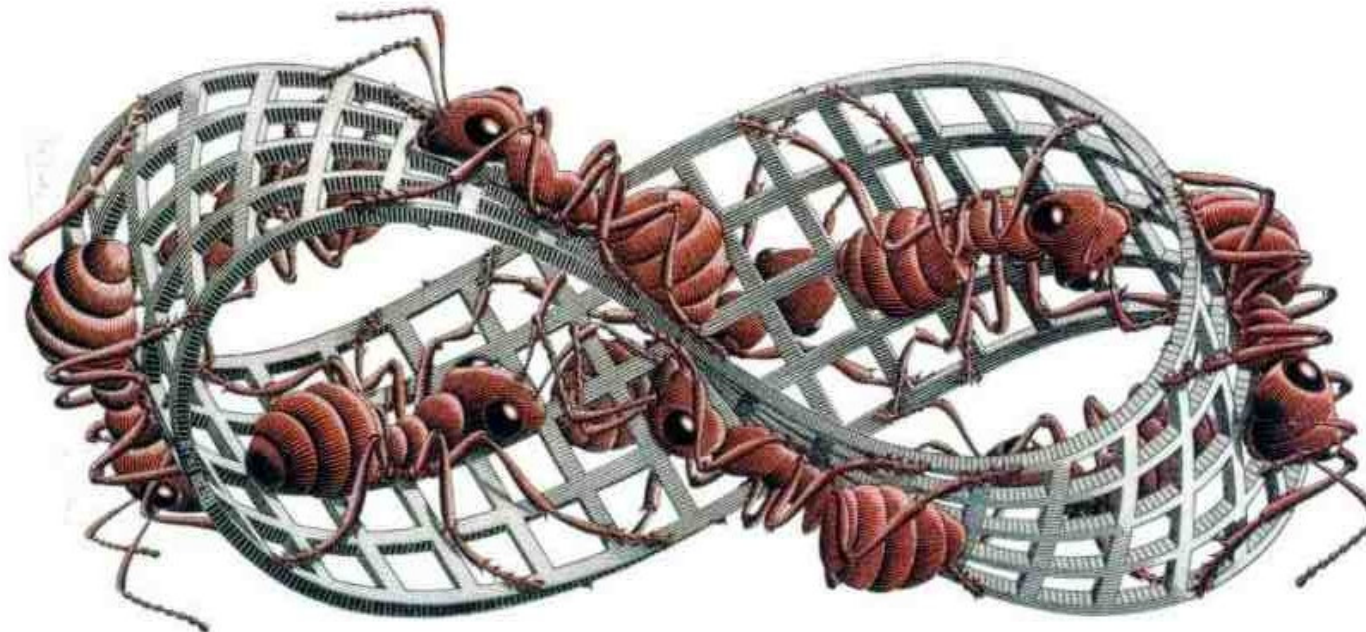


(Re-)Structuration of System Dynamics

André Reichel, University of Stuttgart



*Institute of Economics and Law (IVR)
Department for Environmental and Innovation Research
E-Mail: reichel@ivr.uni-stuttgart.de*

Introduction

- ❖ System dynamics **aiding theory building** in the social sciences
- ❖ Theory of structuration providing for **ontological clarification** of SD core concepts
- ❖ Lane 2001. *Rerum cognoscere causas: part I and II.*
 - *better communication with the rest of the social sciences through clarification of system dynamicists' language*
 - *engage into critical discussion with social theorists about the nature of the method*
 - *learning from, but avoiding at the same time, pure subjectivism*
 - *development of an integrative grounding, reflecting on the "duality of structure"*

Outline

- ❖ **Theory in the social sciences**
- ❖ **Clarification of ontological base: introducing structuration theory**
- ❖ **Benefits for system dynamics**
- ❖ **Benefits for structuration theory** (and the social sciences in general)

Theory in the social sciences

- ❖ concerned with the understanding and explanation of social **action**, with an emphasis on its **controlling mechanisms** (Max Weber)
- ❖ **feedback** between the *explanans* and the *explanandum*
- ❖ **contextuality** of social behaviour
 - social sciences participate in **constituting** the social world
 - Theory, then, is best not viewed as discovering invariant laws, but **reflecting on the cognitive process** itself
- ❖ The “two tribes”: **dualism** of objectivism and subjectivism

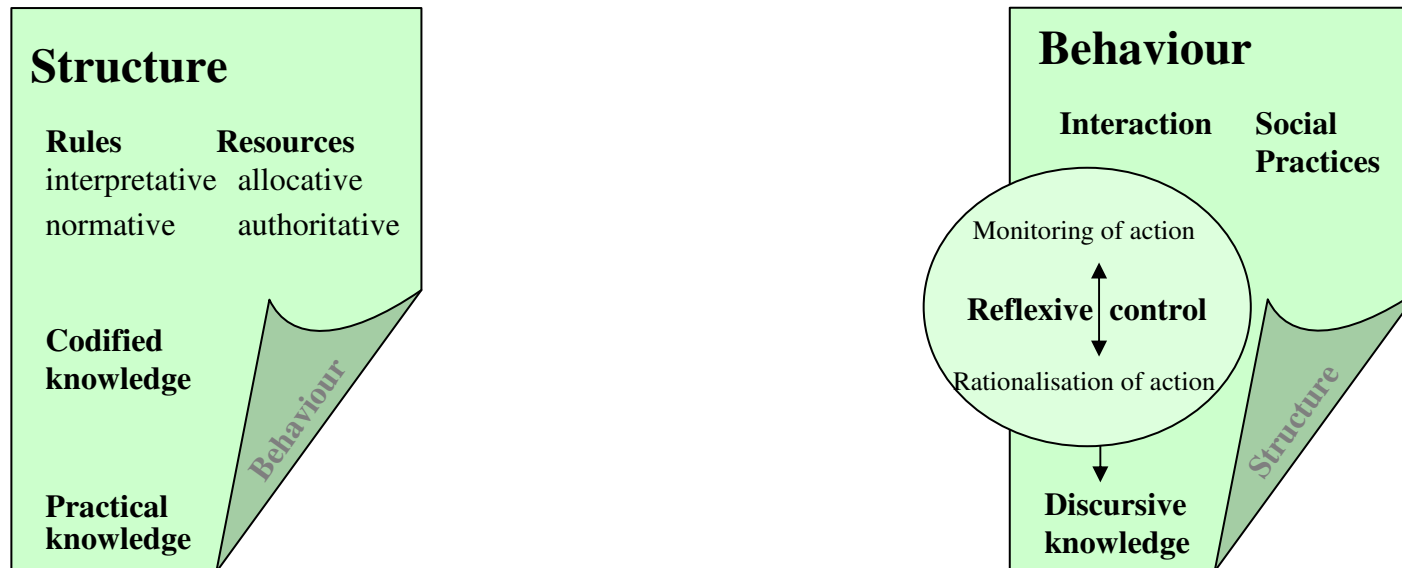
Clarification of ontological base: introducing structuration theory

Basic concepts

- ❖ Theory of structuration as a **social ontology** (meta-theory), reconstructing dualism in the social sciences as a **duality of structure**
- ❖ Structure as enabling **and** constraining, as medium **and** result of practice
- ❖ Structuration = construction ('change') and reconstruction ('stability') of structure (rules, resources) through **interaction of conscious actors** ('rationalisation of action', 'reflexive monitoring')
- ❖ 'Stylised facts'
 - No human society (social systems) without human (inter-)actions
 - Actors do not create but reproduce and change social systems through 'continuity of practice'
 - Human actors with bounded consciousness (homo reflexivus resp. conscius)
 - **Routines** as the predominant form of social action
 - '**Contextuality**' of interactions (space, time, object)

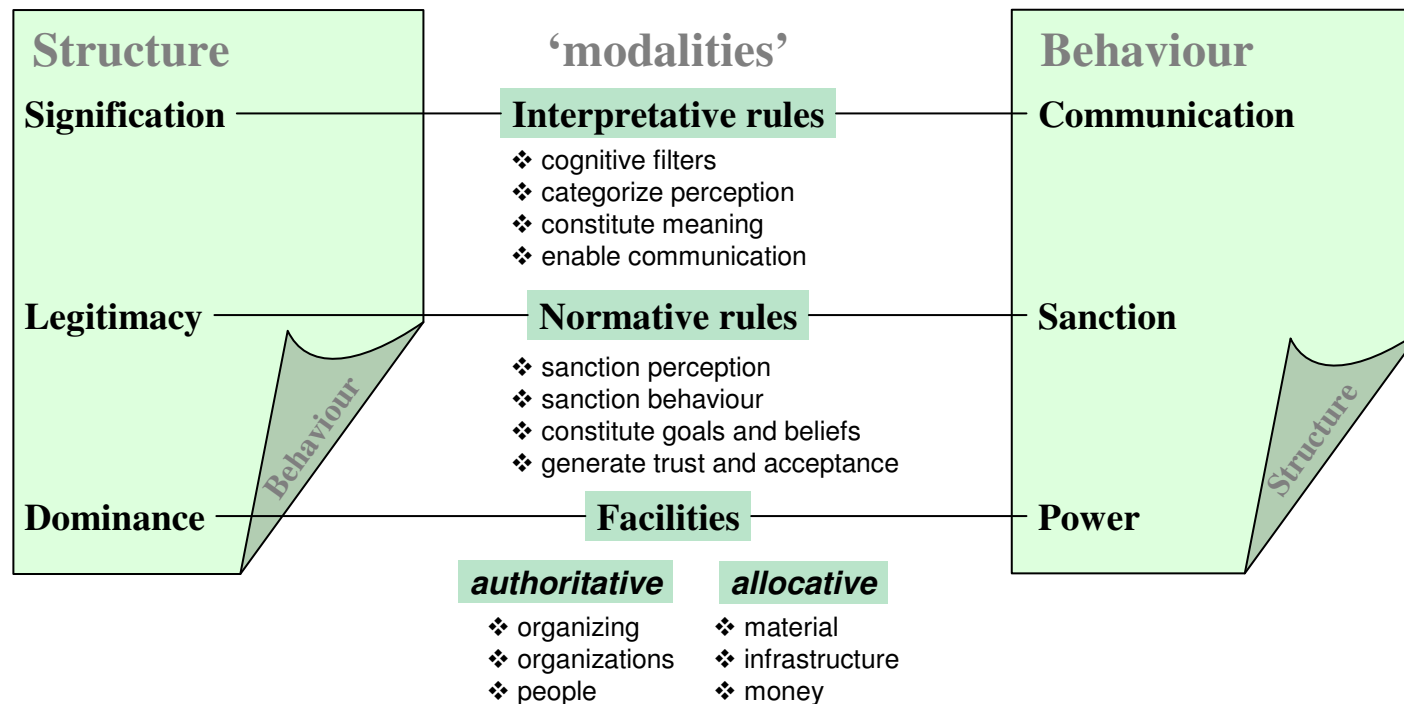
Clarification of ontological base: introducing structuration theory

Structuration process



Clarification of ontological base: introducing structuration theory

Structuration process



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(Re-)Structuration of System Dynamics

Benefits for system dynamics

❖ your turn!

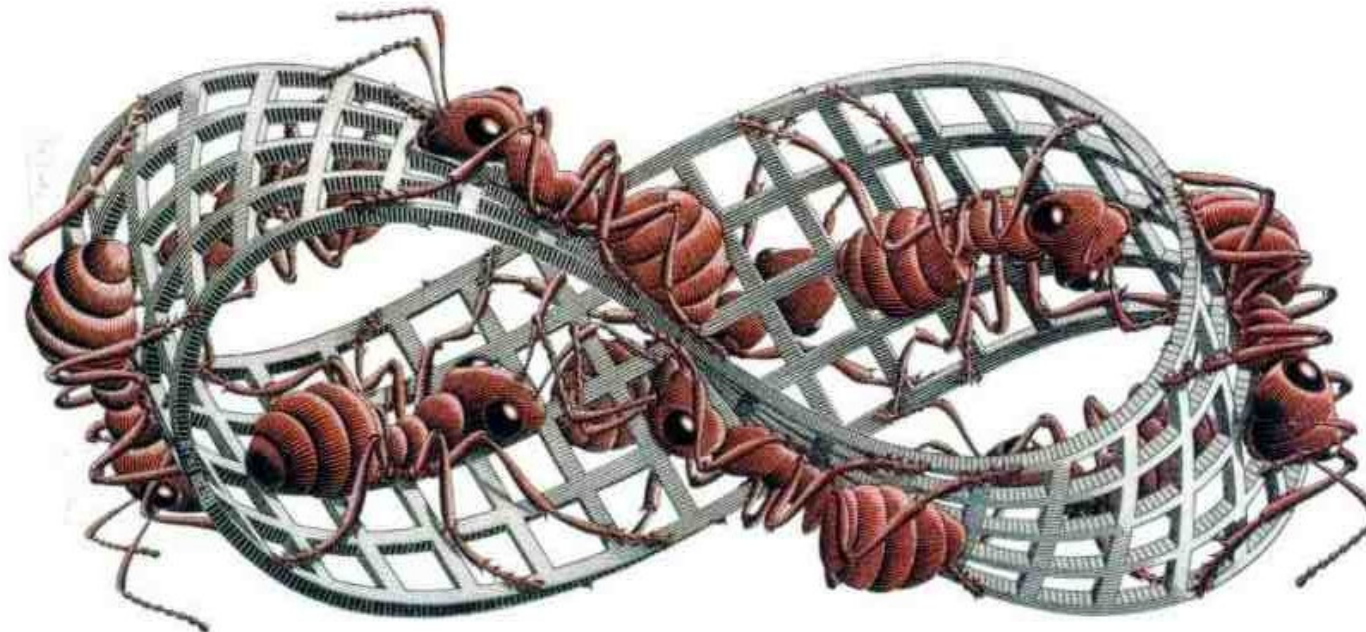
Benefits for system dynamics

- ❖ Overcoming '*-isms*' in systems approaches
- ❖ '**Compatible**' ontology as regards the structure/agency debate
- ❖ Resolving the "significant confusion" between ontology and epistemology, therefore **clarifying theoretical background** ("rulebook") of system dynamics
- ❖ **Mental models**' central position within system dynamics reaffirmed
- ❖ Shifting the emphasis from simulation to **elicitation** and thus to the cognitive process itself.
- ❖ **Qualitative system dynamics** not 'only' the first step of model building (*necessary*), but its most central one (often *sufficient*).
- ❖ Bringing in the **people!**

Benefits for structuration theory

- ❖ Providing for 'rigorous' stock-flow, and therefore **structural thinking**
- ❖ Rules as **mental models**, which can be elicited
- ❖ Elicitation and modelling as 'phases' within the structuration process
 - **Elicitation** of practical knowledge, realised in routine-guided social interactions (,reflexive monitoring')
 - (Re- and de-)Construction of **hypotheses** (,rationalisation of action')
 - **Codification** and/or '**sedimentation** of 'rationalised images of knowledge'
- ❖ Re-focusing on **dynamic aspects** of the structuration of social systems
 - 'Accumulative nature' of rules and resources
 - Situated in time and space
- ❖ System dynamics as an "**ideal language**", helping to formalise everyday and respectively natural language, thus **making inferences** in the social sciences **accessible to scientific investigation**

‘Danke’ for your time and patience!



André Reichel
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Department for Environmental and Innovation Research
E-Mail: reichel@ivr.uni-stuttgart.de