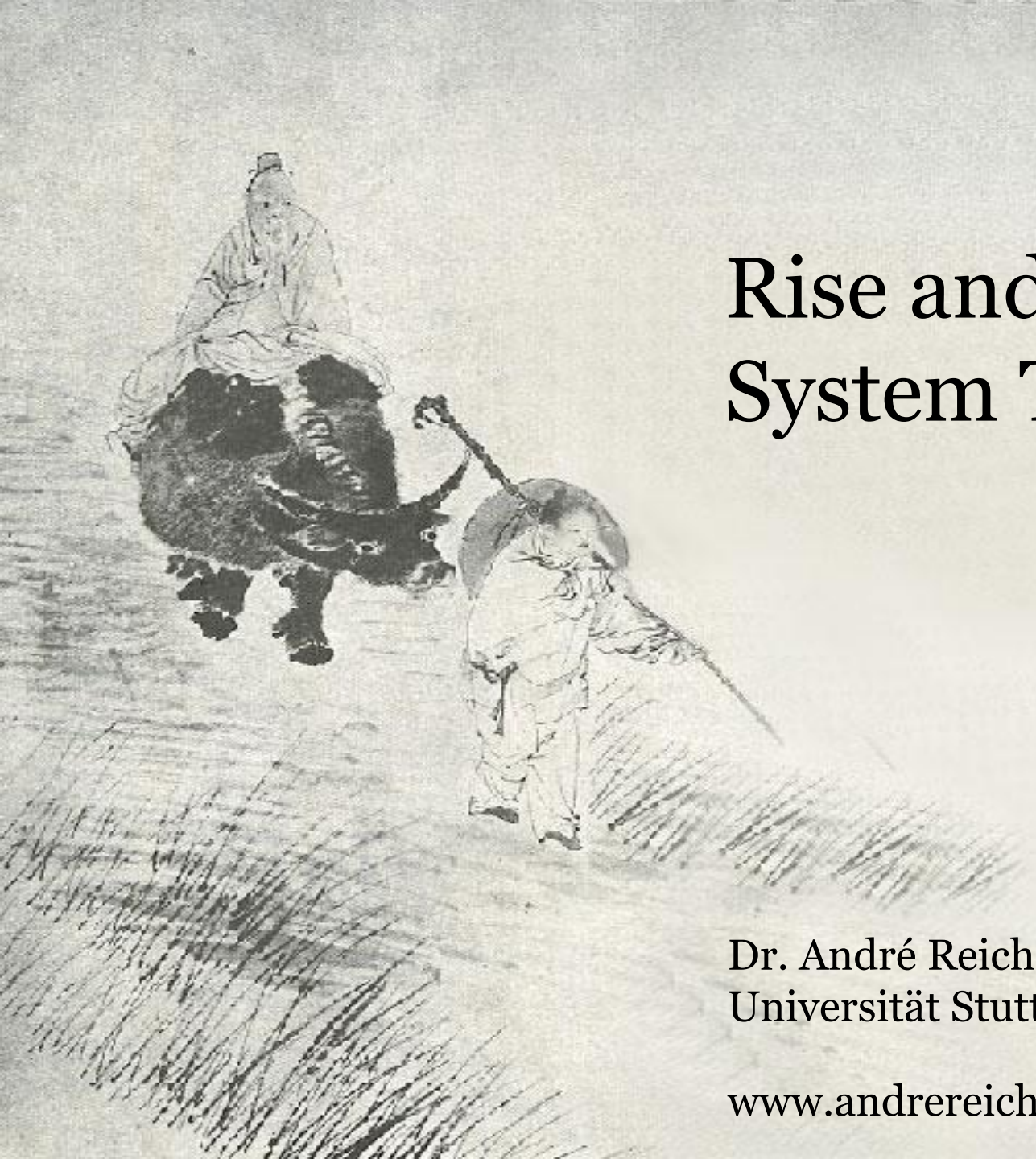

Rise and Failure of System Theory

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What '*is*' a System?

- Entity in the real world
- Epistemic device

- If systems are *perceived as real*, they're *real in their consequences*…

What is a '*System*'**?**

- Whole
- Difference

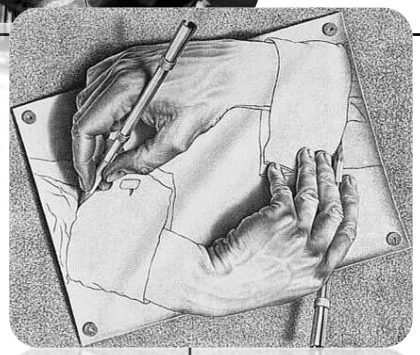
- Draw a *distinction* and create a universe…

Systems in a box

	real	epistemic device
whole		
difference		

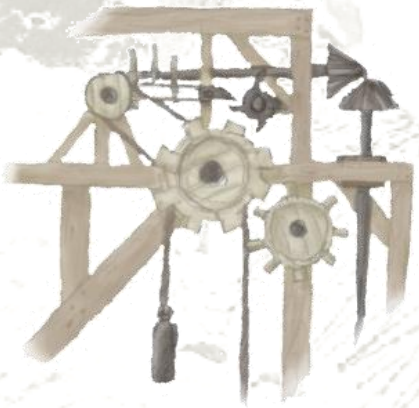
Systems in a box

	real	epistemic device
whole		
difference		



System History

Mechanical
up to 19th century



Complicated
Linear
Closed

Biological
from 1920

Complex
Non-linear
Open

System History

- Macy Conferences (1946 to 1953)

System History (Application)

- 1940 **Systems Engineering**
- 1950 **System Dynamics** (Jay W. Forrester)
- 1960 **Management Cybernetics** (Stafford Beer)
- 1970 **Viable System Model** (Stafford Beer)
- 1980 **Soft Systems Methodology** (Peter Checkland)
- 1990 **Learning Organization** (Peter Senge)
- 2000 **???**

System History (Theory Development)

1960 **Structural-Functionalism**
(Social Systems; T. Parsons)

1970 **Autopoiesis**
(Biological Systems; H. Maturana/F. Varela)

1980 **2nd Order Cybernetics**
(Cognition, Epistemology; H.v.Foerster)

Social Systems Theory
(Sociology; N. Luhmann)

1990 **Complex Adaptive Systems**
(Complexity Science; J. Holland/M. Gell-Mann)

2000 ???

Systems in a box

	real	epistemic device
whole	System Engineering Cybernetics (1st order) System Dynamics	Soft Systems Methodology Systems Thinking Qualitative System Dynamics
difference	Biological System Theory Autopoiesis	Social System Theory Cybernetics (2nd order)

Systems in a box

	real	epistemic device
whole	System Engineering **Hard System Camp** *Heroes of MIT* Cybernetics (1st order) System Dynamics	Soft Systems Methodology **Soft System Camp** *Little Britain* Systems Thinking Qualitative System Dynamics
difference	Biological System Theory Autopoiesis	**Autopoietic System Camp** *Sistema über alles* Social System Theory Cybernetics (2nd order)

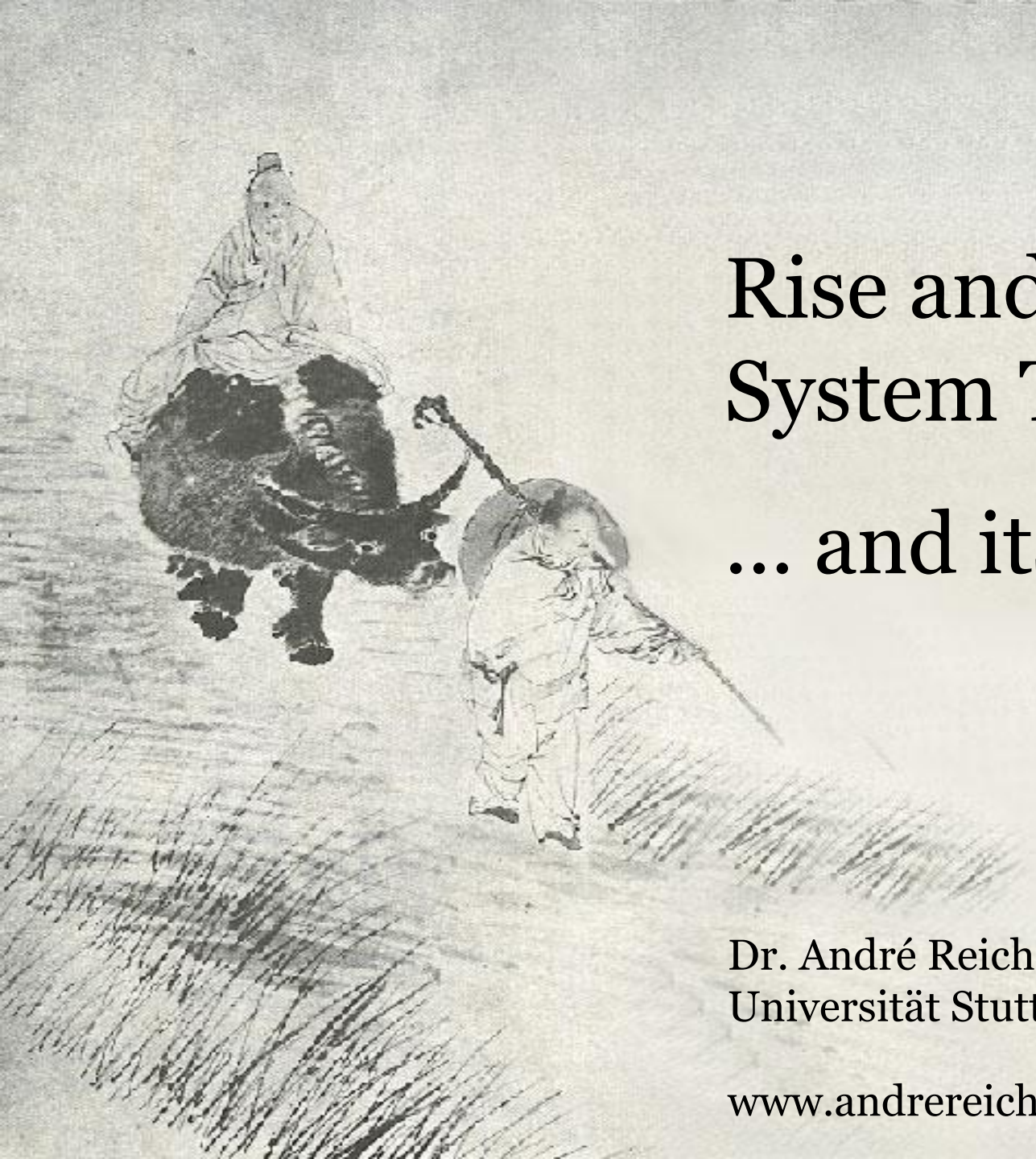
Failures

- Widespread misunderstanding of system ideas and their use
- The conceptual weakness of ‘Management Science’ in general

Failures

- Lack of system research involving engagement with real-world problem situation
- Institutional pressures in universities (system research vs. publishable research)
- Lack of practitioners with the time or inclination to write about their experience

- **Renewal** (?)
- Disarming system rhetoric
- Connectivity to what is already there
- Continuing discontinuity (?)



Rise and Failure of System Theory

… and its Renewal!

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