A traditional Chinese ink wash painting depicting a man in a long, flowing robe sitting on a dark horse. The horse is being led by a young child in a similar robe, who is holding a long, thin stick or whip. The scene is set in a landscape with stylized, textured brushstrokes representing grass or a path. The overall style is minimalist and expressive, characteristic of traditional Chinese art.

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


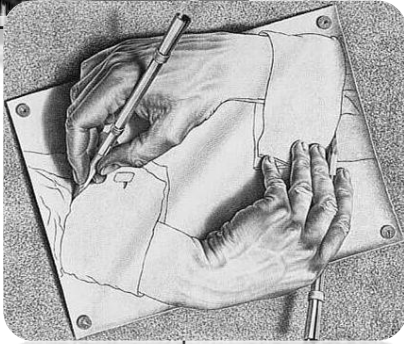
Draw a *distinction* and create a universe...



Systems in a box

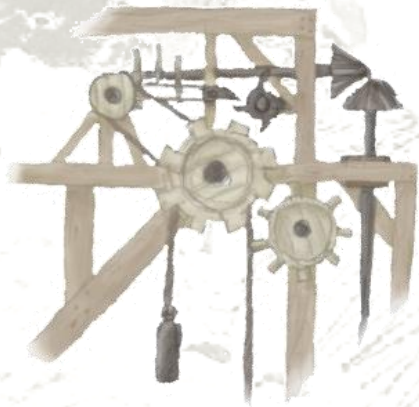
	real	epistemic device
whole		
difference		

Systems in a box

	real	epistemic device
whole		
difference		

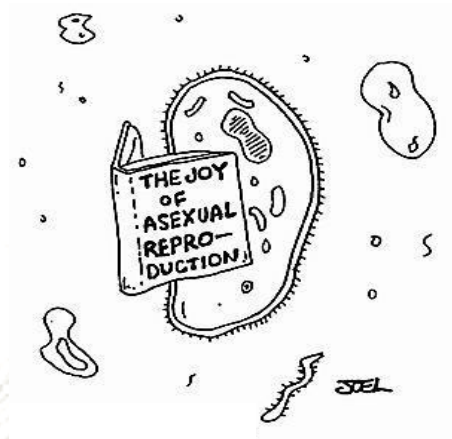
System History

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)

1990

Social Systems Theory

(Sociology; N. Luhmann)

2000

Complex Adaptive Systems

(Complexity Science; J. Holland/M. Gell-Mann)

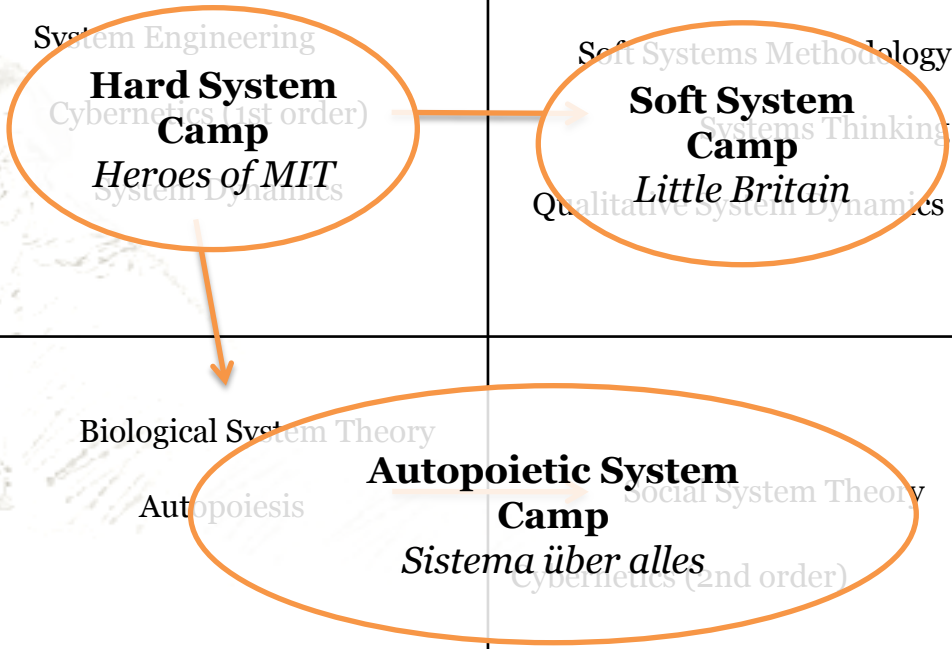
???

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	<p>System Engineering Cybernetics (1st order) System Dynamics</p> <p>Hard System Camp <i>Heroes of MIT</i></p>	<p>Soft Systems Methodology Systems Thinking Qualitative System Dynamics</p> <p>Soft System Camp <i>Little Britain</i></p>
difference	<p>Biological System Theory Autopoiesis</p> <p>Autopoietic System Camp <i>Sistema über alles</i></p>	





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

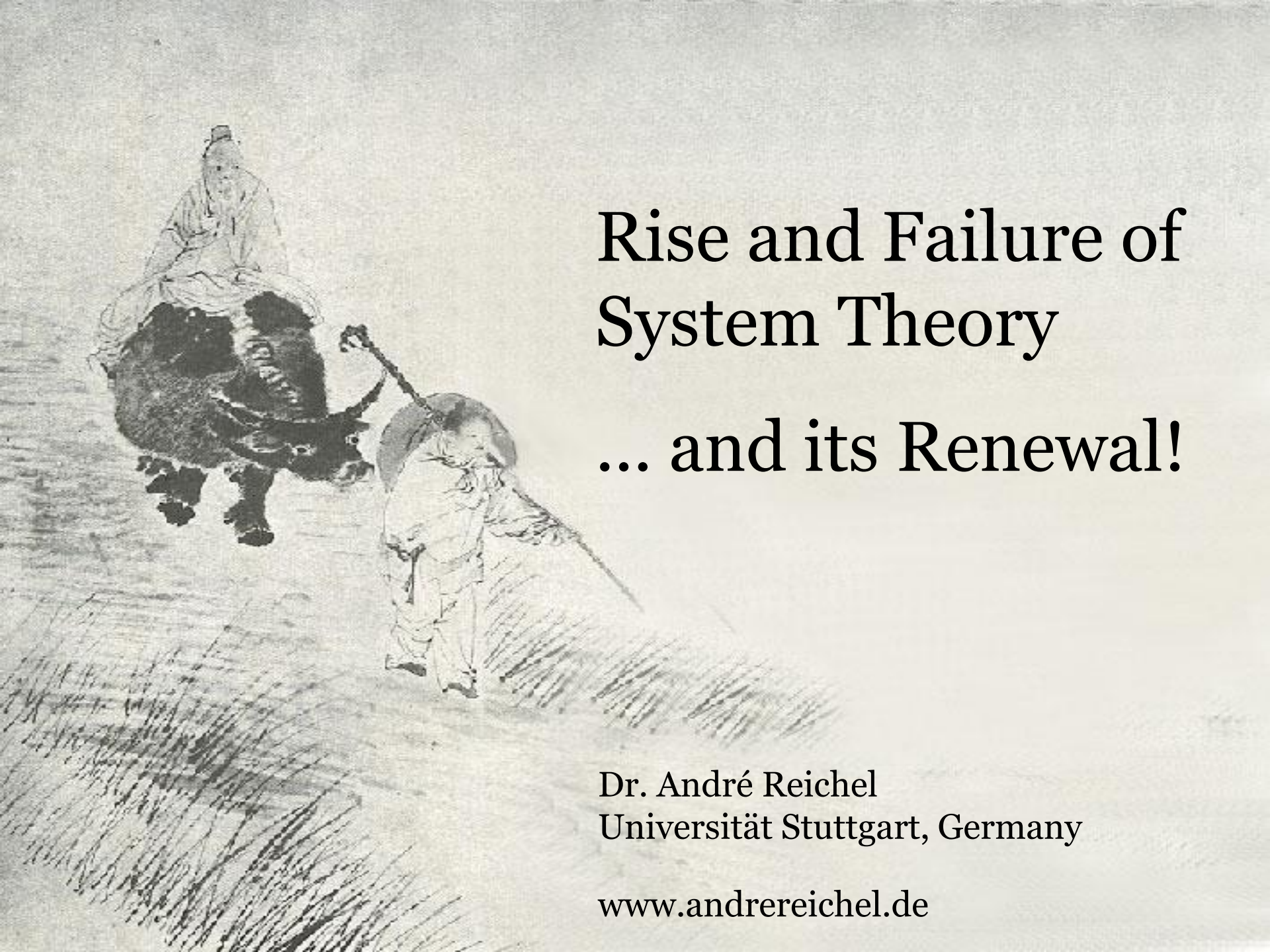


Renewal (?)

○ Disarming system rhetoric

○ Connectivity to what is already there

○ Continuing discontinuity (?)

A traditional Chinese ink wash painting depicting a man riding a horse and a child walking behind him. The man is seated on a dark horse, wearing a light-colored robe and a small hat. The child is walking to the right, carrying a large bundle on their back and holding a long staff. The background is a simple, textured wash of ink, suggesting a landscape or a path. The overall style is minimalist and expressive, characteristic of traditional Chinese art.

Rise and Failure of System Theory ... and its Renewal!

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