UNIVERSITÄT SALZBURG

System Theory in the Context of ICTs

Interdisciplinary Joint Lectures in Media and Communication Management
3 Nov 2008
Wolfgang Hofkirchner

ICT&S Center
Advanced Studies and Research in Information and Communication Technologies & Society

Contents

1 ICTs and Society research

- Insight, let alone foresight, by means of a science reflecting the societal change of today lags behind the rapid technological development.

- The emerging fields of New Media Studies, Social Informatics, Internet Research, and the like, are in a premature state-of-the-art – it is not (yet?) a discipline.
  Is it (or shall it become) an interdiscipline? Is it (or shall it remain) an indiscipline? Or rather a transdiscipline?

1 ICTs and Society research

	mainstream information society research (multi- or interdisciplinary)	critical information society research approaches (e.g., Salzburg approach) (transdisciplinary)
aims	"l'art pour l'art" or any feasible ICT application	the design of ICTs and their social settings for a good society (Global Sustainable Information Society), socially useful ICT applications
scope	ICTs in any context	facilitators or inhibitors that condition *the design of ICTs and their social settings for a good society (Global Sustainable Information Society), socially useful applications*
tools	any method	a system of complexity science methods combining social and human, natural, and engineering science methods that deal with (i.e., produce knowledge of, and inform acting upon) *facilitators or inhibitors that condition the design of ICTs and their social settings for a good society (Global Sustainable Information Society), socially useful applications*

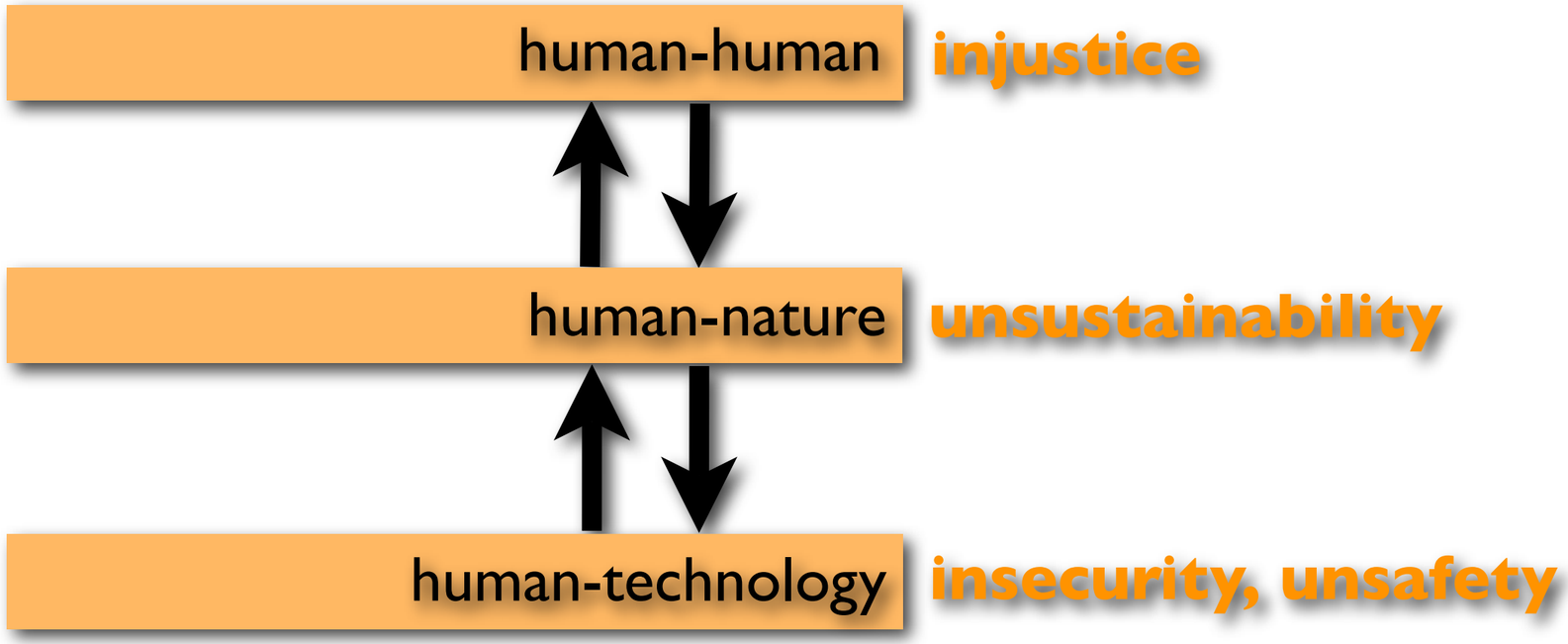
UNIVERSITÄT SALZBURG

2 Complex problems need complex thinking

2.1 Global Sustainable Information Society

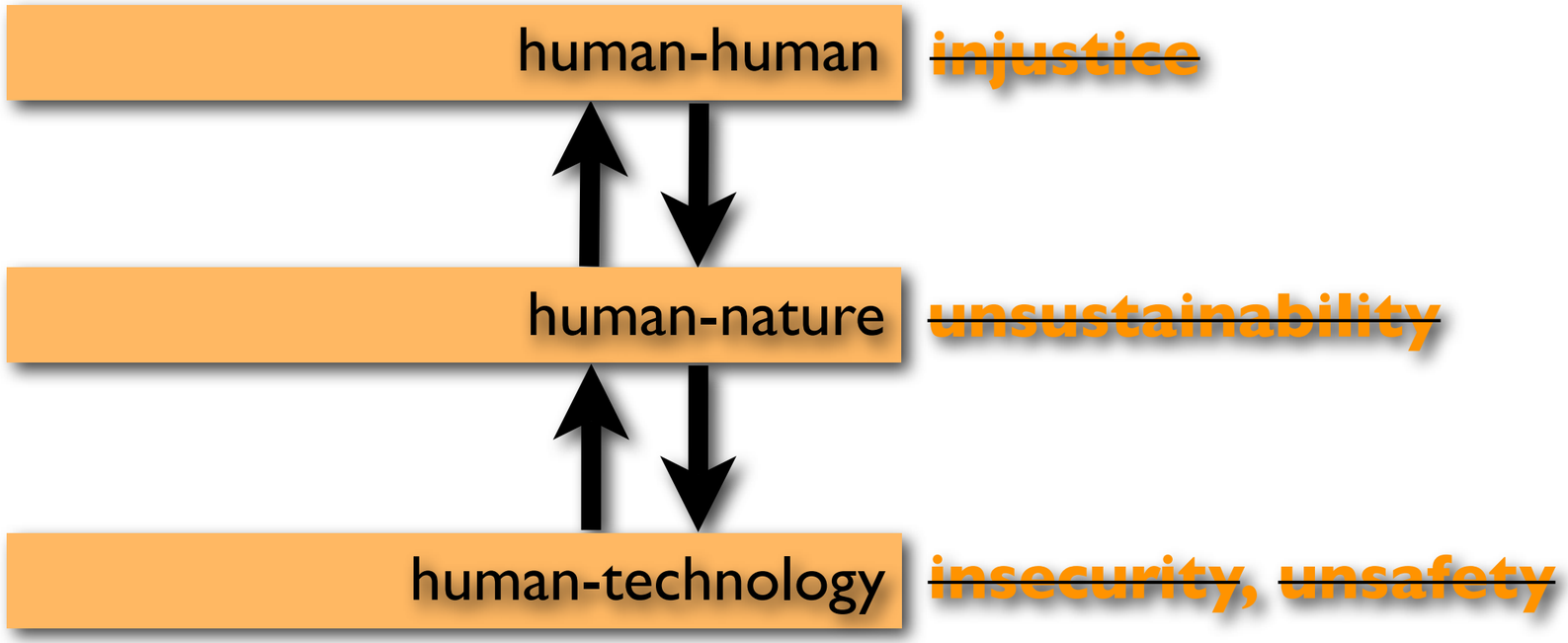
Human history has reached the point of the "Great Bifurcation"
– either breakthrough to a Global Sustainable Information Society (GSIS)
or breakdown.

2.1 Global Sustainable Information Society



Global problems challenge the survival of humanity and can be mastered by united forces only

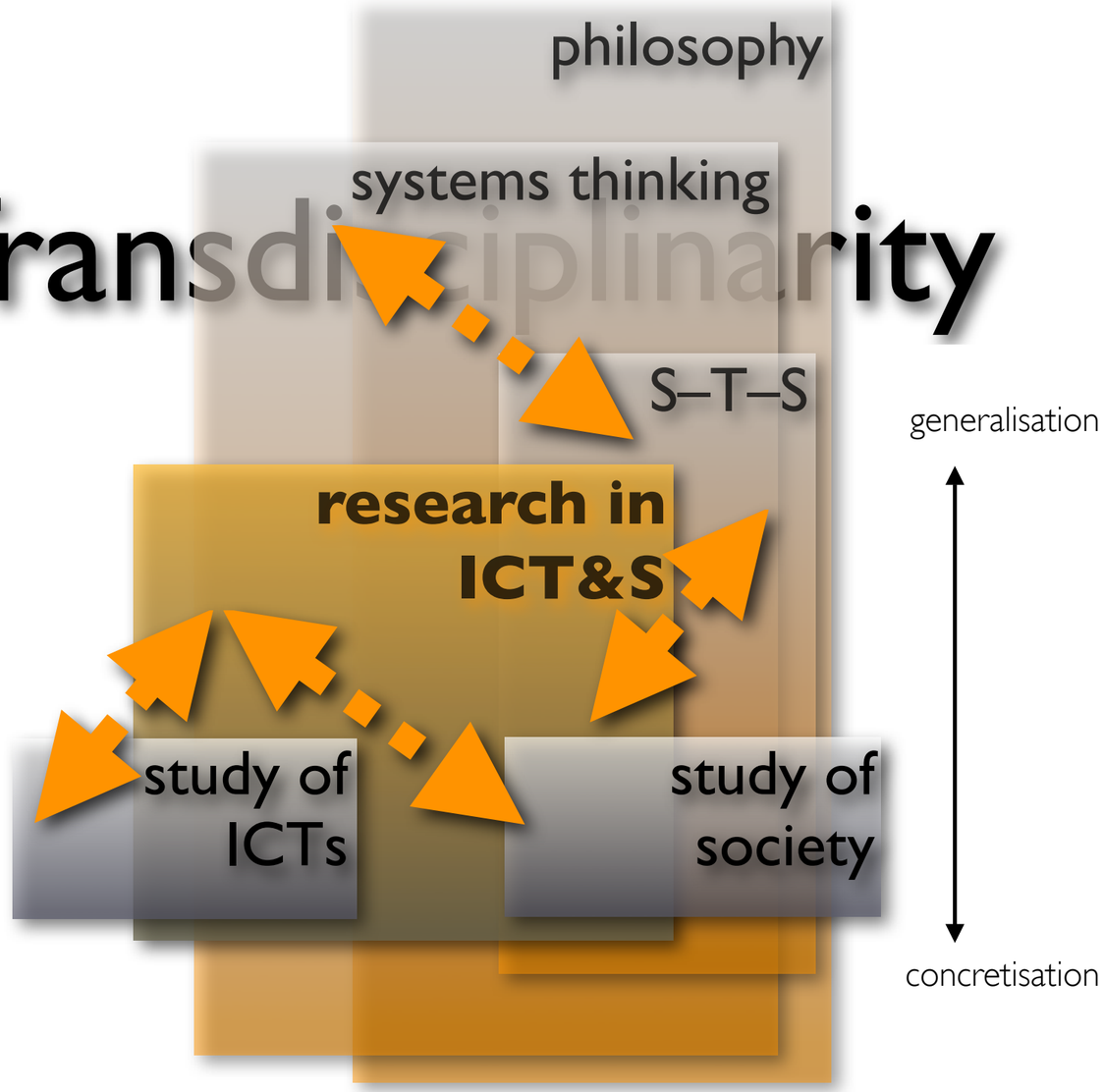
2.1 Global Sustainable Information Society



A GSIS is a society

- that re-organises itself on a planetary scale
- to cope with the challenges originating in its own development
- by taking advantage of ICTs for enhancing new ways of knowledge processes

2.2 Transdisciplinarity



2.3 Complexity science: Evolutionary systems

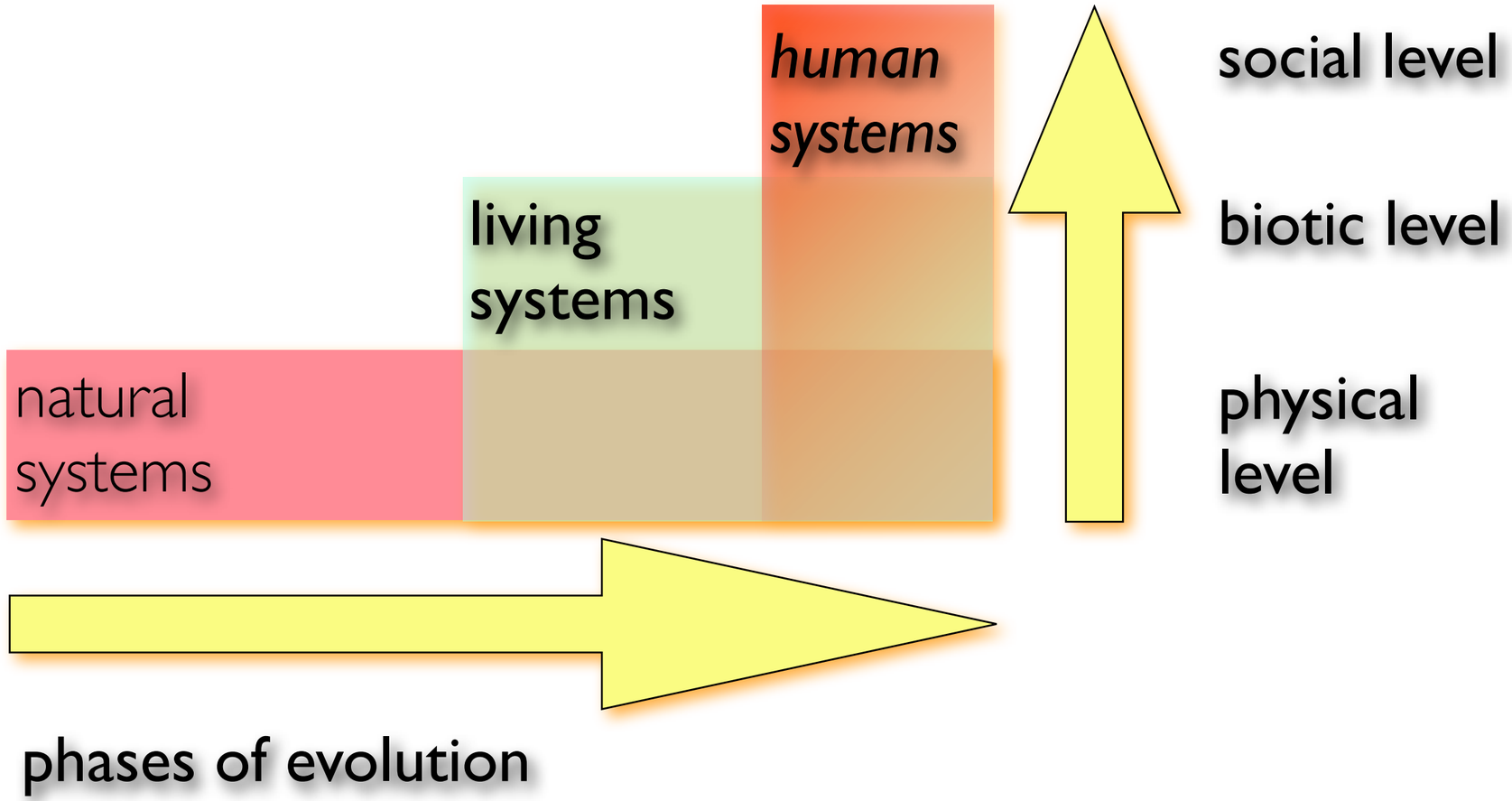
Self-organisation
= spontaneous build-up/maintenance of order in matter (nature, real-world systems)

Puzzle: **Entropy law S > 0** (growing disorder)
vs. Life (growing order)**?**

Solution: Merger of

- Systems Theory
- Theory of Evolution

2.3 Complexity science: Evolutionary systems



3 Information society as system in evolution

Social systems are evolutionary systems.

Information society is but another (possible) social system in the course of the evolution of social systems.

3.1 Technosocial system

The relationship of technology and society makes technology a technosocial system.

A technosocial system forms a specific subsystem of the overall social system (society) and is in itself a social system.

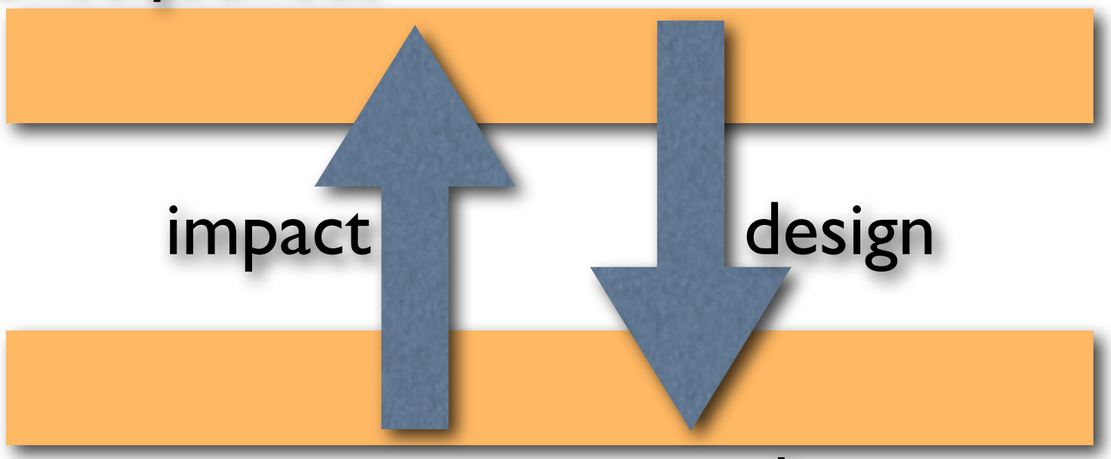
3.1.1 Technosocial System: Being a subsystem of society

The technological level is superseded by the societal level.

3.1.1 Technosocial System: Being a subsystem of society

mediation of social functions
including unintended consequences

Mutual Shaping of Technology and Society

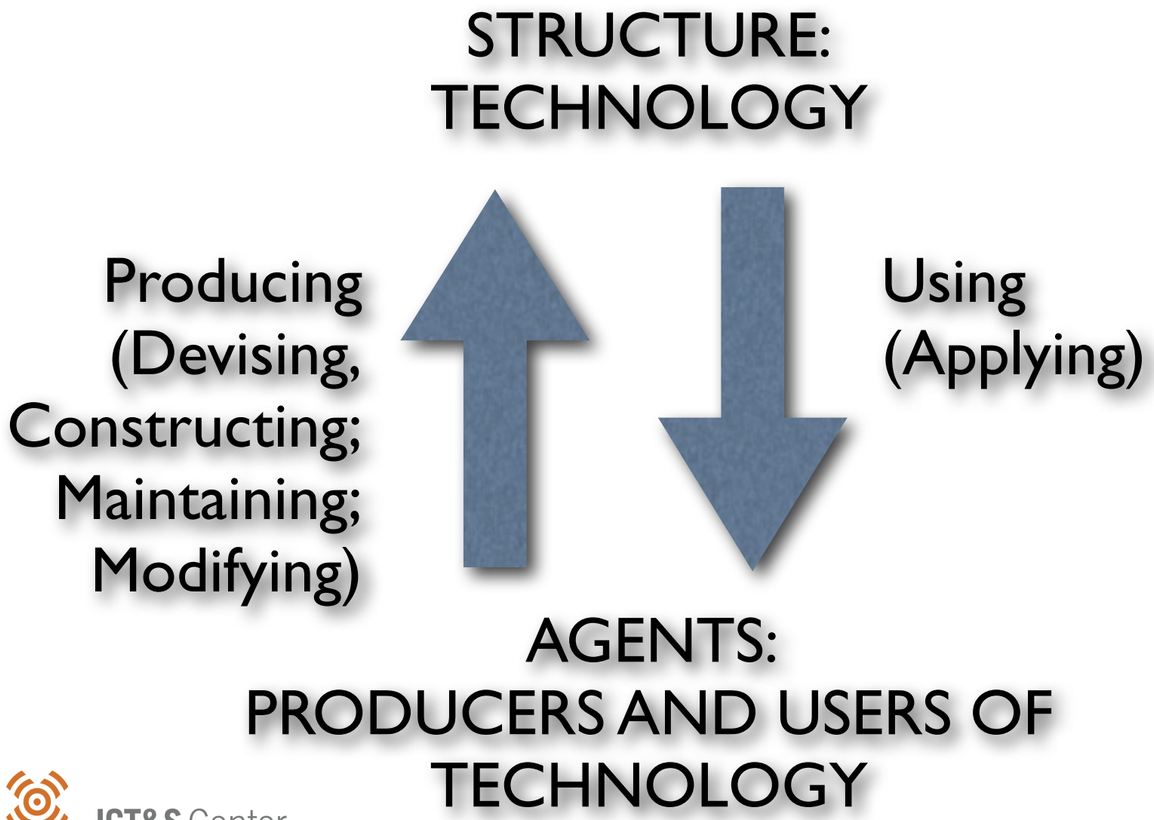


shape according to social interests
including supervenient features

3.1.2 Technosocial System: Being a social system in itself

Each technosocial system is inherently social.

3.1.2 Technosocial System: Being a social system in itself



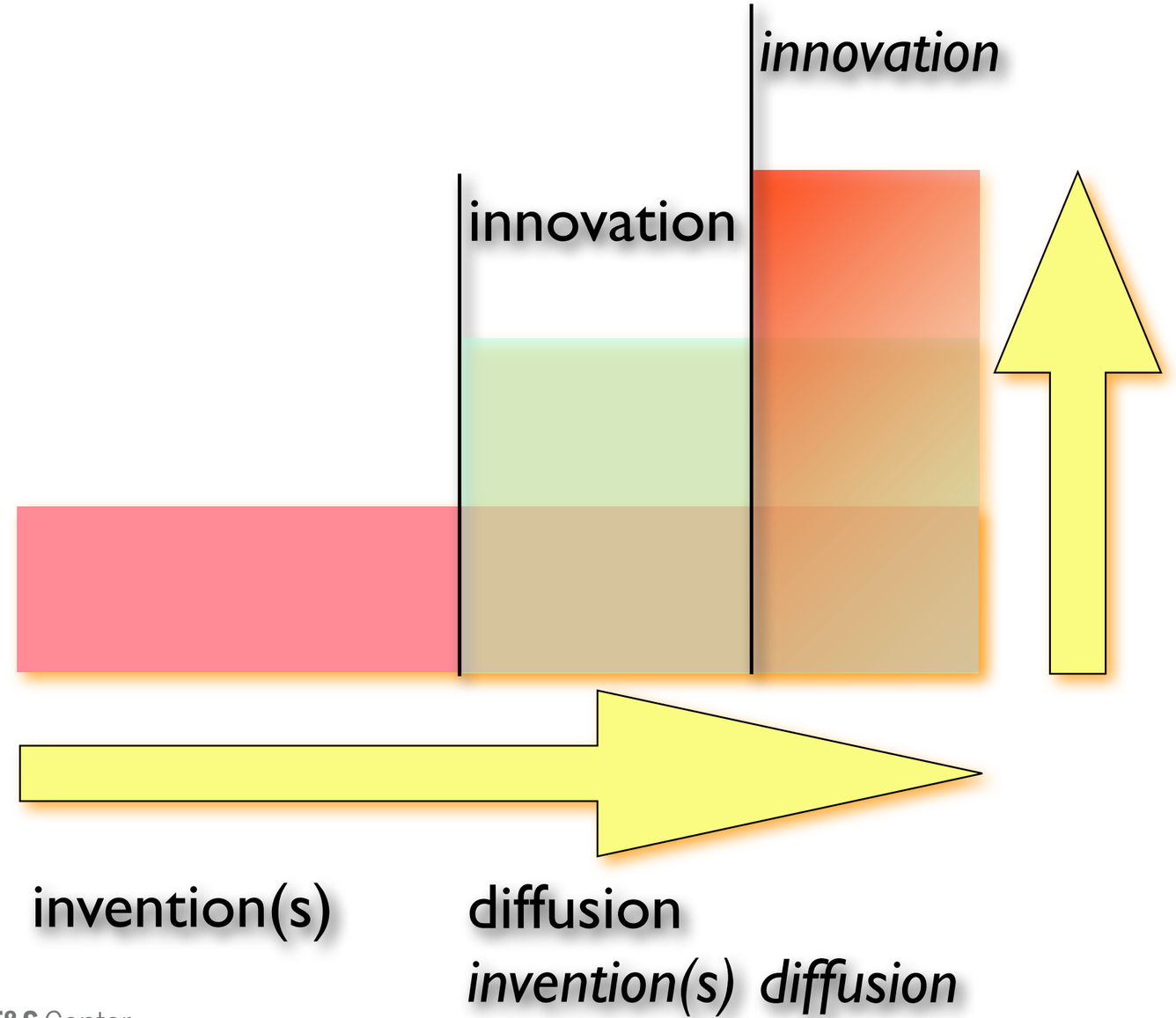
3.2 Technosocial Evolution

The overall system with its subsystems evolves in time. There is differentiation and integration.

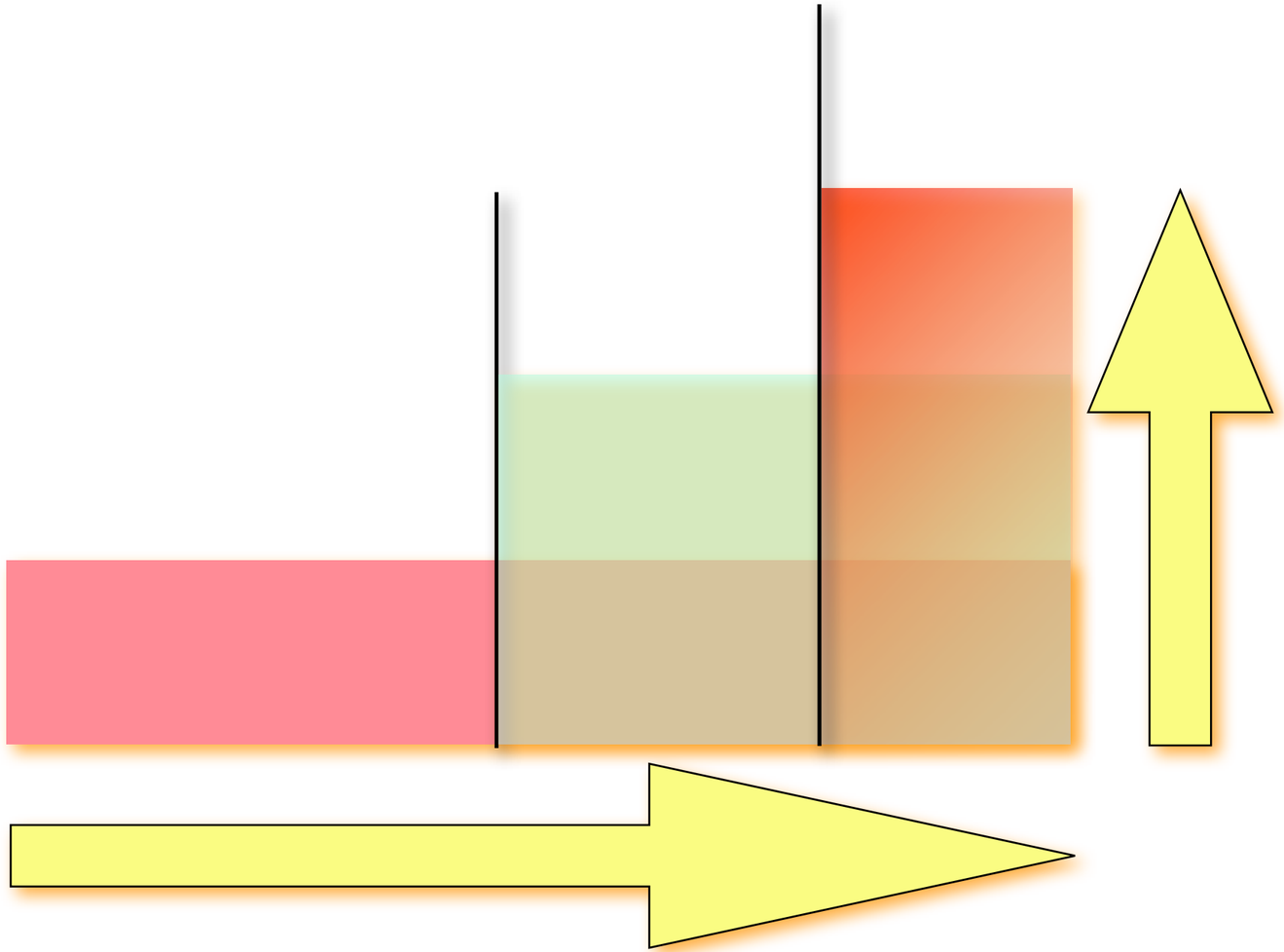
The technosocial system might induce change throughout society and bring about a technosocial revolution.

Design might form lineages in history.

3.2 Technosocial Evolution

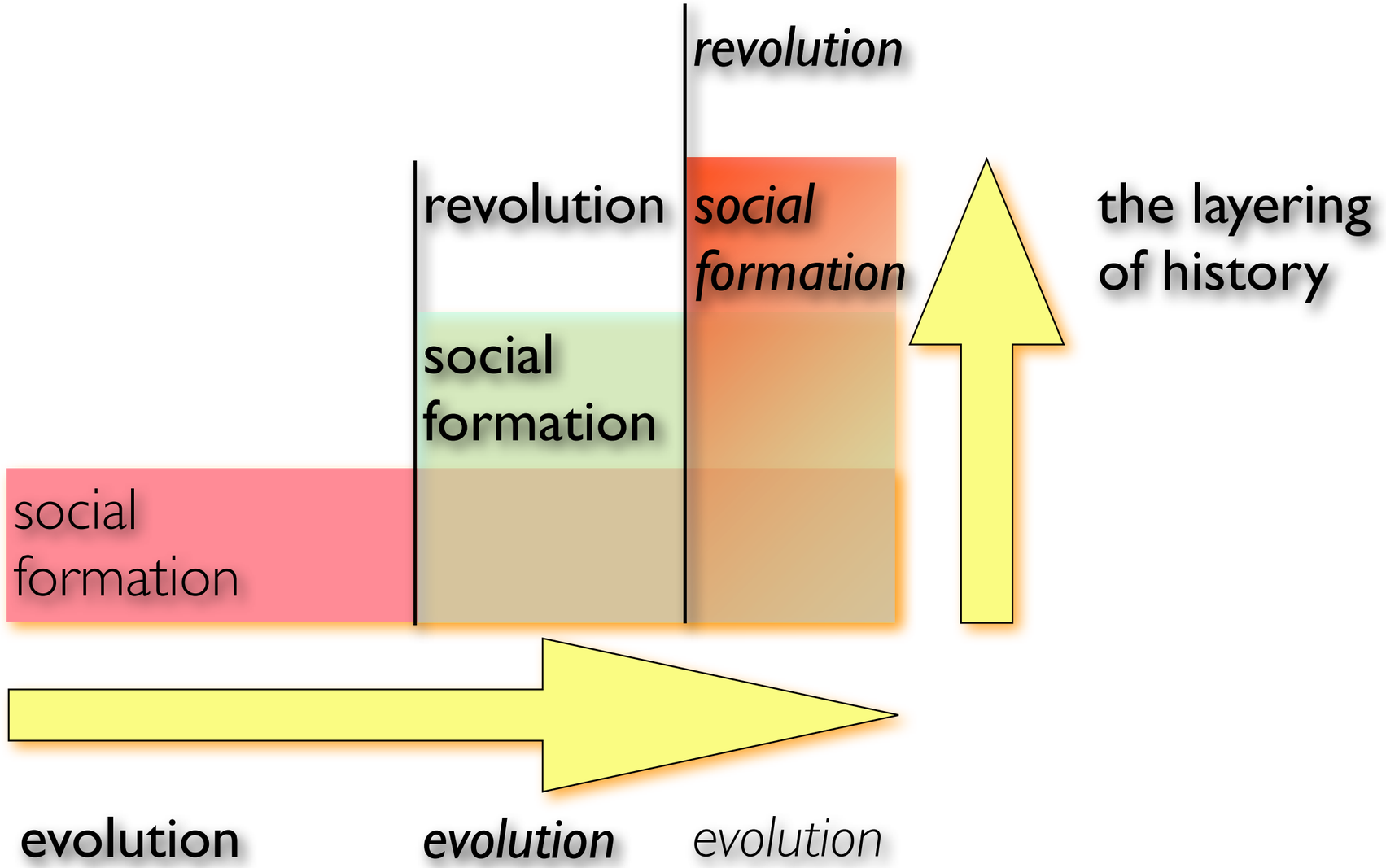


3.2 Technosocial Evolution

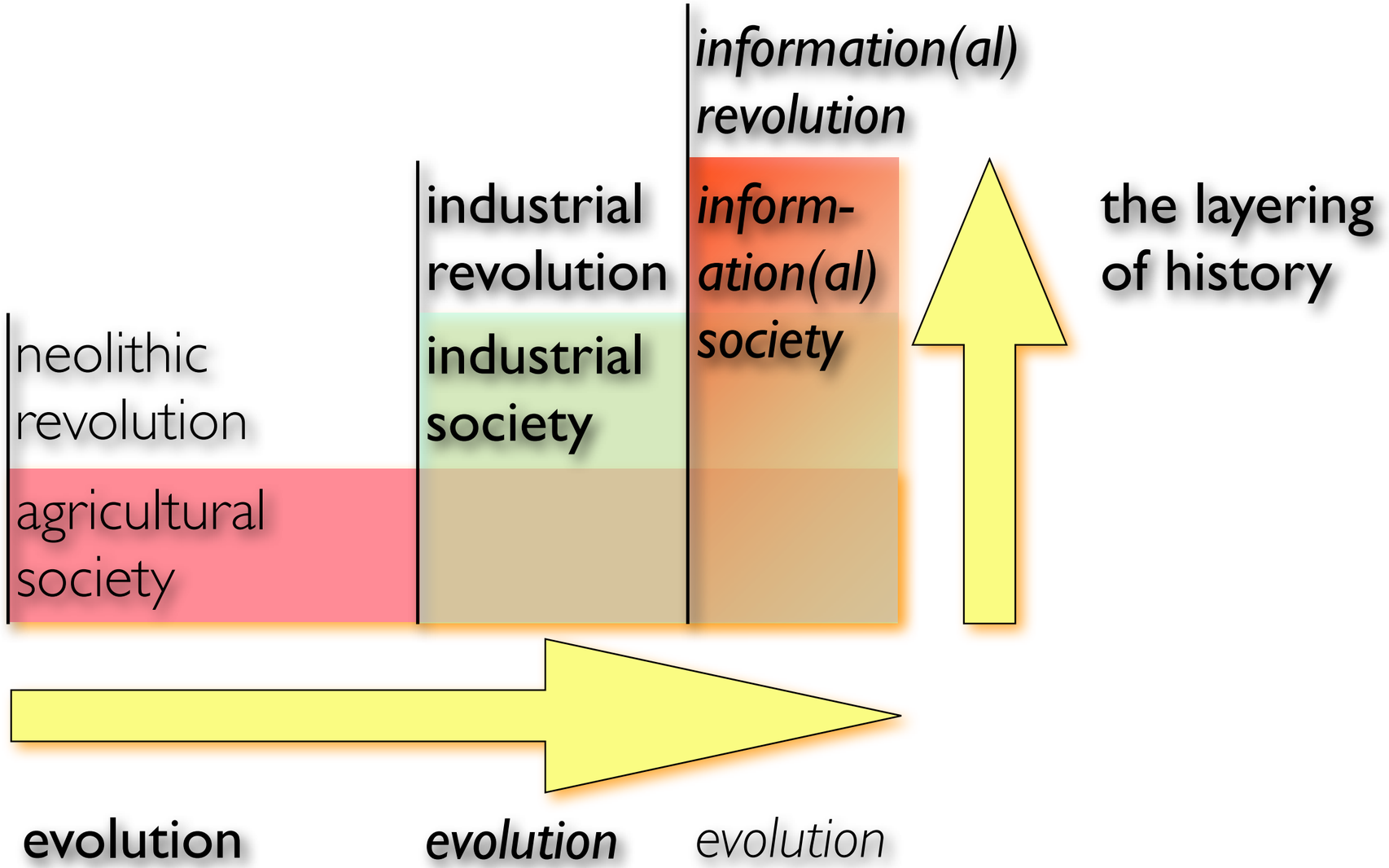


Every medium obsolesces some former medium and retrieves some older form (Marshall McLuhan)

3.2 Technosocial Evolution



3.2 Technosocial Evolution

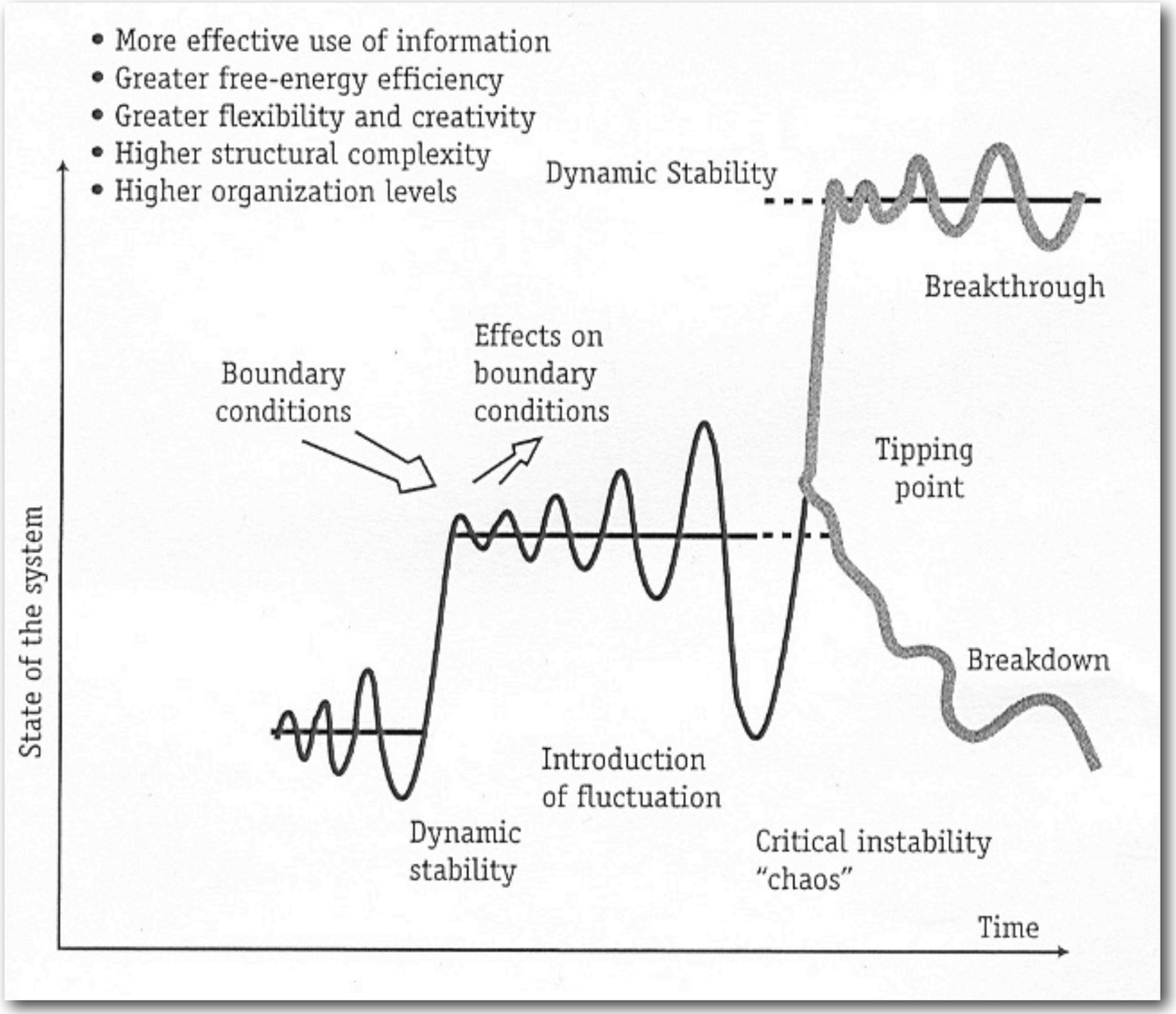


3.3 The Great Bifurcation

The informational revolution is at the crossroads.

Will it usher in a new age of a Global Sustainable Information Society or will there be a devolution?

3.3 The Great Bifurcation



Ervin Laszlo:
The Chaos Point,
2006

further reading:

Hofkirchner, W., Fuchs, C., Raffl, C., Schafranek, M., Sandoval, M., Bichler, R.: ICTs and Society – The Salzburg Approach. Towards a Theory for, about, and by means of the Information Society.
In: ICT&S Center Research Paper Series, No. 3, Dec. 2007, http://icts.sbg.ac.at/media/pdf/pdf1490.pdf, 57 pages