Design thinking
– implications for the issue of designing for mass impact

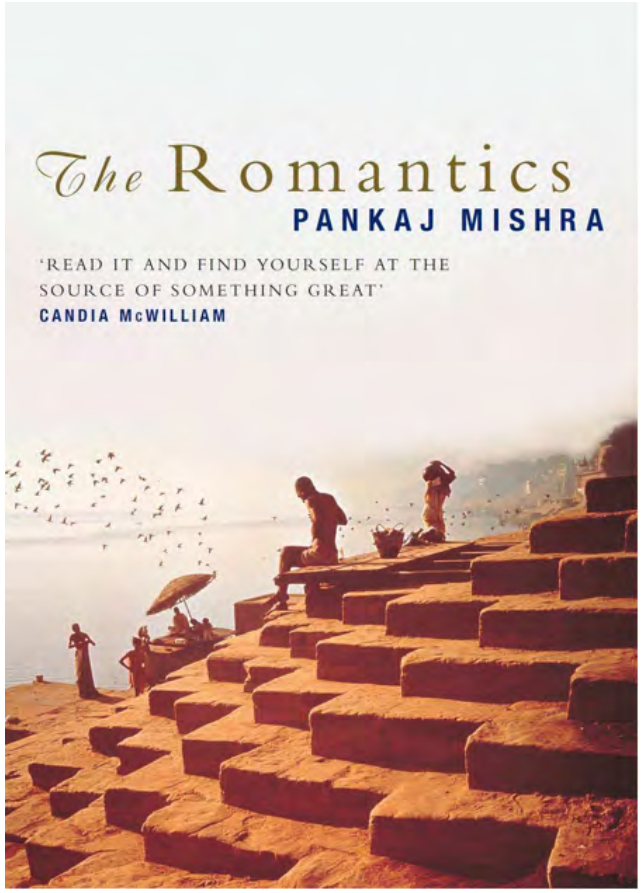
Wolfgang Jonas
Braunschweig University of Art
Germany

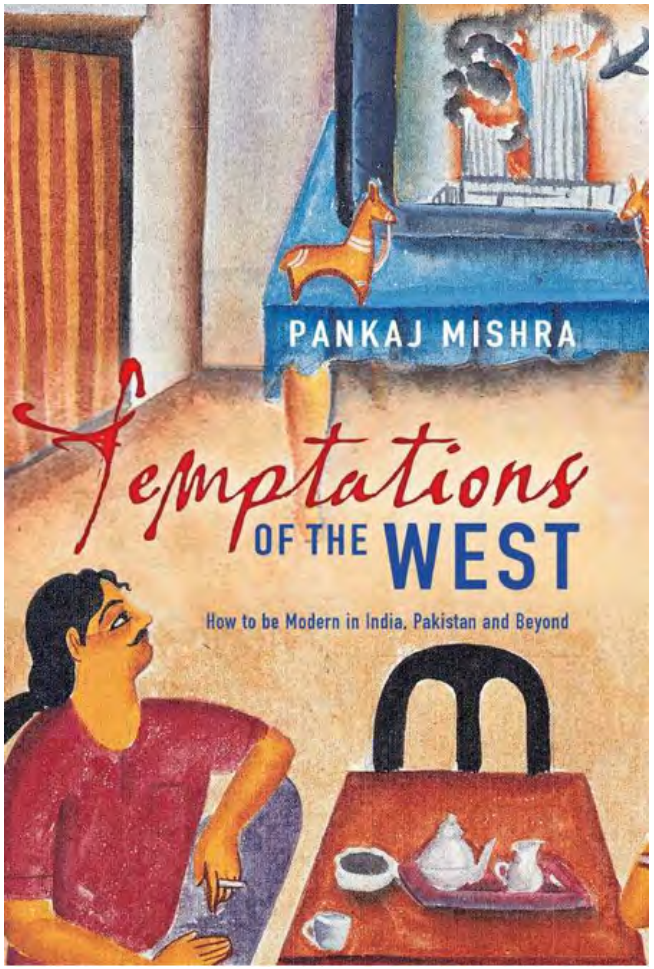
„Design for a billion“, Gandhinagar, 7/8/9 November 2014

„There is no purer myth than the notion of a science which has been purged of all myth.“

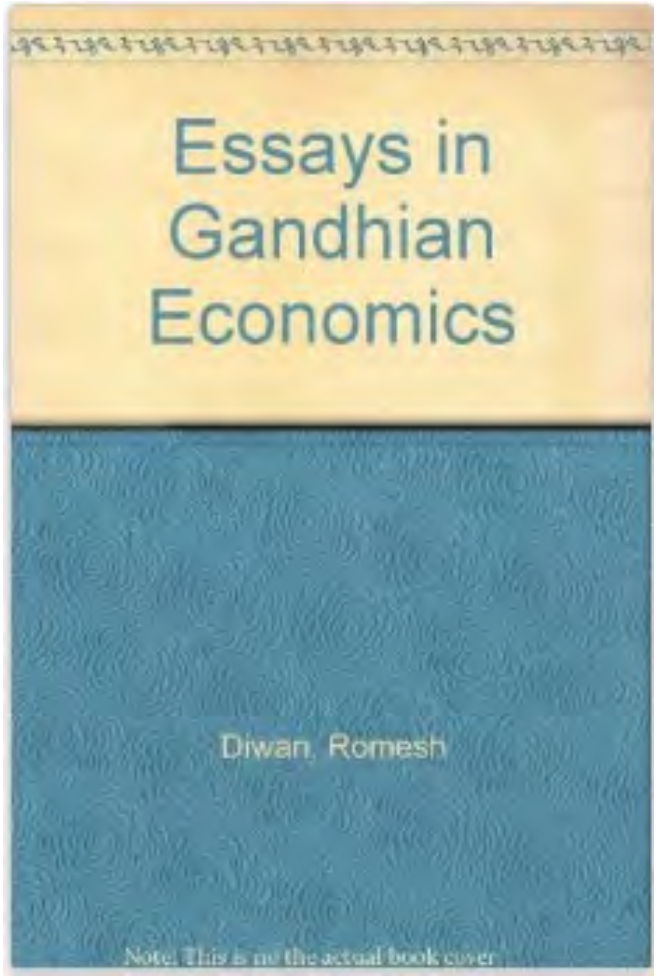
Michel Serres

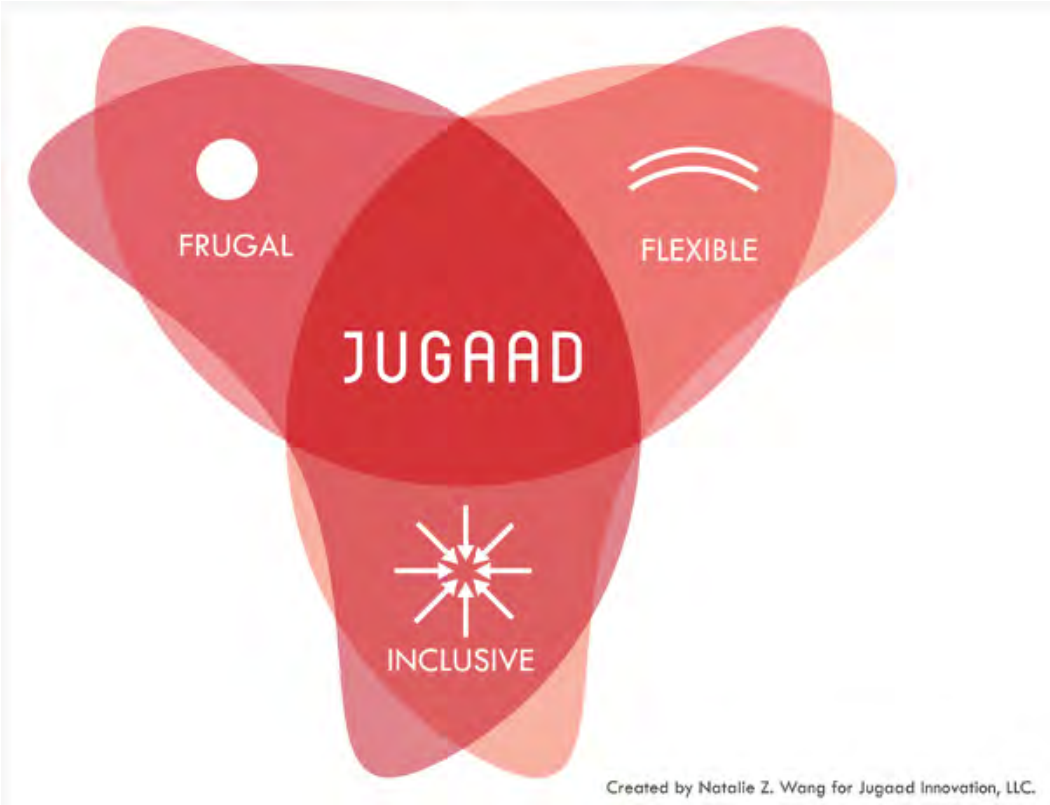
Overtures


The Romantics
PANKAJ MISHRA
'READ IT AND FIND YOURSELF AT THE SOURCE OF SOMETHING GREAT'
CANDIA McWILLIAM


PANKAJ MISHRA
Temptations OF THE WEST
How to be Modern in India, Pakistan and Beyond

Overtures


Essays in
Gandhian
Economics
Diwan, Romesh
Note: This is not the actual book cover


FRUGAL
FLEXIBLE
JUGAAD
INCLUSIVE
Created by Natalie Z. Wang for Jugaad Innovation, LLC.

Rittel think

modesty

lack of respect

systematic doubt

moderate optimist

dilemmas of rationality

activist

What are we talking about ? The Western trajectory ?

MUMBAI (17 Sept. 2014):

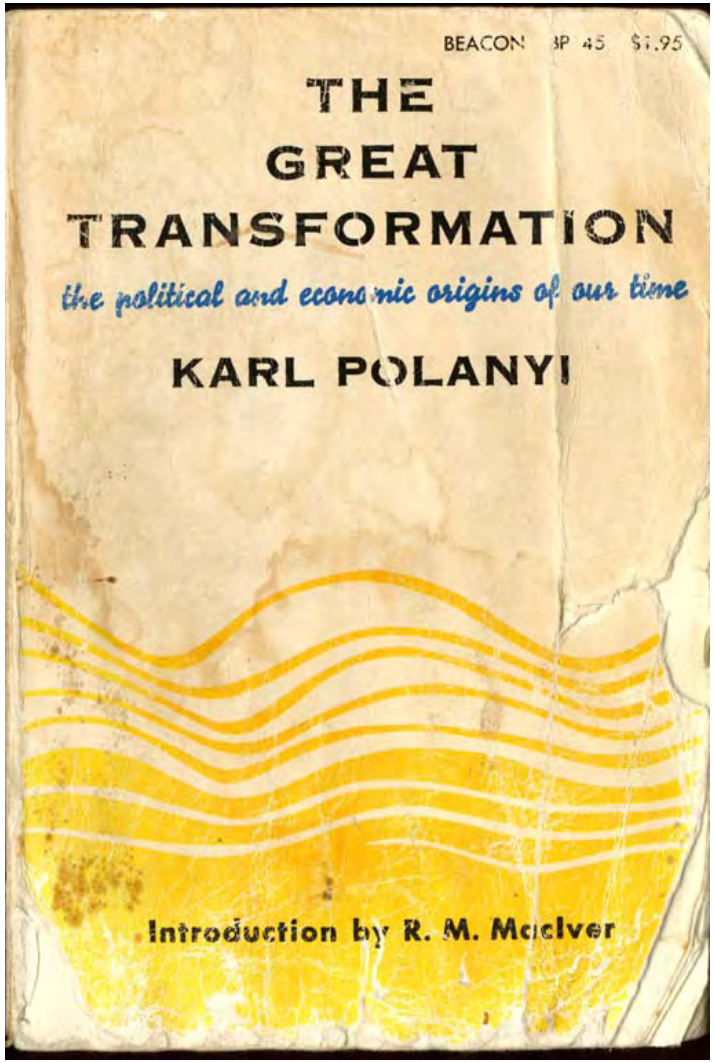
World's largest furniture retailer Ikea today said it has plans to invest Rs 12,500 crore to set up 25 stores in the country over the next decade.

(crore = 10 million)

http://articles.economictimes.indiatimes.com/2014-09-17/news/54024673_1_furniture-retailer-new-stores-large-format-stores

The first „Great Transformation“

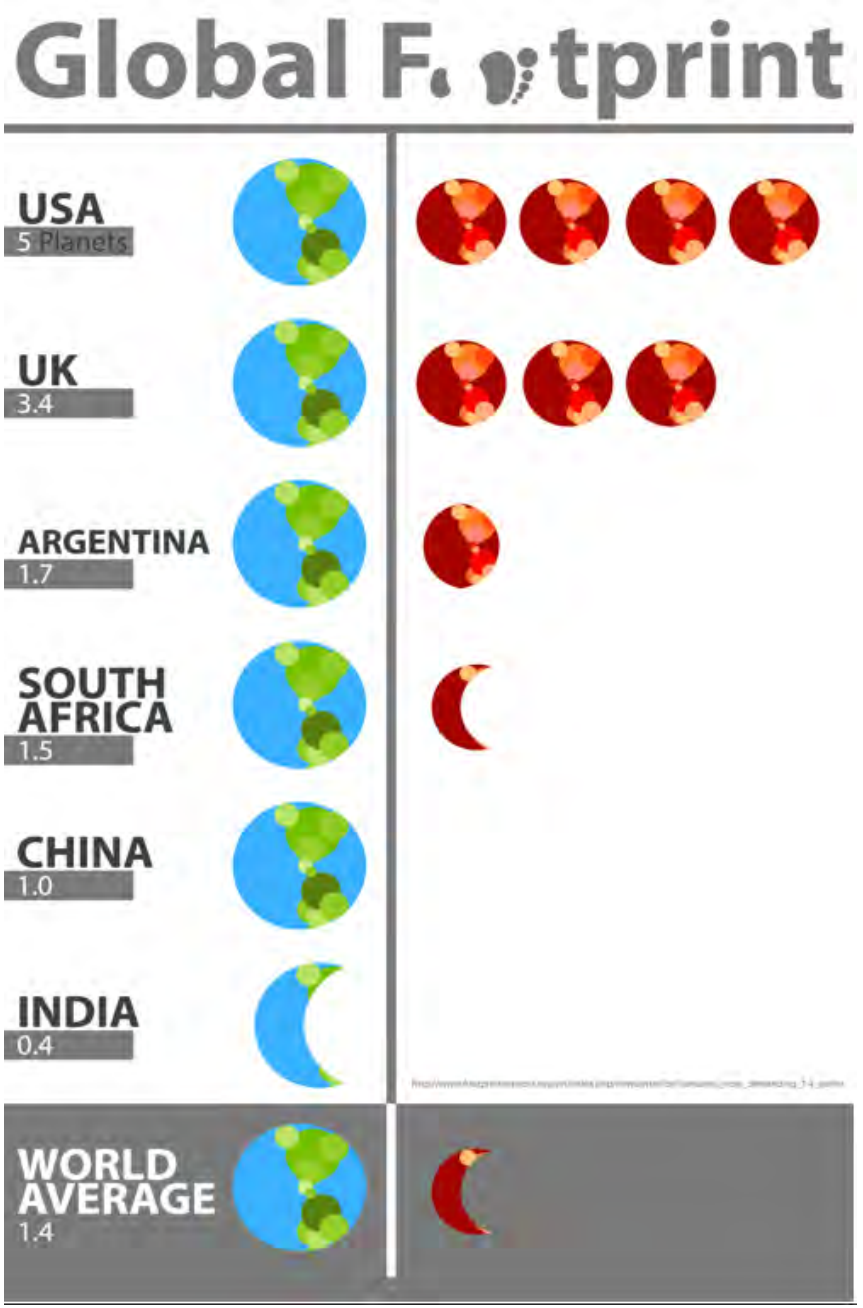
The „dis-embedding“ of the markets.



Karl Polanyi (1886-1964): The Great Transformation (1944)

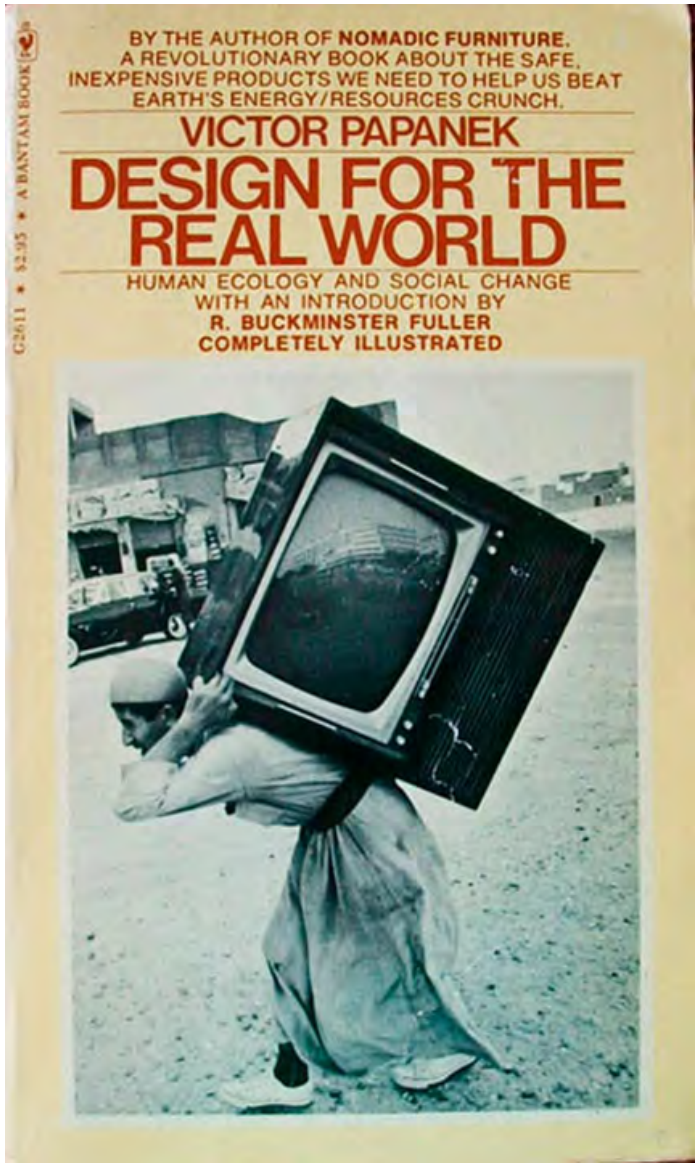
Earth´s carrying capacity

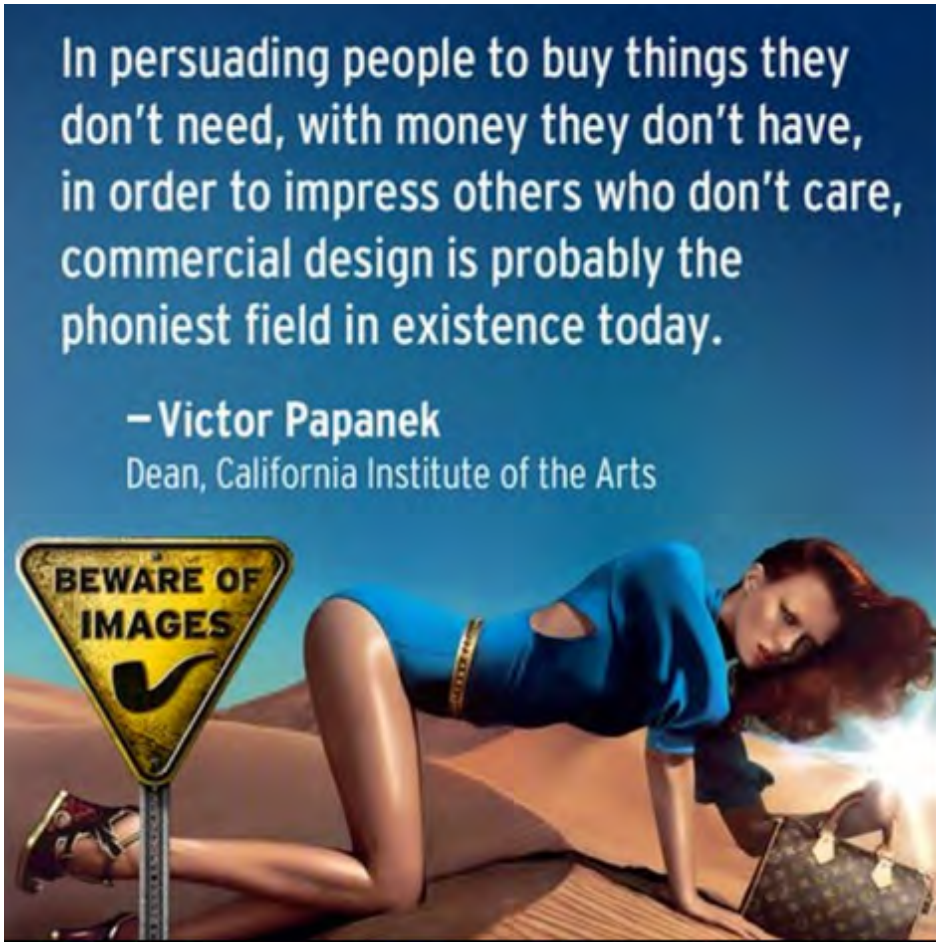
„The average Ecological Footprint per person worldwide is 2.6 global hectares (6.5 global acres), while the average biocapacity available per person is 1.8 global hectares (4.5 global acres.) .“



Wackernagel & Rees (1996)

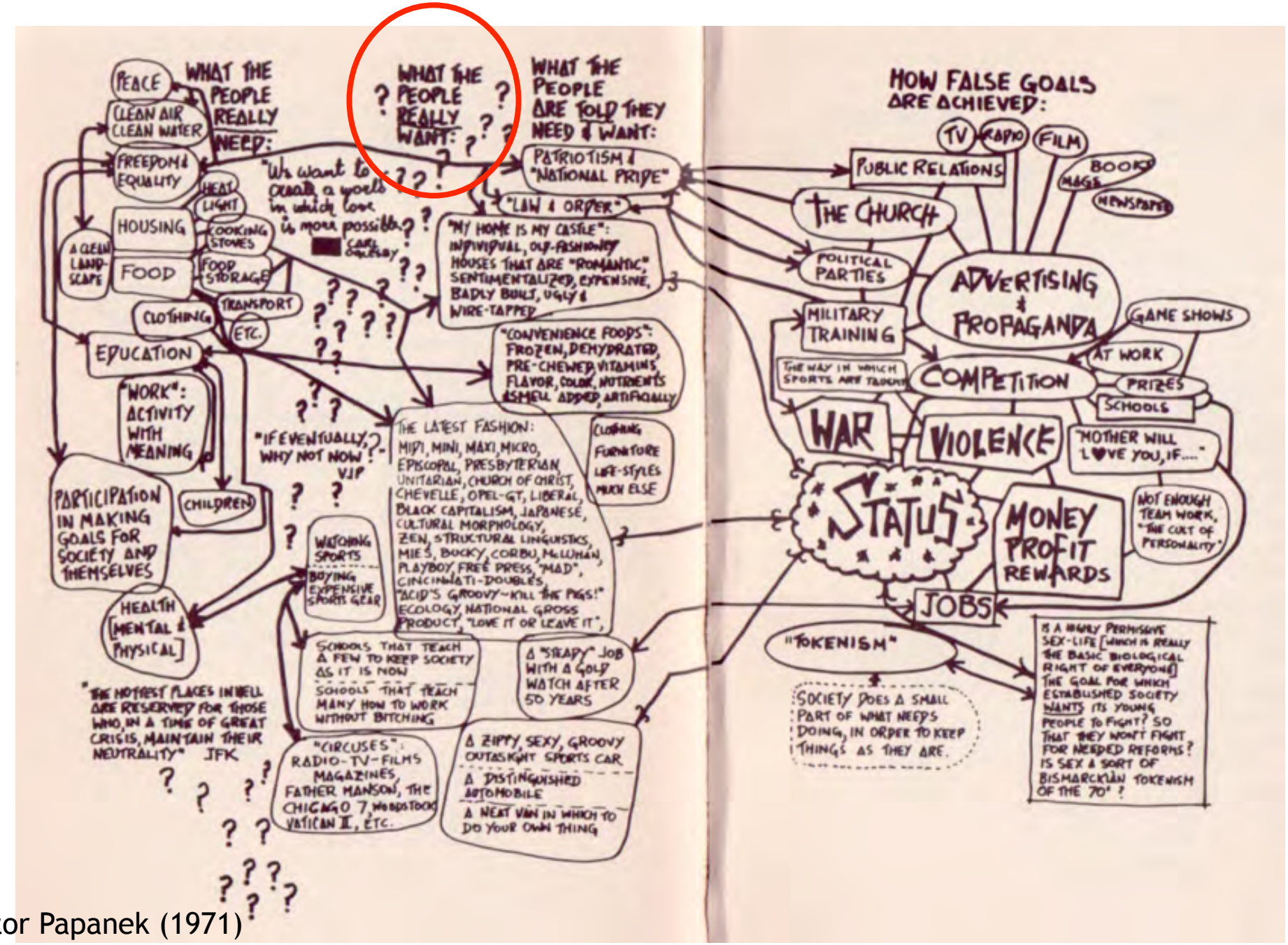
Reduction, alternative paths ...





Victor Papanek (1971)

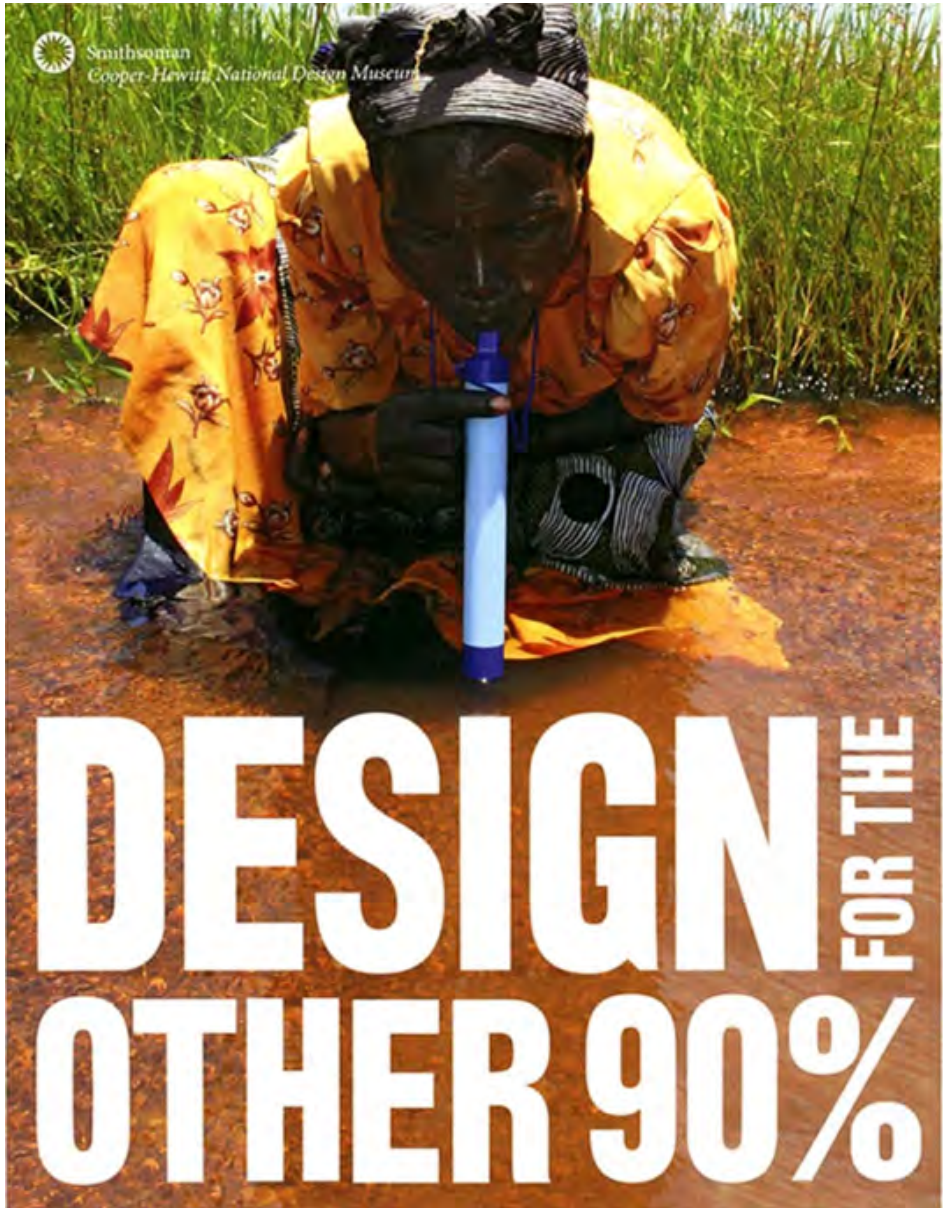
Reduction, alternative paths ...



Victor Papanek (1971)

Reduction, alternative paths ...

... for the first 10 %

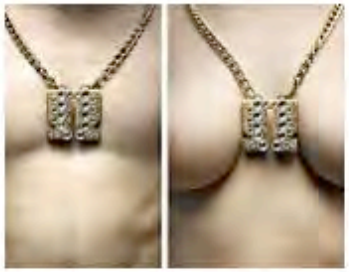


Cynthia E. Smith (2007)

The role of design











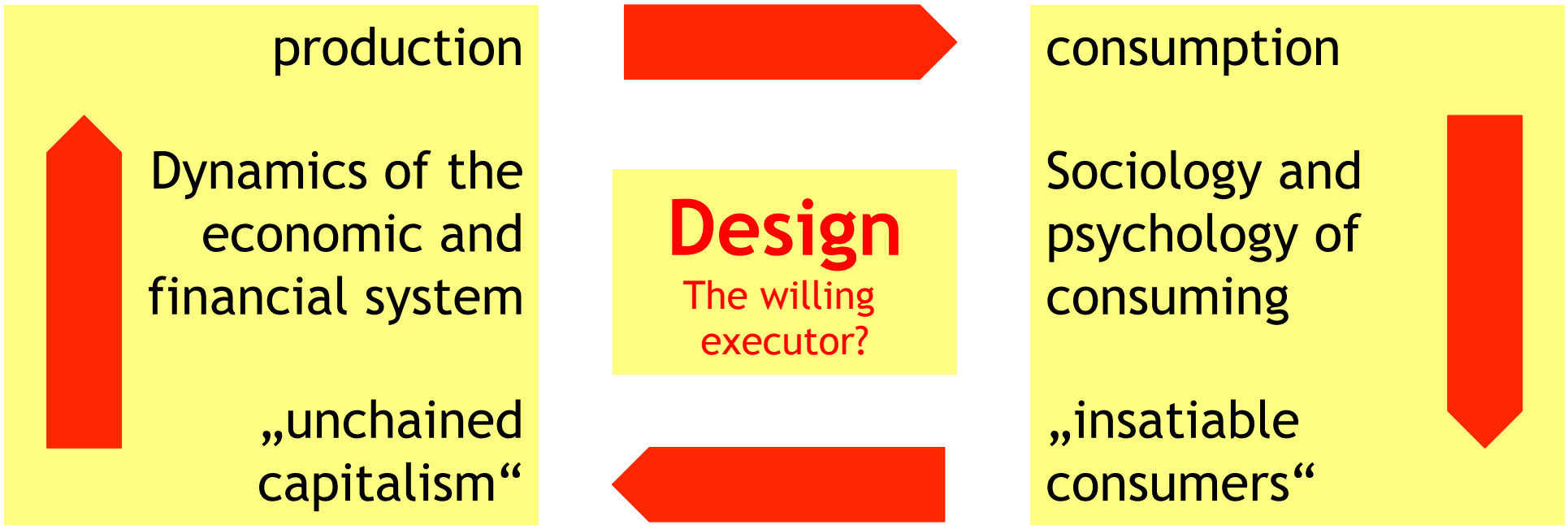





reddot design award


„Design“ - Google Images, 11 October 2012

The role of design



The role of design

UBS Asian Consumption Fund

Investment objective: Achieve long term capital appreciation

The Fund aims to achieve long-term capital appreciation by investing primarily in securities within the Asia ex Japan sectors: consumer discretionary, consumer staples and healthcare focusing on those companies that have substantial business exposure to Asia. The Fund may also invest in companies based in developed markets that are expected to benefit from Asian consumer growth, as well as Asian consumer companies tapping business growth outside of the region.

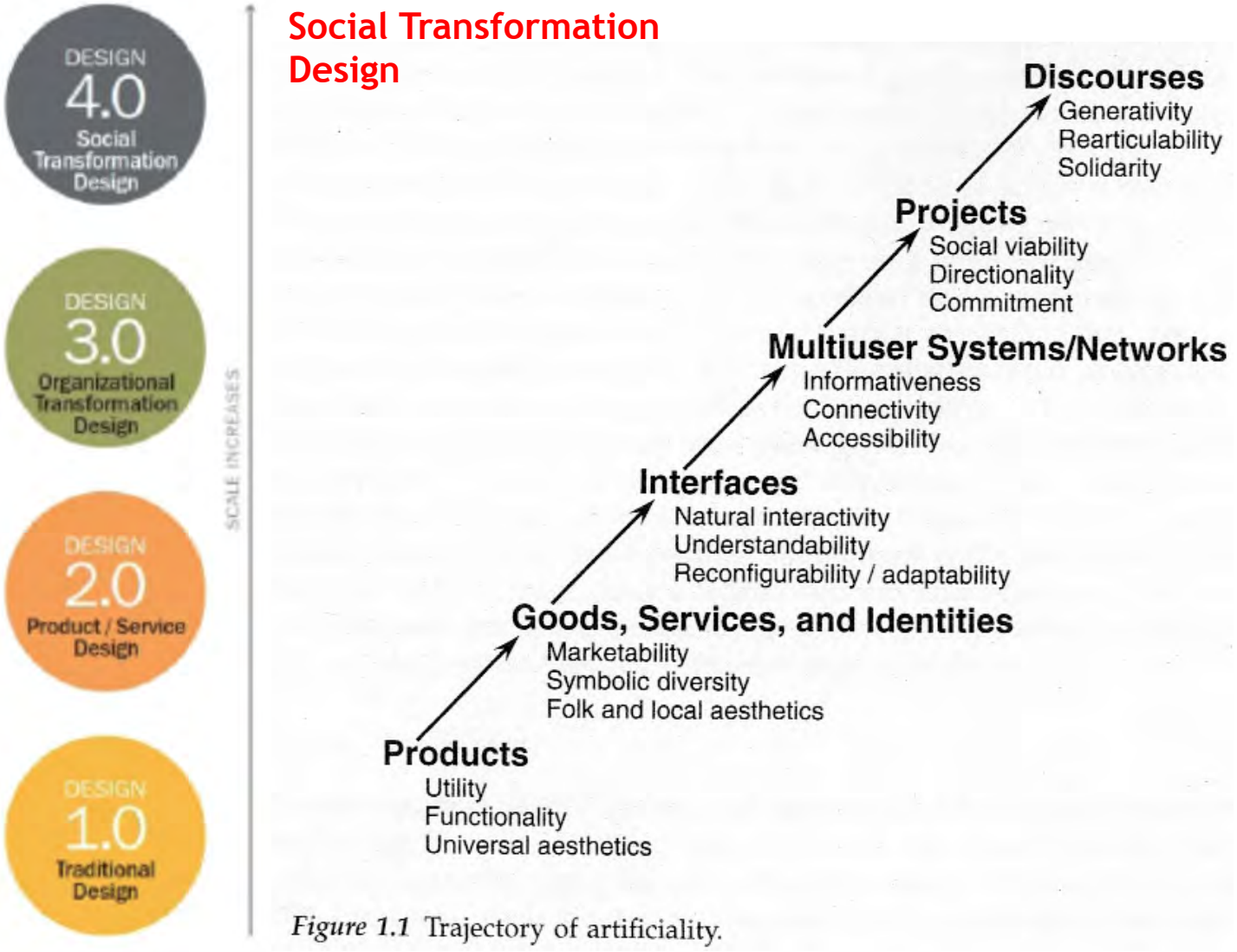
Changing role of design?

KYOTO DESIGN DECLARATION 2008:

"A statement of commitment by the members of Cumulus to sharing the global responsibility for building sustainable, human-centered, creative societies. ...

Human-centered design thinking, when rooted in universal and sustainable principles, has the power to fundamentally improve our world. It can deliver economic, ecological, social and cultural benefits to all people, improve our quality of life and create optimism about the future and individual and shared happiness.“

Design is permanently changing ...



Generativity
Rearticulability
Solidarity

NextDesign (2012), The Semantic Turn (Krippendorff 2006)

Design has / claims extremely broad subject matters

Authors	Subject matters /	Areas of Interest	
Platon	The beautiful (τὸ καλὸν)	The true (τὸ ἀληθές)	The good (τὸ ἀγαθόν)
Vitruvius	The beautiful (Venustas)	The solid (Firmitas)	The useful (Utilitas)
Immanuel Kant	Judgement	Reason	Moral
David Pye (1978)	The beautiful	The efficient	The useful
Bruce Archer (1979)	Products	Process	People
Nigel Cross (2001)	Phenomenology study of the form and configuration of artefacts, the 1920s	Praxiology study of the practices and processes of design, the 1960s	Epistemology study of designerly ways of knowing, the 2000s
Alain Findeli (2008)	Aesthetics	Logic	Ethics
Wolfgang Jonas	Forms	Processes	Knowledges

Source: Jonas

The dilemma of rigor or relevance ...

Donald Schön (1983: 42)

"... there is a high, hard ground ... effective use of research-based theory and technique, and there is a swampy lowland where situations are confusing "messes" incapable of technical solutions.
... the problems of the high ground ... are relatively unimportant to clients or to the larger society, while in the swamp are the problems of greatest human concern. ..."

→This requires:

- appropriate notions of complexity
- ways of dealing with evolutionary uncertainty
- epistemological frameworks
    - which integrate thinking and making as well as normative, causal and evolutionary ways of knowing, and
    - which allow for reflecting user / stakeholder / observer / designer involvement

Design thinking – theorizing design ...

Bruno Latour

Niklas Luhmann

Herbert Simon

Horst Rittel

Frederic Vester

C. West Churchman

„There is no purer myth than the notion of a science which has been purged of all myth.“

Michel Serres

Bruno Latour (* 1947): ANT – Actor-Network-Theory

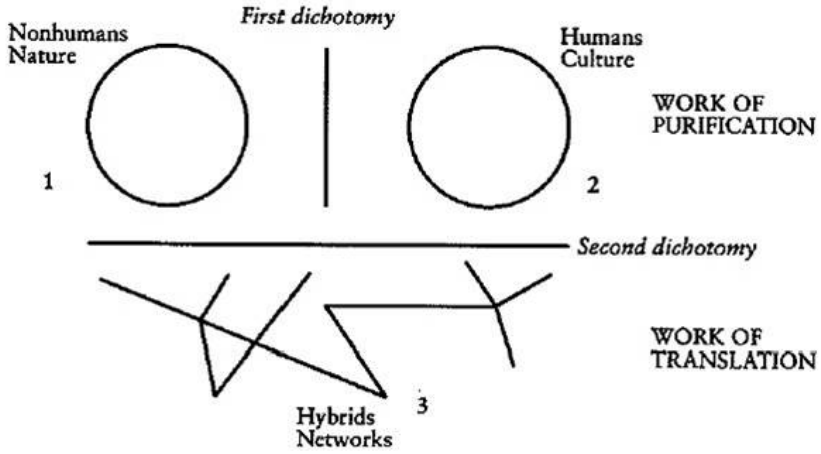
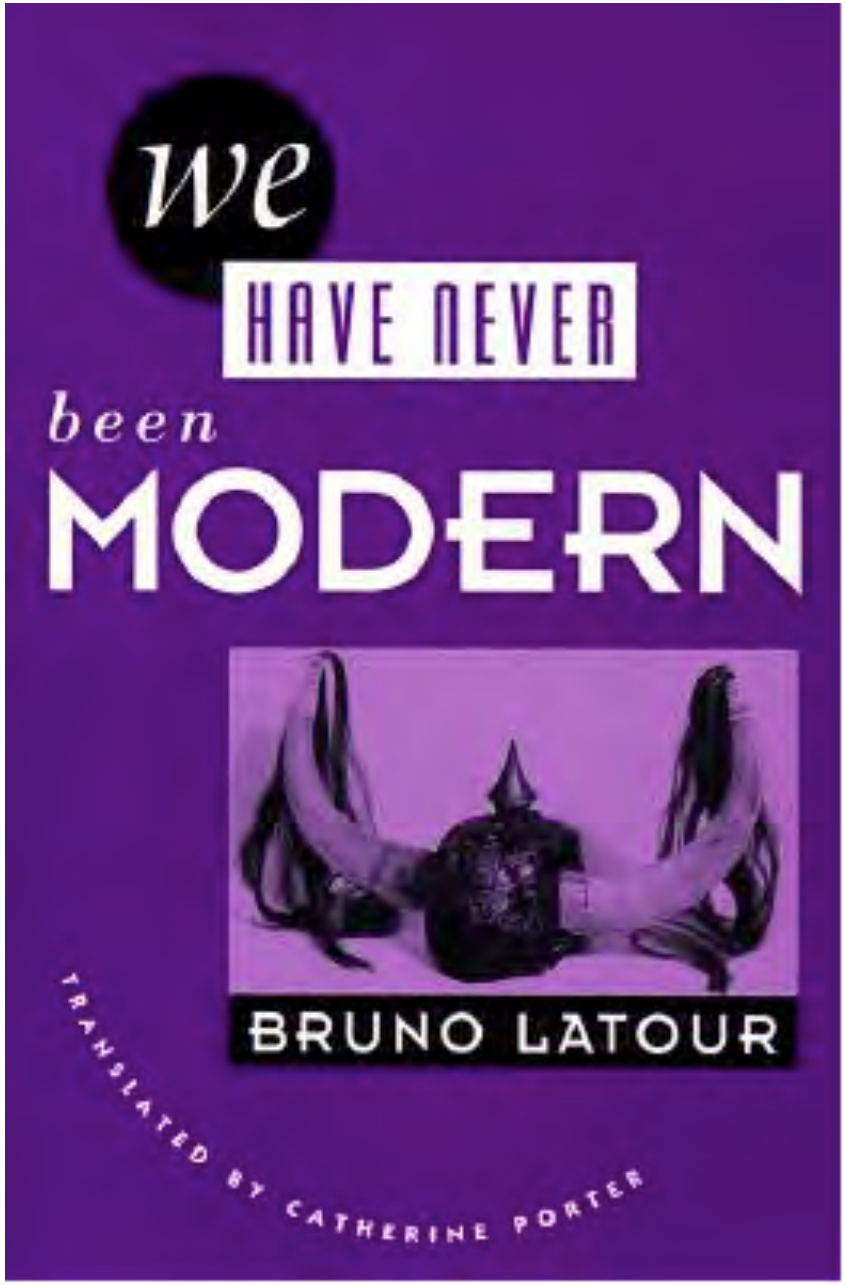


Figure 1.1 Purification and translation

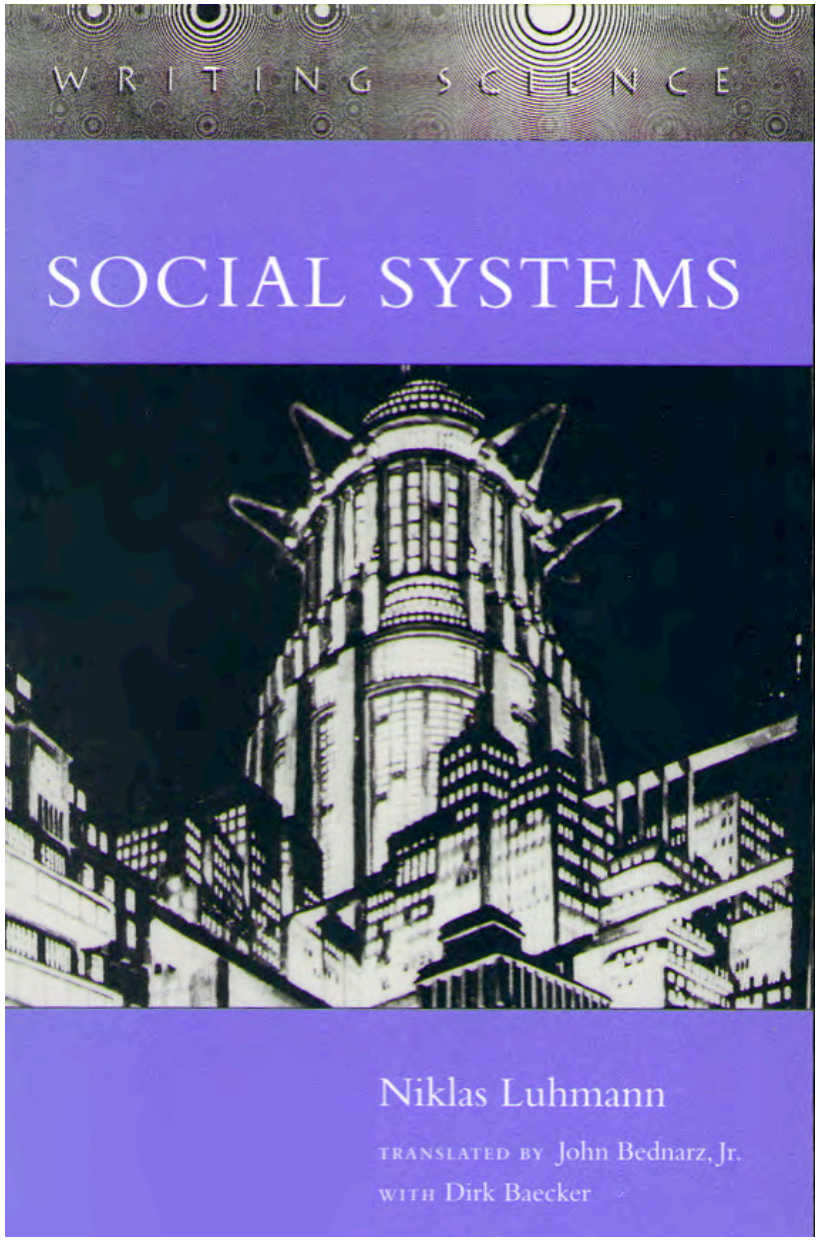


Bruno Latour (* 1947)

Matters of fact → matters of concern.

Latour (2013):
”In other words, why not transform this whole business of recalling modernity into a grand question of design?”

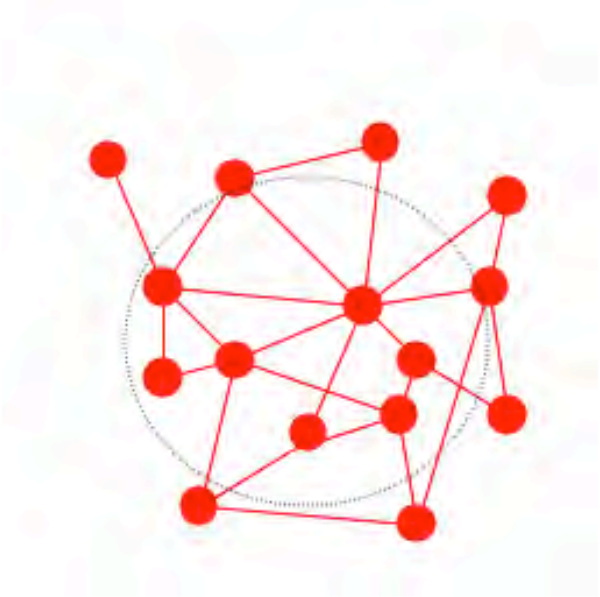
Niklas Luhmann (1927 1998): theory of social systems



Problems of control, prediction and observation

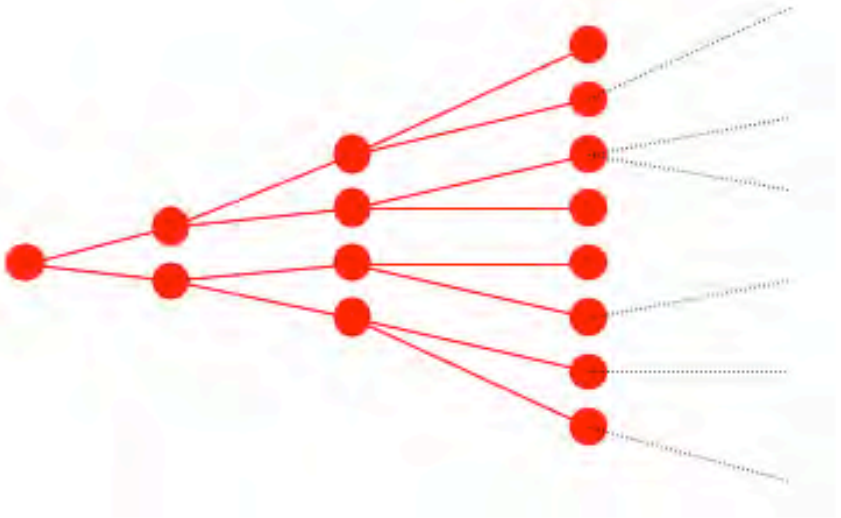
Control:
systemic wholes

- not completely determinable
- limited control



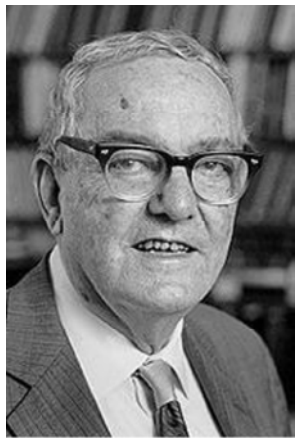
Prediction:
evolutionary processes

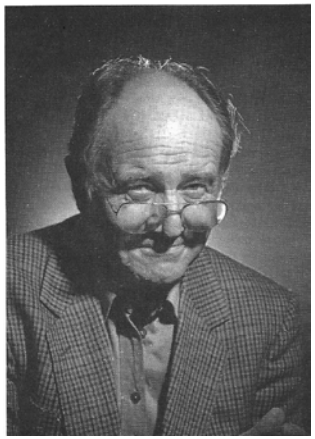
- based on the past, experimenting with the new
- limited predictability



„Everything that is said is said by an observer.“ (Heinz von Foerster)

Systems thinking: my 4 „systems heroes“

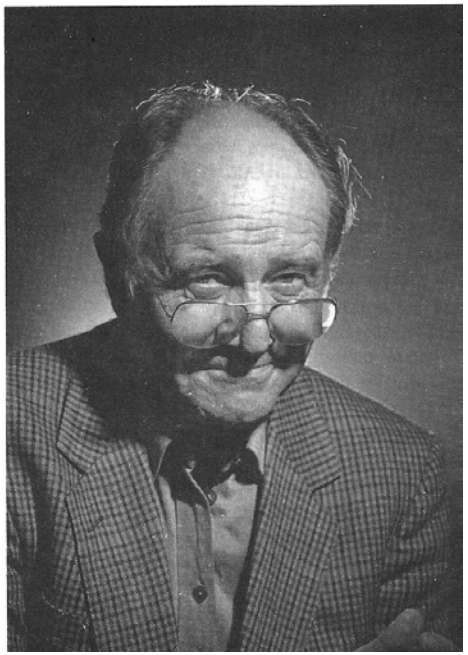




Horst W. J. Rittel (1930 – 1990)

“The reason for this is that there is no professional expertise that is concentrated in the expert´s mind, and that the expertise used or needed, or the knowledge needed, in doing a design problem for others is distributed among many people, in particular among those who are likely to become affected by the solution - by the plan - and therefore one should look for methods that help to activate their expertise. Because this expertise is frequently controversial, and because of what can be called ´the symmetry of ignorance´ - i.e. there is nobody among all these carriers of knowledge who has a guarantee that his knowledge is superior to any other person´s knowledge with regard to the problem at hand - the process should be organized as an argument.”

"Second-generation Design Methods", in: Cross, Nigel (ed.) Developments in Design Methodology, John Wiley, Chichester 1984, 317-327



Planning as civilized conversation in a mode of radical transdisciplinarity

C. West Churchman (1913 – 2004)

Philosophie des Managements
Verlag Paul Haupt, Bern und
Stuttgart 1980, 154
(Challenge to Reason)

"For the applied scientist, the scientific method has to incorporate an overall philosophy, however vague, inadequate, or difficult to justify it might be. This is what the Germans call ´Weltanschauung´ … the main reason why the applied scientist does not simply apply the results of research alone, but also applies his world view.

… His role is tragic in a truly heroic way: he must act, but can never know whether his actions are appropriate. His role is also comic: his conduct has a humorous aspect that everyone can appreciate. As he is human, he is reluctant to become heroic. …
"

„Weltanschauung“ and self-reflection as essential traits, the planner as tragicomic hero

Frederic Vester (1925 – 2003)

Design für eine Umwelt des Überlebens
Umweltgestaltung im Systemzusammenhang - eine Herausforderung an das Design der Welt von morgen
form 60 Zeitschrift für Gestaltung IV 1972 S. 4-9

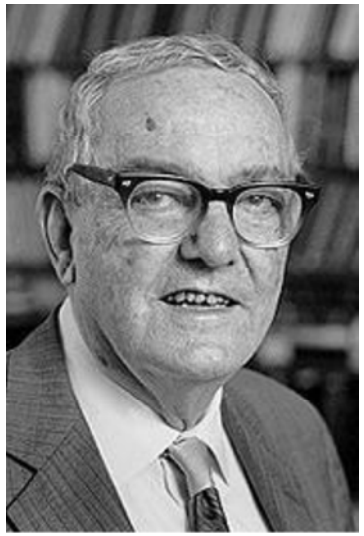
"... designers play a key part in future development, not because they are more intelligent, or better informed, or more creative, but because they have been accorded the role of the overall synthesist. This is a role that does not even require the power to make decisions, for it is often enough to demonstrate the interrelations and their consequences, as well as the possibilities for 'cybernetically meaningful' new products, and to make sure they are talked about. No member of another discipline could assume this role. … It is only the industrial and environmental designer who is confronted horizontally with all fields of knowledge. It is precisely these coordinators that are lacking today. "

Interconnected thinking, cybernetic integration of knowledges by design

Herbert A. Simon (1916 – 2001)

"Closely related to the notion that new goals may emerge from creating designs is the idea that one goal of planning may be the design activity itself. The act of envisioning possibilities and elaborating them is itself a pleasurable and valuable experience. Just as realized plans may be a source of new experience, so new prospects are opened up at each step in the process of design. Designing is a kind of mental window shopping. Purchases do not have to be made to get pleasure from it.

... One can envisage a future, however, in which our main interest in both science and design will lie in what they teach us about the world and not in what they allow us to do to the world. Design like science is a tool for understanding as well as for acting."

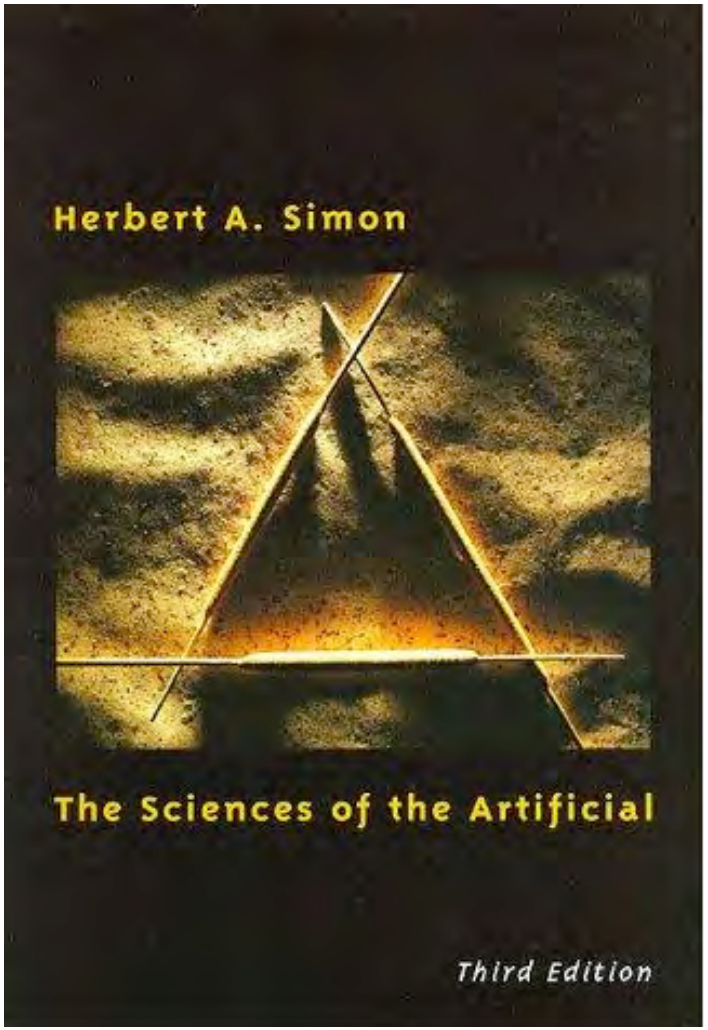


The Sciences of the Artificial (1981: 164, 167)

Design as knowledge production, introducing „Research Through Design“

Simon continued ...
Chapter 6: Social Planning: Designing the Evolving Artifact (139-167)

141:
"The success of planning on such a scale may call for modesty and restraints in setting the design objectives and drastic simplification of the real-world situation in representing it for purposes of the design process."



Problem Design as Design Problem

Simon continued ...

148:
“The heart of the data problem for design is not forecasting but constructing alternative scenarios for the future and analyzing their sensitivity to errors in the theory and data. ...

… we can then turn our attention to constructing paths that lead from the present to that desired future.”

Projection and scenario-building as core competencies

Simon continued ...

153:
“The members of an organization or a society for whom plans are made are not passive instruments, but are themselves designers who are seeking to use the system to further their own goals. ...”

Skepticism regarding the intelligence and social responsibility of the people

Simon continued ...

163:
“The idea of final goals is inconsistent with our limited ability to foretell or determine the future. The result of our actions is to establish initial conditions for the next succeeding stage of action. What we call ´final´ goals are in fact criteria for choosing the initial conditions that we will leave to our successors.”

165:
“Social planning without fixed goals has much in common with the processes of biological evolution. Social planning, no less than evolution, is myopic (short-sighted).”

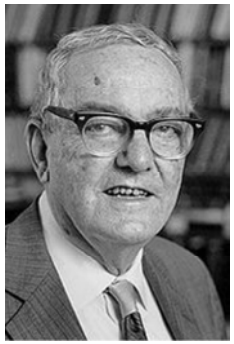
The problems of prediction and control, small tentative steps, no final goals

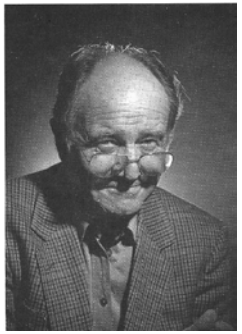
Simon continued ...

167:
“Our grandchildren cannot ask more of us than that we offer to them the same chance for adventure, for the pursuit of new and interesting design, that we have had.”

The prosaic ethical imperative: Design for future flexibility - increase the variety of choices

My 4 „systems heroes“ – incompatible or complementary?





optimistic

empirical - analytical

"Biocybernetics"

missionary

"Sciences of the Artificial“

positive

strained

prescriptive

composed

descriptive

"Philosophy of social system design"

melancholic

"Second generation design methods"

ironic

pessimistic

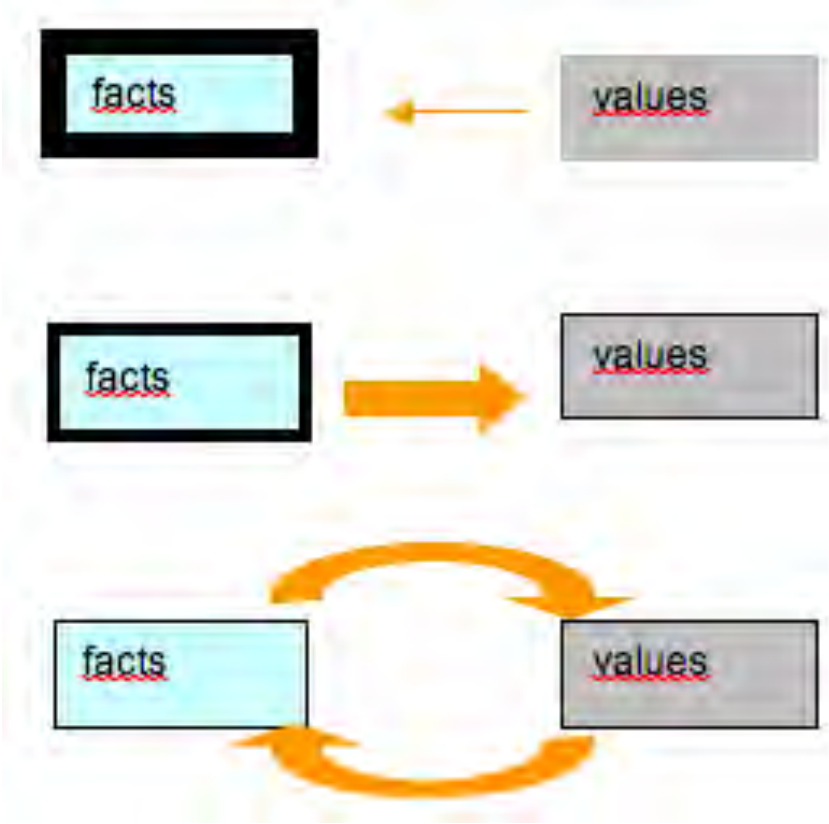
philosophical - reflective

Facts and values in sociological theory (Lykins 2009)

Max Weber

Emile Durkheim

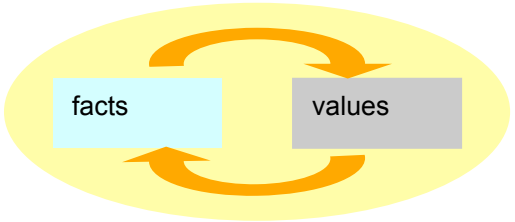
John Dewey



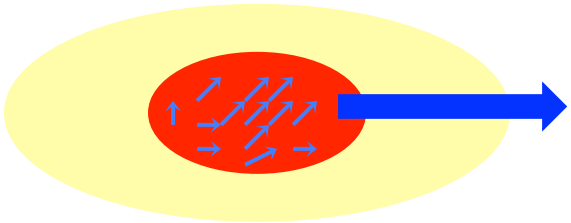
Source: Jonas, adapted from Chad Lykins (2009)

Epistemic democracy establishes the design / inquiring system of „Research Through Design“

Dewey:
„epistemic
democracy“



„Research
Through Design“



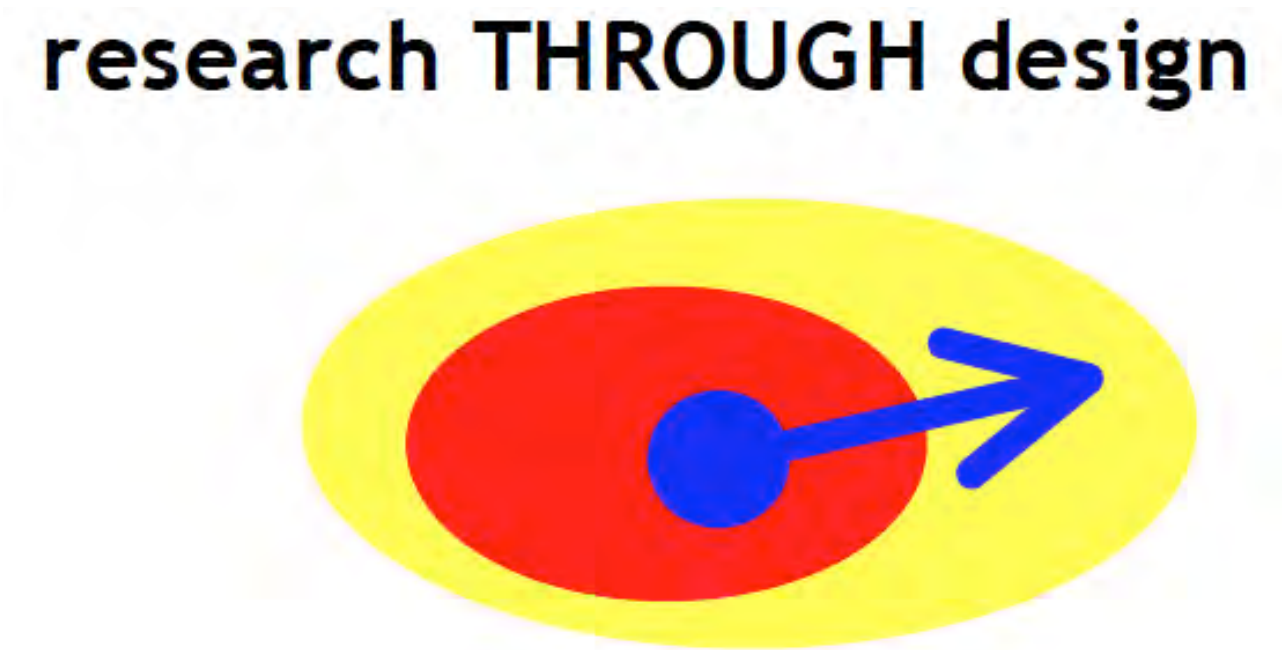
The disembodied, objective Cartesian inquirer is replaced by an embodied, social, intentional inquirer.

Research Through Design

The RTD model comprises three systemic dimensions:

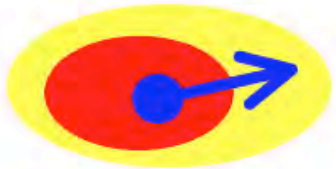
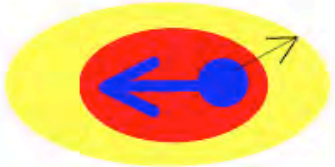
(1) the wider context of a design situation or the relevant environment,
(2) the design / inquiring system, which may be a designer / scientist, a group, a company, a community, etc. and
(3) the driving force, which is determined by the value base, the motivation and the goal of the inquiry.

All of these are not „given“, but have to be negotiated by stakeholders, designers, the wider public...



Research Through Design

The cybernetic concepts of 1st and 2nd order observation are helpful for the distinction between classical detached inquiry and situated inquiry. The diagram, inspired by Ranulph Glanville, attempts to substantiate the concepts of research FOR / ABOUT / THROUGH design as introduced by Archer and Frayling ...

Observer position and perspective relative to the design / inquiring system and the life-world 	**1st order cybernetics** Observer is situated outside the design / inquiring system producing facts	**2nd order cybernetics** Observer is situated inside the design / inquiring system producing (arte)facts based on values
Observer looking outwards	**research FOR design** 	**research THROUGH design** 
Observer looking inwards	**research ABOUT design** 	**research AS design (?)** 

Research Through Design –3-step process models

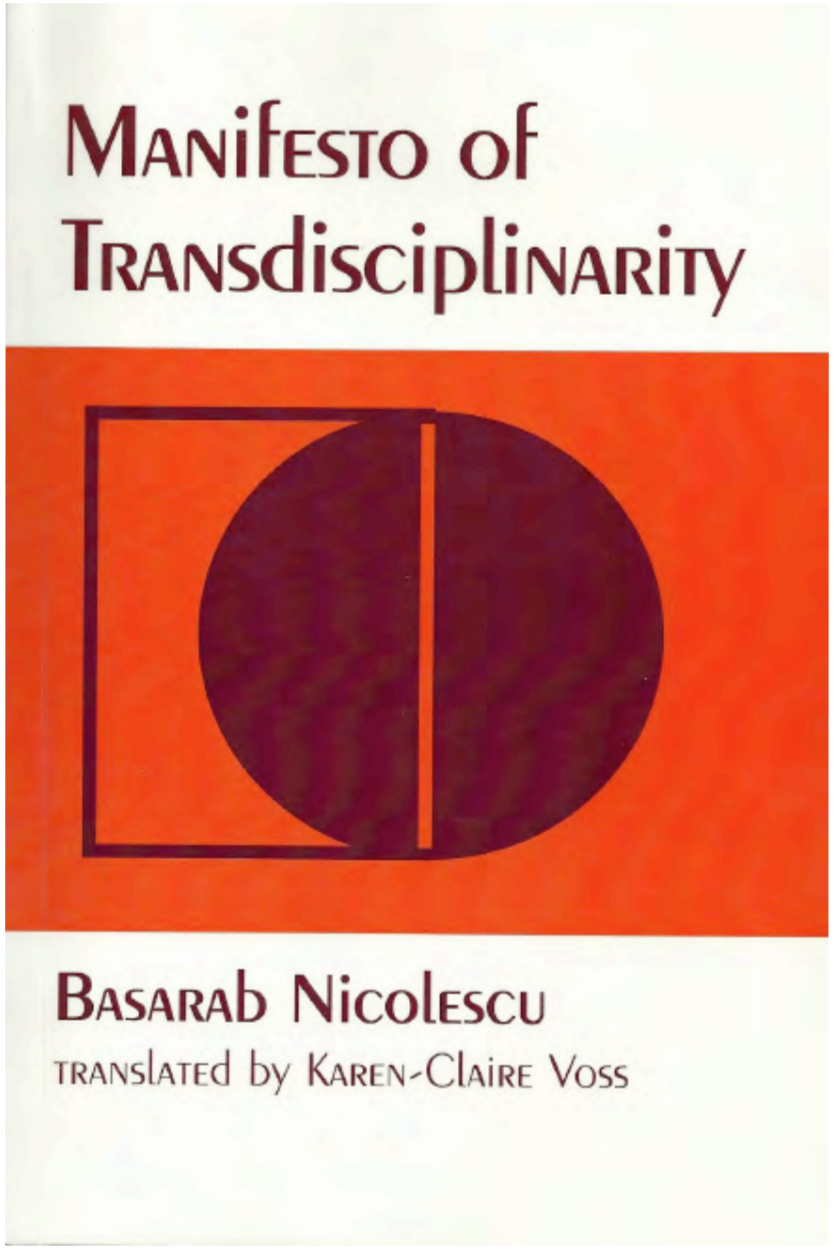
Research Through Design with the phases ANALYSIS – PROJECTION – SYNTHESIS is one possible realization. Note the analogy to Transdisciplinarity Studies.

Authors	Phases /components / domains of knowledge production		
	Induction	**Abduction**	Deduction
Jones (1970	Divergence	Transformation	Convergence
Archer (1981)	Science	Design	Arts
Simon / Weick (1969)	Intelligence	Design	Choice
Nelson & Stolterman (2003)	The True	The Ideal	The Real
Jonas (2007)	**ANALYSIS**	**PROJECTION**	**SYNTHESIS**
Fallman (2008)	Design Studies	Design Exploration	Design Practice
Brown (2009)	Inspiration	Ideation	Implementation
Transdisciplinarity Studies	**System knowledge**	**Target Knowledge**	**Transformation Knowledge**

Research Through Design as the model of Transdisciplinary Science

Design might be the new model for Transdisciplinary Science, as has been suggested by Glanville, who describes Science as a specific sub-category of Design.

The concept of Mode-2 science with its emphasis on socially robust instead of true knowledge might be a strong theoretical support.



Research Through Design integrates Design and Science by means of abductive PROJECTION

	ANALYSIS Induction	PROJECTION Abduction	SYNTHESIS Deduction
„Normal Design“			Transformation knowledge
Design Research / Mode-2 Science / Transdisciplinarity	System knowledge	Target knowledge	
Scientific Research / Mode-1 Science			

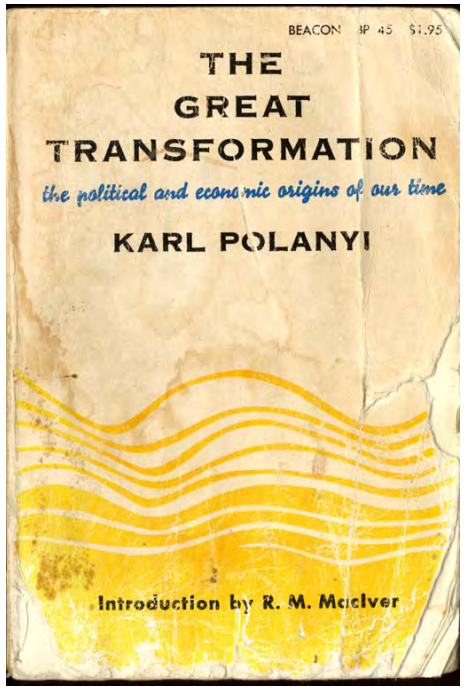
Source: Jonas

Back to „Design for a billion“

How to advance the new „Great Transformation“?

In order to achieve this new “Great Transformation”, Polanyi´s first GT will have to be reversed in major parts.

„Social contract for a great transformation“

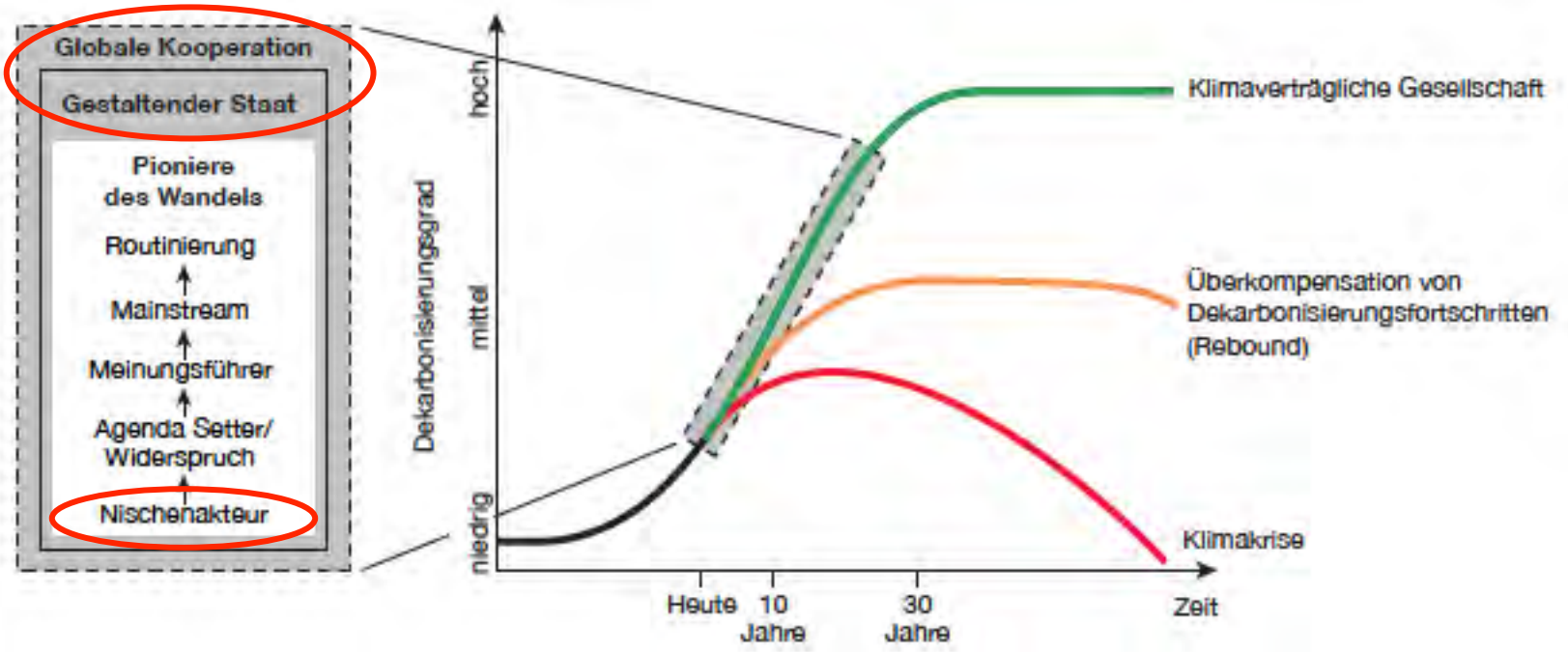


The „re-embedding“ of the markets into society.

„The design of the unplannable“

Global cooperation

The proactive state



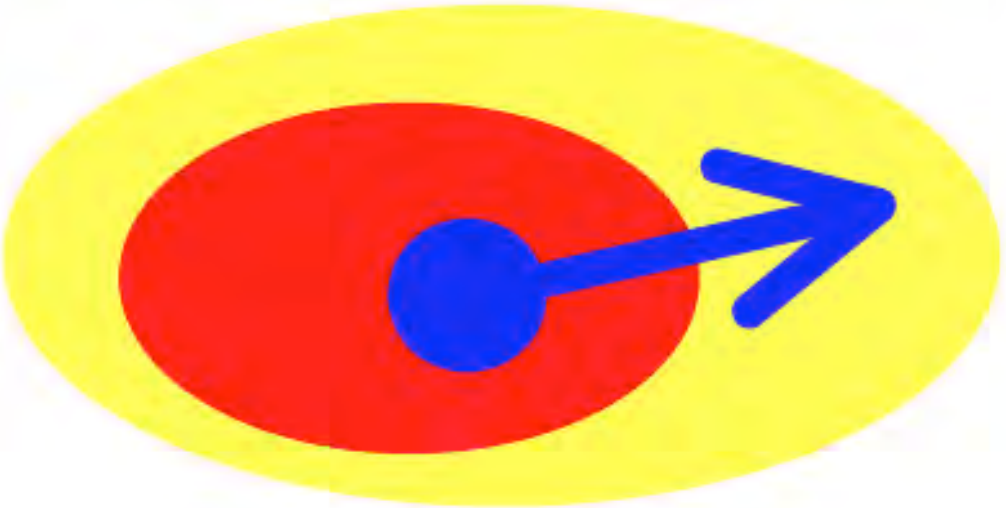
Niche actors
are the essential initiators

Source: WBGU (2011)

Conclusions: Bottom- up approaches ...

Niche actors are the essential initiators.
They act in the mode of „epistemic democracy“ following the process model of ...

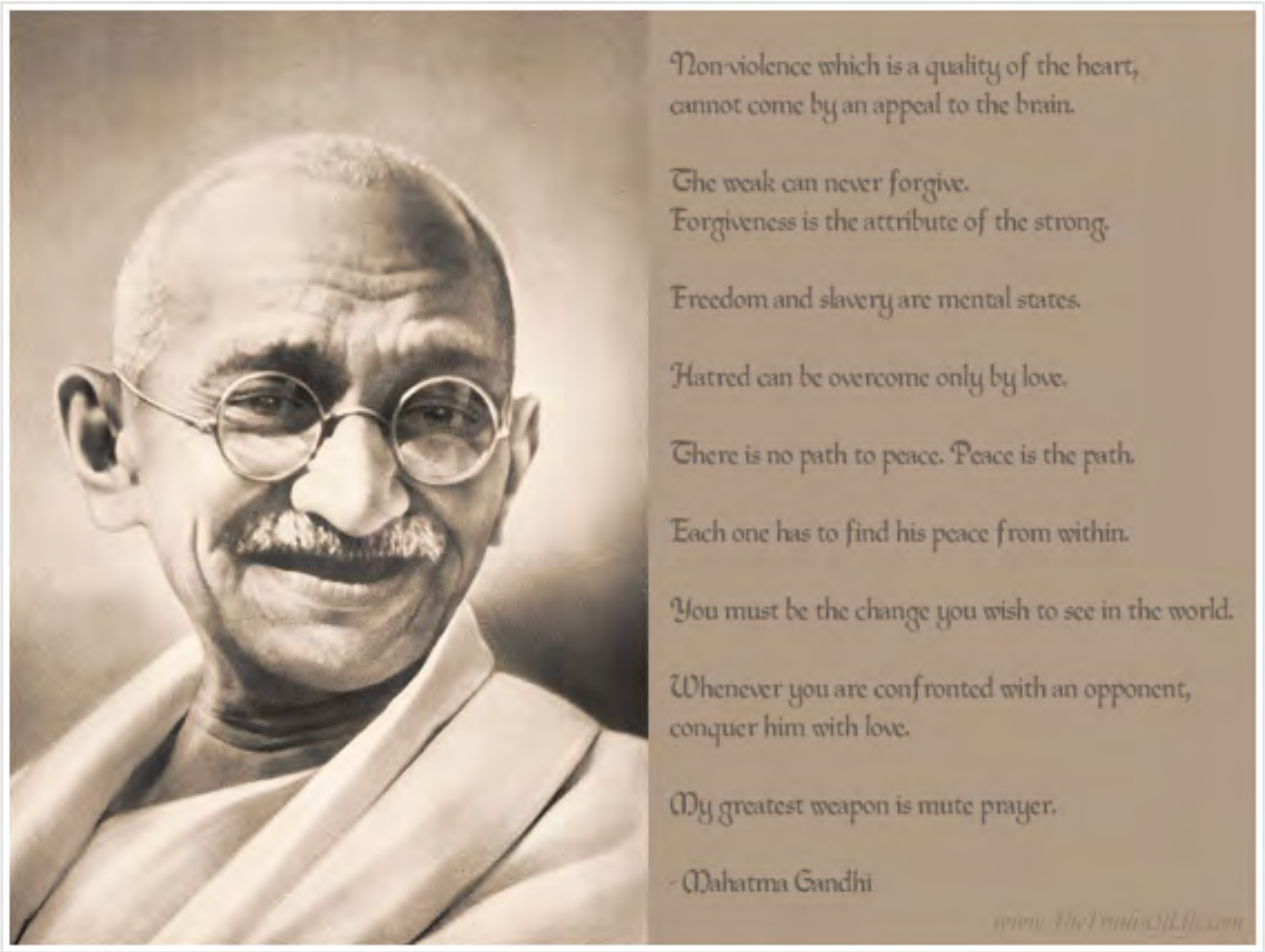
research THROUGH design



Conclusion: Bottom-up approaches ...

… for breaking seemingly fixed social / economic / technological trajectories, referring to various experience:

- Gandhian economics
- Jugaad innovation
- Transition towns
- ...



Source: Truths of Life.

My conclusion

Instead of

„Design for a billion“

→ „Design through glocal communities“

No final solutions, but small, reversible, and scalable designerly projects, real-life laboratories ...

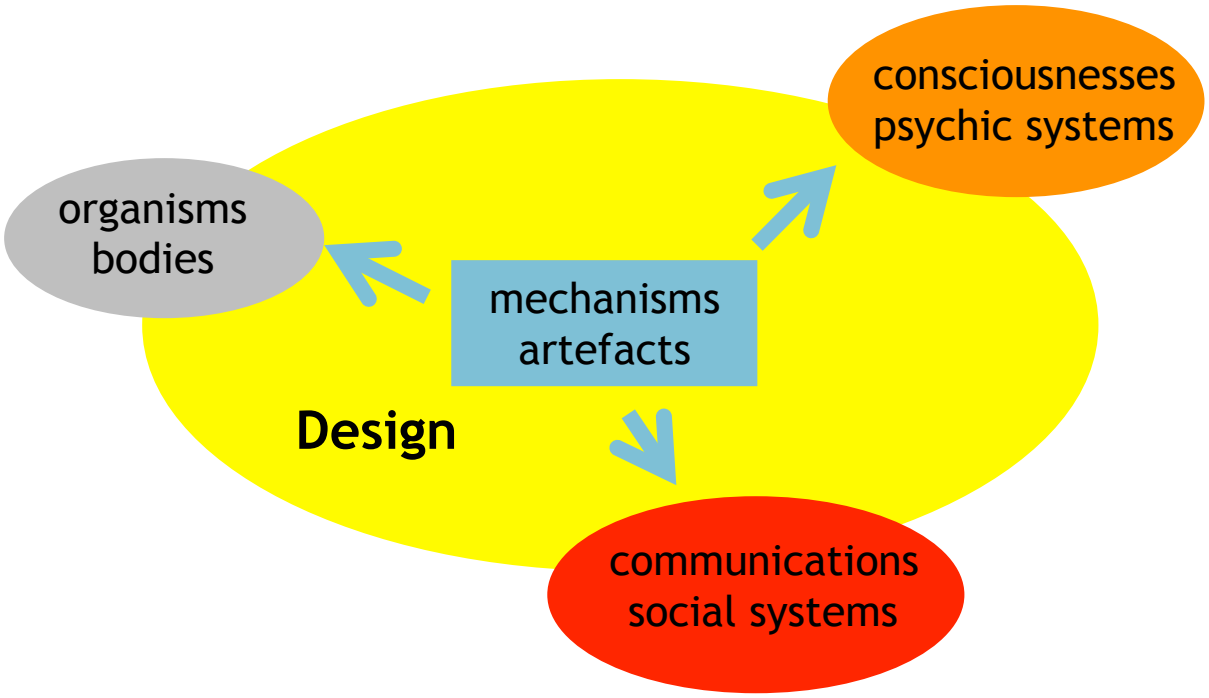
... small steps in order to increase the variety of choices.

The end

Control: Knowledge gaps between systems (was slide 24)

Design tries to bridge these gaps by means of artefacts ...

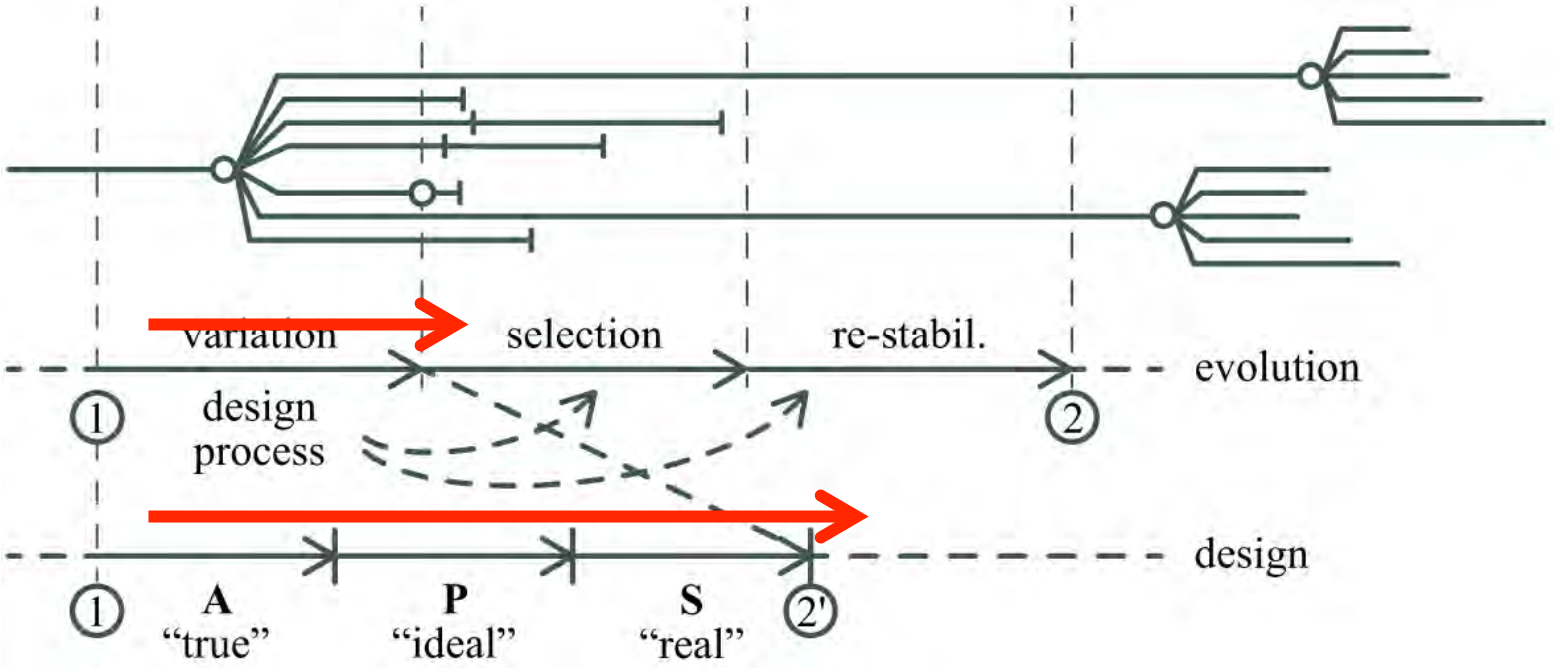
... Design as the expert discipline for dealing with not-knowing



Source: Dirk Baecker: "Wie steht es mit dem Willen Allahs?", Zeitschrift für Rechtssoziologie 21 (2000), Heft 1, S. 145-176 (163)

Prediction: Evolutionary patterns in natural and artificial processes (was slide 25)

Design is creating **variation** in sociocultural evolution ...



The conscious **Design process** (A - P - S) is just the **variation** part of the evolutionary **trial&error process.**

Critical reflection of (our) positions within systemic design ...

Hard Systems Thinking (HST)	Soft Systems Thinking (SST)	Critical Systems Thinking (CST)
systematic	systemic	critical to ideas of reason
mechanistic paradigm	evolutionary paradigm	normative paradigm
instrumental	strategic	communicative
efficiency emphasised	effectiveness emphasised	ethics emphasised
Management of scarceness	management of complexity	management of conflict

Flavors / paradigms of systems thinking (Hutchinson 1997, in Ulrich 1988)