A social systems perspective on indicators

PAUL-MARIE BOULANGER

Workshop: The impacts and Methodology of indicators and scoreboards

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JOINT RESEARCH CENTRE ISPRA
Niklas Luhmann
(1927–1998)

A sociologist who persistently studied the various domains of society and built what is called as a grand theory of society. He tackled fundamental questions regarding how societies are possible.
The theory of observation
Observing systems (Heinz Von Foerster)

- Observing systems that observe.
- First order observation: “Reality” or “factual” level. Exists/Doesn't exist. Essentialism.
- Second order observation: observing observers’ observations. Constructivism.
Distinction - Indication

The act of indicating any being, object, thing, or unity involves making an act of distinction, which distinguishes what has been indicated as separate from its background. Each time we refer to anything explicitly or implicitly, we are specifying a criterion of distinction, which indicates what we are talking about and specifies its properties as being, unity, or object. This is a commonplace situation and not unique: we are necessarily and perennially immersed in it.

Unities
A unity (entity, object) is brought forth by an act of distinction. Conversely, each time we refer to a unity in our descriptions, we are implying the operation of distinction that defines it and makes it possible.
The GDP as a form

Monetized

Non-monetized

Distinction

THE UN-MARQUED IS THE UN-MARKET(ED)
Beyond GDP?

indication

Monetized
AND
Non-monetized

What remains?

Distinction

Non-monetized

Improving GDP? (ISEW,...)
About GDP...the importance of the un-marked

**IS NOT EQUIVALENT TO**
Indicators and organizations

WHAT ROLE FOR INDICATORS?
Organizations as autopoeitic systems

- Organizations are social systems whose communications consist of decisions;
- Every decision paves the way for subsequent decisions. Every decision is the product of earlier decision and gives rise to ensuing decisions. It constitutes a *decision premise* for subsequent decisions.
- A decision is only completed when subsequent decision connect to it.
- Through the process of connected decisions, uncertainty is absorbed. «
Decision as form.

Considered alternatives

Not considered alternatives

Chosen alternative

Marked and un-marked

Decision as form. A two stage operation.
How can an organization deparadoxify its decisions?

- Decision technologies as decision premises => strict couplings between information and decision.
- The paradox is displaced in the technology and uncertainty is absorbed.
- Examples of technology:
  - guidelines, standards, labels, accreditations => indicators
  - consultants, experts, SCIENCE...
Deciding: a paradoxical operation

- Either the considered alternatives are really alternatives and then there is no reason to privilege one of them rather than any other;
- Or they are not real alternatives and the one selected is the only possible $\Rightarrow$ No choice $\Rightarrow$ no decision.
- « Only those questions that are in principle undecidable, we can decide. » (Von Foerster)
Indicators as decision premise

- Deciding with indicators = steering: reducing the difference between actual and « desired » value of the indicator.
- In an organizational context, the choice of an indicator constitutes a decision premise for further decision, provided that the decision to choose the indicator is complete. => The organisation USES the indicator.
- Choosing an indicator is a decision that decides on the decision premises for other decisions. It is deciding about decisions.
- The uncertainty of the decision is absorbed by the preceding decision about the indicator.
William James (father of American psychology and brother of Henry James) is supposed to have had a conversation with an elderly lady who told him the Earth rested on the back of a huge turtle.

“But, my dear lady”, James asked, “what holds up the turtle?”

“Ah”, she said, “that’s easy. He is standing on the back of another turtle.”

“But would you be so good as to tell me what holds up the second turtle?”

“It’s no use, Professor”, said the lady, avoiding the logical trap. “It’s turtles, turtles, turtles, all the way down.” — *Apocryphal*
The case of indicators of wellbeing

- Decisions of the welfare state? Needs indicators
- Which one(s)? Ask scientists
  - If public opinion agree: GDP and siblings => succes of the deparadoxification process.
  - If public opinion disagree: GDP and beyond, several alternatives indicators therefore:
    - No consensus amongst scientist: look for deparadoxisation
    - => Participation of citizens as a deparadoxisation technique => Back to politics (Merry-Go Round).
Steering with indicators? The manufacturing of disappointment

- **Steering** = reduction of a difference between desired and actual indicators’ value.
- **Two cases:**
  - No reduction or not enough => disappointment
  - The target has been reached => it was too modest => fix a new more ambitious target => too ambitious to reachable => disappointment again.
Functional Systems observe each other
Plenty of indices (Bandura 2008)
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1 Survey of Composite Indices Measuring Country Performance: 2006 Update
Structural differentiation of contemporary (world) society

- WORLD SOCIETY
  - ECONOMY
  - LAW
  - POLITICS
    - STATE
    - STATE
    - STATE
  - SCIENCE

Functional differentiation
Segmentary differentiation
Structural differentiation of societies

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<th>Similar</th>
<th>Equal</th>
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Indicators and globalization. The self-description of world society

The multiplication of indicators is correlative to globalization as the self-description of world society.

Difference between first order and second order observation of globalization.

1st order: what is globalization, when did it really start, etc.

2nd order observation: we observe that observers observe nowadays with the distinction Global/Local.

Global Indicators give information on both the converging AND the diverging of the national states providing observations on both redundancy and variability (stability and evolutionary potential).
World Society describes itself as global

- **G-Index (Globalization Index)**
- **G-Index (Globalization Index)-2**
- **Foreign Policy and AT Kearney**
- **World Markets Research Centre (WMRC)**

- **Global Civil Society Index (GCSI)**
- **Global Climate Risk Index**
- **The Centre for the Study of Global Governance – London School of Economics**
- **Germanwatch**

- **Global Competitiveness Index**
- **Global Entrepreneurship Monitor**
- **World Economic Forum (WEF)**
- **Babson College and London Business School**

- **Global Hunger Index (GHI)**
- **Global Integrity Index**
- **Global Investment Prospects Assessment (GIPA)**
- **International Food Policy Research Institute (IFPRI)**
- **Center for Public Integrity**
- **UNCTAD**

- **Global Natural Disasters Risk Hotspots**
- **Global Peace Index (GPI)**
- **Global Production Scoreboard**
- **Global Quality of Living**
- **Global Retail Development Index (GRDI)**
- **Center for Hazards and Risk Research (Columbia University) and Hazard Management Unit (World Bank)**
- **the Economist Intelligence Unit’s Country Analysis**
- **Global-production.com**
- **Mercer Human Resource Consulting**
- **AT Kearney**

- **Global Risk Service**
- **Global Terrorism Index**
- **Global Insight - WMRC**
- **World Markets Research Centre (WMRC)**
The World Economical System observes the Political (and Law) Systems

- Sovereign Credit Rating [Capital Intelligence Economy]
- Sovereign Credit Rating [FitchIBCA Duff & Phelps Economy] (1924)
- Sovereign Credit Rating [Moody’s Economy] (1914)
- Country Performance Assessment (CPA) [Asian Development Bank]
- World Governance Assessment [Overseas Development Institute (ODI)]
- Governance Indicators [World Bank Institute]
- Foreign Direct Investment Confidence Index [AT Kearney - Global Business Policy Council]
- Index of State Weakness in the Developing World [Brookings Institution]
- Country Risk Rating [World Markets Research Centre (WMRC)]
The Global-Local distinction

The world political society's point of view

GLOBAL

The national state's point of view

LOCAL

GLOBAL (The world)

For the world, the marked side is the global.

For the self-observation of the national state as part of the world political system, the marked side is the local (itself). BUT with respect to its own sub-systems, the National State sees itself as global and themselves as local.

=> The global/local distinction is a recursive one with inversions of the marked/unmarked sides at each change of level.

The local is the non-commensurate, what resists commensuration. It is always relative to the perspective.
The world society observes itself

REDUNDANCY AND VARIETY IN THE WORLD POLITICAL SYSTEM.
The importance of commensurability
## Functionals Systems

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Functional systems uses of indicators

• **USE of self-referential indicators:**
  - **self-description** the system observes itself and reduce its own complexity with indicators.
    - Economy: prices indices, Dow-Jones....
    - Science: h-index, G-index, impact factors,...
    - Politics: opinion polls
    - Media: audience

• **USE of other-referential indicators:** Reduction of the complexity of its environment for the system through indicators (Ex: GDP for the political system)

• **INFLUENCE:** Systems observe how they are observed by others systems (Ex: PISA for the educational system).
The Mass-Media

« Whatever we know about our society, or indeed about the world in which we live, we know through the mass media ».

The functions of the mass media:
- creating a common knowledge, what can be taken as known be everyone (but not a consensus) and therefore constitutes the background of all new communication;
- Providing for the auto-description of society.

Mass Media like indicators: what is nice for the mass media is that quantities can vary (even if substantially insignificantly) => newness at least cost. Still better if it combines with dissensus (climate change), disaster, etc. => dramatisation
Other-reference indicators as structures of expectations and structural couplings

- Indicators when recurrent («Named» indicators) imply ongoing observations with the same distinction.
- This supposes that the system has established stable expectations with respect to its environment.
- It is natural to suppose that these expectations focus on the structural couplings of the system with its (social) environment which means other functional systems.
Structural Couplings

Structural Coupling between Functional Systems

Structures for Structural Coupling

- taxes and charges between politics and the economy
- constitutional authority between politics and law
- property and contract between economy and law
- references and certificates between economy and education
- universities between science and education
- expert advice between science and politics
- advertising between economy and mass media
- references between politics and mass media
- art trade (galleries) between art and economy

by Niklas Luhmann

Source: Takashi Iba: « Sociological Perspective of the creative society ». COINs16 - Collaborative Innovation Networks conference, Rome, Italy
Problems of structural couplings between science and politics

- **Scientification of politics**: The inherently limitless (over-)production of knowledge creates for politics technological potentials and/or political expectations, threats to legitimacy and, thus, imperatives to act (irritation of the political system by science). The media play an important role here as being coupled to both systems.

- **Politization of science**: The demand for knowledge to solve scientific/technical (instrumental) and/or obtain support for preconceived decisions (legitimating) ultimately leads to the inflationary use of expertise and, as it pushes to the realm of yet uncertain knowledge, to controversy (irritation of science by politics).

- The (over-)supply of knowledge and its politicisation leads to de-legitimation of politics and loss of authority on the part of science. Thus, it creates imperatives of selecting among variants of expertise. This selection *must operate internally to science...*  

- HOWEVER...in case of impossibility to resolve it internally, => Scientists turn to politics: **PARTICIPATION OF CITIZENS** (micro-publics) = scientification of politics again.
Structural couplings of science with politics, economy, education, the media...

What is science's crisis really about?
Andrea Saltelli, Silvio Funtowicz
https://doi.org/10.1016/j.futures.2016.11.012
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Highlights
- There is a crisis of science’s governance forcing to reconsider evidence based policy as it is being practiced at present.
- The closure of any issue in a pre-established frame used for quantification may correspond to normative and political stances.
- The use of mathematical modelling and indicators conveys a spurious impression of precision, prediction and control.
- Better theoretical understanding is necessary.
- We are not in luck-

Do PISA data justify PISA-based education policy?

Luisa Araujo
Department of Human Capital and Employment, European Commission Joint Research Centre Ispra Sector, Ispra, Italy
Andrea Saltelli
University of Bergen, Bergen, Norway and Universitat Autonoma de Barcelona, Barcelona, Spain, and
Sylke Schnepf
Competence Centre on Microeconomic Evaluation, European Commission Joint Research Centre Ispra Sector, Ispra, Italy
Structural couplings between science and politics or hybridization?

« It has become fashionable to speak of a ‘blurring of the boundaries’ or of ‘hybridisation’. However, it is misleading as it incorrectly suggests that the functional differentiation between science and politics disappears. The novel aspect of the use of scientific expertise is the close coupling of science and politics. This coupling is dynamic in the sense that it is driven from both sides to become ever closer. » (Weingart 1999: 157).

BUT what about: Post-Normal science (Funtowicz & Ravetz), Mode 2 (Gibbons, Limoges, Nowotny & al.), Triple-Helix (Leydesdorf) ???
Summary: the functions of indicators depends on social structures

- For all: reduction of complexity (self and other-reference)
- For the (World) political society as segmentarily differentiated:
  - Construction of reality, self-description as global
  - Providing for both redundancy (same indicators for all States) and variety (differing patterns of values)
- For society as functionally differentiated:
  - Observing each other (1st order) and observing being observed (2nd order)
  - Focus on structural couplings (?)
- For organizations:
  - Deparadoxisation of decisions
  - Uncertainty absorption