Measuring the world

UNGGIM:EUROPE

BRUSSELS, 8. JUNE 2017

WALTER J. RADERMACHER

https://www.bundesbank.de/Redaktion/DE/Bilderstrecken/dm_banknoten_der_serie_bbk_3.html?notFirst=true&docId=20430

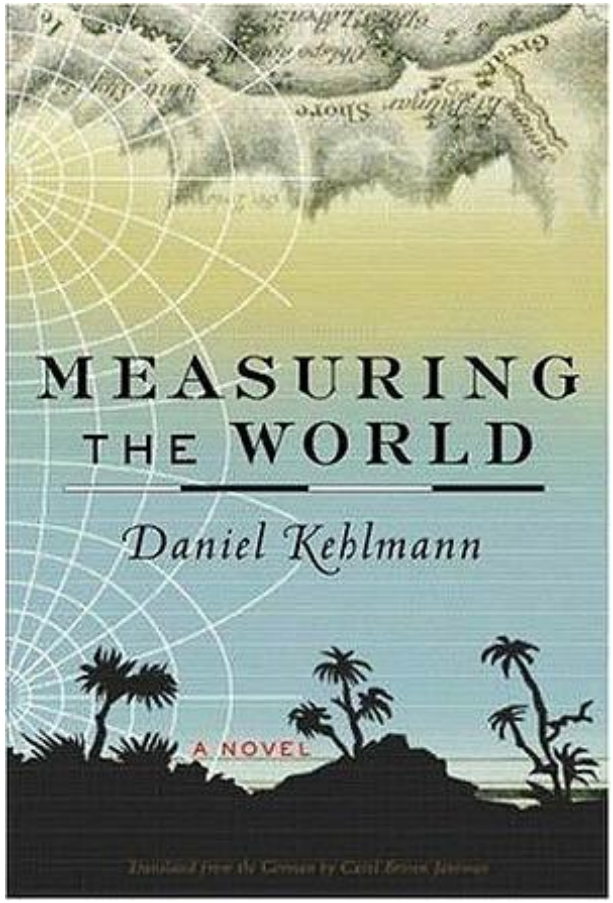
Basics

THE DNA OF PUBLIC GEOGRAPHICAL AND STATISTICAL INFORMATION SYSTEMS

Complementary approaches

Carl Friedrich Gauß

Alexander von Humboldt

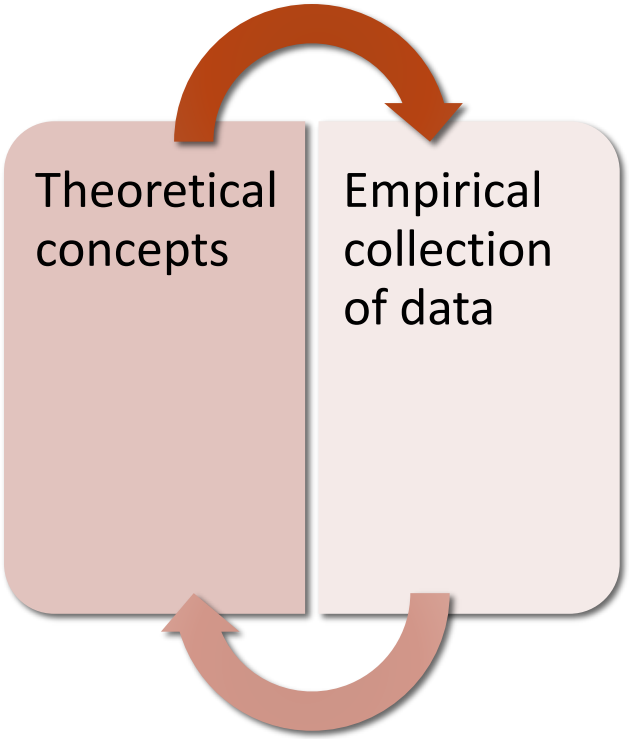



120°W
90°W
60°W
30°W
0°
30°N
0°
Equator
Bordeaux
Aug. 1st 1804
La Coruña
June 5th 1799
July 1804
Philadelphia May-July 1804
Washington
United States
VI
May 1804
Atlantic Ocean
New-Spain
Gulf of Mexico
Canary Islands
Santa Cruz June 1799
I
Havana
Trinidad Mar. 1801
Mexico-City
Mar. 1804
Veracruz
Acapulco
Mar. 22nd 1803
V
III
Dec. 1800
June-July 1799
Caracas
Cumaná
July 16th 1799
Cartagena
Angostura June-July 1800
Feb.-Mar. 1803
Bogotá July-Sep. 1801
New-Granada
II
S. Carlos May 1800
Quito Jan.-June 1802
Chimborazo
Guayaquil
Jan. 1803
IV
Pacific Ocean
Peru
Lima Oct.-Dec. 1802
Azimuthal equidistant projection
Alexander von Humboldt's American expedition 1799-1804
Expedition way
City / Stopping place
Spanish Viceroys and United States
I With the spanish corvette "Pizarro" from La Coruña over the Canary Islands to Cumaná
II 75-days journey with Bonpland, on the Orinoco and the Rio Negro
III With the ship from Nueva Barcelona to Havanna, 3-month sojourn on Cuba, over Trinidad to Cartagena
IV Through today's Colombia, Ecuador and Peru to Lima
V From Guayaquil to Acapulco, longer sojourn in Mexico-City and back to Havanna over Veracruz
VI With the cargo ship "Concepción" to Philadelphia, Washington, with the french Frigate "La Favorite" to Bordeaux

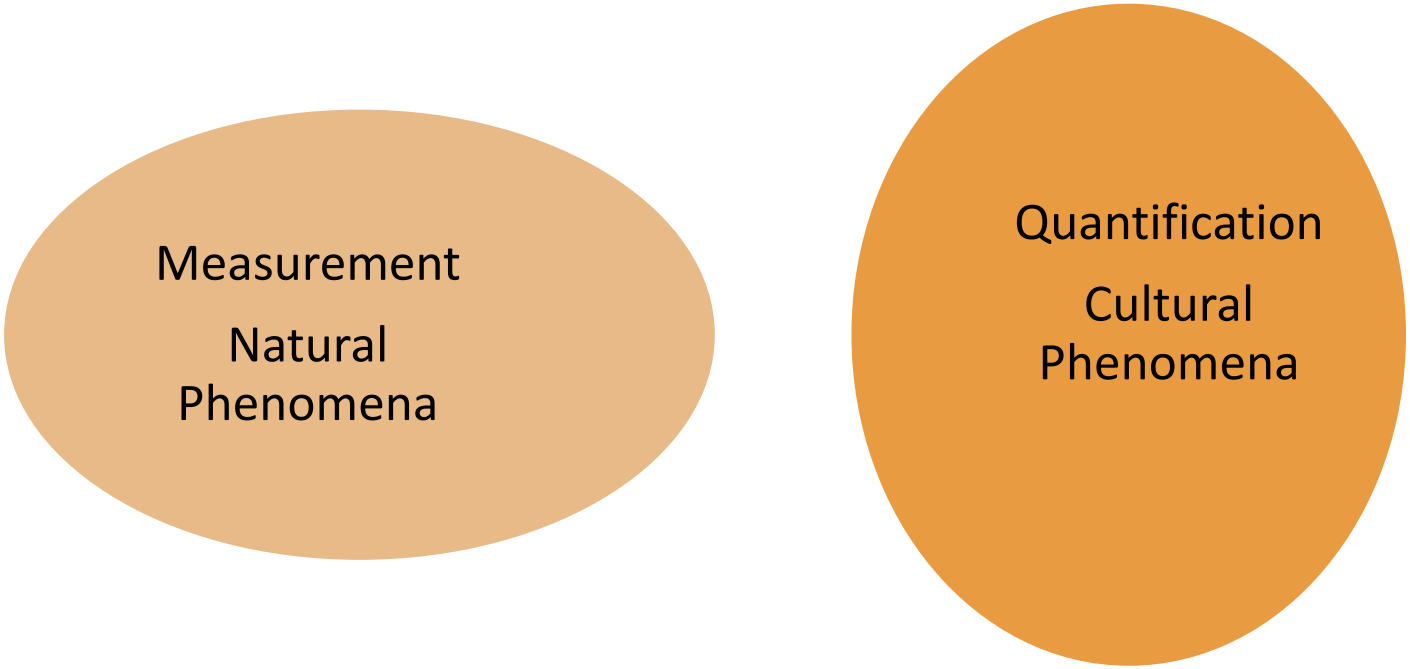
Complementary approaches

Carl Friedrich Gauß

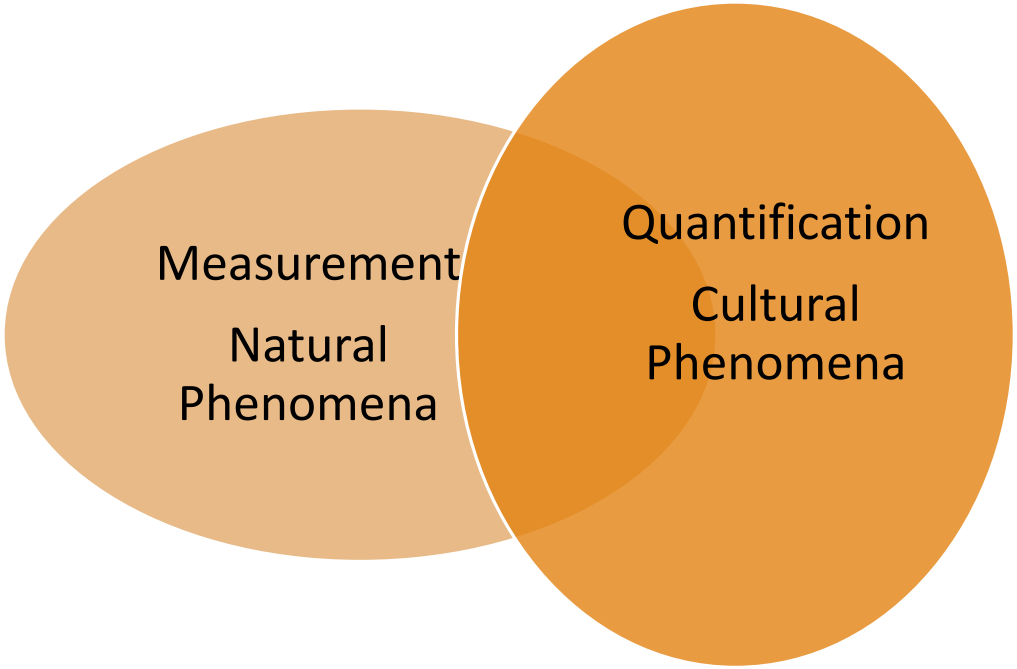
Alexander von Humboldt



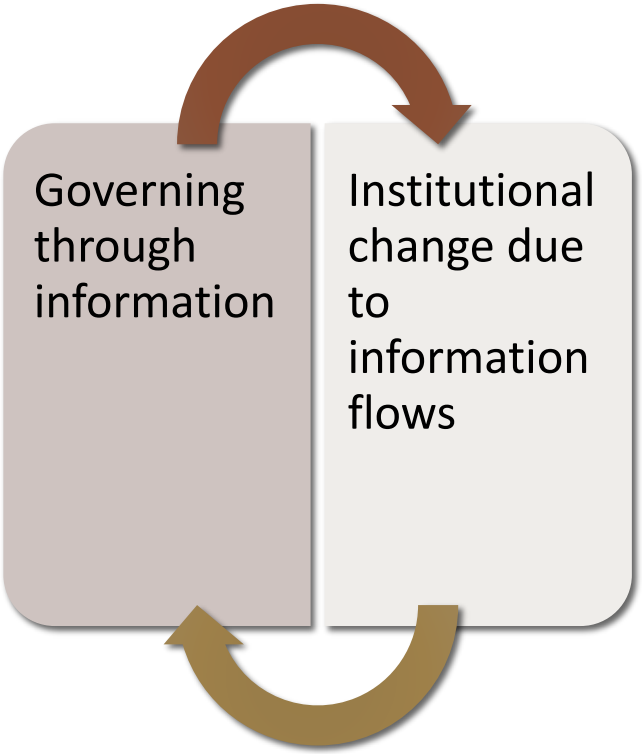
Different objects



Different objects

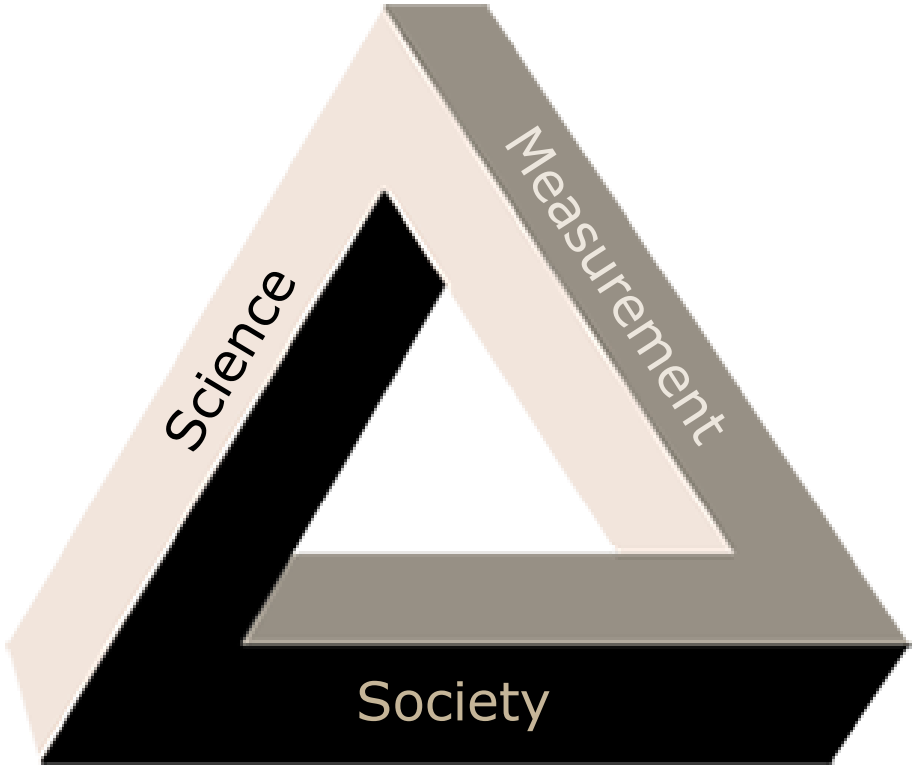


Political Rationality



Source: Soma, K., MacDonald, B.H., Termeer, C.J., Opdam, P.: Introduction article: informational governance and environmental sustainability. Current Opinion in Environmental Sustainability 2016(18), 132 (2016)

Driving forces of change



Learning from history

PREPARATION FOR THE FUTURE

1987

UNECE Seminar on New Techniques to Collect and Process Land-Use Data, Gävle Sweden

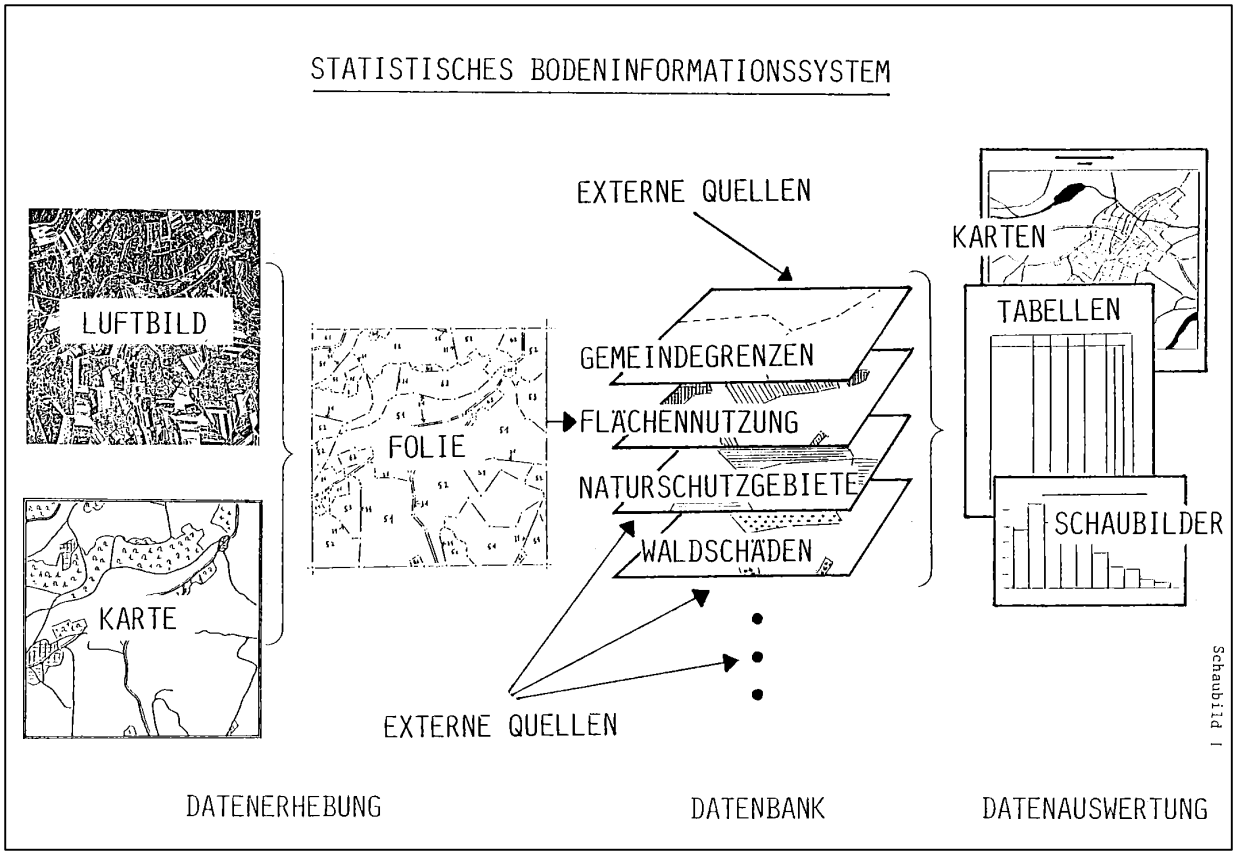
1987

Background document UNECE

"In recent years, new techniques for data collection (remote sensing) and data handling (computers) have been developed and have become universally applicable at relatively low cost. This trend, together with the shifting emphasis in urban and regional planning with its related data requirements, has given new momentum to the issue of data handling which warrants an international exchange of recent experience. Data handling may pose different problems in different countries. However, regardless of the state of development of a country, all countries recognize the need for information and for data handling and analysis in the planning process."

Source: Radermacher, W.: Statistisches Bodeninformationssystem Zielsetzung u. Konzept ; Pilotstudie. Schriftenreihe ausgewählte Arbeitsunterlagen zur Bundesstatistik, vol. 2. Statistisches Bundesamt, Deutschland, Wiesbaden (1987)

1987
GIS based land use statistics



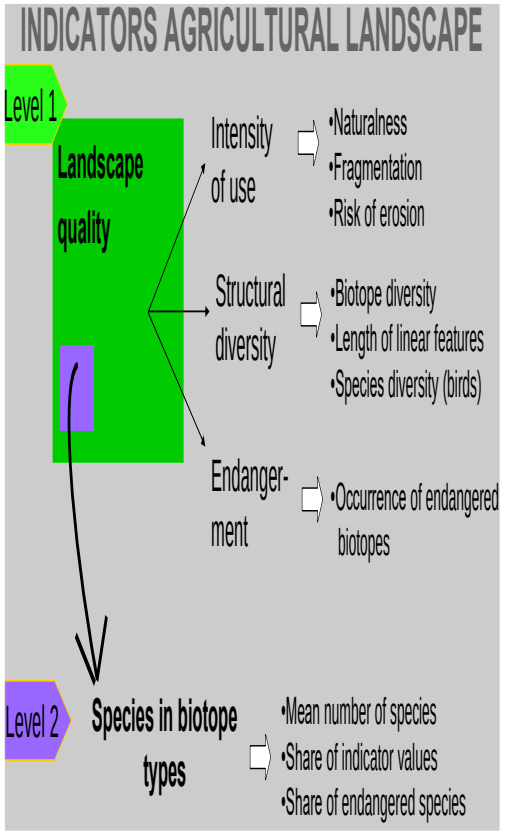
1997 Corine Land Cover + Ecological Area Sampling Germany

Example for inventory stocks from Germany: Ecological Area Sampling

- Statistical approach: Stratified random sample (Based on CLC; Land-classes+landuse patterns)
- Representative for the „normal“ landscape
- Efficiency; Few sites for the whole Country
- Two levels: Landscape, Species
- Uniform methods, reliable results: area balances, indicators (physical data)
- Periodical performance in permanent plots

Current situation of Ecological Area Sampling

- Approval, but little funding
- Representative set of 1000 sample sites for Germany defined (national level)
- Representative set of additional sites for German „Länder“ defined (regional level)
- 1rst step of monitoring (birds) is implemented (research project, supported by volunteers)
- Basis for national sustainability strategy (Indicator no. 5: Species diversity and landscape quality)
- Funding as main problem! Implementation step by step ?



2007 LUCAS + INSPIRE

DIRECTIVE 2007/2/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 14 March 2007

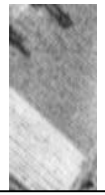
establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)

EUROPEAN COMMISSION
EUROSTAT

Directorate E: Agriculture and environment statistics; Statistical Cooperation
Unit E-1: Agriculture statistics - methodology

eurostat

LUCAS 2006
(Land Use / Cover Area Frame Survey)

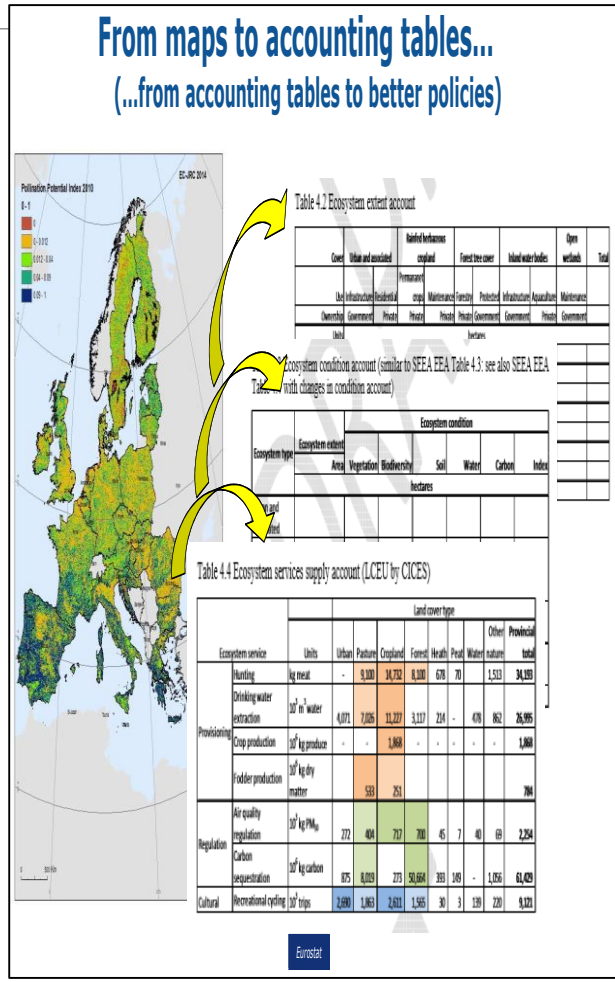


Technical reference document C-1:

Instructions for surveyors

2017 UNGGIM + INCA

EU ecosystem accounting
The 'INCA KIP':
Knowledge Innovation Project for an Integrated system for Natural Capital and ecosystem services Accounting



Lessons learnt

Cooperation amongst technical services and experts

- possible and fruitful
- Differences in cultures and governance structures exist, however with little influence on organisation of common working platforms

Still problematic: Finances

- (Costly) Investments in common infrastructures necessary
- Value added and benefits not visible and compelling in competition with short time alternatives for spending of public money

Quality

- Broad definition addressing the ‘What’, the ‘How’ and the ‘Who’
- ‘Fitness for purposes’ assessment of outputs
- Standardisation as a means to ensure comparability

Pricing

- Open source and accessibility (public infrastructure model) vs. pricing of products/services

International + EU

Authority, Branding, Ethics

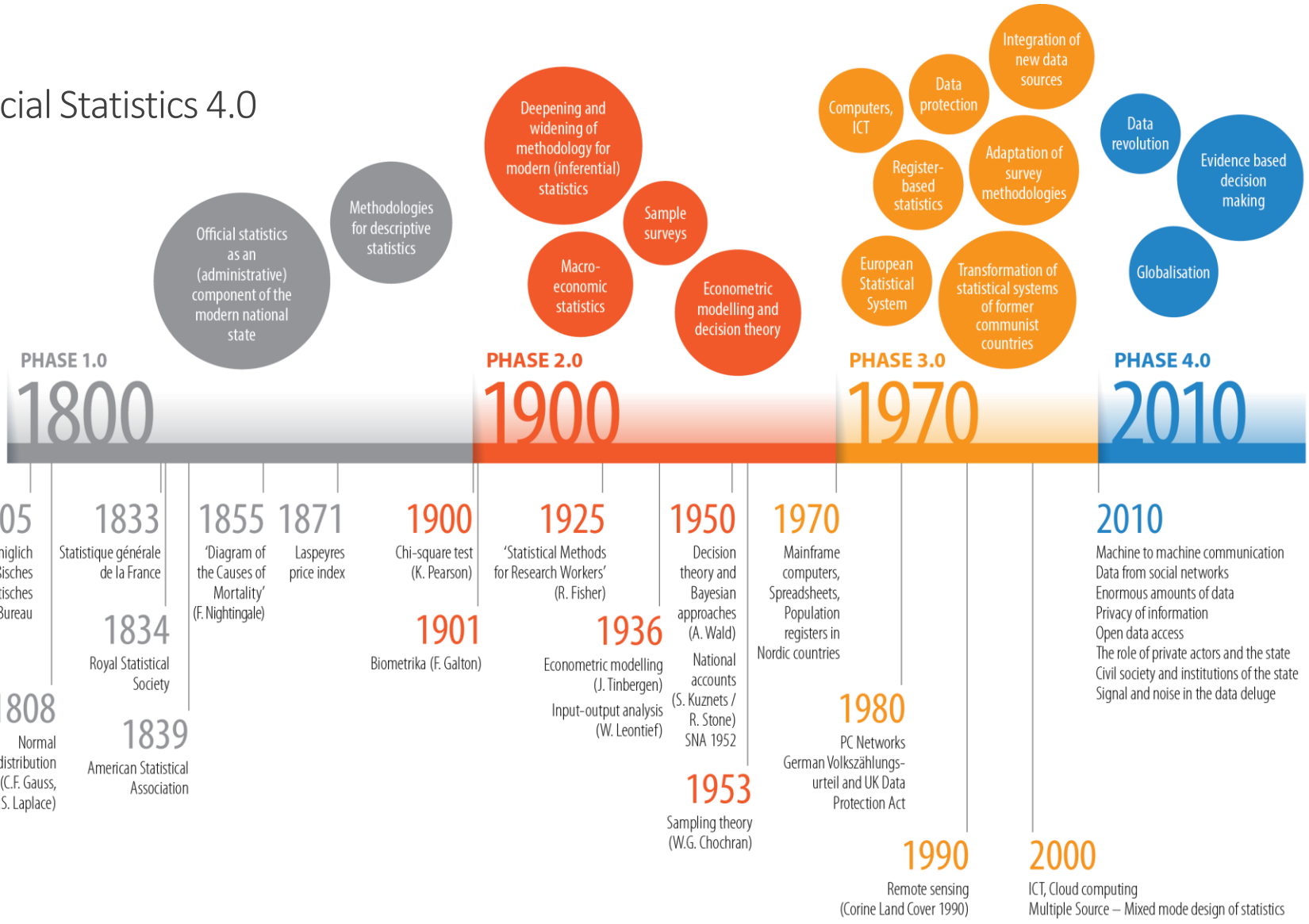
The world we live in

DATA REVOLUTION: "WHAT STEAM WAS TO THE 19TH CENTURY, AND OIL HAS BEEN TO THE 20TH, DATA IS TO THE 21TH." (HTTP://WWW.RSS.ORG.UK/IMAGES/PDF/INFLUENCING-CHANGE/RSS-DATA-MANIFESTO-2014.PDF)

EVIDENCE BASED DECISION MAKING: "IF YOU CAN'T MEASURE IT, YOU CAN'T MANAGE IT." (HTTPS://BLOG.DEMING.ORG/2015/08/MYTH-IF-YOU-CANT-MEASURE-IT-YOU-CANT-MANAGE-IT/)

POST-TRUTH-POLITICS: "THE 5% UNEMPLOYMENT FIGURE IS ONE OF THE BIGGEST HOAXES IN MODERN POLITICS." (HTTPS://WWW.YOUTUBE.COM/WATCH?V=QMMK3OQ0QII)

Official Statistics 4.0

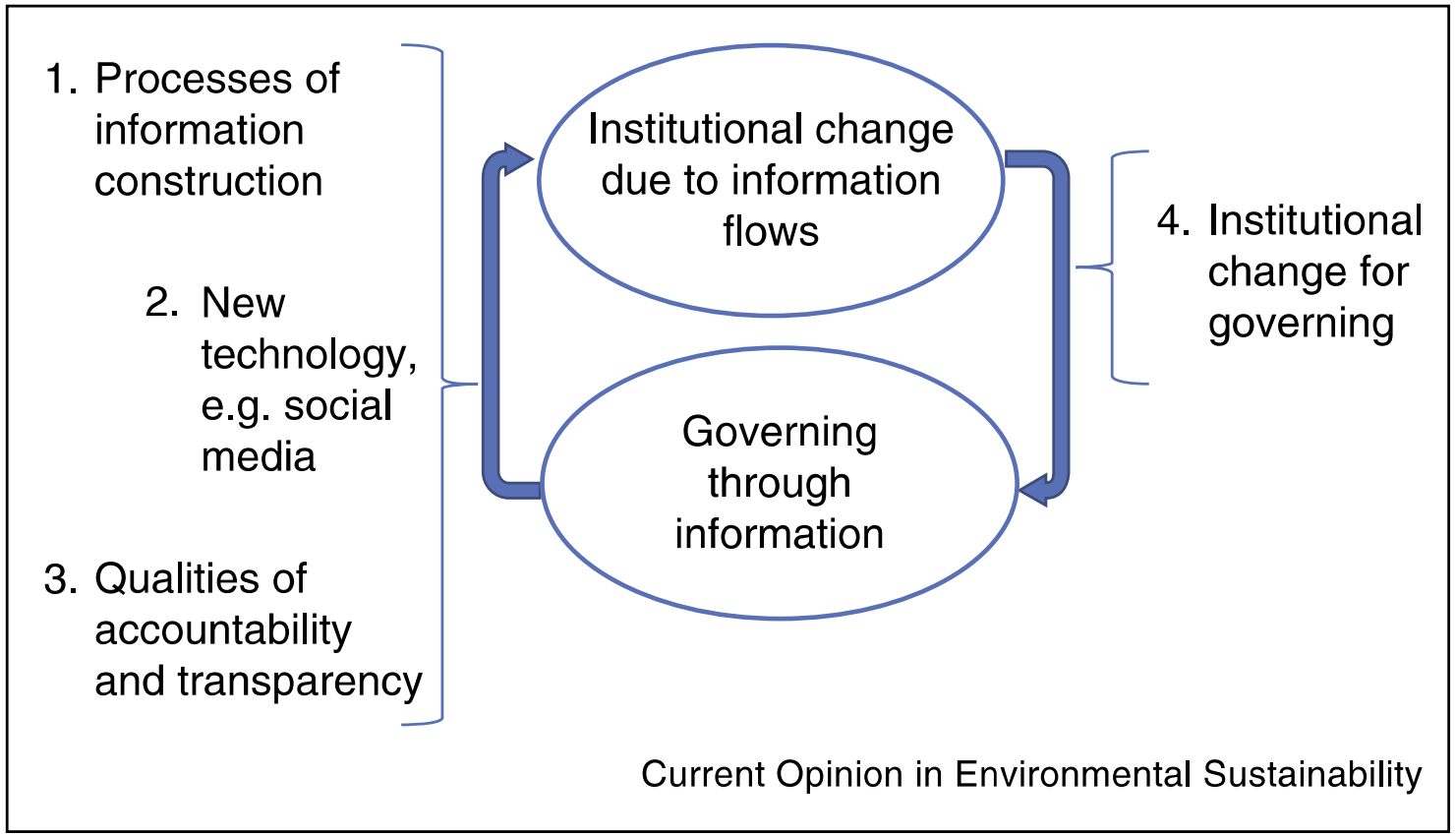


Interaction between statistical indicators and public policies: possible stress!

Goodhart's Law

"When a measure becomes a target, it ceases to be a good measure"

Figure 2



Interrelated themes of informational governance.

Soma, K., MacDonald, B.H., Termeer, C.J., Opdam, P.: Introduction article: informational governance and environmental sustainability. Current Opinion in Environmental Sustainability 2016(18), 134 (2016).

Conclusion

(Statistical) Information is a product

Data is the raw material for these products (statistics equivalent to a refinery of crude oil)

Quality features and profiles of statistical products differ and respond to user specific demands and purposes

The portfolio of products of official statistics contains specific information types, which are complementary and altogether form a system

The current production (products and portfolio) has emerged from an interaction between users and producers (evolutionary process)

Branding / labelling should inform users about the quality profiles

Information @ Society

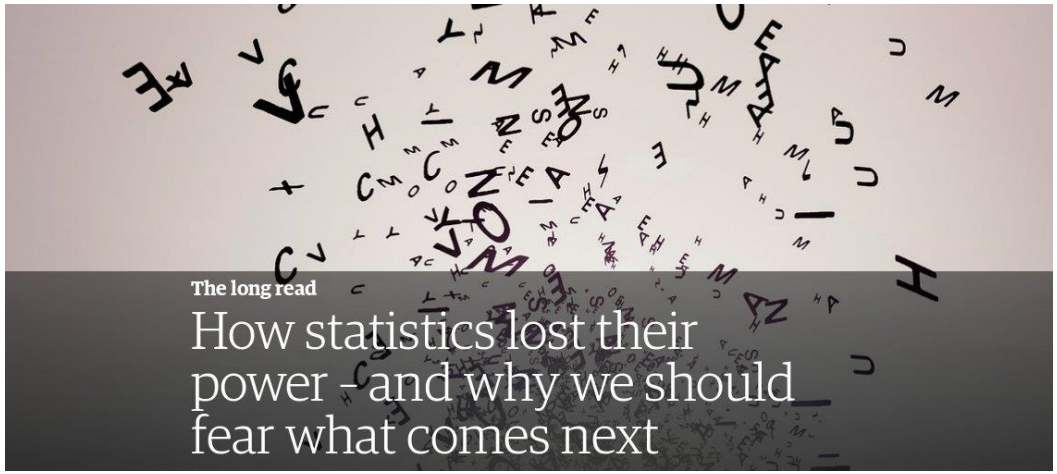
Citizens
making choices,
when consuming and when voting
being politically active,
…

Policy
defining goals & targets
financing implementation
accountability
…

Media
…

Information
from data to knowledge
…

https://www.theguardian.com/politics/2017/jan/19/crisis-of-statistics-big-data-democracy



http://www.zeit.de/2017/18/statistiken-umfragen-realitaet-taeuschung-zahlen

Principles for a New Enlightenment

Statistics is a key for people empowerment

- Statisticians should be aware of the power of data which lies in their transformation of information services for knowledge

Open data are fundamental for open societies

- Statisticians should ensure open and transparent access to data and metadata and measure their actual use for information and knowledge

Datacy is a key enabler for citizens

- Statisticians should proactively invest in datacy capabilities in society at large and measure the results of statistical literacy

The future is smart statistics

- Statisticians should continue to invest in methods and algorithms that enhance the quality of data for statistical services tailored to users' needs

More influence means more responsibilities

- It is a duty of statisticians to explore the link between statistics, science and society and lead intellectual reflections on the possible risk of reliance on data-centrism

Intensifying cooperation

GEOGRAPHICAL STATISTICAL INFORMATION IN TIMES OF BIG DATA

General points

Search for the best possible governance for the cooperation: UNGGIM plus selective areas of more binding commitments

Data science and providers of Big Data as new partners: looking for synergies and complementarities (having the DNA in mind!)

Agree on broad concepts of quality and quality assurance

Further develop professional ethical codes and guidelines of good governance

Strengthen the (common) brand and reputation of the information infrastructure in the wider public; enhance trust in the institutions

Strenghten the common position in research programmes and agendas

Specific points

Open data: general access as a mater of principle in times of Big Data

Mutual data access

Pricing

Standardised models of pricing and licensing

THERE IS NO ALTERNATIVE TO FACTS

MARCH FOR SCIENCE
22. APRIL 2017

Thank you

WJR@OUTLOOK.DE

HTTPS://SWAY.COM/QDWFKIPMTFBHNGEI?REF=LINK

HTTPS://WWW.LINKEDIN.COM/GROUPS/7064446