



The Senior Statisticians Society

24. February 2021

Walter J. Radermacher

Quality:

What (statistical products)?

How (methods)?

Who (institutions)?

<https://medium.com/data-policy/how-statistics-can-help-going-beyond-covid-19-22bb2ce92440>

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**Economic and Social Council**

Distr.: General  
28 October 2013

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Substantive session of 2013  
Agenda item 13 (c)

**Resolution adopted by the Economic and Social Council on 24 July 2013**

*[on the recommendation of the Statistical Commission (E/2013/24)]*

**2013/21. Fundamental Principles of Official Statistics**



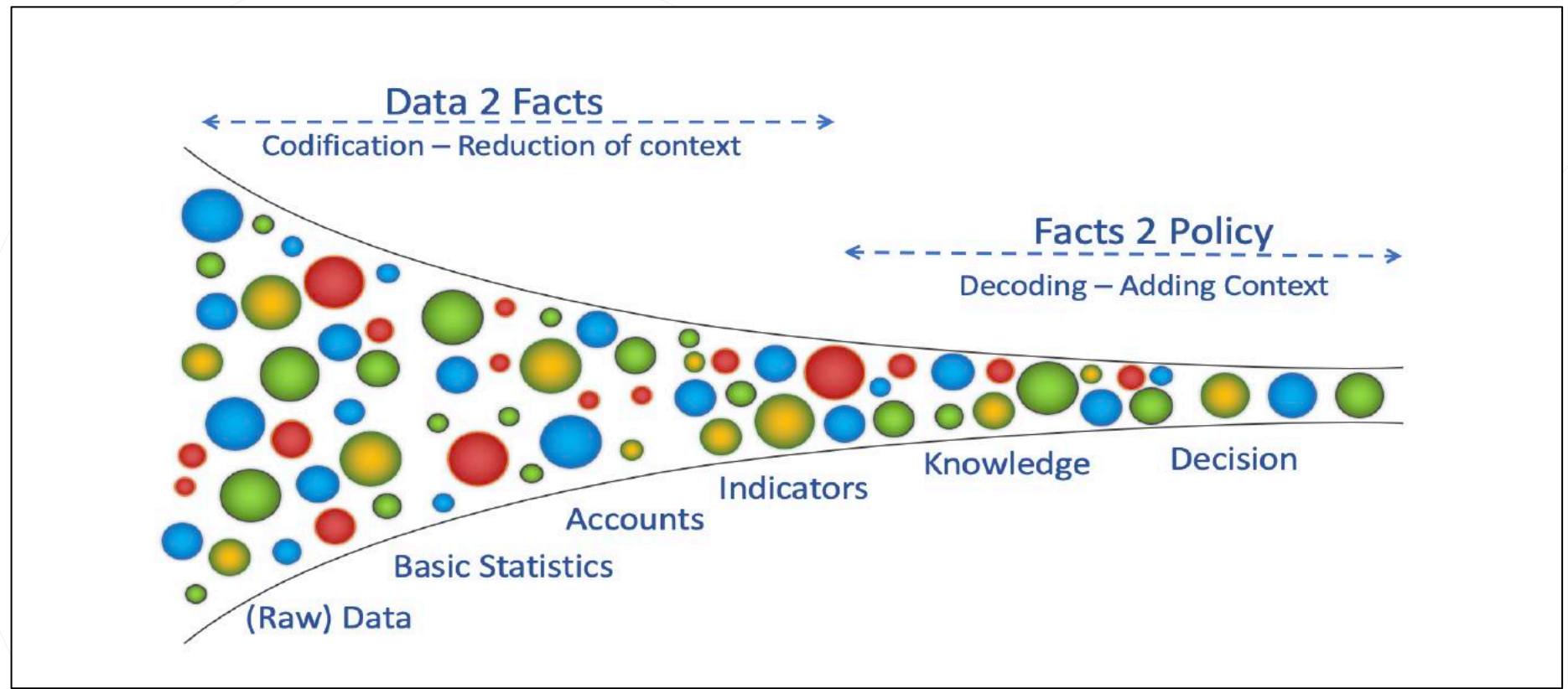
Facts are Products

# Statistical Information



# Reducing Complexity – Stages and Roles - Governance

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Policy to Facts

Policy to Data

# Mission Risks Transformation

Towards 2030  
vs.  
Short Term Crisis Management

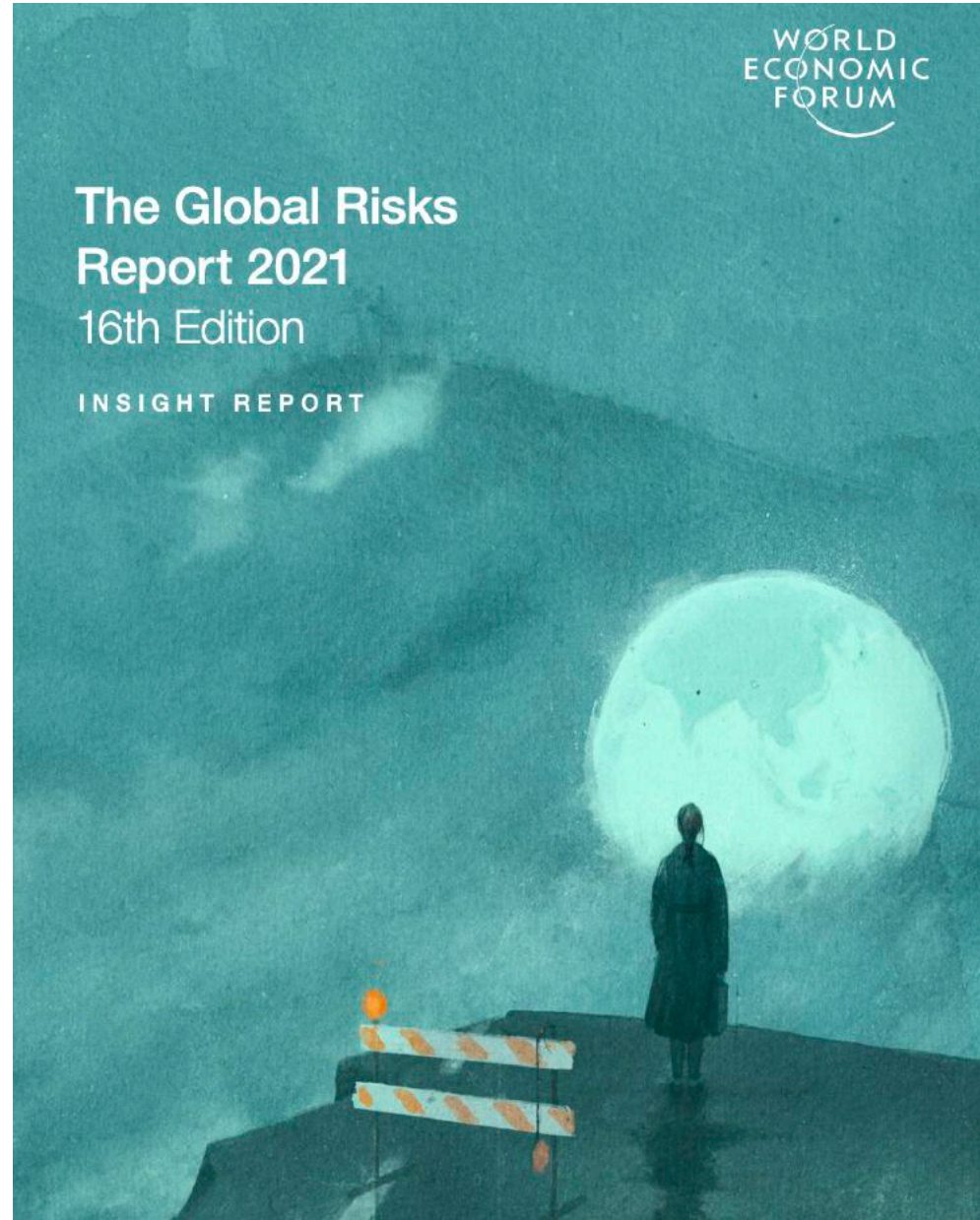


WORLD  
ECONOMIC  
FORUM

# The Global Risks Report 2021

16th Edition

INSIGHT REPORT



[http://www3.weforum.org/docs/WEF\\_The\\_Global\\_Risks\\_Report\\_2021.pdf](http://www3.weforum.org/docs/WEF_The_Global_Risks_Report_2021.pdf)

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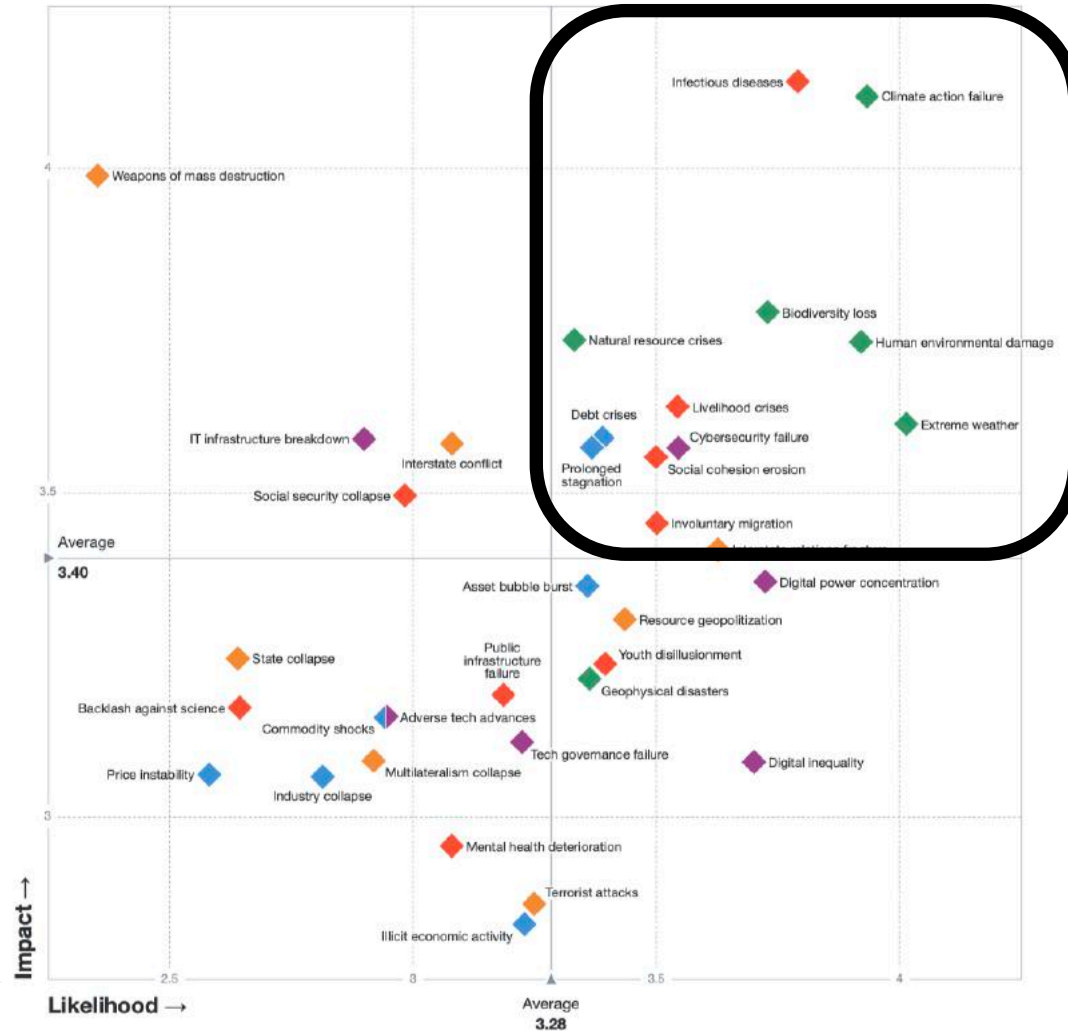


<https://intelligence.weforum.org/topics/a1Gb000000pTDXE2?tab=publications>

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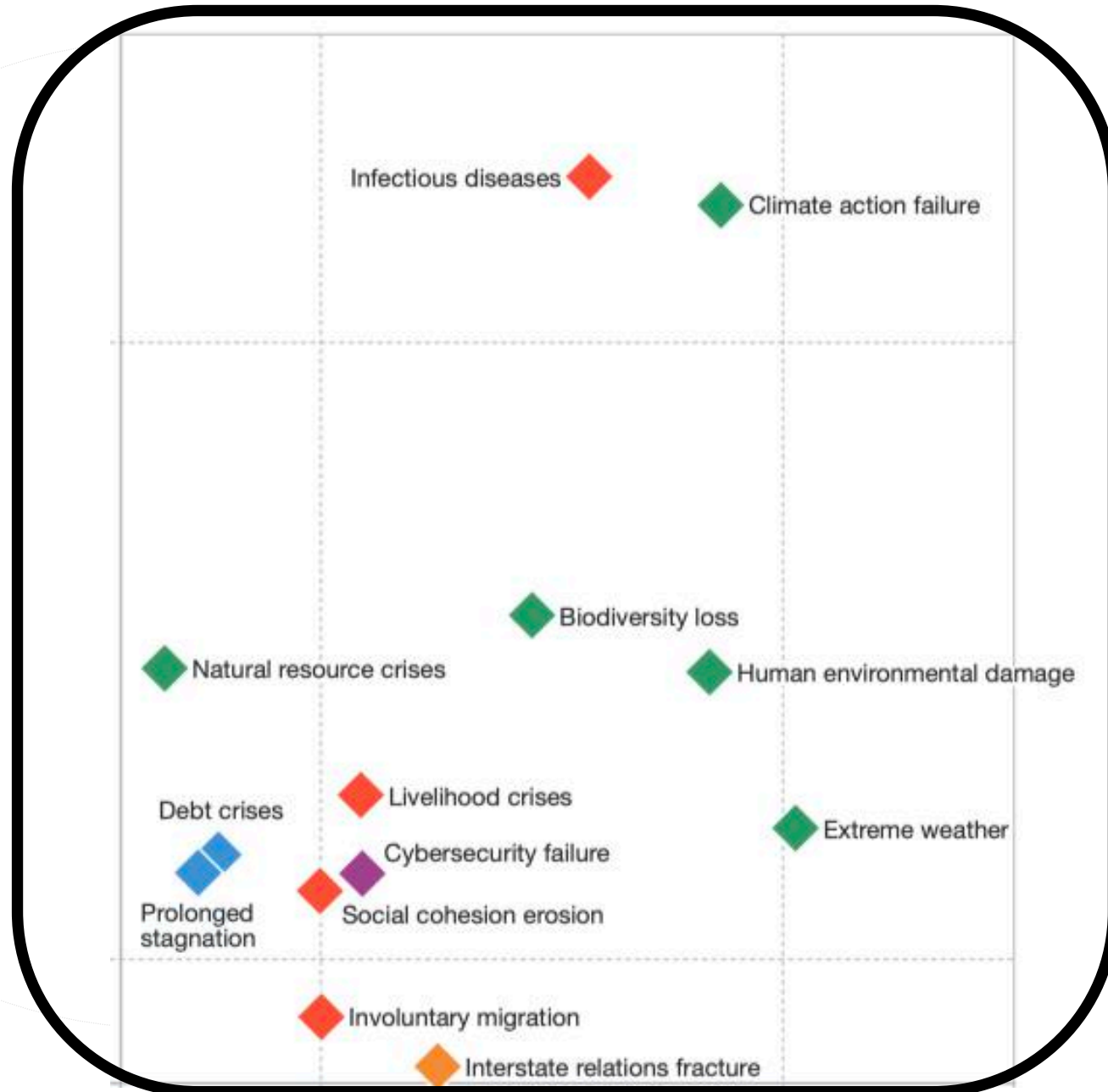
FIGURE II  
**Global Risks Landscape**

How do respondents perceive the impact ↑ and likelihood → of global risks?





2021





Politics  
 17 Goals  
 (qualitative)  
 169 Targets  
 (qualitative and  
 quantitative)



Statistics  
 231 Indicators



<https://www.un.org/sustainabledevelopment/progress-report/>



# COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)

Global Cases

**46.909.107**

Cases by Country/Region/Sovereignty

<b>9.292.514</b>	US
<b>8.267.623</b>	India
<b>5.554.206</b>	Brazil
<b>1.661.096</b>	Russia
<b>1.460.745</b>	France
<b>1.240.697</b>	Spain
<b>1.183.131</b>	Argentina
<b>1.057.021</b>	United Kingdom
<b>1.004.308</b>	Colombia
<b>933.155</b>	Mexico
<b>902.503</b>	Peru
<b>731.588</b>	Italy
<b>727.595</b>	South Africa



Global Deaths

**1.206.886**

231.562 deaths  
US

160.253 deaths  
Brazil

123.097 deaths  
India

92.100 deaths  
Mexico

46.943 deaths  
United Kingdom

39.059 deaths  
Italy

**37.485** deaths

Global Deaths

600k  
400k  
200k

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<https://coronavirus.jhu.edu/map.html> Accessed on 03.11. 2020



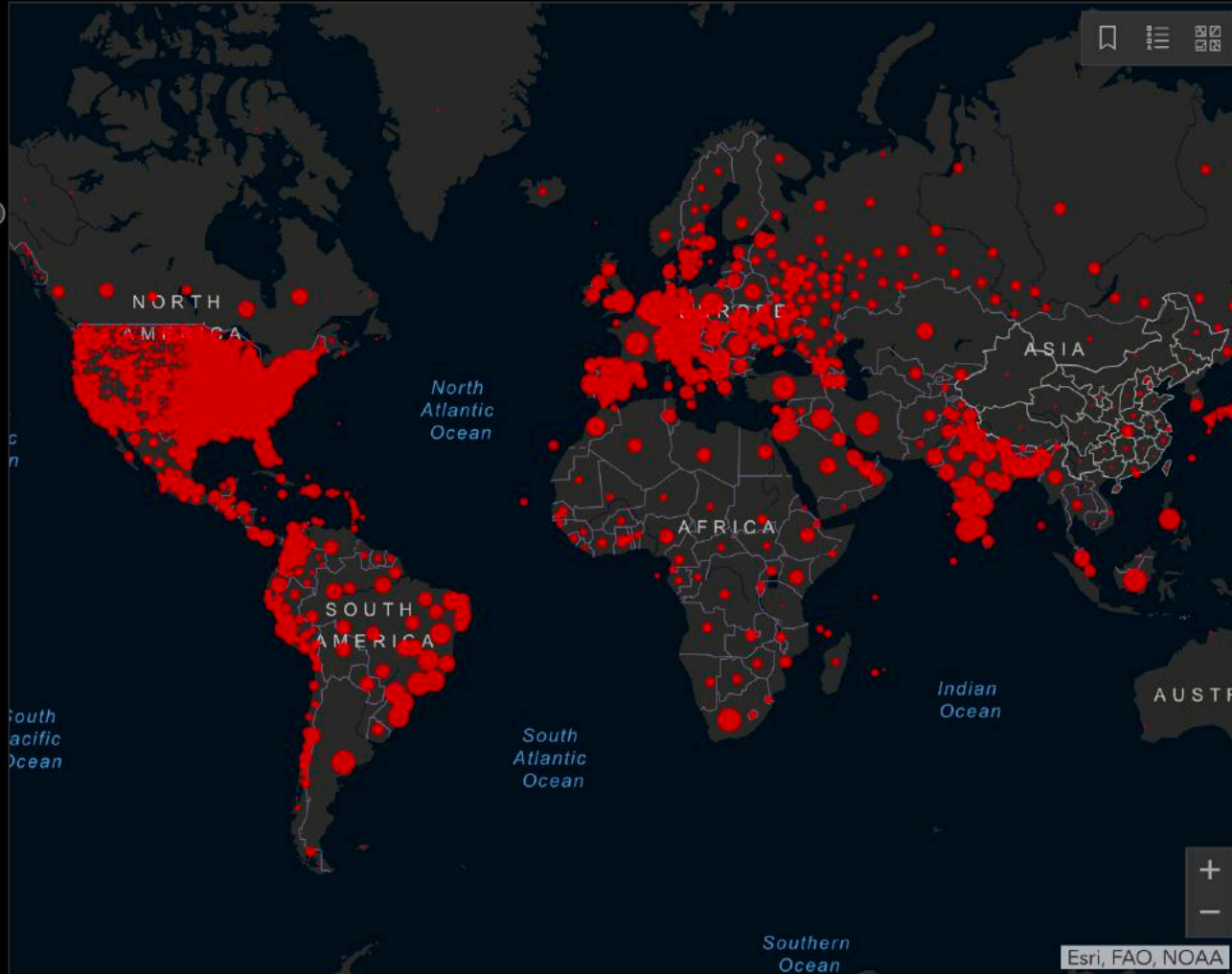
# COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University

Global Cases

**111.555.751**

Cases by Country/Region /Sovereignty

<b>28.139.690</b> US
<b>11.005.850</b> India
<b>10.168.174</b> Brazil
<b>4.138.215</b> United Kingdom
<b>4.130.447</b> Russia
<b>3.664.700</b> France
<b>3.133.122</b> Spain
<b>2.818.863</b> Italy
<b>2.638.422</b> Turkey
<b>2.398.561</b> Germany
<b>2.226.262</b> Colombia
<b>2.064.334</b> Argentina
<b>2.041.380</b> Mexico
<b>1.642.658</b> Poland
<b>1.582.275</b> Iran



Global Deaths

**2.469.417**

499.075 deaths  
US

246.504 deaths  
Brazil

180.107 deaths  
Mexico

156.385 deaths  
India

120.810 deaths  
United Kingdom

95.718 deaths  
Italy

84.430 deaths  
France

Global Deaths



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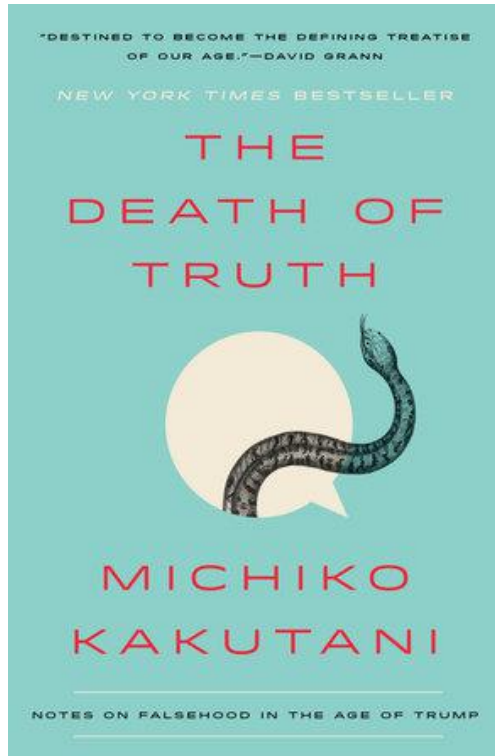
<https://coronavirus.jhu.edu/map.html> Accessed on 23.02.2021



Economist.com

Kal

<https://external-preview.redd.it/xwHtR8k5PNX2t5vHufjViai8L5aCOjZ4S2QHOMCAPT4.jpg?auto=webp&s=7676945731ba277e4b338f7a886e54000d9c4ec>



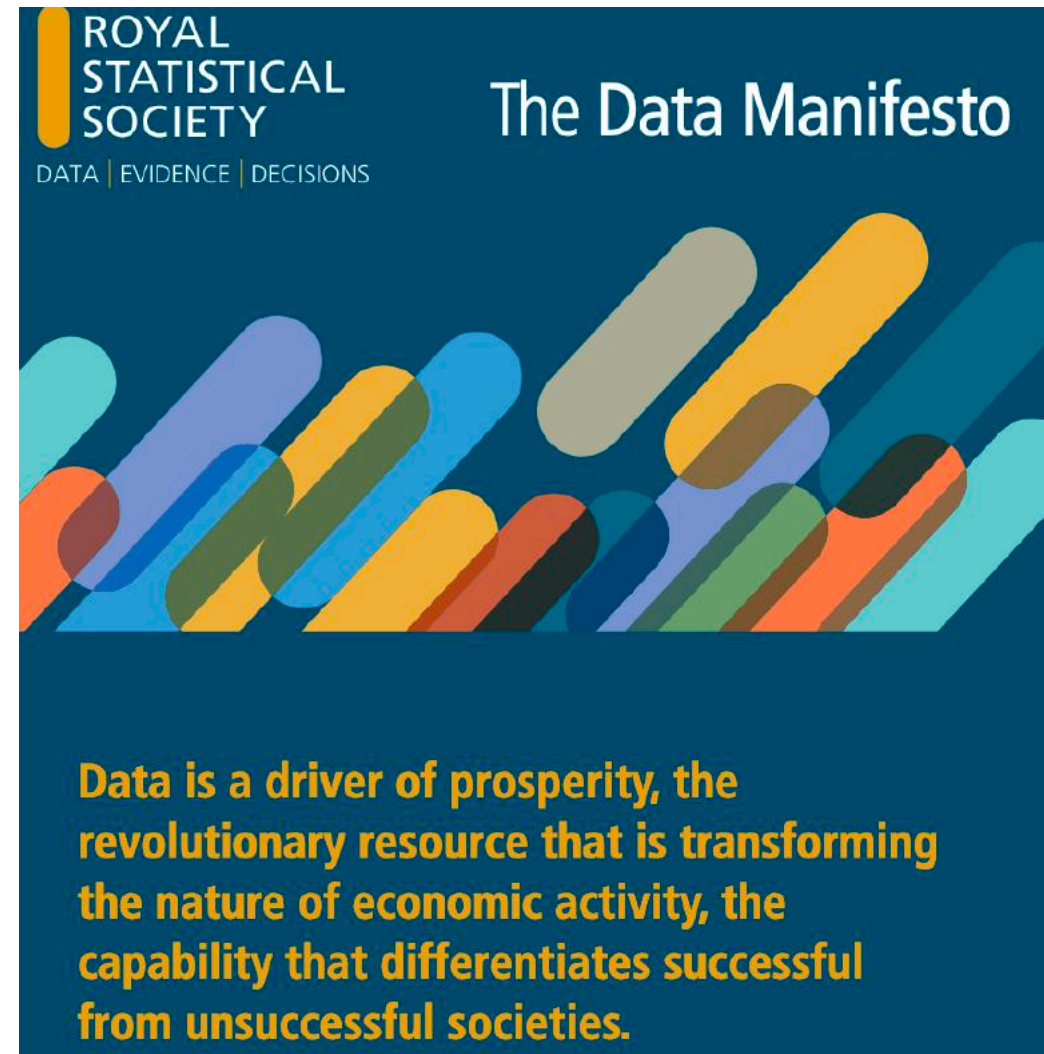
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The Era of Digitisation and Globalisation

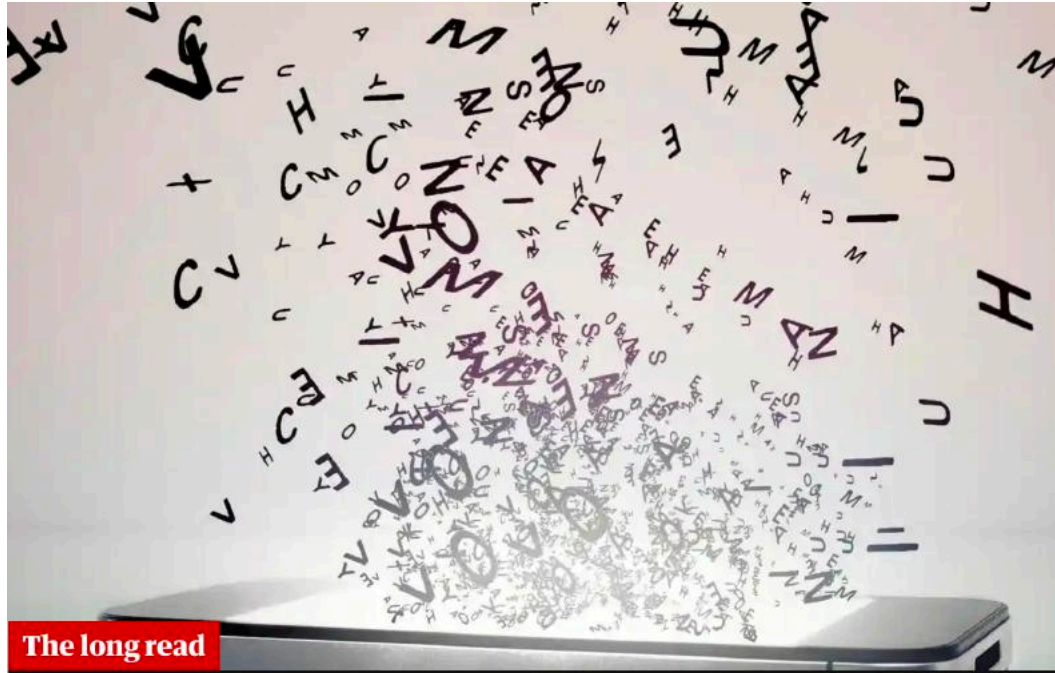
# Data Goldrush & Death of Truth

# Data Revolution

- Data for better policymaking
  - There is a great opportunity for more effective policymaking if we use data to inform what we are doing.
- Data: the driver of productivity and prosperity
  - Our wellbeing depends on economic prosperity, which in turn depends upon exploiting our investment in data, and on our skills as a society to understand and use data.
- Data to strengthen democracy and trustworthiness
  - Our democracy relies on the quality and trustworthiness of data in the public domain.



<https://rss.org.uk/RSS/media/File-library/Policy/2019/9522-RSS-Data-Manifesto.pdf>



The long read

## How statistics lost their power – and why we should fear what comes next

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

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- The declining authority of statistics is at the heart of the crisis that has become known as “post-truth” politics
- The statistical logic of the past two centuries is being replaced by a data logic
- With the authority of statistics waning, and nothing stepping into the public sphere to replace it, people can live in whatever imagined community they feel most aligned to and willing to believe in



## REPORT 2019

**STATISTICS AT A CROSSROADS:  
WHO IS FOR THE CHALLENGE?**

RAPPORTEURS: Xuming He, David Madigan, Bin Yu, Jon Wellner  
PREPARED FOR: The National Science Foundation

With the fast establishment of various Data Science entities across campuses, industry, and government, there is a limited time window of opportunity for a successful transformation that we must not miss.

We must effect this change now by reimagining our educational programs, rethinking faculty hiring and promotion, and accelerating the cultural change that is required.

<https://www.amstat.org/asa/files/pdfs/POL-Statistics%20at%20a%20Crossroads%20Report.pdf>



# Data Science vs. Official Statistics

# Mutual critiques between different “data worlds”<sup>1)</sup>

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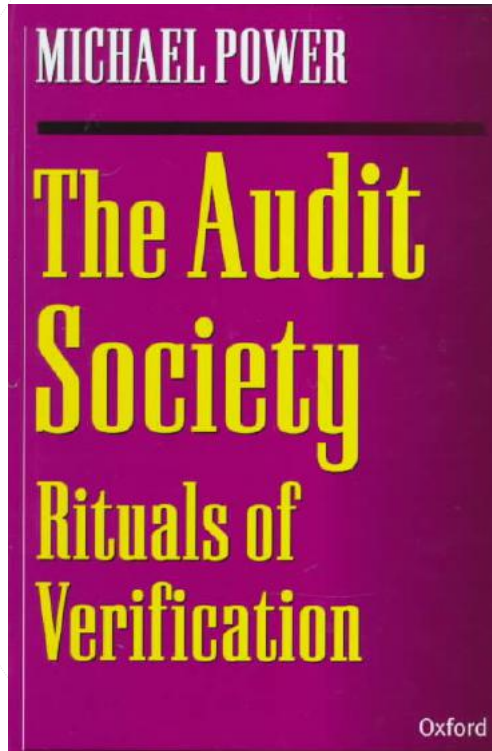
	Official Statistics	Big Data/IoT/AI	Civil Society
Official Statistics		Opaque procedures, not relying on methodological standards, not pursuing a common good	Methodological amateurs, particular and politically biased interests of social movements and specific parties
Big Data/IOT/AI	Inefficient, state dependent, applying old-fashioned methodologies, too slow in data proceeding / publication		Naïve, because engaging for a common good and not for profit; limited by lack of access to data generating technologies
Civil Society	State centered and not providing data, relevant for contemporary social issues and civic concerns	Profit oriented and opaque, not linked to a common good, ignoring the imperative to justify measurement	

1) Source: Diaz-Bone, Rainer, and Kenneth Horvath. 2021. 'Official Statistics, Big Data and Civil Society. Introducing the Approach of “economics of Convention” for Understanding the Rise of New Data Worlds and Their Implications’, Statistical Journal of the IAOS, 37.

# 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/>)

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1999



2016

<http://www.institutjeanlecauuet.org/content/vers-homo-algorithmus>

**“Any observed statistical regularity  
will tend to collapse  
once pressure is placed upon it  
for control purposes.”**

- Charles Goodhart

That is:

**“When a measure becomes a target,  
it ceases to be a good measure.”**



[https://2.bp.blogspot.com/-o5jkVyBaMY/WWD01Yn1Cpl/AAAAAAAAAYEs/Sm9iUryoZi0pf8VeizRScCQdxAcPKNrZAClCBGAs/s1600/Goodhart\\_Law.png](https://2.bp.blogspot.com/-o5jkVyBaMY/WWD01Yn1Cpl/AAAAAAAAAYEs/Sm9iUryoZi0pf8VeizRScCQdxAcPKNrZAClCBGAs/s1600/Goodhart_Law.png)



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**"People in this country have had enough of experts."**

**The growing danger of anti-intellectualism**

[https://3.bp.blogspot.com/-NbovOdI5zkM/WG1SSsTXqtI/AAAAAAAAAC38/4xWsRQQUA6k1PZ65Ju-J\\_Awh6UPb-sQmgCLcB/w1200-h630-p-k-no-nu/gove%2Bexperts%2Banti%2Bintellectualism.png](https://3.bp.blogspot.com/-NbovOdI5zkM/WG1SSsTXqtI/AAAAAAAAAC38/4xWsRQQUA6k1PZ65Ju-J_Awh6UPb-sQmgCLcB/w1200-h630-p-k-no-nu/gove%2Bexperts%2Banti%2Bintellectualism.png)

# Globalisation of risks

## GLOBAL WARMING

# Planet at risk of heading towards “Hothouse Earth” state

*Keeping global warming to within 1.5-2°C may be more difficult than previously assessed*

<https://www.stockholmresilience.org/research/research-news/2018-08-06-planet-at-risk-of-heading-towards-hothouse-earth-state.html>



Paris, October 2016

## **Irish GDP up by 26.3% in 2015?**

On 12 July 2016, the Irish Central Statistics Office published its latest national accounts data for 2015, revealing that real GDP growth was up 26.3% from 2014 (and up 32.4% in current prices) These figures have attracted considerable attention in the international press, with commentators raising questions about their reliability and about the conceptual basis for the measurement of GDP.

<http://www.oecd.org/sdd/na/Irish-GDP-up-in-2015-OECD.pdf>



# The world we live in: Trends, Evolutions, Revolutions

- Data revolution, IoT, AI
- Society
  - Evidence based decision making, neoliberal governance, technical experts and elites  
*depending-on-evidence*
  - Critical civil society, social movements, NGOs,  
*pro-evidence*
  - Do-it-Yourself statistics  
*pro-my-own-evidence*
  - Post-truth-politics, mistrust against experts and institutions, conspiracy theories,  
*contra-evidence*
- Globalisation of economies and crises



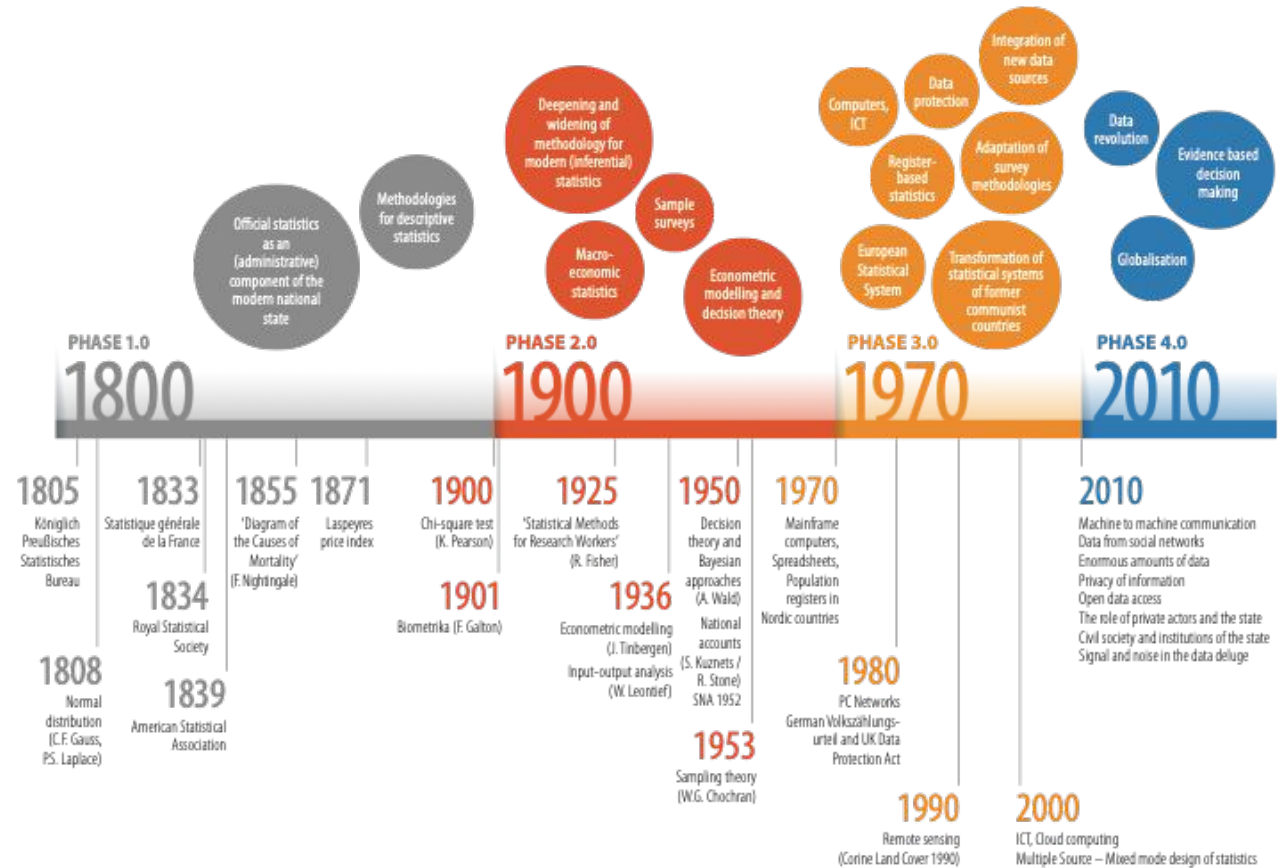
# Official Statistics

## 4.0

A strategic perspective



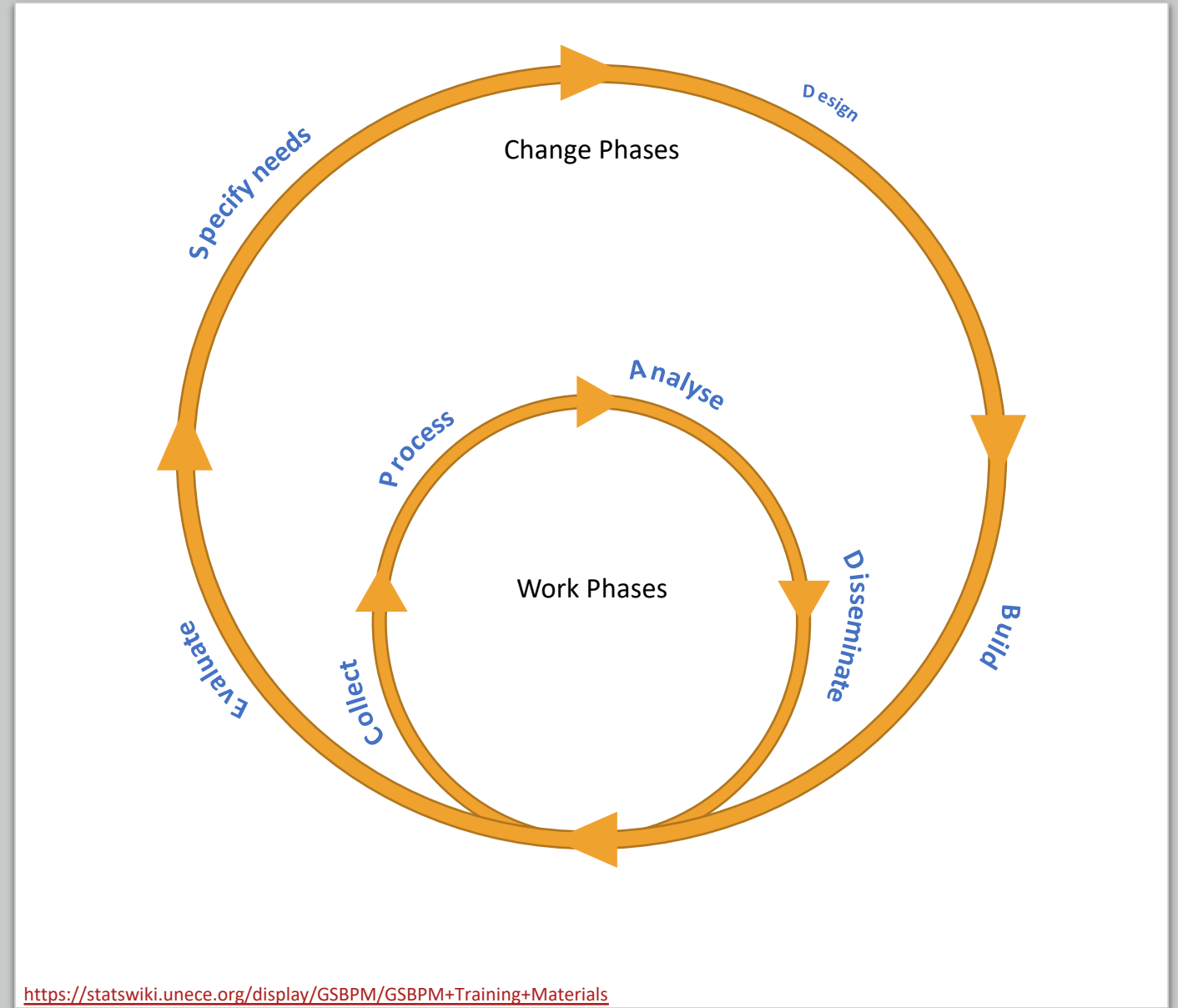
# Official Statistics' History



<https://link.springer.com/book/10.1007%2F978-3-030-31492-7>

# Learning, Adaptation, Change in Official Statistics

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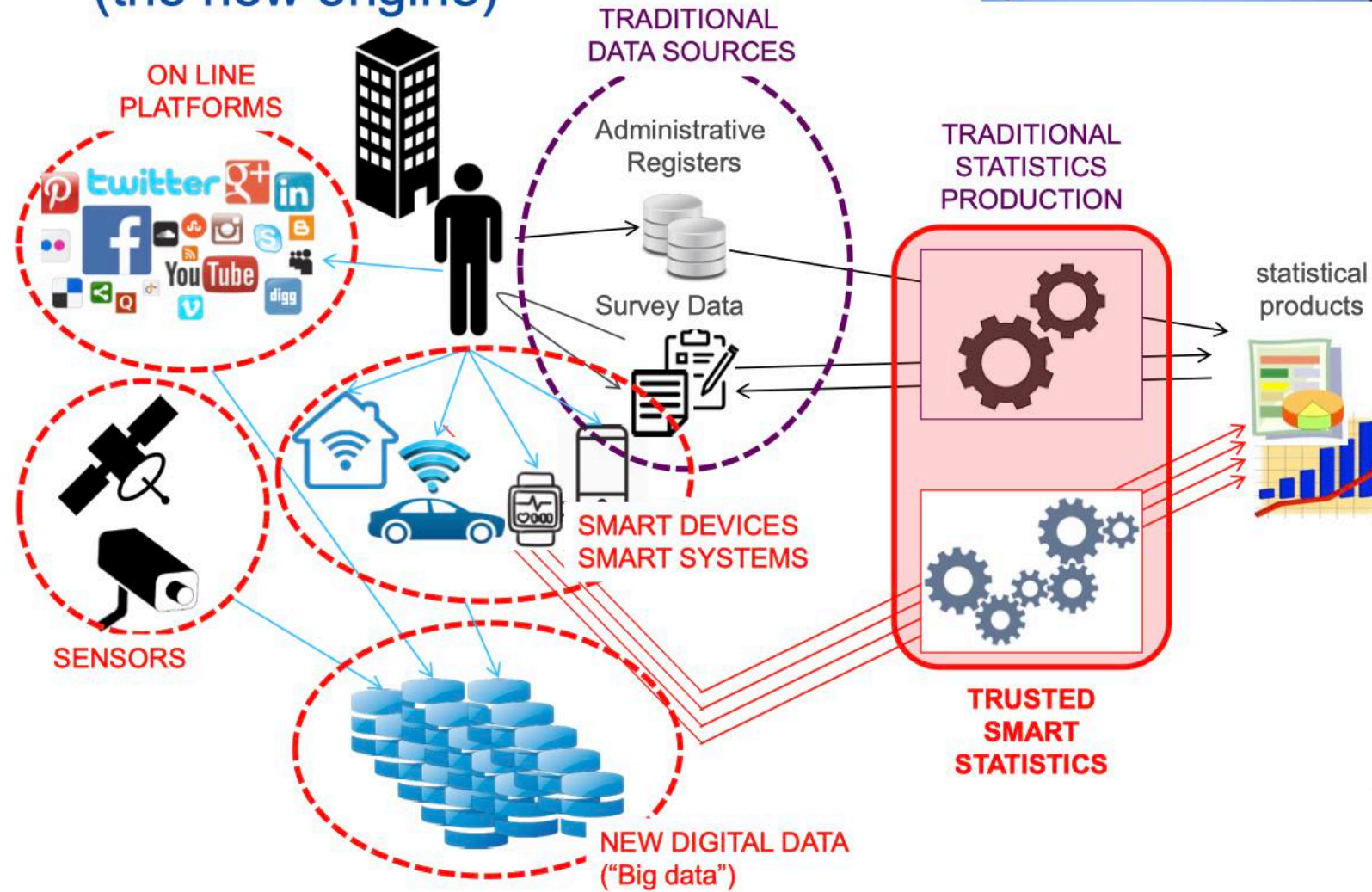


Trusted Smart Statistics



SYSTEMIC  
AUGMENTATION OF  
OFFICIAL STATISTICS

# Trusted Smart Statistics (the new engine)



<https://emos2020events.ec.unipi.it/what-is-a-trusted-smart-statistics/>

# Trusted Smart Statistics

## Design Principles

1. Push computation out
2. Multi-purpose data sources for multi-source statistics
3. Layered and modular organisation of the data workflow  
→ Reference Methodological Frameworks

3

<https://emos2020events.ec.unipi.it/what-is-a-trusted-smart-statistics/>



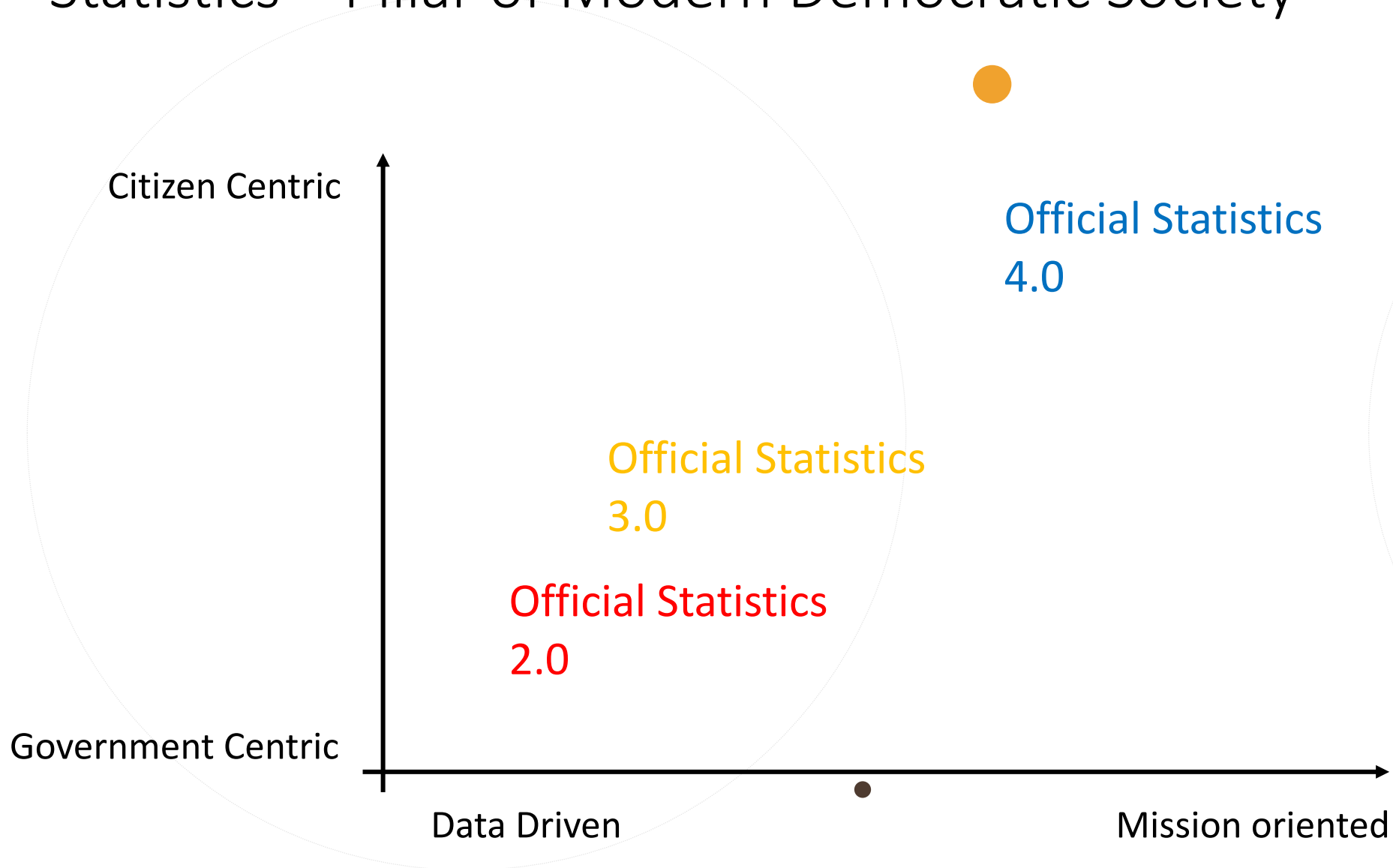
# Data4Policy et retour

Going beyond the modernisation of processes



# Statistics = Pillar of Modern Democratic Society

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# Products and Programme: Be Prepared!


Foresight of future developments and information needs



Long-term planning (long learning cycle)

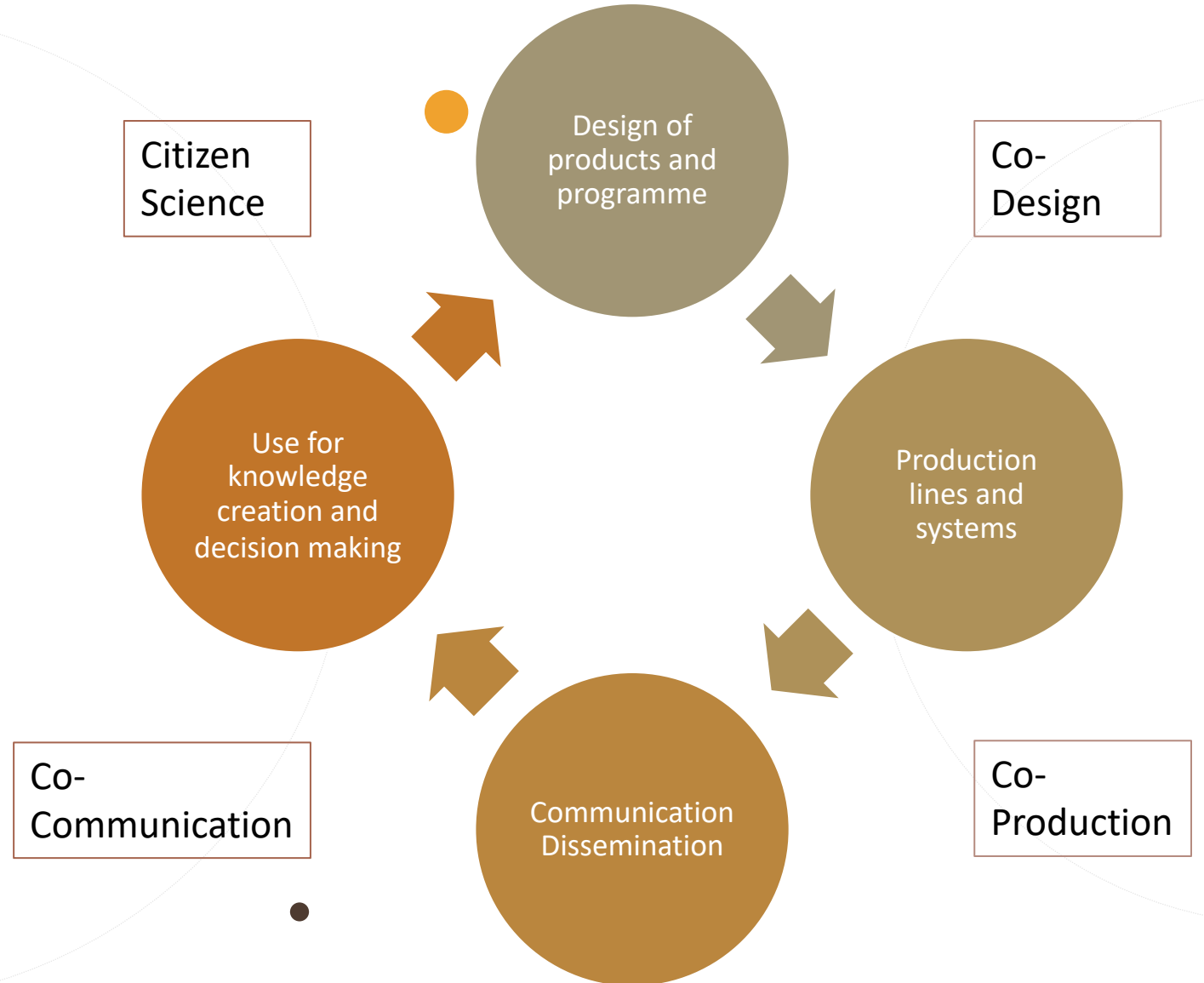


Short term adaptation (short learning cycle according to upcoming information needs)



Wide (r) and early(er) consultation of civil society with appropriate methods

# Factory Statistics: Co-Construction



# New Products + Services, Labelling, Partners

## Official Statistics



<https://st.motortrend.com/uploads/sites/5/2013/05/2014-Mercedes-Benz-S-Class-side-031.jpg>

Operated by  
Official Statistics



[https://images.hgmsites.net/hug/2011-smart-fortwo\\_100334354\\_h.jpg](https://images.hgmsites.net/hug/2011-smart-fortwo_100334354_h.jpg)

Science

Politics

## Services:

- Data stewardship
- Standards setting / certifying for statistics produced by other institutions
- Support for statistics produced by other institutions
- Advisory role for science and politics

# Literacy, Skills, Education

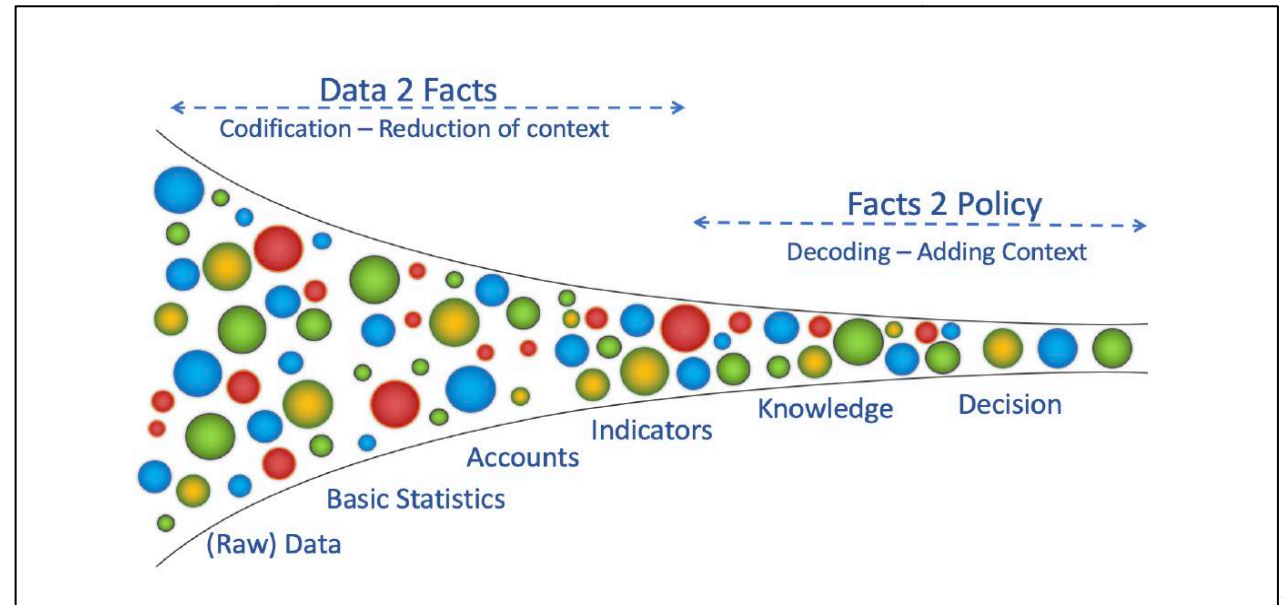
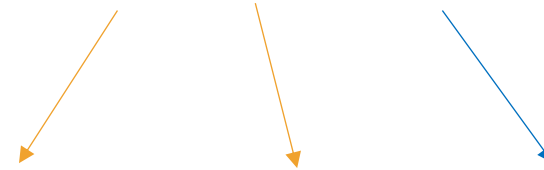
## Teaching statistics



## Doing Statistics

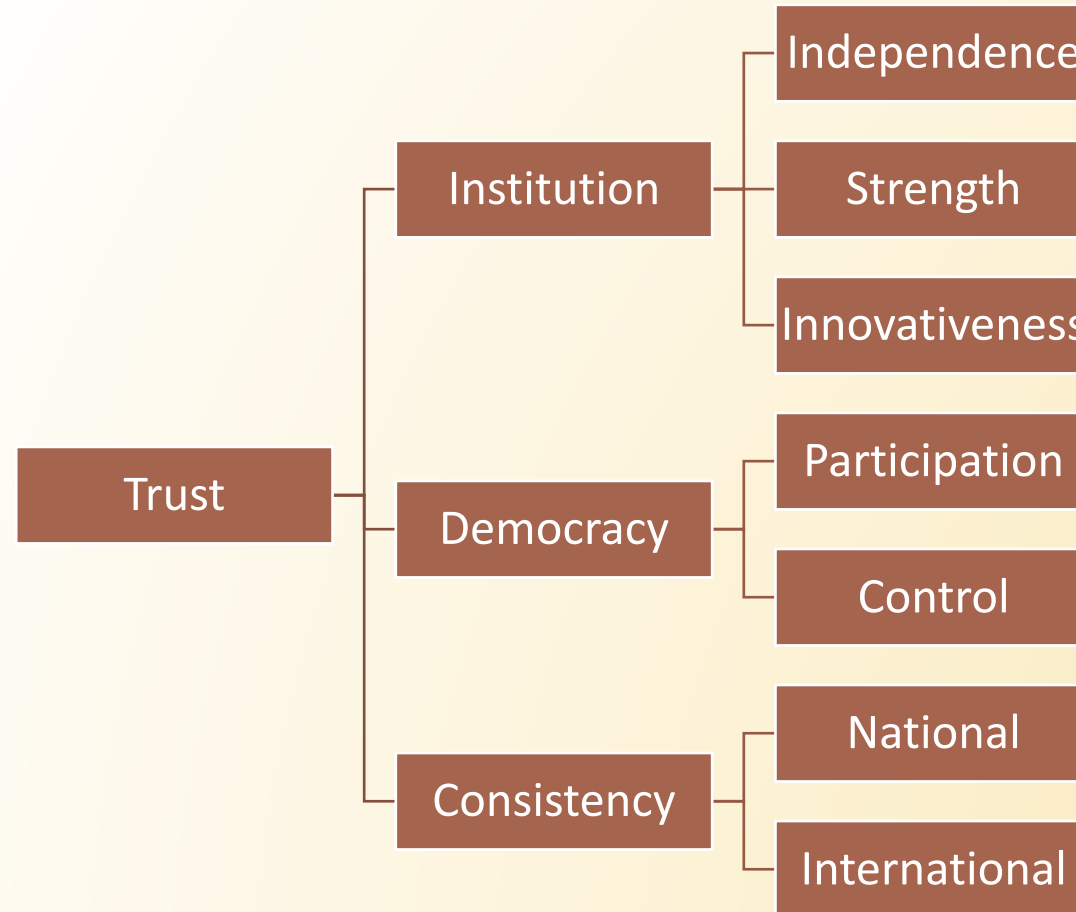


## Competences Variation

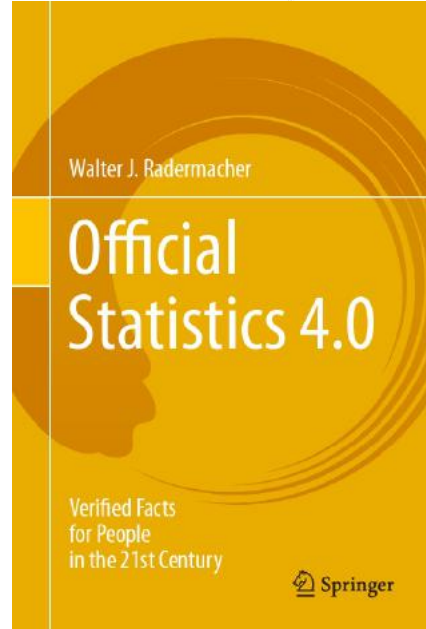


[https://pbs.twimg.com/media/EH8h0NMWwAE0\\_Xo?format=jpg&name=small](https://pbs.twimg.com/media/EH8h0NMWwAE0_Xo?format=jpg&name=small)

# Governance: Being policy relevant, not politically driven!



# THANK YOU



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Official Statistics 4.0  
Verified Facts for People in the 21st Century  
<https://www.springer.com/gp/book/9783030314910>

Radermacher, Walter J. 2021. 'Governing by the numbers',  
Statistical Journal of the IAOS, Pre-press: 1-3.  
<https://content.iospress.com/articles/statistical-journal-of-the-iaos/sji210795?resultNumber=8&totalResults=10&start=0&q=radermacher+editorial&resultsPageSize=10&rows=10>

