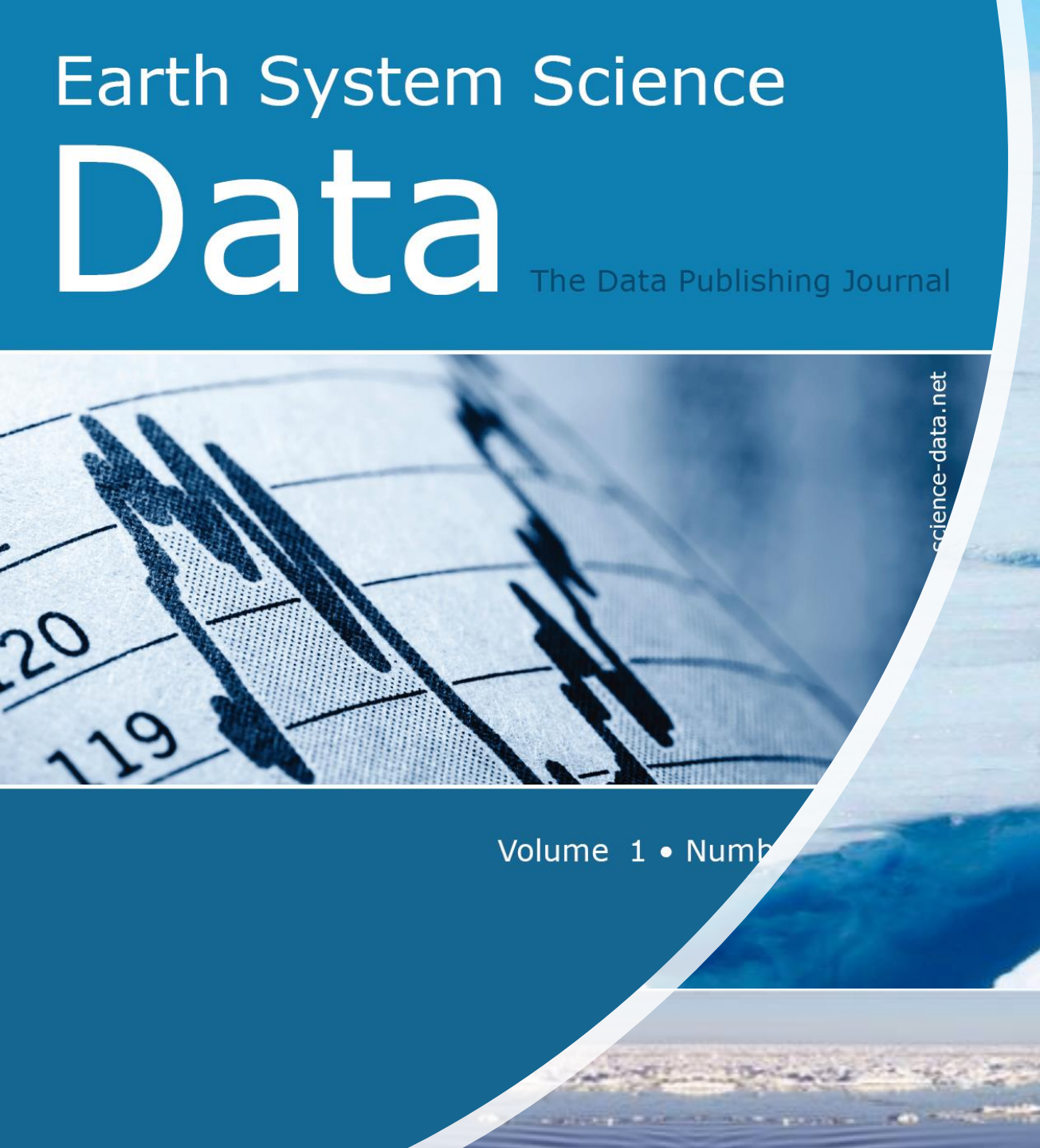


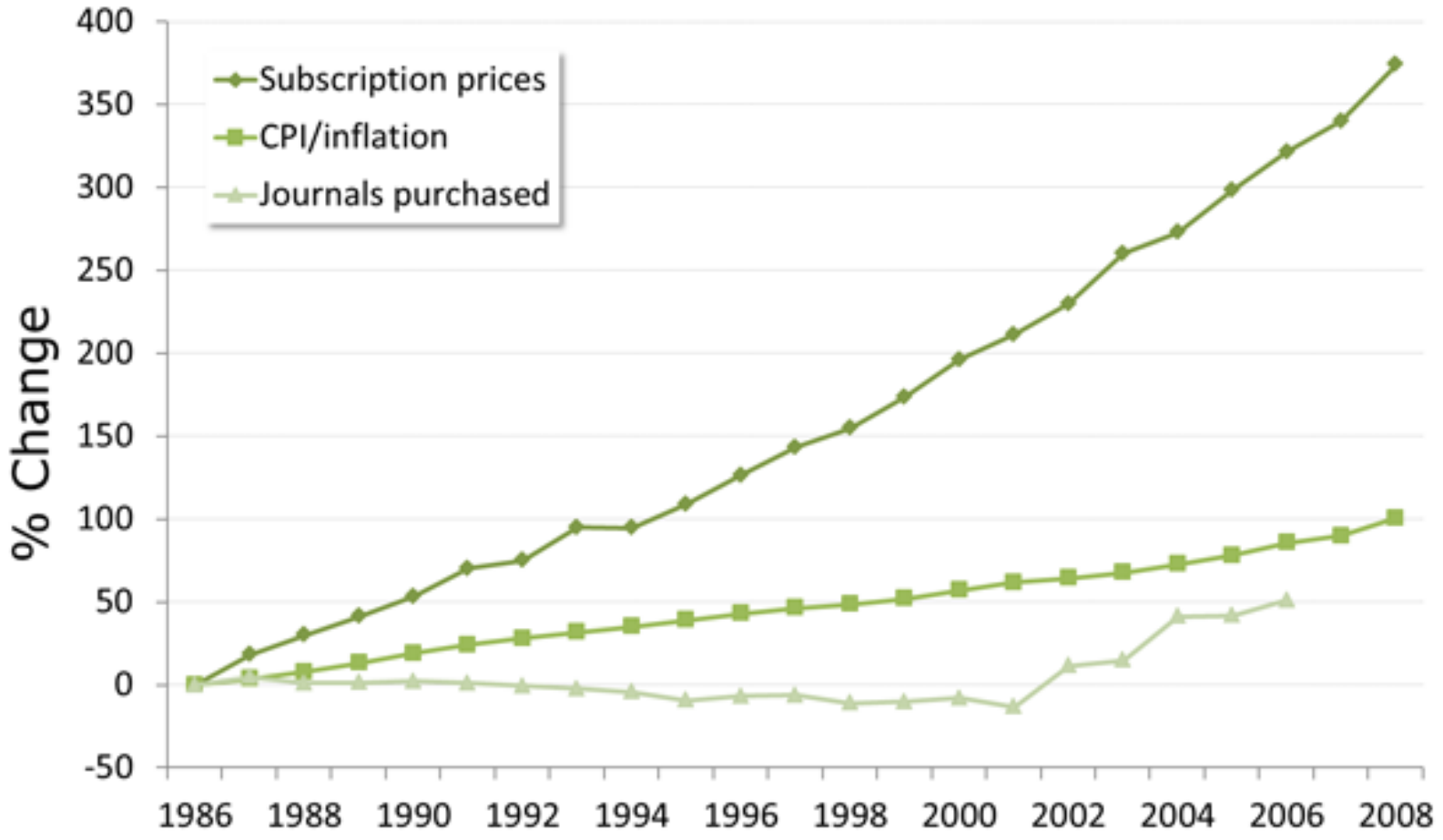
Ideal und Notwendigkeit

Hans Pfeiffenberger

OA Roadshow, Uni Kiel

2019-11-11

Serials Crisis



Modified from ARL: http://www.arl.org/bm~doc/arlstats06.pdf, http://www.arl.org/bm~doc/arlstat08.pdf

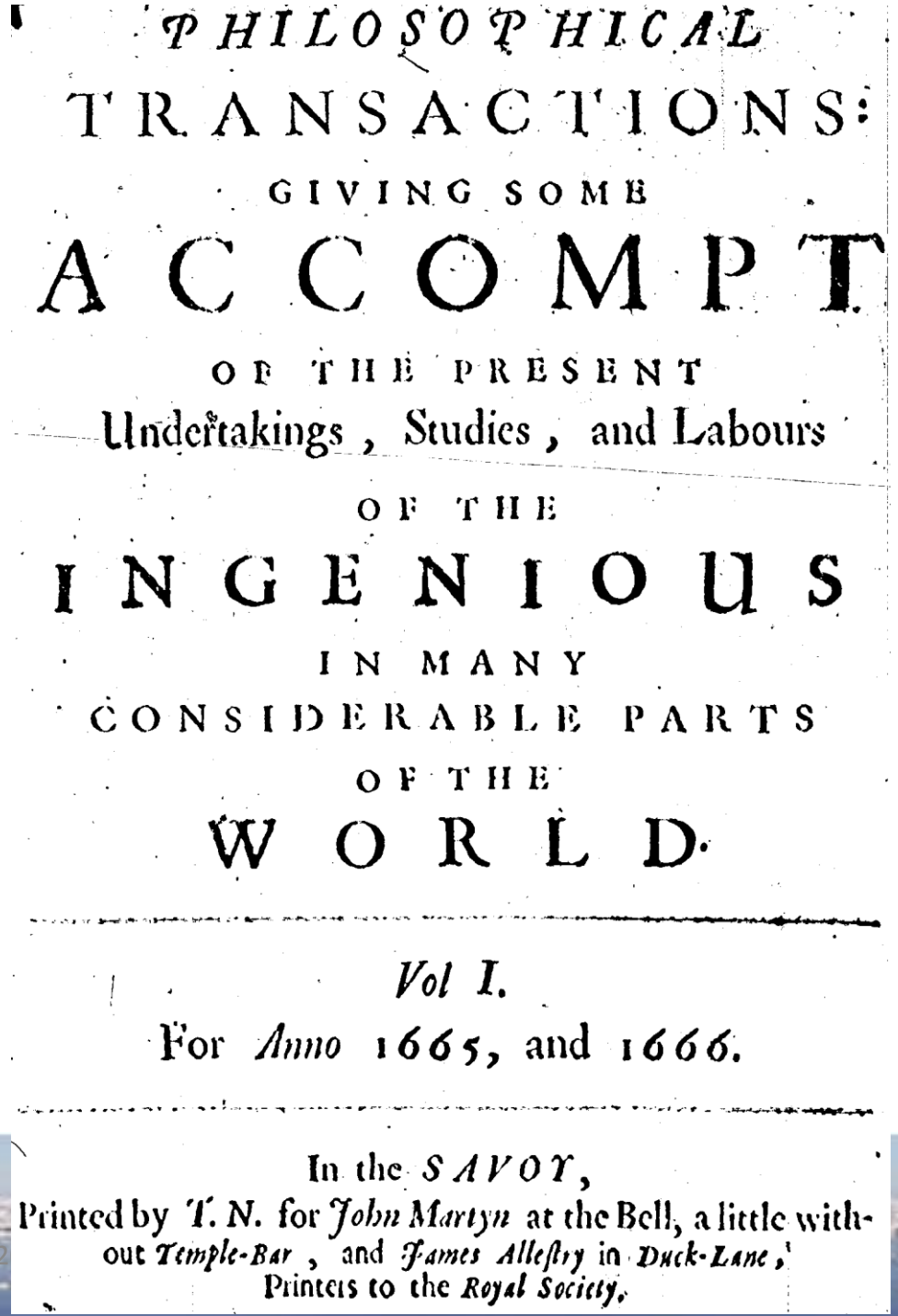
Philosophical Transactions

In Oldenburg's Long Shadow: Librarians, Research Scientists, Publishers, and the Control of Scientific Publishing

Jean-Claude Guédon, 2001
https://www.arl.org/wp-content/uploads/2001/12/in-oldenburgs-long-shadow.pdf

The Baroque Cycle

Neal Stephenson, 2003+2004
https://en.wikipedia.org/wiki/The_Baroque_Cycle



PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD.

Vol I.
For Anno 1665, and 1666.

In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little without Temple-Bar, and James Allestry in Duck-Lane,
Printers to the Royal Society.

ODE „Tales“, 2012

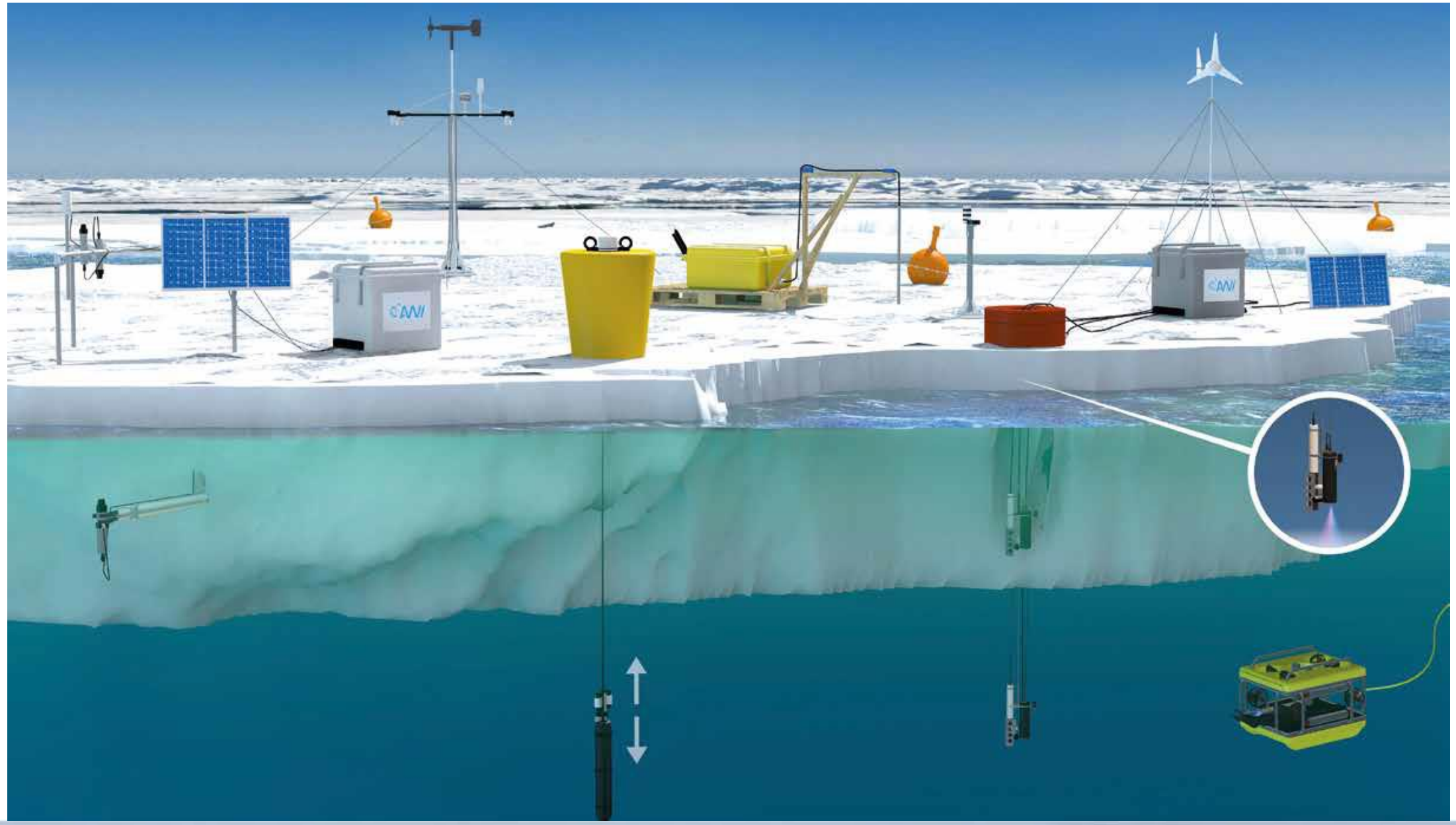
“[Researchers would prefer] just one point of access to all data, which would be simple to use and ‘fool proof’.”

But she suspects it is **wishful thinking** to ask for Google-like simplicity when one looks for “chlorophyll data in the Atlantic at 200 meters depth”

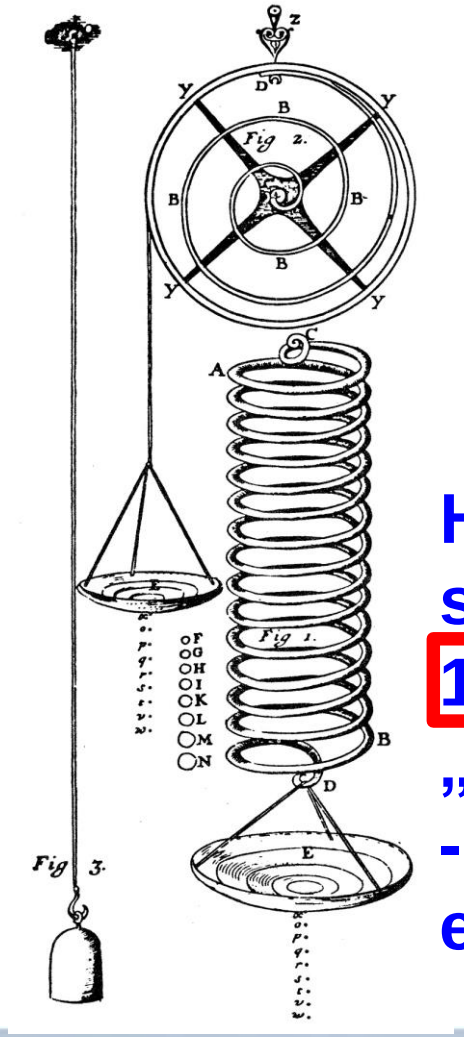
Karin Lochte, 2012
(Alfred Wegener Institute for Polar and Marine Research)

MOSAiC 2019-20

- 600 Forschende
- 17 Nationen
- (150 Mio EUR)



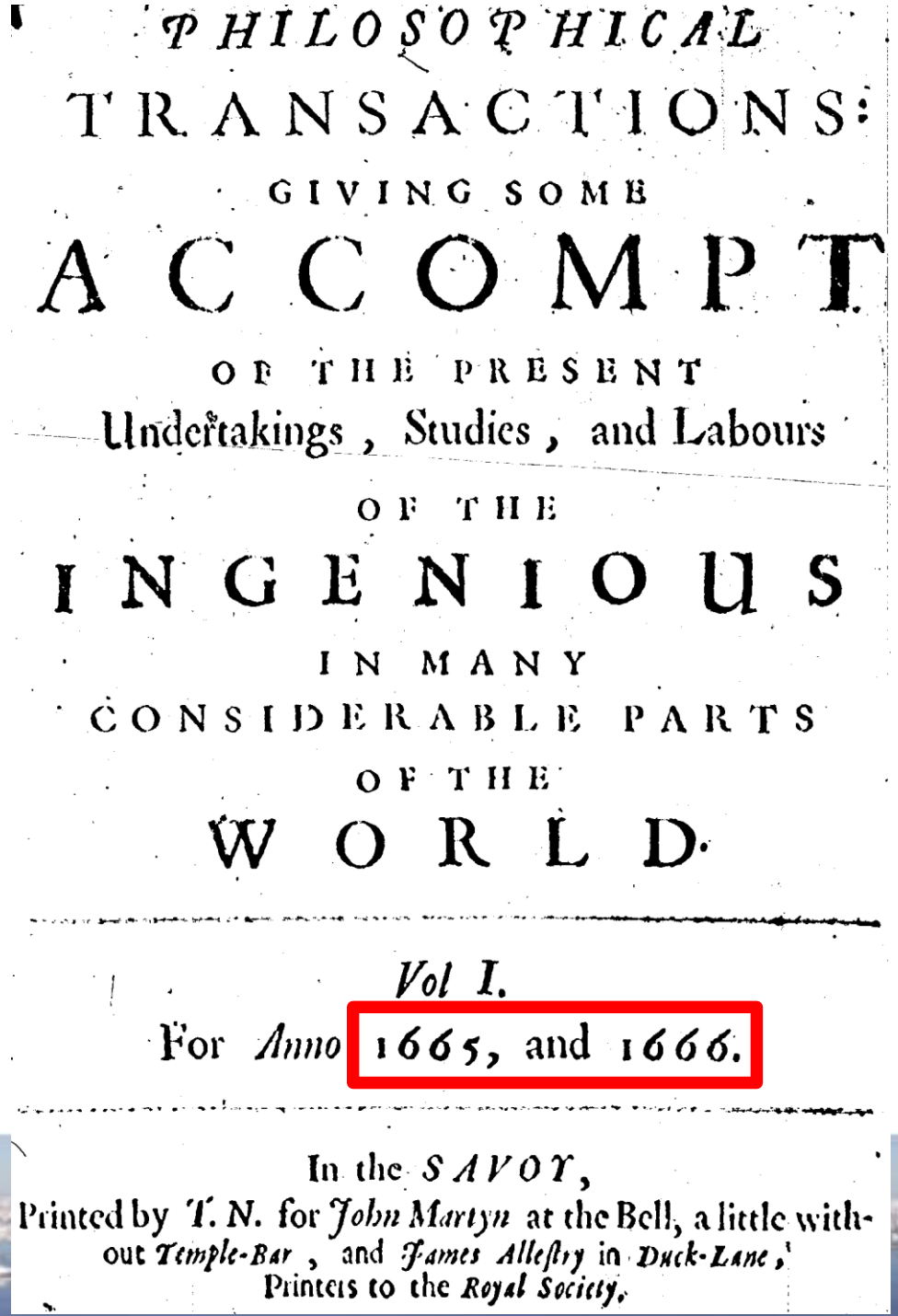
Angst („bloß keine Experimente!“) im 17ten Jahrhundert



Hooke „publizierte“ sein Feder-Gesetz 1676 als Anagram „ceiiinosssttuv“

-

erst 1678 als Büchlein



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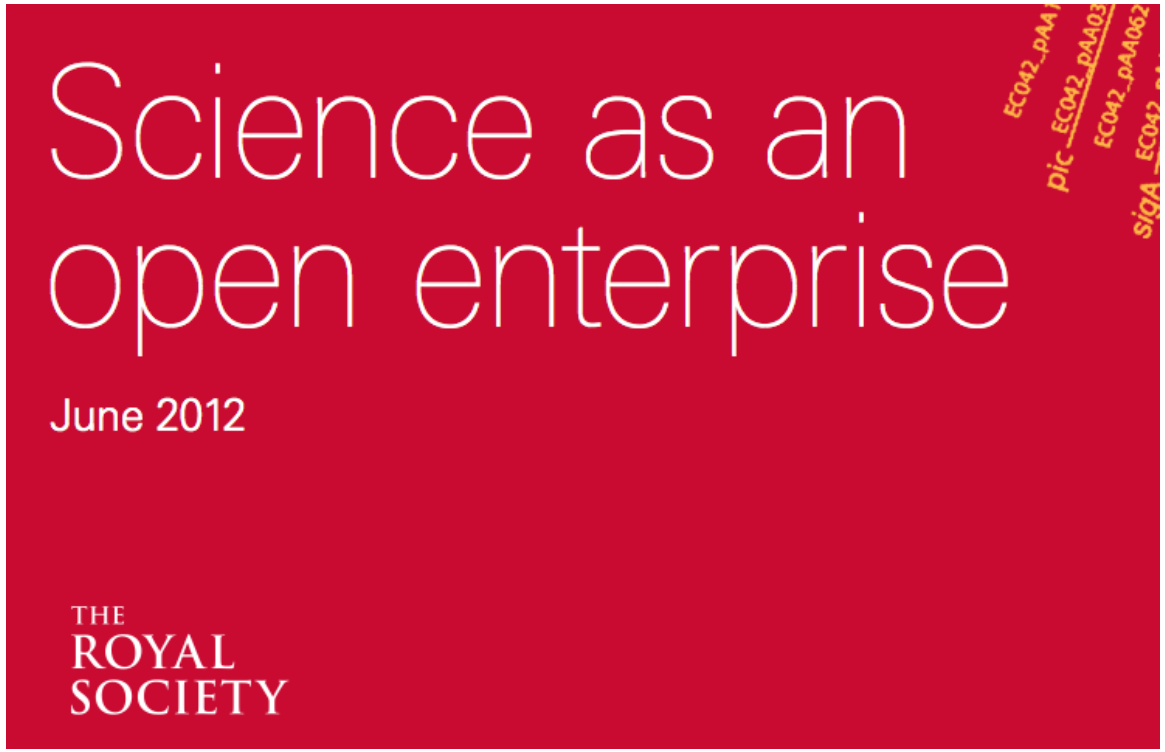
Royal Society: Science as an Open Enterprise (2012)

- **Open enquiry has been at the heart of science** since the first scientific journals were printed in the **seventeenth century**. …

- Science's capacity for **self-correction** comes from this openness to scrutiny and challenge.

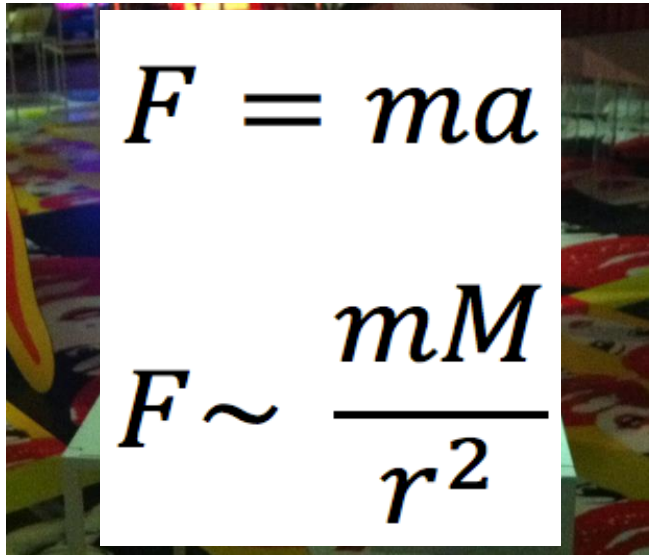
- **RS applied this to data:**

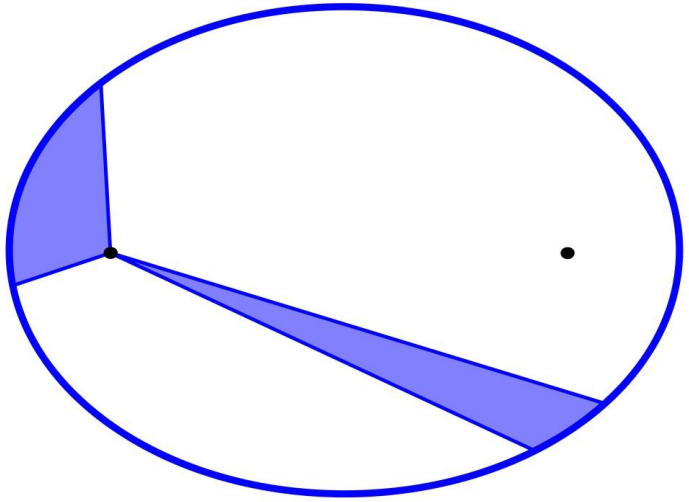
  « Intelligent Openness »



Modern Science is based on data – since the Renaissance!

- 1606 - 1618: **Kepler‘s Laws**
  - **from Tycho Brahe‘s quality data**
- 1684 – 1687 **Newton De Motu – Principia**
  - **explained (!) Kepler‘s laws**





Planet	T	d	T^2	d^3	T^2/d^3
Merkur	0,241	0,387	0,058081	0,057960603	1,002077221
Venus	0,615	0,723	0,378225	0,377933067	1,000772446
Erde	1	1	1	1	1
Mars	1,881	1,524	3,538161	3,539605824	0,999591812
Jupiter	11,863	5,203	140,730769	140,8515004	0,999142846
Saturn	29,458	9,555	867,773764	872,3526289	0,994751131

T = siderische Umlaufzeit in trop. Jahren d = große Halbachse in astronomischen Einheiten (Abstand Erde–Sonne)

“TOP” Guidelines – Science 2015

SCIENCE

Journal Science Releases Guidelines for Publishing Scientific Studies

By BENEDICT CAREY JUNE 25, 2015

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BROOKLYN
NOVEMBER 4

In the midst of a debate over scientific misconduct, one of the world’s leading scientific journals on Thursday posted the most comprehensive guidelines for the publication of studies in basic science to date, calling for the adoption of clearly defined rules on the sharing of data and methods.

The guidelines, published in Science, come weeks after the

Dr. Marcia McNutt, the editor-in-chief of Science, co-authored new guidelines to improve transparency of data, methods and materials in published studies.
Drew Angerer for The New York Times

TOP Criteria 2015

- TOP: modular, agnostic to disciplines, low barrier to entry; categories are:
  - a) **data citation**
  - b) design transparency (**standard operating procedures**, protocols)
  - c) materials transparency
  - d) **data transparency**
  - e) analytical **methods (code) transparency**
  - f) preregistration of studies
  - g) **preregistration of analysis plans**
  - h) replication
- 3 levels
  - level 1: article states whether data are available and where to access
  - level 2: data has to be in trusted repository
  - level 3: data in TR, but reported analyses will be reproduced independently

isgtw international science grid this week

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Home

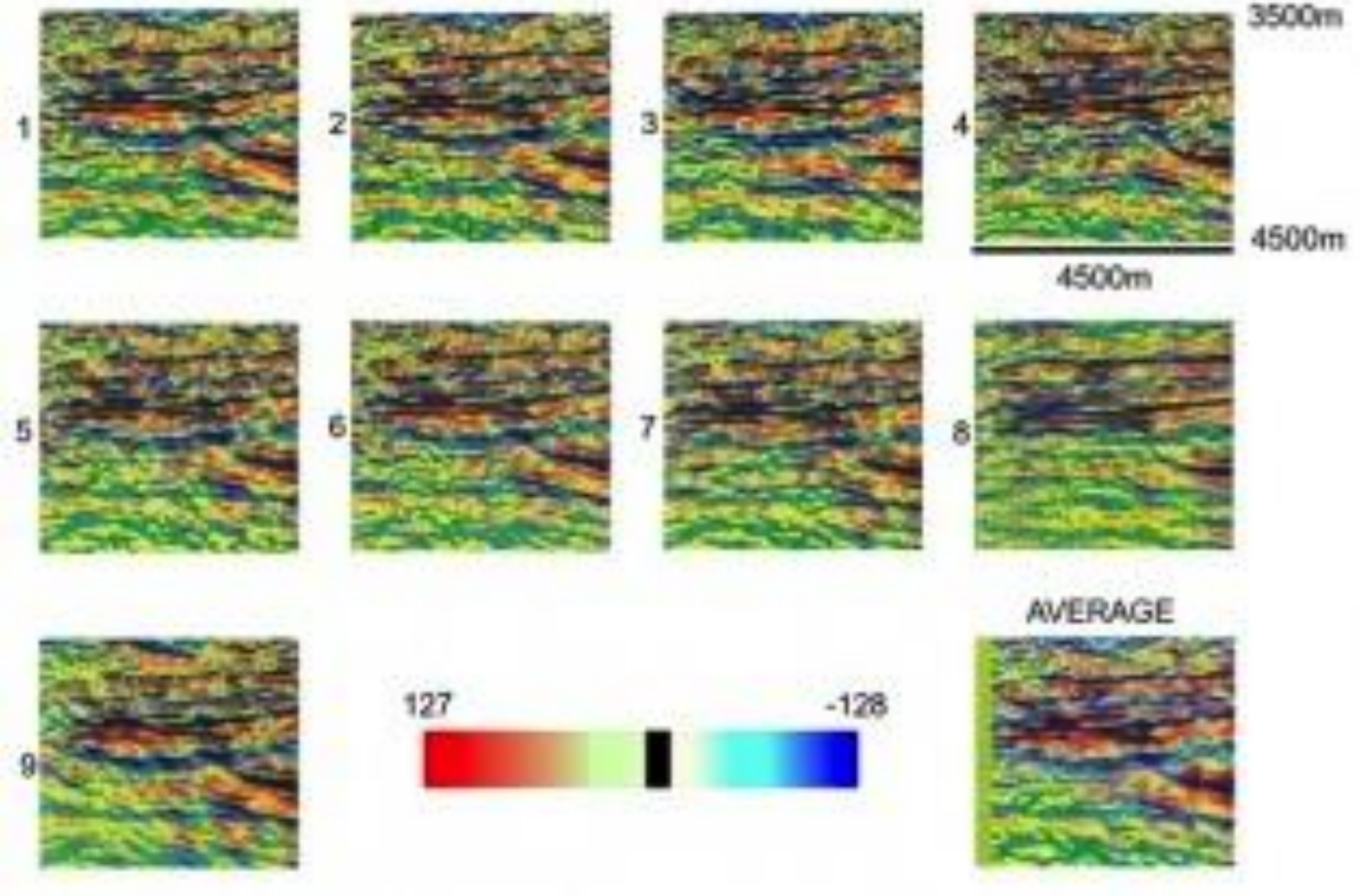
Does computation threaten the scientific method?

Reproducibility?

FEATURE | MARCH 28, 2012 | BY LESLIE HATTON, ADRIAN G[illegible]RDANI

The scientific method has been the most successful contributor to systematic progress in the history of human endeavour. One of the key elements of the method is that if the result cannot be reproduced, it is discarded. Models are then

- „using the same processed data from eight other companies, the same algorithms in the same programming language, same input data, but coded independently
- L.Hatton, A. Giordani, 2012



HELMHOLTZ
Open Science

Impressum | Datenschutz | Sitemap Deutsch

Suche

Open Science in der Helmholtz-Gemeinschaft | Bewusstsein schärfen | Projekte | Kontakt

„Open inquiry is at the heart of the scientific enterprise."

„Science as an open enterprise", Report der Royal Society, 2012

Arbeitspapier zum Thema Informationsbudget erschienen

Ein jetzt erschienenes Arbeitspapier argumentiert für die Etablierung eines Informationsbudgets, um alle Kosten einer wissenschaftlichen Einrichtung für die Informationsversorgung und das Publizieren zu erfassen. Mehr...

Helmholtz Open Science Webinar

Dr. Elmar Spiegel: How to make statistical analysis code reproducible and reusable

This webinar on 10 and 25 October 2019 will discuss ideas on how to enhance the reproducibility and reusability of program code for data analysis. More...

RSS-Feeds & Twitter

Aktuelles aus dem Projekt

Literaturhinweise

Twitter

Newsletter

Aktuelle Ausgabe des Helmholtz Open Science Newsletters

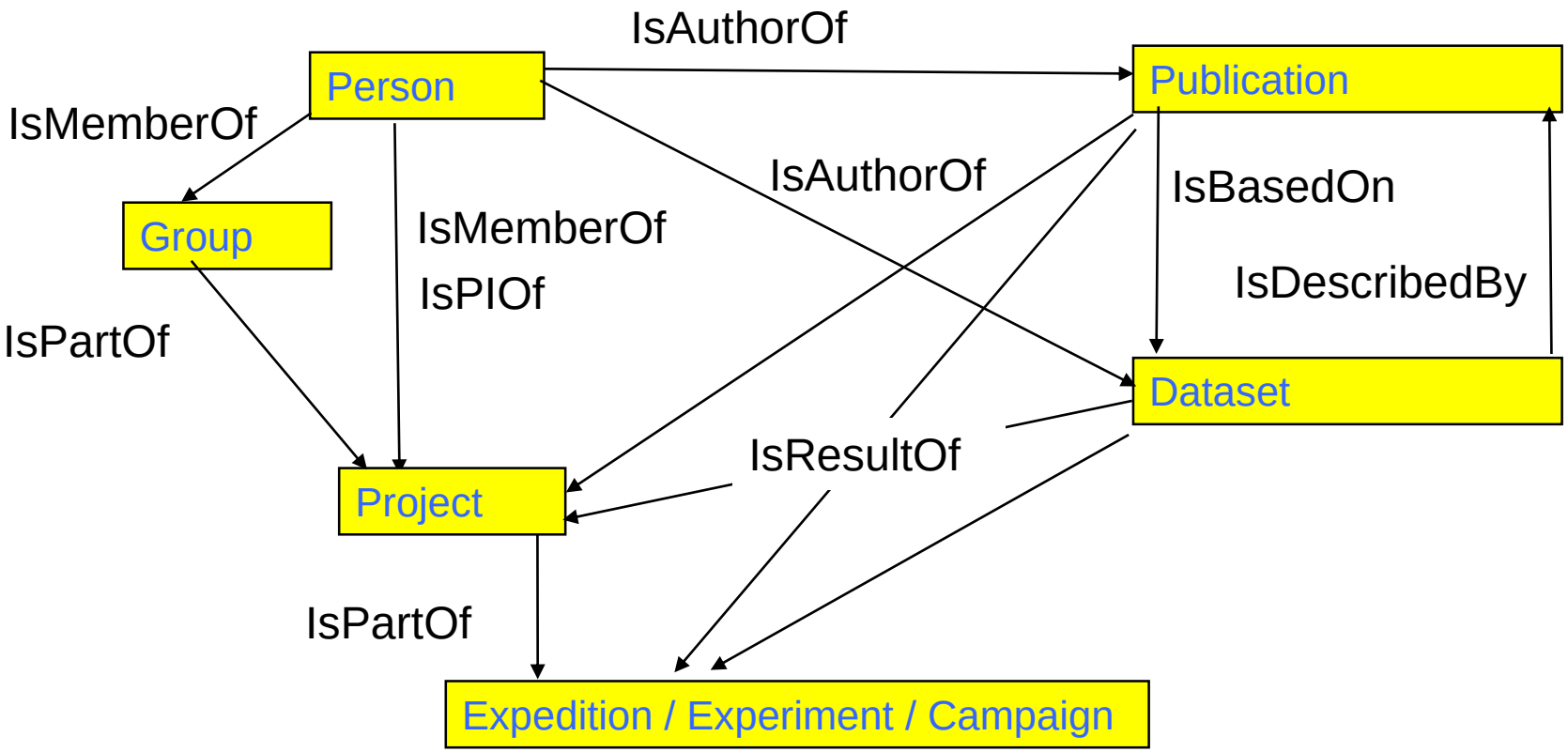
Open Science in der Helmholtz-Gemeinschaft

[in English]

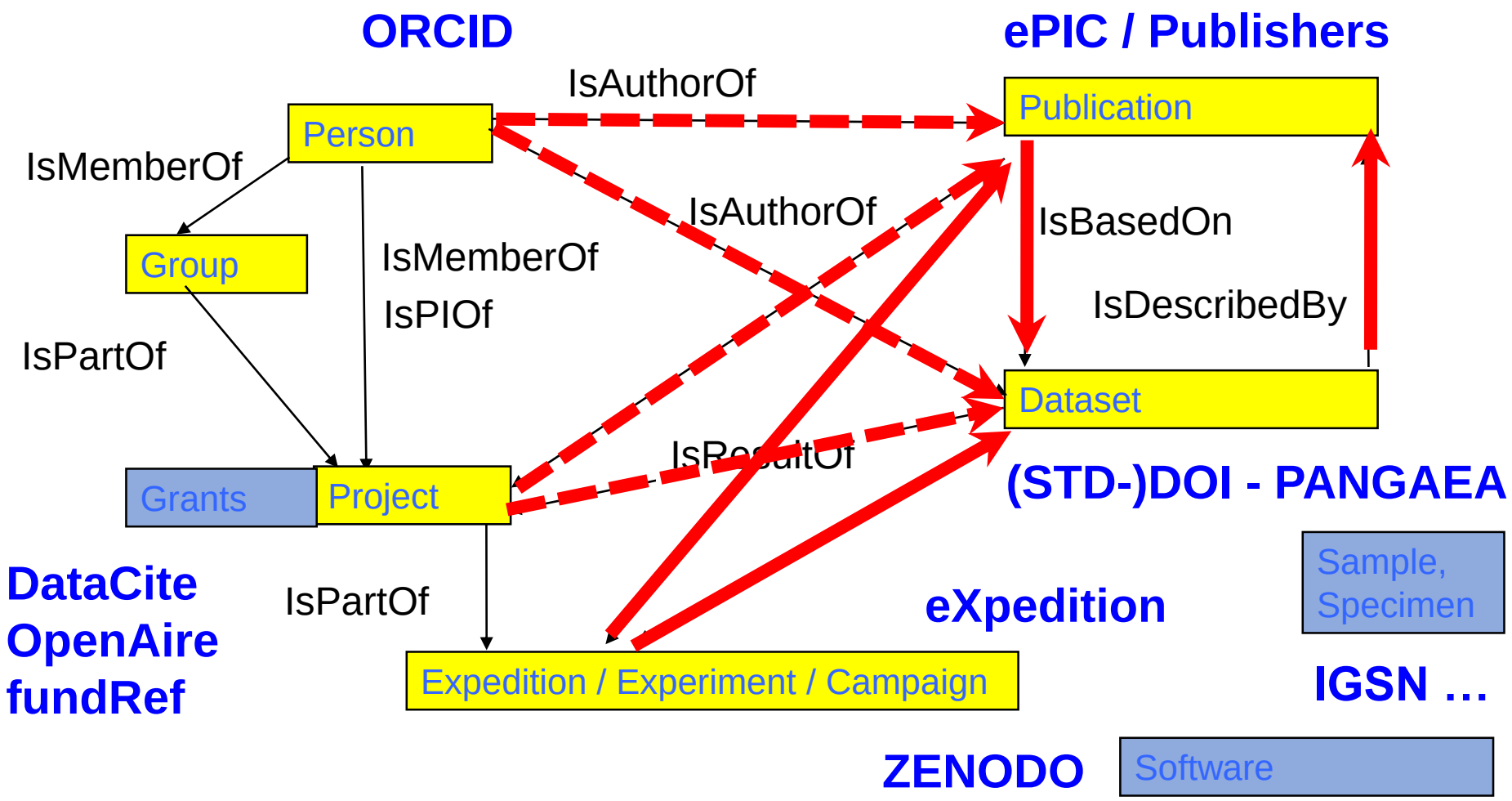
Der Begriff Open Science bezeichnet einen kulturellen Wandel in der wissenschaftlichen Arbeitsweise und Kommunikation. Computergestütztes Arbeiten und digitale Kommunikation ermöglichen einen effektiveren und offeneren Informationsaustausch innerhalb der Wissenschaft und fördern den Transfer der Ergebnisse in die Gesellschaft. Der offene, durch möglichst wenige finanzielle, technische und rechtliche Hürden behinderte Zugang zu wissenschaftlichen Publikationen, Forschungsdaten und Forschungssoftware erweitert die Transparenz und die Möglichkeiten zur Qualitätssicherung wissenschaftlicher Arbeit, erhöht durch eine verbesserte

Allianz der deutschen Wissenschafts-organisationen

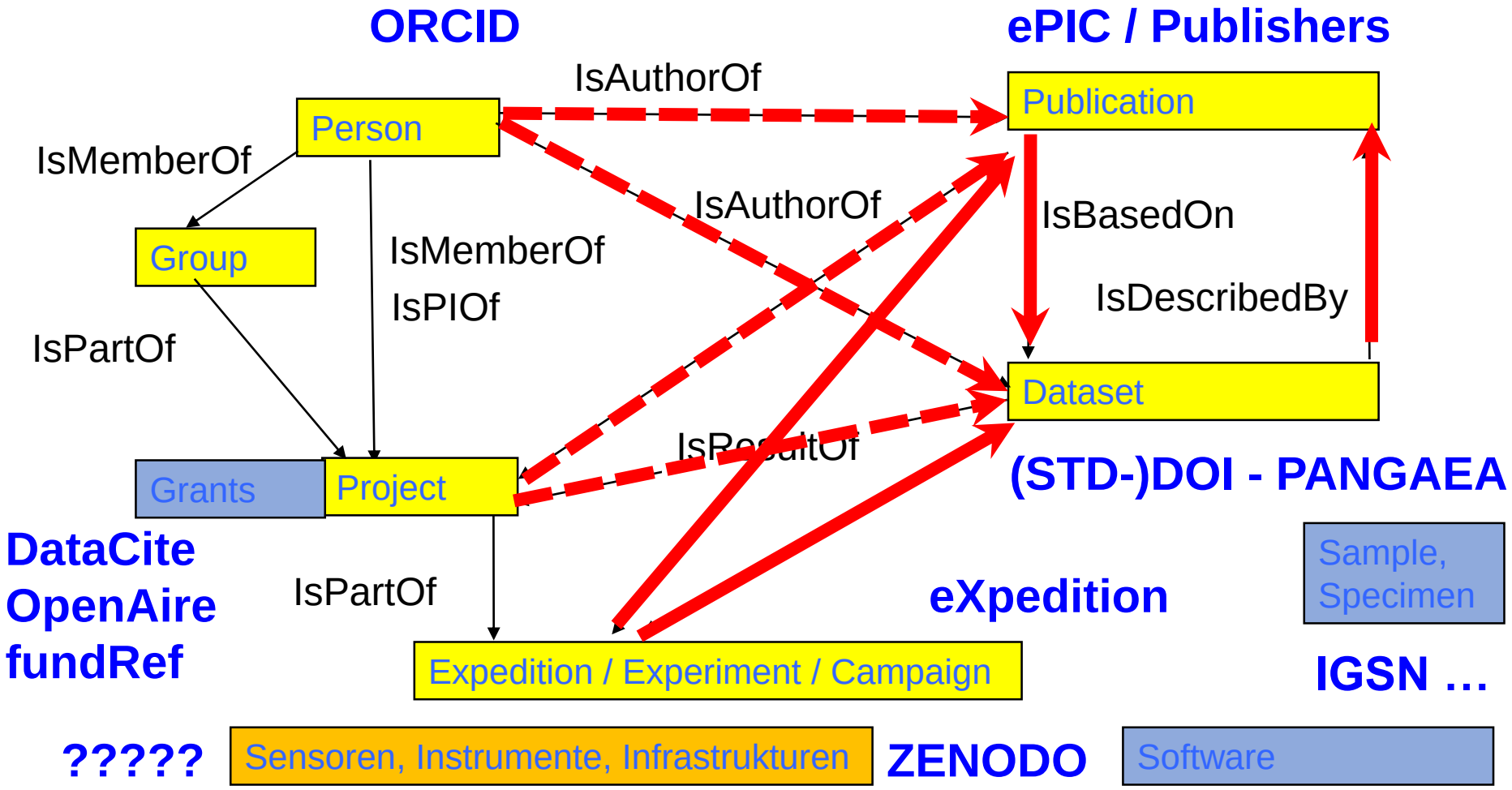
Pfeiffenberger, Macario
“Text, Data and People”, OAI4, CERN 2005



Pfeiffenberger, Carlson, TR32 DM WS Cologne 2014

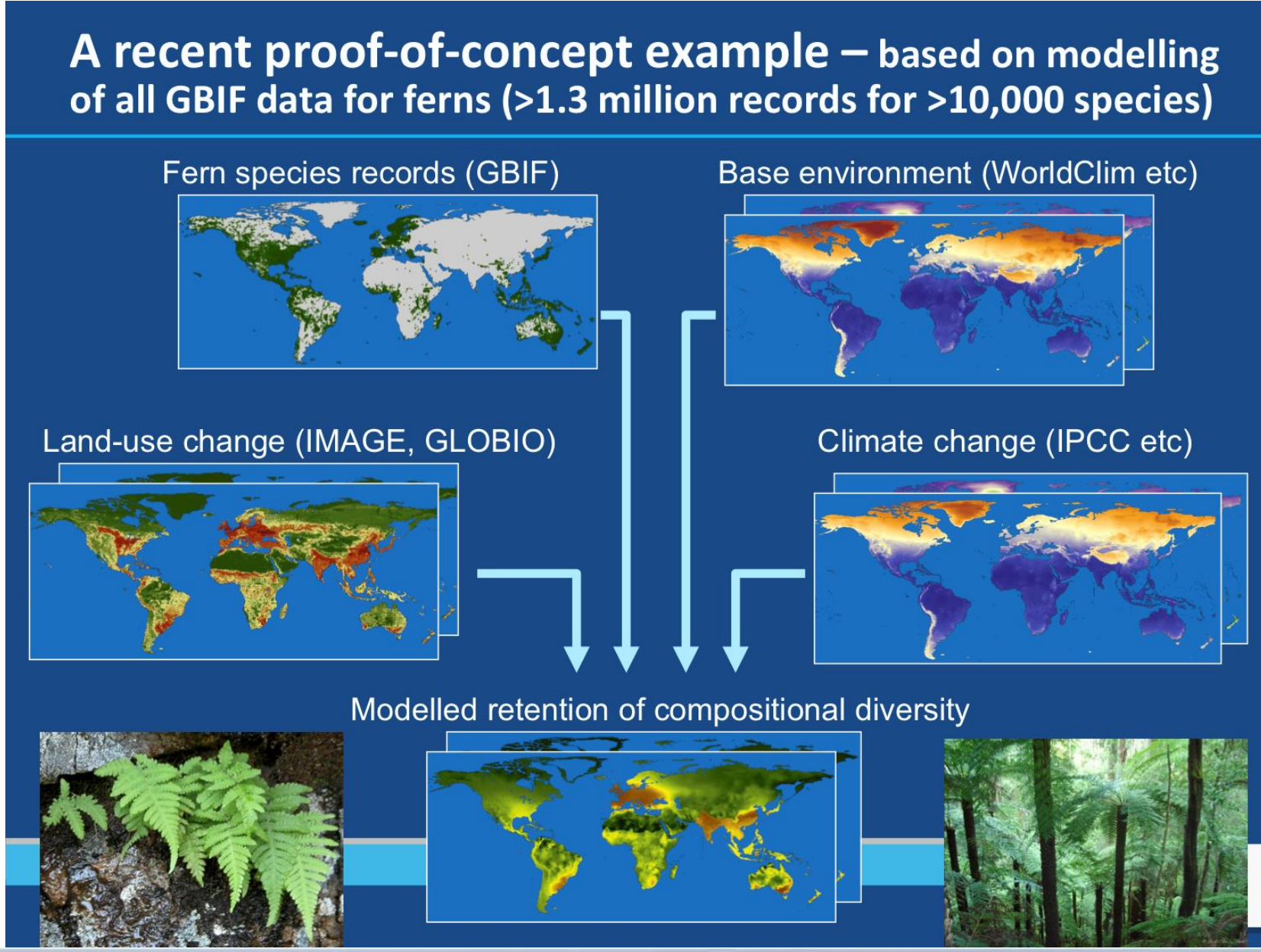


Pfeiffenberger, DINI 2017



Biodiversität

- GBIF : “occurrence data”:
  - 1,3 Mia Beobachtungen in 48.000 Datensätzen von **1.500 “Verlagen”**
  - CC0, CC-BY (erst?) *seit 2016*
    - Aber: “Nagoya Protokoll”
  - **IPCC SR15: 5.432 Datensätze**
  - **Fast 50% der Beobachtungen von “Citizen Scientists”**
- “Historische” Literatur:
  - (erst) 56 M von ca. 500 M Seiten sind digitalisiert
- Sammlungs-Objekte:
  - (erst) 10-15% von 3 Milliarden Objekten sind “digitalisiert”



Open (und FAIR) Scientific Output

- … ist **notwendig**, um in einer globalen heterogenen Landschaft von digitalen Objekten tatsächlich arbeitsfähig zu werden (statt Lizenzverhandlungen - oder Schlimmeres - zu führen)

- … ist **ideal**, da es bestmöglich wissenschaftliche Transparenz ermöglicht – nach dem neuesten Stand der Technik –
- … und wird noch für viele Jahre ***ein* Ideal** sein, an dem zu arbeiten sein wird – technisch und sozial/kulturell, je Disziplin –