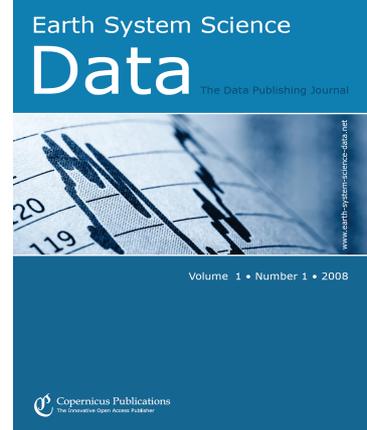# Evolution of Open Science
in Europe
and the Helmholtz Association

Hans Pfeiffenberger

Alfred-Wegener-Institute for Polar and Marine Research,
Helmholtz Association - Germany
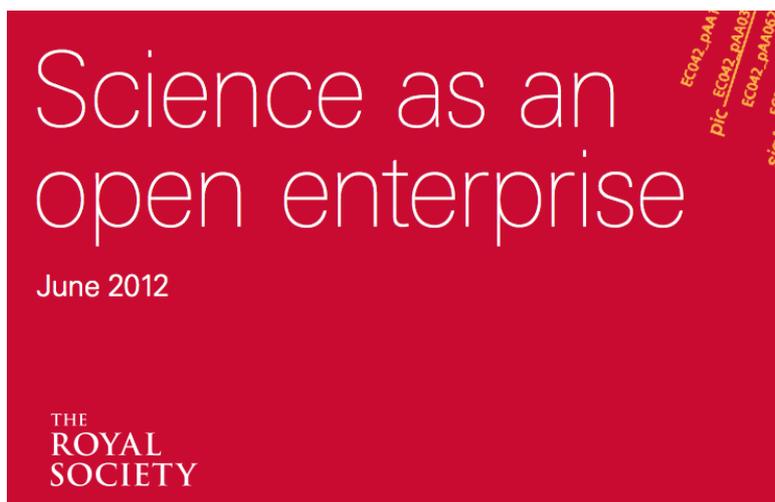
RDA Plenary 6, IG PANSIG, 2015-09-24, Paris

Earth System Science
Data
The Data Publishing Journal

Volume 1 • Number 1 • 2008

Copernicus Publications
The Innovative Open Access Publisher

AWI

Agenda

- **Selection of documents & declarations**

- **What motivates whom?**

- **Give an impression of a Timeline**

- **Summary**

Royal Society: Science as an Open Enterprise (2012)   [1]

- **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.

  Science as an open enterprise

  June 2012

  THE ROYAL SOCIETY

- **RS's take on data:**
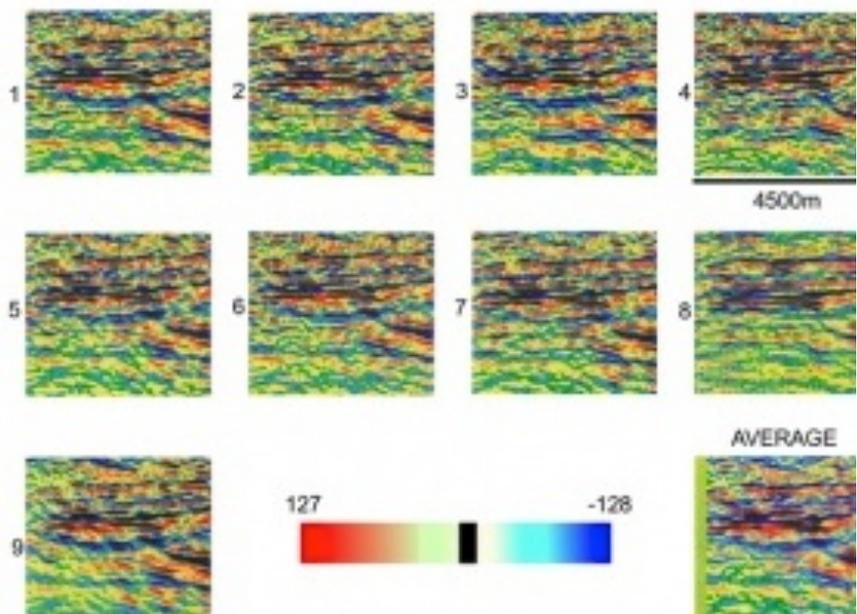
  Intelligent Openness

Reproducibility

- **"Reducing waste from incomplete or unusable reports of biomedical research" The Lancet (2014)**

- **"… studies of published trial reports showed that … 40–89% were non-replicable"**

- **Required solution is publishing and linking all text, data, software …**

- **"Data available on request" is "out" (PLoS);** (It has been shown over and over that requests are not honoured.)

Slide 1

PLoS Data Policy (2014)

- **Refusal to share data** and related metadata and methods in accordance with this policy will be grounds for rejection.

- PLOS journal **editors encourage researchers to contact them if they encounter difficulties in obtaining data … .**

- **If restrictions on access to data come to light after publication,** we reserve the right to post a correction, to contact the authors' institutions and funders, or in extreme cases to retract the publication.

Slide 2

The Dangers of Working in Closed Silos – „Does computation threaten the scientific method?"

- „using the same processed data from eight other companies, the

  same algorithms in the

  same programming

  language, using the

  same input data,

  just

  coded independently

- L.Hatton, A. Giordani ISGTW

The „economic" case: Primary data made available doubles the amount of knowledge gained
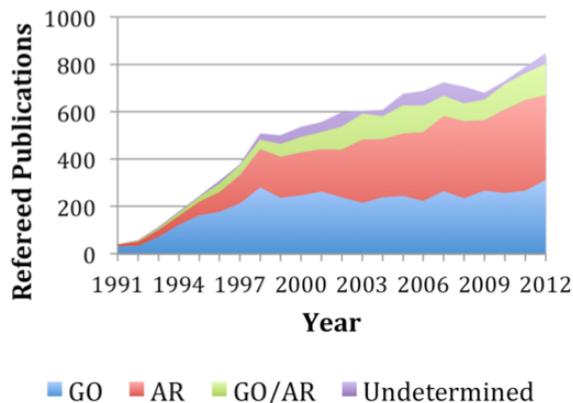
- **Hubble Space Telescope data**

Figure 1. Number of refereed publications based on Hubble Space Telescope data in the Multi-mission Archive at the Space Telescope Science Institute. GO = guest observer programs (papers published by the principal investigator and immediate collaborators), AR = archival research (papers published by researchers not affiliated with the principal investigator), GO+AR = papers that include both GO and AR data, and Undetermined = papers for which the origin of the data is unclear.

GLOBAL CARBON ATLAS

The Global Carbon Atlas is a platform to explore and visualize the most up-to-date data on carbon fluxes resulting from human activities and natural processes. Human impacts on the carbon cycle are the most important cause of climate change.

[2]

Outreach
Take a journey through the history and future of human development and carbon

Go

Funded by BNP Paribas

Emissions
Explore and download global and country level carbon emissions from human activity
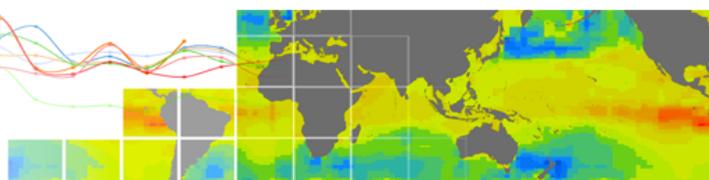
Updated with 2013 figures

Go

Implemented by WeDoData

Research
Explore and visualize research carbon data, and get access through data providers

Go

(„data journalism")

European Commission 2013 – Horizon 2020

- **H2020 talks of "Growth", Innovation,…**

- **"Research Data Pilot" on 20% of funding**

  - **Guidelines on Data Management (2013) [3]**

    - **Requires Open Data as default**

    - **Requires Data Management Plan**

      (as first deliverable)

    - **Allows to request funding for DM**

European Commission 2015

- **Speech "Open Innovation, Open Science, Open to the World", 22 June 2015, Carlos Moedas [4]**
  Commissioner for Research, Science and Innovation

  - **'A new start for Europe: Opening up to an ERA of Innovation' Conference**

  - **a new path for European research and innovation policy. … fit for purpose for a world that is open, digital and global.**

European Commission 2015

- **Draft [5] "European Charter for Access to Research Infrastructures"**

  - **societal challenges** such as climate change, health and ageing population

  - 4. PRINCIPLES, h) Research data management "… should have a **research data management policy"** => H2020 Guidelines

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Helmholtz Association 2003 - 2010

- **Berlin Declaration (2003) [6]**

  - Open access contributions include original scientific research results, **raw data** …

- Principles for the **Handling of Research Data**, Alliance of German Science Organizations (2010) [7]

  - supports the long-term preservation … principle of **open access to data from publicly funded research.**

Helmholtz Association 2013

- **Science Europe Roadmap (2013) [8]**

  - **Research data should be permanently, publicly and freely available for re-use.** …

    balanced approach

- **Science Europe:**
  - **50 Members**
  - **2/3 Funders**

PART II
Priority Action Areas.................
Access to Research Data ....
Cross-border Collaboration ....
Gender and Other Diversity Issues ....
Open Access to Research Publications ....
Research Careers...........................
Research Infrastructures.......................
Research Integrity...........................
Research Policy and Programme Evaluation
Science in Society ....

Helmholtz Association 2014 - 2015

- **Helmholtz Vice President Marquardt and RDA Council Member Wedlich also members [9] of the federal government's "Council on Information Infrastructure"**

- **Helmholtz Working Group on Open Access renamed to Open Science (2014) [10]**

  - **1st Draft of Helmholtz Data Policy 2015-10-01**

  - **Data Policies per Helmholtz Center by 2016, 2017 ?**

Summary

- **Open Access (to data) is coming**

- **Deal with it: Negotiate adequate embargo (when)**

  - **What to share, where**

- **Make sure that *you* (the data producer) will be rewarded (citation, evaluation)**

- **Care about the infrastructure (at RDA…)**

  - **For funding, pester EC, national councils, …**

Thank you!

Earth System Science

Data The Data Publishing Journal

www.earth-system-science-data.net

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119

Volume 1 • Number 1 • 2008

Copernicus Publications
The Innovative Open Access Publisher

Some References

[1] https://royalsociety.org/policy/projects/science-public-enterprise/Report/

[2] http://www.globalcarbonatlas.org/

[3] http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf

[4] http://europa.eu/rapid/press-release_SPEECH-15-5243_en.htm

[5] http://ec.europa.eu/research/infrastructures/pdf/2015_charterforaccessto-ris.pdf

[6] http://openaccess.mpg.de/Berlin-Declaration

[7] http://www.allianzinitiative.de/en/core-activities/research-data/principles.html

[8] http://www.scienceeurope.org/uploads/PublicDocumentsAndSpeeches/ScienceEurope_Roadmap.pdf

[9] http://www.rfii.de/en/category/the-council/

[10] http://oa.helmholtz.de/open-science-in-der-helmholtz-gemeinschaft.html