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"Antonio Zampolli"
Consiglio Nazionale delle Ricerche

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Meeting Ingenium
21-06-2023
Università di Chieti-Pescara

What is OPEN SCIENCE?

Open science: a “buzzword”

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“I call on all countries, companies and research institutions to support open data, open science, and open collaboration so that all people can enjoy the benefits of science and research”

T.A. Ghebreyesus, ‘

WHO Director-General’s Opening Remarks at the Media Briefing on COVID-19 - 6 April 2020

G7 - Open Science working group since 2016

G7 Science and Technology Ministers' Communique
Sendai, May 2023

（2）In order to contribute to the creation of new knowledge, G7 Ministers need to cooperate in the expansion of open science with equitable dissemination of scientific knowledge and publicly funded research outputs.

Annex 1: G7 Open Science (OS) Working Group

Mandate extended in the 2021 “G7 Research Compact”, committing the G7 nations to work together on open science.

In Europe: Council and European Commission

2015 on: Open Innovation, Open Science, Open to the world (publication)

Council conclusions on OS

2016 on: EOSC

NOTE

From:	General Secretariat of the Council
To:	Permanent Representatives Committee/Council
No. prev. doc.:	8024/23
Subject:	*Preparation of the Council (Competitiveness (Internal Market, Industry, Research and Space)) on 22-23 May 2023* Draft Council conclusions on high-quality, transparent, open, trustworthy and equitable scholarly publishing - Approval

Horizon Europe and H2020:

2008
FP7
OA **Pilot**
Deposit and open access

2014
H2020
OA **Mandatory**
Deposit and open access
& ORD/DMP **Pilot**

2017
H2020
OA **Mandatory**
Deposit and open access
& ORD/DMP **by default (exceptions)**

2021
Horizon Europe
OA **Mandatory** Deposit and OA
DMP in line with FAIR **Mandatory**
OD **by default (exceptions)**
& Open Science **embedded**

What is Open Science?

What is Open science?

A **first definition**

Paul David (2000/2007)

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Two opposite models:

(1) "**open science**": Science as collaboration.
It is the most fragile model. It needs public support (policies), not just funding.

(2) Commercially oriented R&D. Science as competition.
based on proprietary information.

These two tendencies must be in the right balance.

Open science as a trait of modern science

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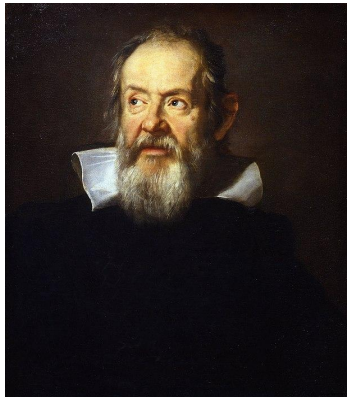
Collaboration is made possible through **publication** (via the press):



"**Parmi necessario**, oltre a le altre circuspezioni, per mantenere et augumentare il grido di questi scoprimenti, **il fare che con l'effetto stesso sia veduta et riconosciuta la verità da più persone che sia possibile**: il che ho fatto et vo facendo in Venezia et in Padova".

(Galilei, 1610)

Openness is about a discourse on the method

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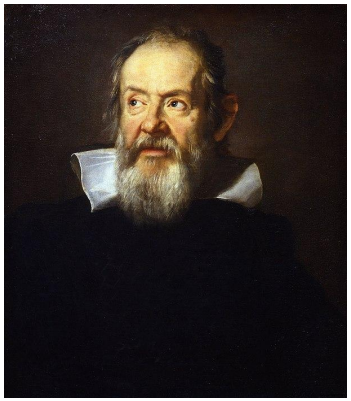

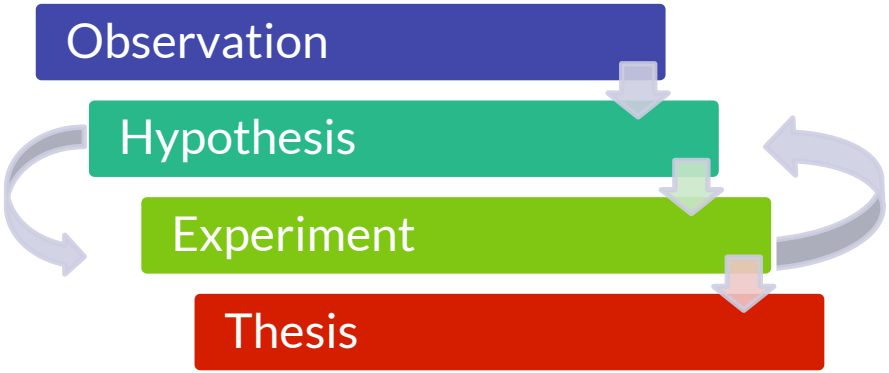

→ Science is based on the idea of **a debate, which precondition is to have shared and common data, tools and methodological foundations**

→ The method implies a set of rules of behaviour (**common ethos**)

The ethos of (open) science: Mertonian CUDOS

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(1) Universalism - everybody can do science

(2) Communism (Communalism) - knowledge belongs to everybody

(3) Disinterestedness - scientists should not follow personal agendas but work for the 'greater good'

(4) Organized Skepticism - judgment is suspended until findings have been examined

(Merton, 1942)

Science is based on collaboration

Thomas Jefferson (1813)

"He who receives an idea from me, receives instruction himself without lessening mine; as he who lites his taper at mine, receives light without darkening me"

Isaac Newton (1676)

"If I have seen further it is by standing on the shoulders of Giants".

...but also ***Giustino philosopher***: «Nonne vero hoc tale est quale etiam in nobis fieri videmus? Sermonen enim aliquem proferentes,sermonem gignimus; non per abscissionem, ita ut sermo (ratio) qui in nobis est imminuatur, proferentes. **Quale est etiam quod in igni videmus alium |ignem| fieri, non imminuto illo ex quo accensus est, sed in eodem statu manente; et qui ex eo accensus est etiam ipse exsistens apparet non imminuens illum ex quo accensus est**»

..but also ***John of Salisbury***: «Bernard of Chartres said that **we are like dwarves on the shoulders of giants, so that we can see more things than them and further away**, certainly not because of the acuity of sight or the height of our body, but because we are lifted and carried high from the stature of giants»

In sum

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- Open Science means applying correctly the scientific methods to the entire scholarly communication workflow, by making the processes and products transparent, and FAIR.
- It is based on sharing, collaboration, openness (shared values at institutional levels)
- Real-life constraints/barriers:
  - copyright
  - infrastructures
  - Policies/mandates
  - (counter)incentives

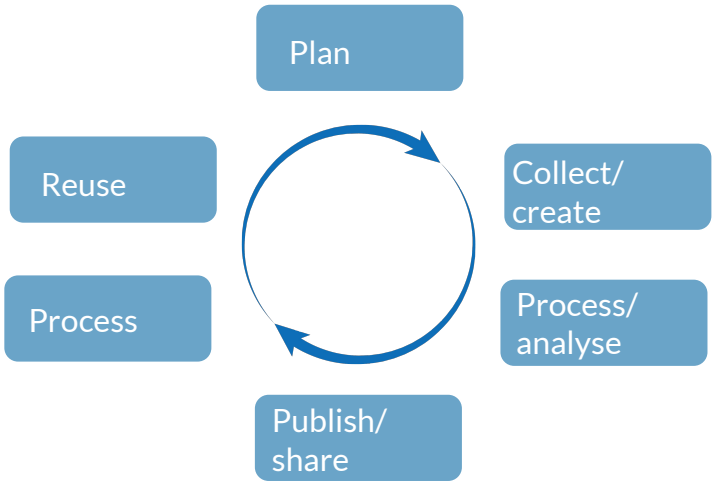
One step back:

History of SCHOLARLY COMMUNICATION (pills)

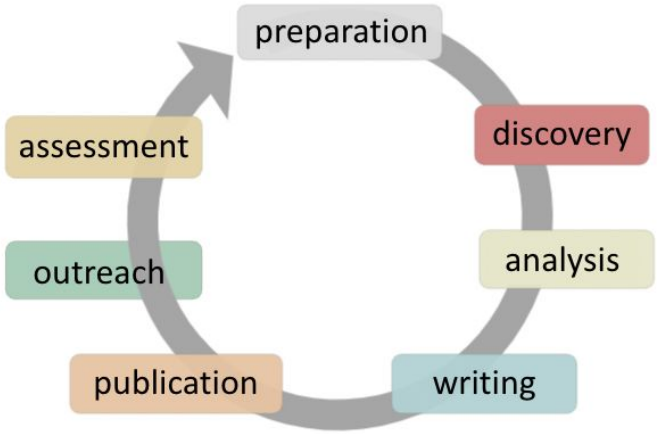
What about scholarly communication

"the system through which research and other scholarly writings are **created**, **evaluated** for quality, **disseminated** to the scholarly community, and **preserved** for future use" (ACRL, 2003)

It can been seen as a **workflow**, a process, and a set of practices and empowering tools which structure our "scholarly behaviour" .



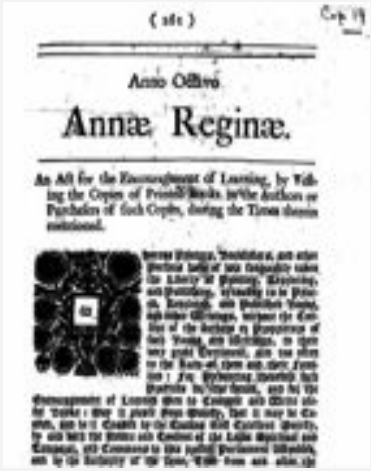
Data centric perspective



Researcher centric perspective

The modern science system of communication

3 major innovations:


Anno Octavo
Annæ Reginæ.

1. Copyright

- **1710 Statute of Anne**
- End of the system of privileges
- Lasts 14 years (+14)
- first european law on "copyright" = right on the copy.
- Birth of the "author"

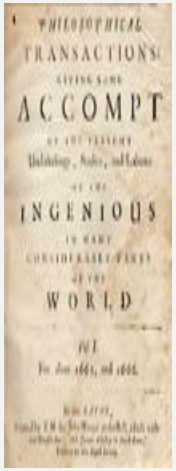
Before print

- Roman law and the res qui tangi possunt (Scientia donum dei est, unde vendi non potest)
- Science as a common good

The regime of privileges

- The object is not intellectual property but the actions of the press and book trade
- Censorship

(Guédon J.-C., 2002; Johns A., 1998; (Italian) Di Donato F., 2009)



2. Scientific Journals

- 1665: *Philosophical Transactions of the Royal Society of London*
- Public registry of Intellectual property
- Arbiter elegantiarum

+

3. Peer reviewing

- Perusal
- 1731 - Royal Society of Edinburgh
- It becomes the standard evaluation practice

(Guédon J.-C., 2002; Johns A., 1998; (Italian) Di Donato F., 2009)

The spread of Scientific Journals and the birth of bibliometrics

1665→ 1900: Journals become the “killer app” of modern science

Maxwell (1950s):

- creation of "international" journals for a world audience (International Journal of ..);
- use of English as the default language to facilitate the treatment of the whole world as a single market;
- libraries = primary market for magazines.

1960s (Garfield): Science Citation Index and the Impact Factor (**bibliometrics**).

Journals grant intellectual property rights; act as brand; and they function as a career management system, thus becoming more and more central to the academic communication system.

(Guédon J.-C. 2002; 2015).

1990s
The crisis
of the modern scholarly communication system

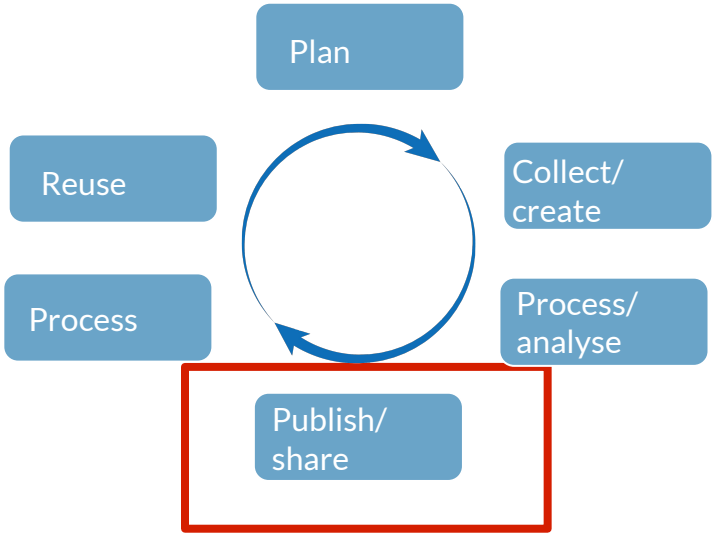
"Ostensibly aligned,

publishing and communication have diverged.

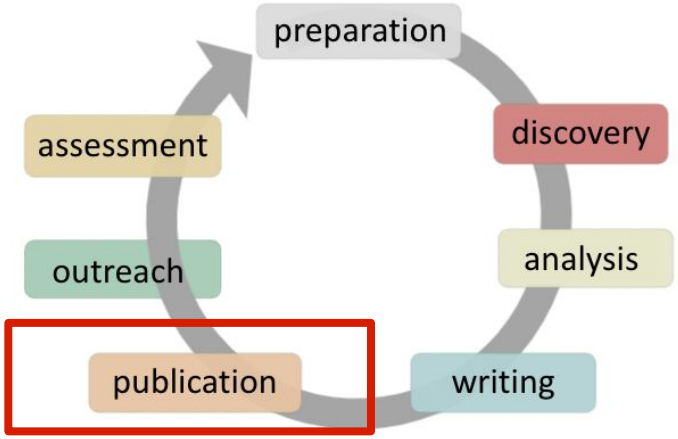
Journals and the concept of "version of record" are not only a legacy from print, but their roles have shifted to the point where some processes involved in scholarly publishing are getting in the way of optimal scholarly communication, as the present pandemic amply reveals."

J.C. Guédon, **Scholarly Communication and Scholarly Publishing**, 2021

NB: Formalised publishing practices are just a subset of a larger pool of various communication practices (emails, social media, blogs, press, etc.), both between scholars and between scholars and the public.



Data centric perspective



Researcher centric perspective

6

Open Science:
a recent definition

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"Open science is defined as **an inclusive construct** that **combines various movements and practices** aiming **to make multilingual scientific knowledge openly available, accessible and reusable for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community**. It comprises all scientific disciplines and aspects of scholarly practices, including basic and applied sciences, natural and social sciences and the humanities, and it builds on the following **key pillars: open scientific knowledge, open science infrastructures, science communication, open engagement of societal actors and open dialogue with other knowledge systems**".

UNESCO recommendation on open science, November 2021

What is Open science?

Open Science **movements**

1960 → on: Internet and the Web
Protocols are published in the PD
RFC as a working methodology

1987 → on: Free Libre Open Source Software movement
GNU licenses
Working methodology based on open and early sharing of results and processes
"Bazaar" (academia/puzzle) model

What is Open science?

Open Science **movements**

2002 → on: **Open Access**

"*An old tradition and a new technology have converged to make possible an unprecedented public good*" (BOAI, 2002)

Protocols (OAI-PMH), software, declarations (Berlin, 2003), and funder mandates (European Commission)

2006 → on: Open Content

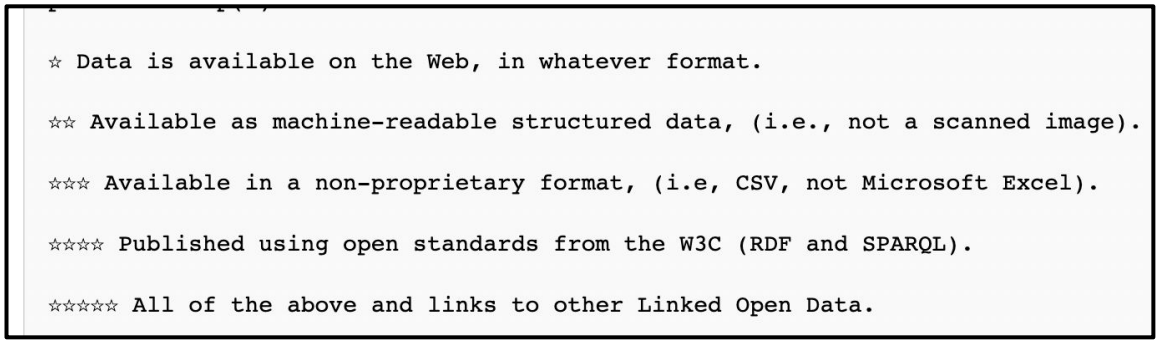
Creative commons licenses

What is Open science?

Open Science **movements**

2006 -2015 → Linked Open Data & **FAIR data**

Linked data:



FAIR data:

FAIR Principles: Findability, Accessibility, Interoperability a Reusability (Wilkinson et al., 2016)

Victoria Tsoukala, PhD, Policy Officer
Unit 'Open Science', DG RTD
April 21, 2021

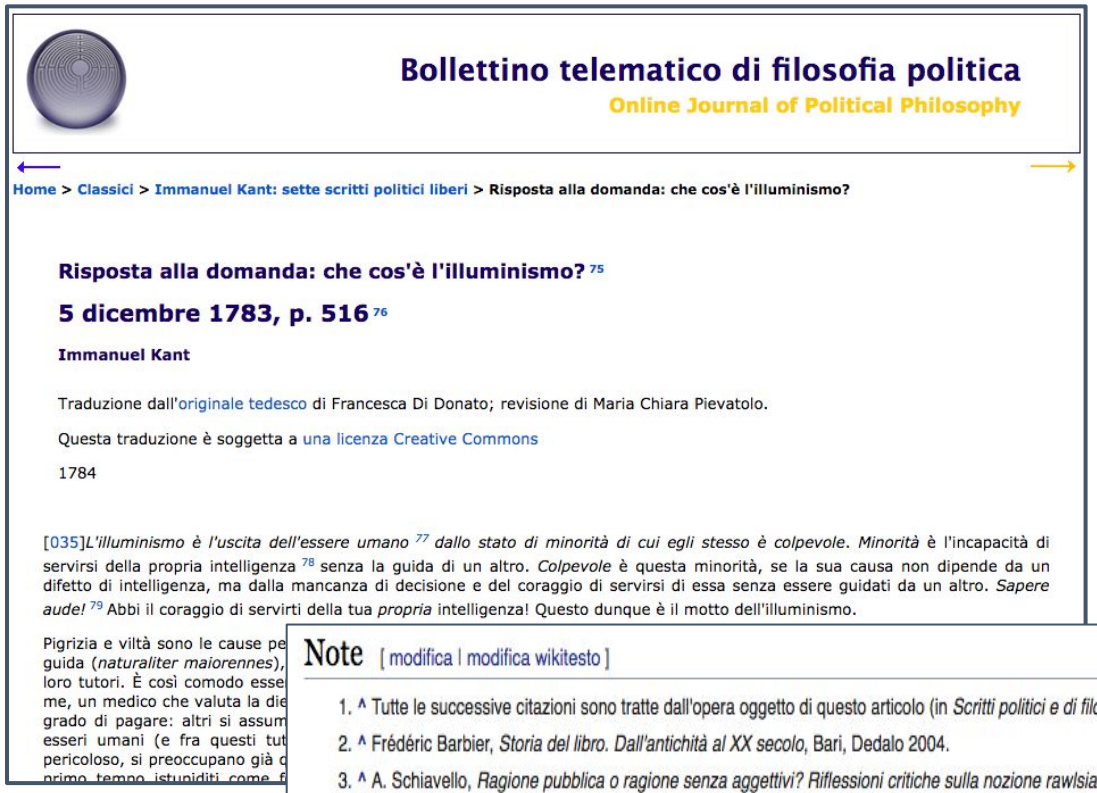
What is Open science?

Open Science **practices**

- **early and open sharing** of research (for example through preregistration, registered reports, pre-prints, or crowd-sourcing)
- **research output management** including research data management
- measures to ensure **reproducibility** of research outputs
- providing **open access** to research outputs (e.g. publications, data, software, models, algorithms, and workflows) through deposition in **trusted repositories**
- participation in **open peer-review**
- **involving all relevant knowledge actors** including citizens, civil society and end users in the co-creation of R&I agendas and contents (such as citizen science)

*Listed in the proposal template
** Mandatory and non-mandatory practices.

A (bad) example of workflow



Bollettino telematico di filosofia politica

Online Journal of Political Philosophy

Home > Classici > Immanuel Kant: sette scritti politici liberi > Risposta alla domanda: che cos'è l'illuminismo?

Risposta alla domanda: che cos'è l'illuminismo? [75]

5 dicembre 1783, p. 516 [76]

Immanuel Kant

Traduzione dall'originale tedesco di Francesca Di Donato; revisione di Maria Chiara Pievatolo.

Questa traduzione è soggetta a una licenza Creative Commons

1784

[035]*L'illuminismo è l'uscita dell'essere umano* [77] *dallo stato di minorità di cui egli stesso è colpevole. Minorità* è l'incapacità di servirsi della propria intelligenza [78] senza la guida di un altro. *Colpevole* è questa minorità, se la sua causa non dipende da un difetto di intelligenza, ma dalla mancanza di decisione e del coraggio di servirsi di essa senza essere guidati da un altro. *Sapere aude!* [79] Abbi il coraggio di servirti della tua *propria* intelligenza! Questo dunque è il motto dell'illuminismo.

Pigrizia e viltà sono le cause pe
guida (*naturaliter maiorennes*),
loro tutori. È così comodo esse
me, un medico che valuta la die
grado di pagare: altri si assum
esseri umani (e fra questi tut
pericoloso, si preoccupano già c
primo tempo istupiditi come f

Note [modifica | modifica wikitesto]

1. ^ Tutte le successive citazioni sono tratte dall'opera oggetto di questo articolo (in *Scritti politici e di filosofia della storia e del diritto*, Torino, 1963)
2. ^ Frédéric Barbier, *Storia del libro. Dall'antichità al XX secolo*, Bari, Dedalo 2004.
3. ^ A. Schiavello, *Ragione pubblica o ragione senza aggettivi? Riflessioni critiche sulla nozione rawlsiana di ragione pubblica*, in G.L. Brena (a cura di), *Etica pubblica e pluralismo*, Padova, Editrice Il Messaggero, 2001.
   John Rawls si è particolarmente occupato di questo tema kantiano dell'uso pubblico della ragione (cfr. Claudia Mancina, *Uso pubblico della ragione e ragione pubblica: da Kant a Rawls*).
4. ^ Jürgen Habermas, *Storia e critica dell'opinione pubblica*, trad. it., Bari, Laterza, 1990.

Bibliografia [modifica | modifica wikitesto]

- I. Kant, *Risposte alla domanda: Che cos'è l'Illuminismo?* (in *Scritti politici e di filosofia della storia e del diritto*, Torino, 1963)
- I. Kant, *Risposta alla domanda: che cos'è l'illuminismo?*, traduzione dall'originale tedesco di Francesca Di Donato, Bollettino telematico di filosofia politica

The case is **my translation of Kant's writing: Beantwortung der Frage: Was ist Aufklaerung?** published under the CC BY-SA 2.0 IT license.

It is apparently a case of success: quoted on Wikipedia, is the first result you find on Google … so

Cfr: Risposta alla domanda che cos'è illuminismo and the related wikipedia entry.

…so, why is it a bad model?

→ Publication → Outreach → Assessment

- Archive
- Select journal to submit to
- Publish

- Archive presentations
- Tell about outside academia
- Researcher profiles

- Determine impact of research output
- Determine impact of researchers

Archivio Marini
open access archive for political and social sciences

Bollettino telematico di filosofia politica
Overlay journal of political philosophy

DOAJ DIRECTORY OF OPEN ACCESS JOURNALS

e-LiS e-prints in library & information science [2003-2018] 15th Anniversary

figshare

ORCID Connecting Research and Researchers

Where
data? I L
the
es?
D!

Are these documents OA? **YES**

Are these documents+data FAIR? **YES**

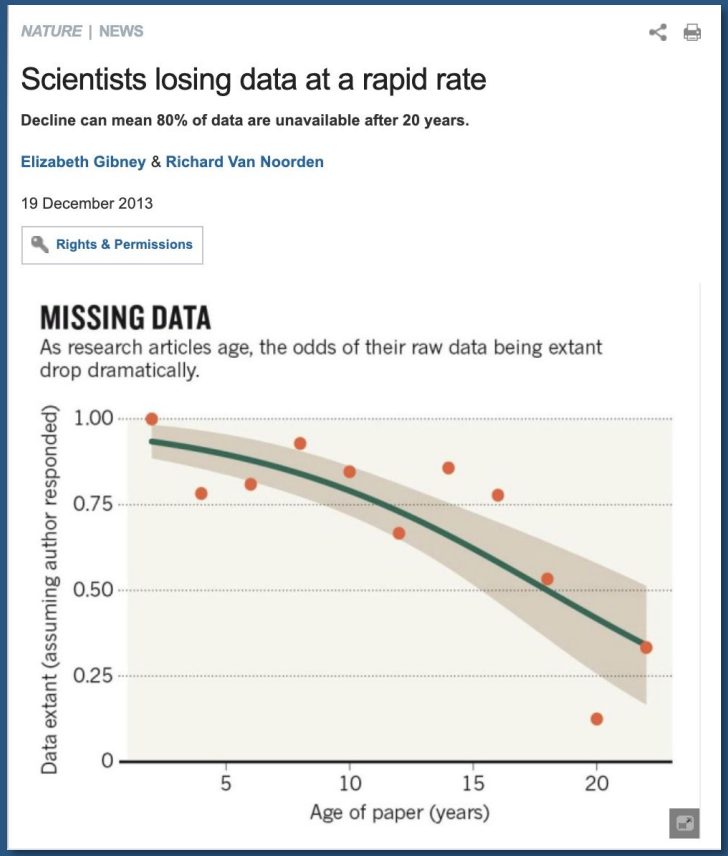
do I have this data? **YES**

and I'm not alone...

The authors of the study, which is published today in *Current Biology*[1], looked for the data behind 516 ecology papers published between 1991 and 2011. The researchers selected studies that involved measuring characteristics associated with the size and form of plants and animals, something that has been done in the same way for decades. By contacting the authors of the papers, they found that, whereas data for almost all studies published just two years ago were still accessible, the chance of them being so fell by 17% per year. Availability dropped to as little as 20% for research from the early 1990s.

"Most of the time, researchers said 'it's probably in this or that location', such as their parents' attic, or on a zip drive for which they haven't seen the hardware in 15 years," says Timothy Vines, the lead author on the study and an evolutionary ecologist at the University of British Columbia in Vancouver. "In theory, the data still exist, but the time and effort required by the researcher to get them to you is prohibitive."

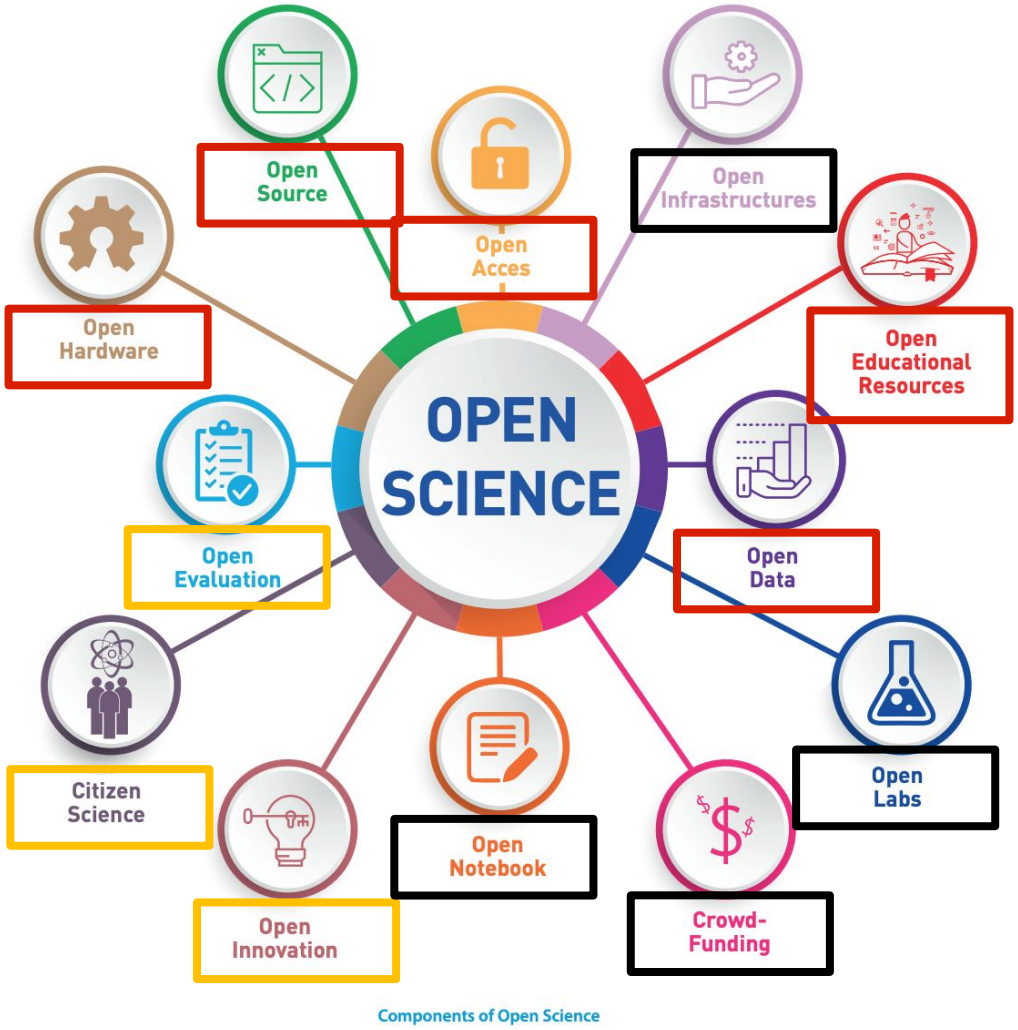
Another challenge was simply tracking down authors and receiving a response, something at which the team was successful in just 37% of cases. The likelihood of being able to find a working e-mail address, even after an extensive online search, declined by 7% per year. Meanwhile, only around half of the authors with valid addresses responded to the requests, however old the paper.



https://www.nature.com/news/scientists-losing-data-at-a-rapid-rate-1.14416

Back to the definition

"..aiming to [1] make multilingual scientific knowledge openly available, accessible and reusable for everyone, to [2] increase scientific collaborations and sharing of information for the benefits of science and society, and [3] to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community.



Components of Open Science

Back to the definition

"... It **comprises all** scientific disciplines and aspects of **scholarly practices**, including basic and applied sciences, natural and social sciences and the humanities,

and it **builds on the following key pillars**:

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open scientific knowledge
(open access, open data, open source, open hardware, OERs, open labs, open notebooks)
so to make it reused by others

open science infrastructures
ESFRIs and other Research Infrastructures (see also the PNIR for the Italy) and the EOSC as a common ecosystem of resources and tools

science communication
open processes (including evaluation) and research objects
value what values (quality)

open engagement of societal actors
citizen science, crowd-founding

and **open dialogue with other knowledge systems**
open innovation

An umbrella (or a mushroom?) term

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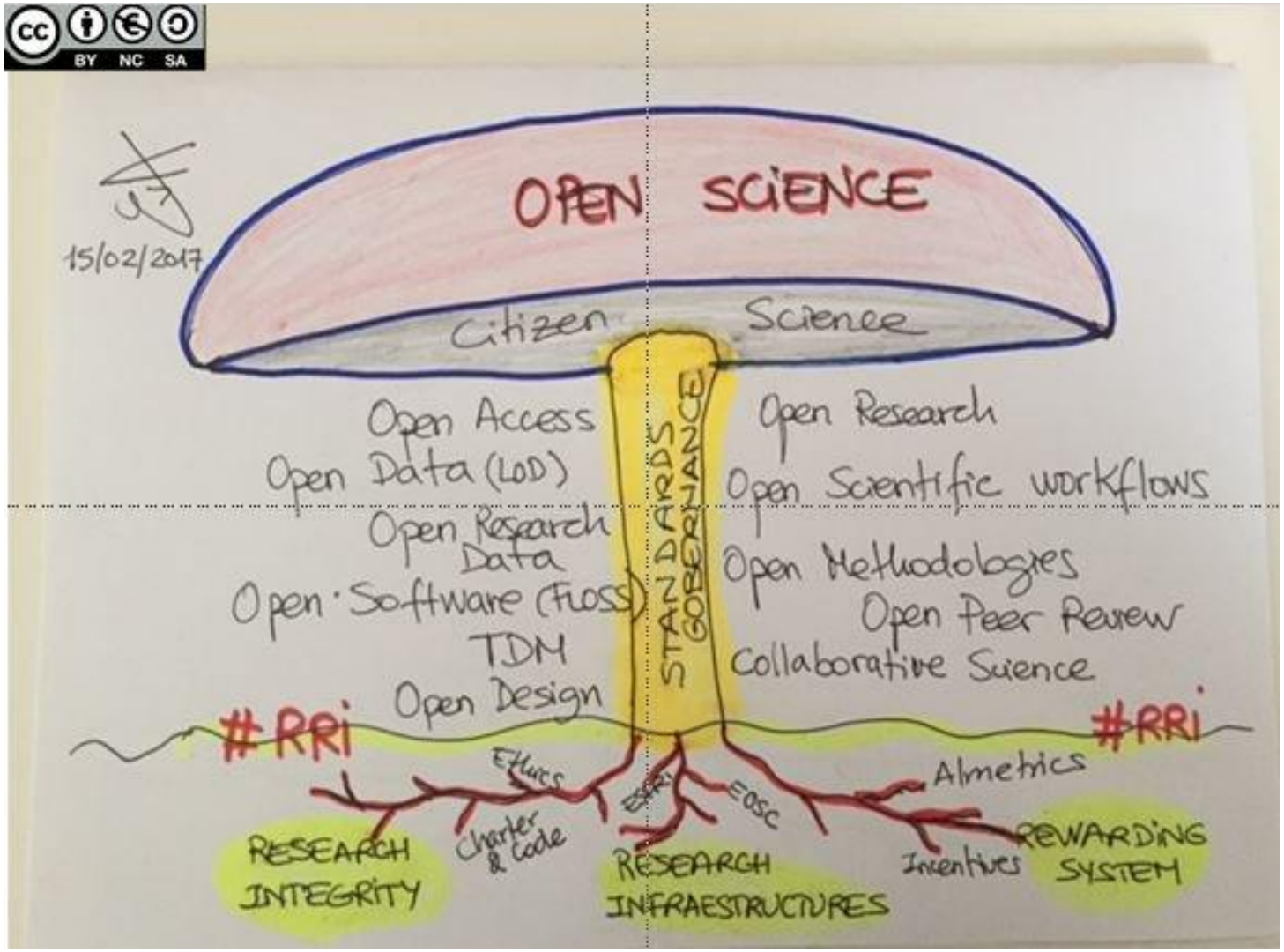

Source: Eva Mèndez, Twitter, 2017

In sum (again)

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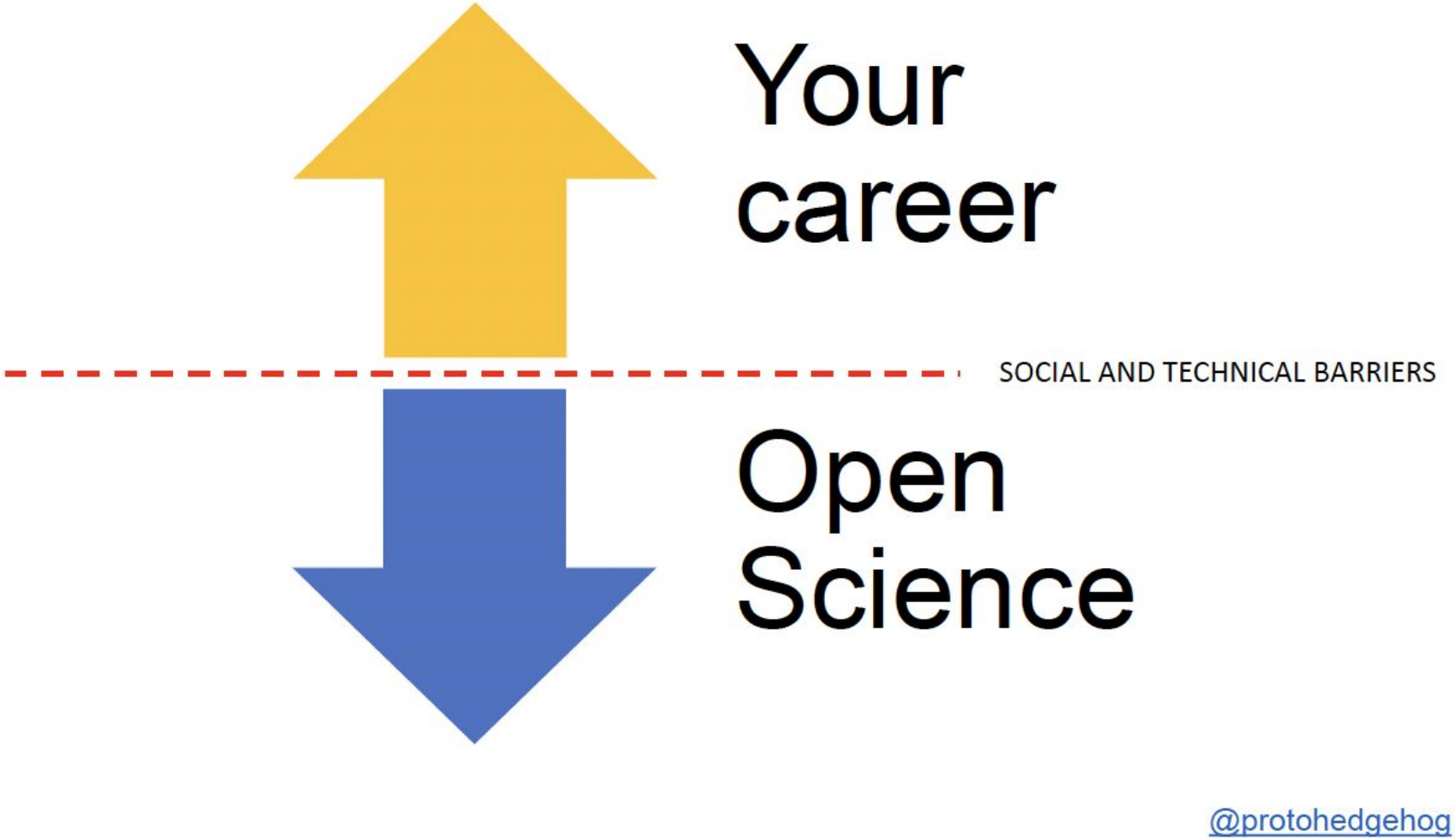
- Open Science means applying correctly the scientific methods to the entire scholarly communication workflow, by making the processes and products transparent, and FAIR.
- It is based on sharing, collaboration, openness (shared values at institutional levels)
- **But there are real-life constraints/barriers:**
  - copyright
  - (missing/not interoperable/closed) infrastructures
  - Policies/mandates
  - **(counter)incentives**



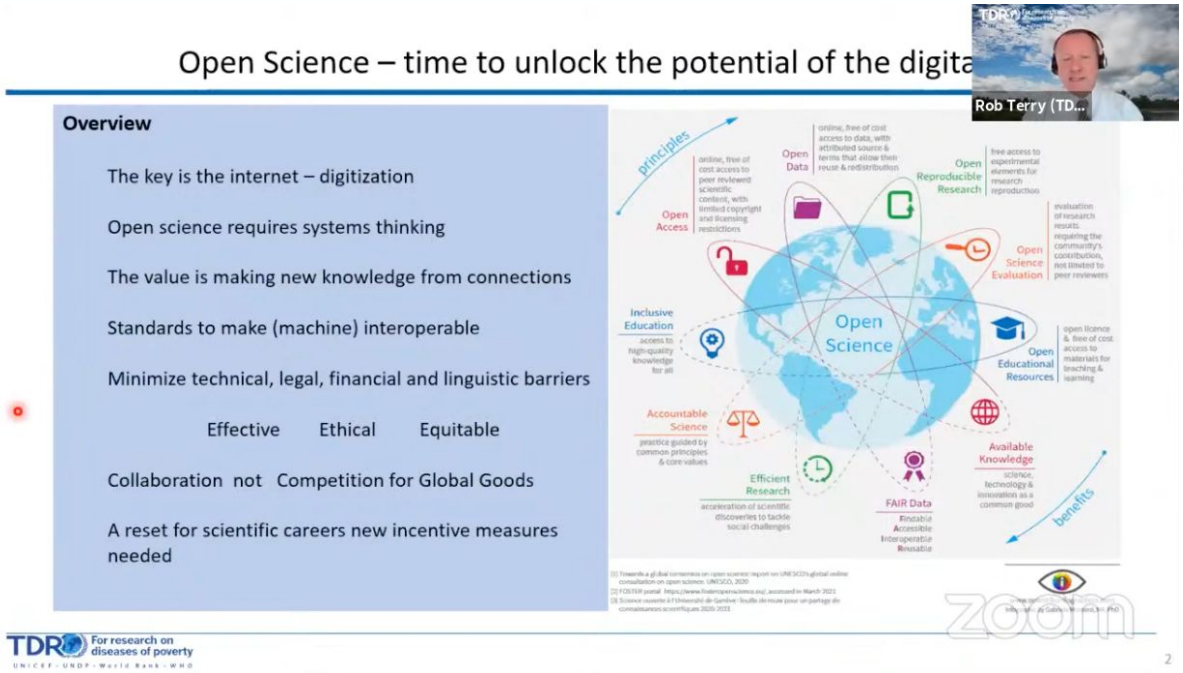
(Tennant, J., 2018)

OPEN SCIENCE and the **RESEARCH ASSESSMENT SYSTEM REFORM**

The pandemic, and the urge to open up the research results

Robert Terry (WHO):

Less than 25% of the scientific material included in the WHO COVID Guidelines comes from traditional publications. "They proved useless, just when we needed them most"



But who are THEY?

(Terry R., 2021)

We do have a problem

36%

margin of scholarly publishers

Source: https://www.theguardian.com/science/2017/jun/27/profitable-business-scientific-publishing-bad-for-science

10 billions dollar

annual cost for the subscriptions to scholarly publications (journals) worldwide

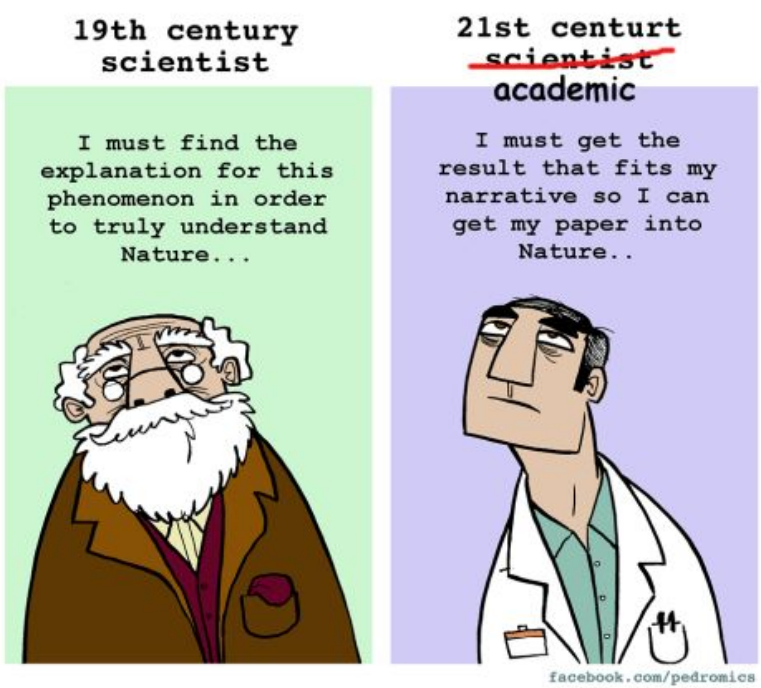
Source: Schimmer, R., Geschuhn, K. K., & Vogler, A. (2015). Disrupting the subscription journals' business model for the necessary large-scale transformation to open access. doi:10.17617/1.3

26 billions euro

lost every year in Europe because research data are not properly managed

Source: Directorate-General for Research and Innovation (European Commission), PwC EU Services Cost of not having FAIR research data, 2019-01-16

A “publish or perish” system



Research assessment mostly based on bibliometric indexes or on selected «top class» list of **journals**

Effects:

- many many publications
- high citation rate
- “important” venus (read: high IF)

But this does not in itself imply excellence in research!

Dr Maria van Kerkhove, WHO Covid-19 Technical Lead at HDR UK conference June 2021

‘...publication in a high impact journal does not equal quality..... it is important we need to receive data from chemistry, engineering, architecture not just medicine...’

(Several criticisms and) a problem of method

Goodhart's law:

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

Strathern, Marilyn (1997). "'Improving ratings': audit in the British University system". *European Review*. John Wiley & Sons. **5** (3): 305–321. doi:10.1002/(SICI)1234-981X(199707)5:3<305::AID-EURO184>3.0.CO;2-4.

Gaming the metrics

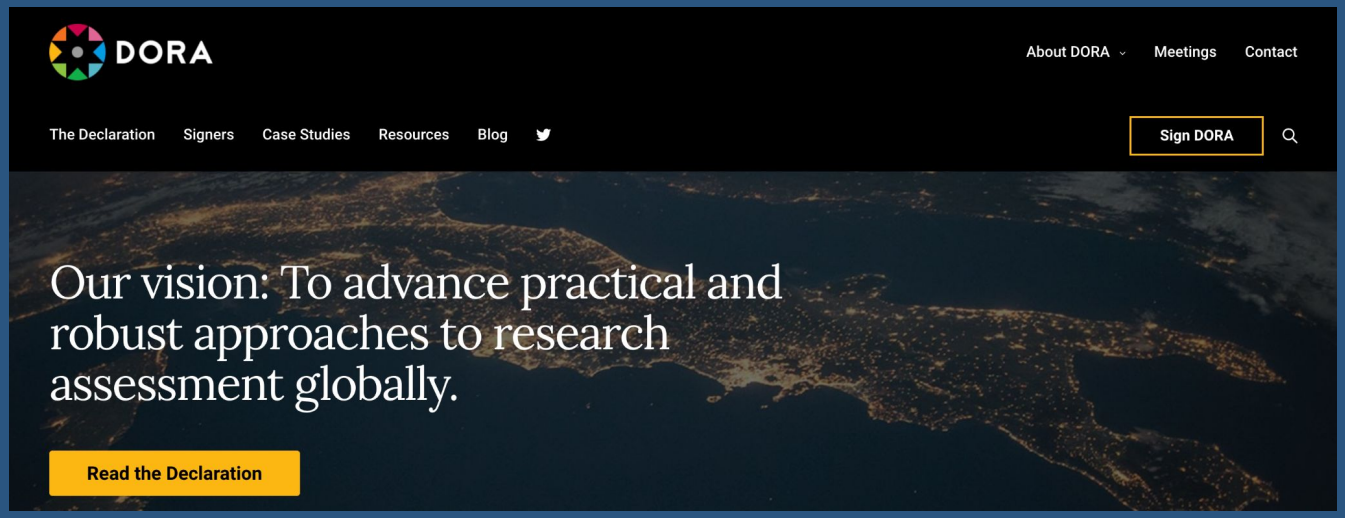
"Researchers will do anything to publish papers in some journals, including even creating fake authors"

" [...] publishing papers in certain journals is the only way to earn grants, tenure, and promotions"

M. Biagioli, A. Lippman, Gaming the Metrics: Misconduct and Manipulation in Academic Research
DOI: https://doi.org/10.7551/mitpress/11087.001.0001

But things are changing
and many funders are embracing Open Science

The Declaration on Research Assessment (DORA)



"There is a pressing need to improve the ways in which the output of scientific research is evaluated by funding agencies, academic institutions, and other parties".

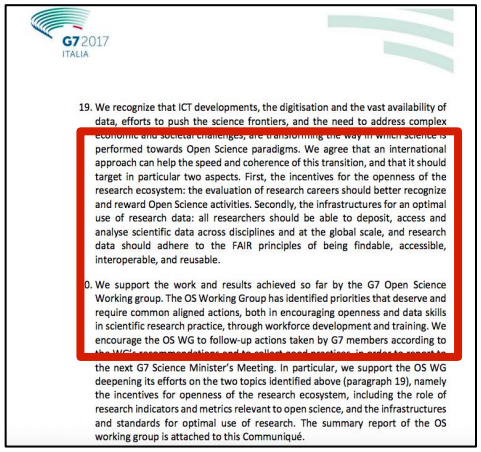
https://sfdora.org/

Basic principles of DORA recommendations

The need to eliminate the use of journal-based metrics, such as Journal Impact Factors, in funding, appointment, and promotion considerations;

The need to assess research on its own merits rather than on the basis of the journal in which the research is published;

A global issue:



G7 2017 ITALIA

19. We recognize that ICT developments, the digitisation and the vast availability of data, efforts to push the science frontiers, and the need to address complex economic and societal challenges, are transforming the way in which science is performed towards Open Science paradigms. We agree that an international approach can help the speed and coherence of this transition, and that it should target in particular two aspects. First, the incentives for the openness of the research ecosystem: the evaluation of research careers should better recognize and reward Open Science activities. Secondly, the infrastructures for an optimal use of research data: all researchers should be able to deposit, access and analyse scientific data across disciplines and at the global scale, and research data should adhere to the FAIR principles of being findable, accessible, interoperable, and reusable.

20. We support the work and results achieved so far by the G7 Open Science Working group. The OS Working Group has identified priorities that deserve and require common aligned actions, both in encouraging openness and data skills in scientific research practice, through workforce development and training. We encourage the OS WG to follow-up actions taken by G7 members according to the WG's recommendations and to collect good practices, in order to report to the next G7 Science Minister's Meeting. In particular, we support the OS WG deepening its efforts on the two topics identified above (paragraph 19), namely the incentives for openness of the research ecosystem, including the role of research indicators and metrics relevant to open science, and the infrastructures and standards for optimal use of research. The summary report of the OS working group is attached to this Communiqué.

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Research

The New Research Assessment Reform in China and Its Implementation

Authors: Lin Zhang, Gunnar Sivertsen

Abstract

A radical reform of research assessment was recently launched in China. It seeks to replace a focus on Web of Science–based indicators with a balanced combination of qualitative and quantitative research evaluation, and to strengthen the local relevance of research in China. It trusts the institutions to implement the policy within a few months but does not provide the necessary national platforms for coordination, influence and collaboration on developing shared tools and information resources and for agreement on definitions,

JUMP TO DISCUSSIONS

Abstract
Introduction
The background for the new policy
Farewell to "SCI worship"
From metrics to peer review
Local relevance
Conclusion
Competing Interests
References

G7 Science Ministers Communiqué, Turin, 28 September 2017.

Lin Zhang, Gunnar Sivertsen, The New Research Assessment Reform in China and Its Implementation, Scholarly Assessment Reports, 2020.

IN EUROPE

1. **2016**: Amsterdam call for actions for OS
2. **2017**: Evaluation of research careers fully acknowledging Open Science practices.
3. **2017**: Rewards, incentives and/or recognition for researchers practicing Open Science
4. **2017**: Responsible metrics and evaluation for open science
5. **2017**: EOSC Declaration
6. **2018**: COMMISSION RECOMMENDATION (EU) 2018/790 of 25 April 2018 on access to and preservation of scientific information
7. **2019**: Indicator frameworks for fostering open knowledge practices in science and scholarship
8. **2019**: Future of Scholarly Publishing and Scholarly Communication
9. **2019**: Report: Research Assessment in the Transition to Open Science
10. **2020**: Open Science Policy Platform final report
11. **2020:** EOSC Strategic Research and Innovation Agenda
12. **2020**: Science Europe, Position statement and recommendations on research assessment processes

13. **2020**: Commission Communication COM(2020) 628 of 30 September 2020 on a new European Research Area for R&I

14. **2020**: Council Conclusions on the new ERA of December 1st 2020

15. **2020**: Digital skills for FAIR and open science. Report from the EOSC Executive Board Skills and Training Working Group:

16. **2021**: RDA: Rewards and Incentives for Open Science

17. **2021**: Conclusions for the Competitiveness Council of 27-28 May on attractive and sustainable researchers' careers and working conditions

18. **2021**: Proposal for a Council Recommendation on a "Pact for Research and Innovation in Europe", as a first key achievement of the new European Research Area

19. **2021**: G7 Research Compact

Towards a common reform process

(EC, 2021)

The **research process is changing**
Less linear, more open and collaborative, multiplicity of outputs, "team science"

The traditional valuation system is not suited to reflect this change
It is the Achilles heel of the OS, quantitative aspects and publications are evaluated, collaborative processes and different types of results remain outside

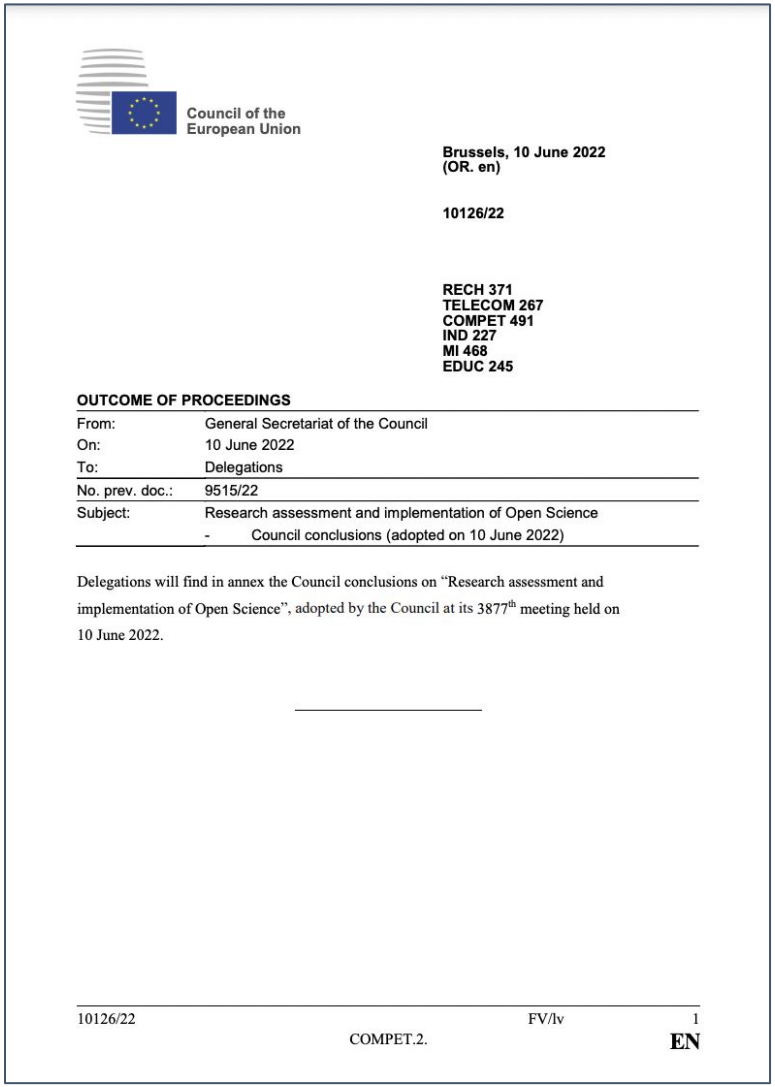
A process of reform, which increases the efficiency, impact, and social responsibility of research, was needed
The Council conclusions on the new ERA and on research careers go in this direction
A cultural change is needed

The process towards the *Agreement on reforming research assessment*

- **2021:** consultation of the EC with stakeholders and publication of the scoping report.
- **December 2021:** publication of a call for expressions of interest to join the coalition that helped drafting the agreement.
- **Jan -July 2022**: Drafting by drafting team + meetings with core group and stakeholder assembly to discuss the elements of the agreement + member states consultation process (ERAC and ERA Forum). June: Council conclusions.

"Research assessment and implementation of Open Science"

Council conclusions of June 10, 2022



Council of the European Union

Brussels, 10 June 2022
(OR. en)

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RECH 371
TELECOM 267
COMPET 491
IND 227
MI 468
EDUC 245

OUTCOME OF PROCEEDINGS

From:	General Secretariat of the Council
On:	10 June 2022
To:	Delegations
No. prev. doc.:	9515/22
Subject:	Research assessment and implementation of Open Science - Council conclusions (adopted on 10 June 2022)

Delegations will find in annex the Council conclusions on "Research assessment and implementation of Open Science", adopted by the Council at its 3877th meeting held on 10 June 2022.

The Agreement on Reforming Research Assessment

Published on July 20th 2022

European Commission > Research and innovation > News > All research and innovation news > Reforming research assessment: The Agreement is now final

NEWS ARTICLE | 20 July 2022 | Directorate-General for Research and Innovation

Reforming research assessment: The Agreement is now final

Launched in January 2022 as a co-creation exercise, the process of drafting an agreement for reforming research assessment has reached an important milestone. On 8 July, the final version of the agreement was presented at a Stakeholder Assembly bringing together the 350+

Our vision is that the assessment of research, researchers and research organisations recognises the diverse outputs, practices and activities that maximise the quality and impact of research. This requires basing assessment primarily on qualitative judgement, for which peer review is central, supported by responsible use of quantitative indicators.

28 Sept. 2022: Launched and opened to signatures

Content

1.Principles

2. Commitments

3. CoARA

4. Timeframe

Annexes
1. The need for a research assessment reform
2. Glossary
3. Reform journey
4. Toolbox

It establishes a **common direction** for a research evaluation reform, based on 10 commitments, respecting the autonomy of organizations.

In particular, it includes the principles, commitments and timeframe for reforms and establishes the principles for a coalition of organizations willing to work together in implementing such reform.

Core commitments

1. ***Recognise the diversity of contributions*** *to, and careers in, research in accordance with the needs and nature of the research*

2. ***Base research assessment primarily on qualitative evaluation*** *for which peer review is central, supported by responsible use of quantitative indicators*

3. ***Abandon inappropriate uses in research assessment of journal- and publication-based metrics****, in particular inappropriate uses of Journal Impact Factor (JIF) and h-index*

4. ***Avoid the use of rankings of research organisations*** *in research assessment*

Agreement on Reforming Research Assessment, pp. 4-6.

5. ***Commit resources*** *to reforming research assessment as is needed to achieve the organisational changes committed to*

6. ***Review and develop research assessment criteria, tools and processes***
(For units and institutions - promoting interoperability - and for individuals and projects, with the direct involvement of researchers)

Supporting commitments

7. ***Raise awareness*** *of research assessment reform and provide transparent communication, guidance, and training on assessment criteria and processes as well as their use*

8. ***Exchange practices and experiences*** *to enable mutual learning within and beyond the Coalition*

9. ***Communicate progress*** *made on adherence to the Principles and implementation of the Commitments*

10. ***Evaluate practices, criteria and tools*** *based on solid evidence and the state-of-the-art in research on research,* ***and make data openly available for evidence gathering and research***

In practice...

CoARA will work to **enable systemic reform** based on common principles and to **facilitate information exchange and mutual learning**.

+460 members (end of May, 2023)

Working Groups and National Chapters are going to be defined and **will start working in a few weeks**

Thank you!

Questions?

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Isaac Newton (on Wikipedia)