

What's next on Open Science

Trends and opportunities
for the near future

Digital Humanities and
Digital Knowledge
(DHDK) final seminar
[prof. Peroni]

Bologna, May 4, 2023

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 @egiglia



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What are we going to see

Setting the scene: Why do we need Open Science?
[or: does scholarly communication work?]

...COVID19 made it clear: sharing is the only way to go

...from «publishing» to «knowledge sharing» to «co-creating»

...you need FAIR Open data (and data stewards)...

...and the research assessment is acknowledging it...

IS IT GOING TO BE
NEUTRAL? NOPE. I'M A BIT
FED UP WITH
«SMOOTHNESS» ON THIS
TOPIC

**OPEN SCIENCE:
JUST
SCIENCE
DONE RIGHT**

IS IT GOING TO BE
SYSTEMATIC/STRUCTURED?
NO, TODAY IT WON'T. JUST
FOOD FOR THOUGHTS.

Housekeeping

THERE WILL BE A BREAK AFTER
THE FIRST PART

QUESTIONS WILL BE TAKEN AT THE
END OF THE FIRST PART, BUT OF
COURSE YOU CAN NOTE THEM
DOWN WHILE I'LL BE SPEAKING

BY THE WAY, IF YOU NEED THE
SYSTEMATIC VERSION PLEASE
CHOOSE ONE FROM THE LIST:

OA@unito.it

[OA unito corsi e formazione](#)

[In UniTO](#) [Come](#) [Cos'è utile](#) [Perché è importante](#) [Editori e Politiche Open Access \(EPOcA\)](#) [E](#)

Corsi e formazione

Docente: Elena Giglia ([Biografia](#), [CV in Italiano](#), [English Bio](#), [English CV](#)), [CV dettagliato/ detailed CV sections](#)

1. [Open Science in pratica](#): solo i link agli strumenti per fare Open Science (una sintesi dei corsi)
2. [Guida pratica: come fare Open Science](#) in tre pagine!
3. [Guida pratica: Come rendere i dati FAIR](#) [le basi, eh, perché non è così semplice!]
4. [Guida all'Open Science in Horizon Europe](#) (ITA, ENG)

Seminari

2023

1. [Gestione dei dati FAIR by design](#), Area Science Parck trieste, 12/5
2. [Open Science come e perché](#), Area Science Park Trieste, 9/5
3. [Open Science why and how](#), Digital Humanities course, Prof. Silvio Peroni, Università di Bologna, 4/5
4. [Open Science: empowering researchers in FAIR data management](#), Università di Camerino, 20/4
5. [Open Science A to Z](#), PhD school, UniTO, 17, 18, 27, 28 / 4
6. [Open Science e dati FAIR in pratica](#), Corso di dottorato in scienze documentarie, linguistiche e letterarie, Università La

Let's start with a video...

<https://www.youtube.com/watch?v=8F9gzQz1Pms>

Academic Journals Doing Crime



1:08 / 1:49

Scorri per i dettagli



It says it all...

4-6

Universal Declaration of Human Rights

Article 27

1. Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.
2. Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

RIGHT. IT'S RESEARCH FUNDED BY PUBLIC MONEY SO IT SHOULD BE AVAILABLE FOR ANYONE

«FREE TO THE PUBLIC SO THAT ANYONE CAN APPRECIATE THE LATEST SCIENTIFIC ADVANCEMENTS»



It says it all / 2

«AUTHORS WILL HAVE TO PAY A PUBLISHING FEE... SAY 11.000 DOLLARS FOR AN ARTICLE IN NATURE»



kind of publishing fee. Yeah. Ok, that's reasonable

WRONG. HERE YOU ARE PAYING FOR PRESTIGE, NOT FOR SERVICES

WRONG. AUTHORS ARE NOT PAID, REVIEWERS ARE NOT PAID. WHAT DO THEY GET IN RETURN? PRESTIGE, VISIBILITY, CITATIONS



It's a PDF on a website.



Why so much? Oh, you know, all the costs?



What costs? Reviewing the article. Yeah. We don't pay reviewers.

«YOU KNOW, THE COSTS» «REVIEWING THE ARTICLE»

«THE COST OF FORMATTING?»

WRONG. IT'S A PDF ONLINE [IN 2023!!!]

It says it all / 3

«WHO IS GOING TO AFFORD IT?» «PEOPLE WILL PAY BECAUSE THEY HAVE TO»



EVALUATION IS THE KEY. BUT RESEARCHERS ARE EVALUATED ON THE SAME TOOL THEY USE TO DISSEMINATE SCIENCE [WITH AWFUL SIDE EFFECTS]

«PRESTIGIOUS JOURNALS» = HIGHER SUBSCRIPTION RATES. EVERY YEAR IN UNITS 4.4 MILLION EUROS IN SUBSCRIPTIONS

1) TODAY READING IS NOT FOR FREE [CALCULATED 3800/5000 \$ PER ARTICLE IN 2017]

2) BUT WE PAY TO CLOSE: ONCE GRADUATED, YOU WILL NO LONGER HAVE ACCESS (ALSO YOUR MD, YOUR NURSE...)

[reminder #1]



**Open science needs no martyrs,
but we must recognize the need
for reform**

Oct. 28 2021 28 October 2021



“

“...the result is also that good, solid science stays behind paywalls, while lots of misinformation is openly accessible.”

”

It says it all / 4



in order to keep their jobs or get promoted

«IN ORDER TO GET
PROMOTED RESEARCHERS
HAVE TO PUBLISH, AND WE
ARE ONE OF THE MOST
PRESTIGIUOS JOURNALS.
PEOPLE WILL PAY»



So it's extortion

«SO, IT'S
EXTORTION»

[reminder #2]



PUBLISHING SHOULD SERVE
SCIENCE, BUT IT DOESN'T.
SCIENCE SEEMS TO SERVE
PUBLISHERS



Ivo Grigorov
@OAforClimate

In risposta a [@EvaHnatkova](#), [@Eurodoc](#) e altri 8

Challenges for [#OpenScience](#): “Publishing should serve Science, but it doesn't! Science seems to serve publishers”, Kostas Glinos [@KGlinos](#) [@EU_Commission](#) [#KRECon2021](#)

[Traduci il Tweet](#)

1:32 PM · 11 nov 2021 · Twitter for iPhone [Nov. 11, 2021](#)

It says it all / 4

«SO LET ME GET THIS STRAIGHT. YOU WANT TO CHARGE 11.000 \$ TO PUBLISH OA, THEREBY ENSURING THAT ONLY RESEARCHERS WITH THE MOST MONEY GET TO PUBLISH THE ARTICLE, WHICH **DEFEATS THE PURPOSE OF HAVING OA IN THE FIRST PLACE**»



2022

AISA

Associazione italiana per la promozione della scienza aperta

L'open access ad ogni costo non può essere una opzione.

**OPEN ACCESS AT ANY COST
IS NOT AN OPTION**

[Opening, not patronizing]

The unique opportunity to advance
Science as a Global Public Good:
Open Science in a world of contrasts



Arianna Becerril García

Autonomous University of the State of Mexico

Arianna Becerril, Feb. 2023



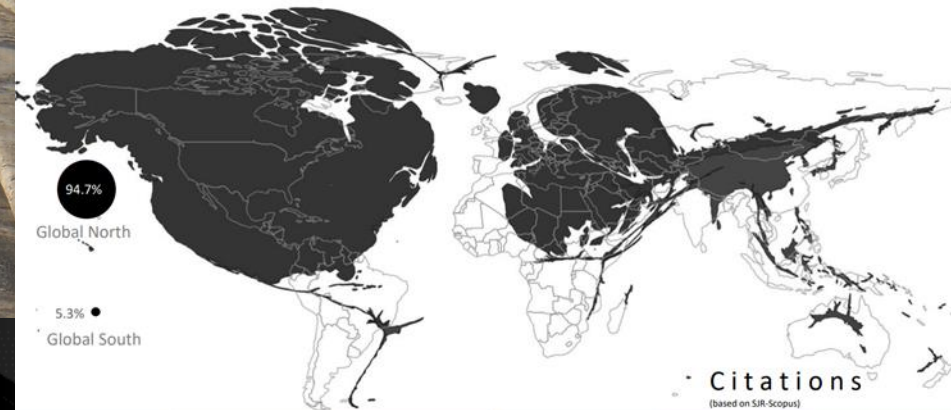
UNITED NATIONS, NEW YORK | 8-10 FEBRUARY 2023

3rd Open Science Conference

Accelerating the Sustainable Development Goals,
Democratizing the Record of Science

#OpenScienceUN

The map is not the territory



On what data is the industry of prestige founded?

Which regions, countries, science fields, journals, institutions or authors are privileged by current strategies? Which ones are excluded?

Which inequalities the current system will continue to perpetuate?

Is openness structural and sustainable?

Who owns and control the knowledge? The research community interests prevail?

The future restrictions on knowledge generation depend on the ownership.

How to achieve systematic participation in science (not patronizing strategies) that enables a global conversation?

WHICH REGIONS ARE EXCLUDED?
WHO OWNS AND CONTROL THE KNOWLEDGE?
HOW TO ACHIEVE SYSTEMIC PARTICIPATION IN SCIENCE?

It says it all / 5



«AND THIS IS GUARANTEED TO BE PROFITABLE BECAUSE RESEARCHERS LIVELIHOODS ARE DEPENDENT ON A PREDATORY SYSTEM THAT VALUES PUBLISHING IN HIGH IMPACT JOURNALS»
«THIS, OF COURSE, IS INSANE»



Jon Tennant
@Protohedgehog

The smartest business model ever. Have all of your products and services performed for free by researchers, and then sell it back to them with an unholy markup. Try describing the model to a non-researcher, and they mock us for falling for it.

[Traduci il Tweet](#)



Steven Salzberg ❤️👍 @StevenSalzberg1 · 15 apr 2018

Nature and other Springer journals make all of their money from free labor provided by scientists, who write all the papers and do all of the peer review. And now they are cashing in: "Springer Nature aims to raise 1.2 billion euros in new money in IPO" reut.rs/2qqhp93

10:46 AM · 15 apr 2018 da Ubud, Indonesia

2018

IT'S ACADEMICS,
BABY



REPORT
JUN 22, 2020

2020 Update: SPARC Landscape Analysis & Roadmap for Action

This report takes a look at the events of the past year—particularly the global COVID health crisis and its resulting economic impact—and provides updates on the academic publishing market landscape and the status of the key companies involved.

1. A significant deepening in the shift of major companies away from research publishing and towards research assessment;
2. A shift away from individual research distribution to more communal, consolidated models; and
3. The emergence of a “Bigger Deal,” where institutional content licensing is directly linked to the purchase of data analytics services.

2020

FROM PUBLICATIONS TO
DATA ANALYTICS

About



ELSEVIER

Elsevier is a leader in information and analytics for customers across the global research and health ecosystems

NO LONGER «PUBLISHERS» EVEN
ON THEIR HOMEPAGE



THEY «COVERED»
THE ENTIRE CYCLE

SURVEILLANCE
PUBLISHING: WE
ARE THE PRODUCT
(AND WE ALSO PAY!)

Surveillance Publishing

Nov. 2021

Jefferson D. Pooley

Muhlenberg College
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jeffpooley.com

It's a good business for Elsevier. Facebook, Google, and Bytedance have to give away their consumer-facing services to attract data-producing users. If you're not paying for it, the Silicon Valley adage has it, then you're the product. For Elsevier and its peers, we're the product *and* we're paying (a lot) for it. Indeed, it's likely that windfall subscription-and-APC profits in Elsevier's "legacy" publishing business have financed its decade-long acquisition binge in analytics.³ This is insult piled on injury: Fleece us once only to fleece us all over again, first in the library and then in the assessment office.

[reminder #3]

SPARC*

2021
UPDATE

SPARC Landscape Analysis
and Roadmap for Action

SPARC update 2021

The fact that Elsevier (and, potentially, other companies) would pursue interests that put them at odds with the interests of the academic community and tolerate internal conflicts of interest should not come as a surprise. The business of publishers is to make money; the “business” of academic institutions is to advance knowledge, not to enable publishers to achieve their commercial goals. Unfortunately, the responsibility for highlighting and resolving conflicts of interest falls squarely onto the academic community.

THE BUSINESS OF PUBLISHERS IS TO MAKE MONEY;
THE «BUSINESS» OF ACADEMIA IS TO ADVANCE KNOWLEDGE

... so what about the current system?

WE ARE STILL TOO FOCUSED ONLY ON PAPERS (FOR EVALUATION)

WE PAY 10 BN \$ TO LOCK UP BEHIND PAYWALLS A CONTENT PRODUCED WITH PUBLIC MONEY AND GIVEN FOR FREE

...WITH AN AVERAGE PUBLICATION TIME OF 9-18 MONTHS...

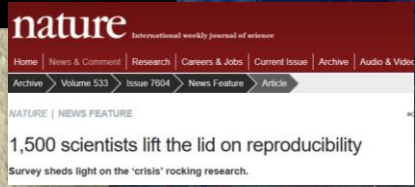
...AND 179% INCREASE IN SELF-CITATIONS...

...AND 70% OF STUDIES WHICH ARE NOT REPRODUCIBLE...

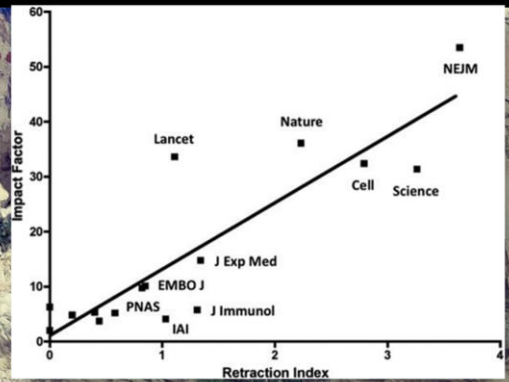
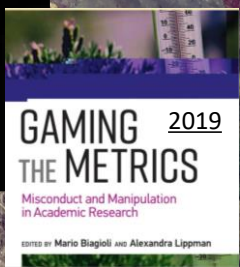
... AND 43% RETRACTIONS FOR FRAUD, WITH A DIRECT CORRELATION BETWEEN THE #RETRACTIONS/JOURNAL IMPACT FACTOR

Retraction Watch

Tracking retractions as a window into the scientific process



WHY? BECAUSE EVALUATION BECAME AN OBSESSION, AND PEOPLE GAMED THE SYSTEM AT EVERY LEVEL



Retractions

The Retraction Watch Leaderboard

<https://retractionwatch.com/>

Who has the most retractions? Here's our unofficial list (see notes on methodology), which we'll update as more information comes to light:

1. Yoshitaka Fujii (total retractions: 183) See also: [Final report of investigating committee, our reporting, additional coverage](#)
2. Joachim Boldt (175) See also: [Editors-in-chief](#)
3. Hironobu Ueshima (123) See also: [our coverage](#)
4. Yoshihiro Sato (112) See also: [our coverage](#)
5. Ali Nazari (96) See also: [our coverage](#)
6. Jun Iwamoto (87) See also: [our coverage](#)
7. Diederik Stapel (58) See also: [our coverage](#)
8. Yuhji Saitoh (56) See also: [our coverage](#)
9. Adrian Maxim (48) See also: [our coverage](#)
10. Chen-Yuan (Peter) Chen (47) See also: [our coverage](#)
11. Shahaboddin Shamshirpour (46) See also: [our coverage](#)
12. Fazlul Sarkar (41) See also: [our coverage](#)
13. Hua Zhong (41) See also: [our coverage](#)
14. Shigeaki Kato (40) See also: [our coverage](#)

Does scientific misconduct cause patient harm? The case of Joachim Boldt 2013

An internal investigation found no evidence of harm to the patients Boldt treated, and the the Cochrane review found “no change in the findings related to the inclusion or exclusion of the studies by Boldt et al.,” according to the editorial. But the new meta-analysis found something different:

After exclusion of the studies by Boldt et al, Zarychanski et al found that hydroxyethyl starch was associated with a significantly increased risk of mortality (risk ratio [RR], 1.09; 95% CI, 1.02-1.17) and renal failure (RR, 1.27; 95% CI 1.09-1.47).

Dec. 2020

Elsevier looking into “very serious concerns” after student calls out journal for fleet of Star Trek articles, other issues

An undergraduate stu-

Springer Nature slaps more than 400 papers with expressions of concern all at once Sept. 29, 2021



Feb. 2, 2021

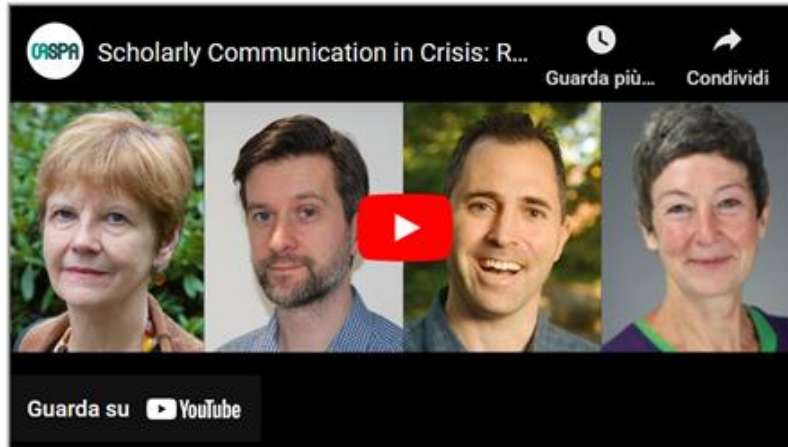
Researcher to overtake Diederik Stapel on the Retraction Watch Leaderboard, with 61

Nazari's publications include falsification of results, plagiarism (including self-plagiarism), and manipulation of authorship. A series of 13 recent retractions by Springer also noted “evidence of peer review manipulation.” To date, these issues have resulted in 48 retractions. I have recently compiled a report, summarized by Retraction Watch, which documents how Nazari's works appear to be part of an international research fraud ring.

Webinar – Scholarly Communication in Crisis: Research Integrity and Open Scholarship

April 25, 2023 by Bernie Folan

2023



How papermills work – Authorship and citations for sale

<https://retractionwatch.com/2022/10/25/meet-a-sleuth-whose-work-has-resulted-in-more-than-850-retractions/>



Nick Wise

“There’s this entire economy, ecosystem of Facebook groups, Whatsapp groups, Telegram channels selling authorship for papers, selling citations, selling book chapters, selling authorship of patents.”

Dorothy Bishop

See also: talk by Bernhard Sabel at <https://osf.io/47utb/>

<https://forbetterscience.com/2022/10/19/the-incredible-collaborations-of-renaissance-men-and-women/>

A moment for recalibration

NEWS FEATURE | 23 March 2021

The fight against fake-paper factories that churn out sham science

Some publishers say they are battling industrialized cheating. A *Nature* analysis examines the ‘paper mill’ problem – and how editors are trying to cope.

Holly Elise & Richard Van Noorden

July 2022: Hearing at US House Committee on Science, Space and Technology. Paper mills and research misconduct

Exclusive: Hindawi and Wiley to retract over 500 papers linked to peer review rings

After months of investigation that identified networks of reviewers and editors manipulating the peer review process, Hindawi plans to retract 511 papers across 16 journals, Retraction Watch has learned.



Physics publisher retracting nearly 500 likely paper mill papers

<https://retractionwatch.com/2022/09/09/physics-publisher-retr>

<https://retractionwatch.com/2022/09/28/exclusive-hindawi-and-wiley-to-retract-over-500-papers-linked-to-peer-review-rings/>



Philip Stark

SELLING AUTHORSHIP? HERE IS WHERE THE CURRENT ASSESSMENT CRITERIA BROUGHT US + SCIENCE SHOULD BE «SHOW ME»: OPEN UP THE PROCESS!

Test and Trace

Tracking down papermills – importance of open data/code sharing

“Science should be ‘show me’, not ‘trust me’;

If I publish an advertisement for my work (that is, a paper long on results but short on methods) and it’s wrong, that makes me untrustworthy.

If I say: “here’s my work” and it’s wrong, I might have erred, but at least I am honest.”

If open data/scripts routinely required, then would make a great deal of work for paper mills

What is a line on a CV worth? Does it make that grant a little more likely? Does it get you past the magic threshold to get on the applicant short list? Is there a shortcut? Researchers are experts at behaviour optimisation and seeing how systems work. I simply don't buy the "hapless victim" stance and a lot of the hand wringing is disingenuous at best. On a harsh economic analysis this is perfectly rational behaviour. Smart people doing dumb things for smart reasons.

Researchers are not 'hoodwinked' victims. All choose to play the publishing game and some can choose to change it.

2015

In both cases the researcher is presented as a hapless victim, "hoodwinked" as the headline states into parting with money (either directly in the form of APCs or indirectly through their libraries). But really? I've no intent to excuse the behaviour of these publishers, but they are simply serving a demand. A demand created by researchers under immense pressure to demonstrate their productivity. Researchers who know how to play the game.

RESEARCHERS ARE NOT VICTIMS
IT'S NOT PEOPLE GAMING THE
SYSTEM. THE SYSTEM IS A GAME.
TIME TO SAY GAME OVER

Scott Edmunds perhaps summed it up best at the FORCE2015 meeting in Oxford:



It is no longer the case that people are gaming the system, the system has become a game. It's time to say Game Over.



If we cast ourselves as mere victims we'll never change the rules. The whole narrative is an excuse for doing nothing.

At times it is tempting to suggest that it is not publishers that are predatory, but researchers. But of course the truth is that we are all complicit, from publishers and authors producing content that no-one reads, through to administrators counting things that they know don't matter, and funders and governments pointing to productivity, not to mention secondary publishers increasing the scope of their indices knowing that this leads to ever increasing inflation of the metrics that makes the whole system go round.

We are all complicit. Everyone is playing the game, but that doesn't mean that all the players have the same freedom to change it. Commercial suppliers are only responding to demand. Governments and funders can only respond to the quality assessments of the research community. It is only the research community itself that can change the rules. And only a subset of that.

Predatory??

THE CASE OF MDPI -
«PREDATORY
REPORTS». IS IT
TRUSTWORTHY?



 **Gianluca Sbardella**
@g_sbardella

11 MARZO 2023

MDPI journals have been included in the list of predatory journals. It was about time.
[Traduci il Tweet](#)



predatoryreports.org
List of all MDPI predatory journals
MDPI as a publisher of open-access scientific journals was spun off from the Molecular Diversity Preservation ...

8:27 AM · 11 mar 2023 · **2,2 Mln** visualizzazioni

Predatory Reports is an association of scientists and researchers who seek to help researchers identify trusted journals and publishers for their research. Through a variety of practical tools and resources, including the Predatory Publishers List, this international and cross-sectoral initiative aims to educate researchers and students, promote integrity, and build trust in scientific research and publications.

— [Show Less](#) Predatory reports

Characteristics

- Complaints that are associated with **predatory journals (open-access)** publishing include:
- Accepting articles quickly with little or no peer review or quality control, including hoax and nonsensical papers.
 - Notifying academics of article fees only after papers are accepted.
 - Aggressively campaigning for academics to submit articles or serve on editorial boards.
 - Listing academics as members of editorial boards without their permission, and not allowing academics to resign from editorial boards.
 - Appointing fake academics to editorial boards.
 - Mimicking the name or web site style of more established journals.
 - Making misleading claims about the publishing operation, such as a false location.
 - Using ISSNs improperly.
 - Citing fake or non-existent impact factors.



[Elsevier = predatory]

björn.brembs.blog

1. entities that prioritize self-interest at the expense of scholarship

Elsevier consistently prioritizes mega-profits over scholarship. Too many examples to list, would need new server, so here is some more.

Check

2. false or misleading information

Elsevier published nine fake journals. And, of course, Dezenhall/PRISM and many other FUD campaigns, past and ongoing. Extensive track record.

Check

3. deviation from best editorial and publication practices

Chaos, Solitons and Fractals? The recently sold journal "Homeopathy"? Ghostwriting?

Check

4. lack of transparency

Widespread use of non-disclosure agreements in subscription contracts.

5. aggressive and indiscriminate solicitation practices

Everybody who has received a "call for papers" outside their fields from Elsevier journal raise their hands. Advertising extra products or datab, access to authors? Aggressive and misleading negotiation tactics?

Dec 11 **ELSEVIER NOW OFFICIALLY A "PREDATORY" PUBLISHER** 2019

In: Science Politics • Tags: Elsevier, predatory publishing, publishing
For a number of years now, publishers who expect losing revenue in a transition to Open Access have been spreading fear about journals which claim to perform peer-review on submitted manuscripts, but then collect the publishing fee of a few hundred dollars (about 5-10% of what these legacy publishers charge) without performing any peer-review at all. Identifying such journals, however, in order to study if they have any actual detrimental effect on scholarship beyond the claims

ELSEVIER PERFECTLY MATCHES THE DEFINITION OF PREDATORY PUBLISHER

Predatory journals and publishers are entities that prioritize self-interest at the expense of scholarship and are characterized by false or misleading information, deviation from best editorial and publication practices, a lack of transparency, and/or the use of aggressive and indiscriminate solicitation practices

[Elsevier = predatory...]

AL THE FREDDO
SPREMUTA
PROSECCO
CON VODKA

Per il resto
chiedi a
Gianni!!!

björn.brembs.blog

The fact that Elsevier fits the consensus definition of a “predatory publisher” so well is thus only one of many reasons why data kraken Elsevier is so reviled in the academic community, but a reminder of it seems to have triggered the “we really can be trusted, honestly, this time” wolf-in-sheep-clothing-reflex in the RELX CCO Dr. Abrahams, such that he responded:

 **p@ul_abrahams**
@paul_abrahams

Replying to @ChirpDontTweet and @brembs

Elsevier publishes 600,000 articles a year, about 18% of all papers. Those account for 28% of citations. The share of articles in top 50% journal Field Weighted Citation Index tier is 96%. Just 4% in the bottom 50%.

Article and citation share¹

L'A

Search
Search...
Main Menu
Home
About
Publications
Citations
Downloads
Resume
Interests
Contact
Archive

< Prev

Mar
14

SHOULD YOU TRUST ELSEVIER? 14 marzo 2023

In: Science Politics • Tags: Elsevier, predatory publishing, publishers, trust

Data broker RELX is represented on Twitter by their Chief Communications Officer Paul Abrahams. Due to RELX subsidiary Elsevier being one of the largest publishers of academic journals, Dr. Abrahams frequently engages with academics on the social media platform. On their official pages, Elsevier tries to emphasize that they really,



1. “Elsevier provides above-average quality...”

Let’s pretend, for now, RELX were not chiefly a surveillance platform and data broker enabling ICE mass deportations (some quality!), but instead an academic publisher (via subsidiary Elsevier) with above average overall impact (according to the citation numbers Dr. Abrahams posted himself, see above). In that case, given the negative relation between impact/prestige and quality, the available data suggest that Elsevier actually provides “below average” quality. So the first statement is contradicted by the available evidence. Of course, it may also be that Elsevier journals aren’t as impactful as their CCO claims, in which case his previous statement would be false. Either way, both cannot be correct at the same time.

2. “...for below average prices”

From the Q&A on occasion of the release of the latest 2022 RELX financial statement, and from Dr. Abraham’s tweet above, we learn that Elsevier published 600,000 articles the past year yielding a revenue of 2,909 £ million. Accordingly, an average article from Elsevier cost the tax payer

... evaluation is the key

EVALUATION

- AFFECTS THE BEHAVIOUR OF RESEARCHERS
- PROMOTES COMPETITION OVER COLLABORATION
- MAINTAINS HIGH JOURNALS PRICES BASED ON PRESTIGE
- FAILS TO RECOGNIZE RESEARCH OUTPUTS LIKE DATA, CODE, BLOGS...

**International
Science Council**

STAY TUNED...GOOD
NEWS FROM THE EU!!!

metrics designed to assess the importance and impact of research as an aid to evaluation, with publication outputs in traditional scientific journals being the major focus. These metrics in turn affect the behaviour of researchers, such as their choice of journals, as they seek to maximize their performance as measured by the metrics used. They can contribute to the maintenance of high journal prices, promote intense competition rather than openness and sharing, and fail to recognize research contributions such as the production of datasets, software, code, blogs, wikis and forums.

ICSU 2014



REPowerEU

It does not work, the way it is

Kostas Glinos based on Danny Kingsley, May 30, 2022

Some of the challenges for science today

- Skewed perceptions of quality; reproducibility, replicability
- Focus on 'stars' rather than collaboration
- Publishing in a market where client is not the king; closed access
- Obsession with rankings
- Risk-averse research
- Hyper-publishing and hyper-authorship
- Fight for funding
- Wasting (data) resources, repeating doomed research
- Gaming the system

Is this the culture we want?

Slide adapted from a presentation by Danny Kingsley, Flinders University



IS THIS THE RESEARCH
CULTURE WE WANT?

Lessons learned from COVID / 1

In only a matter of months, the coronavirus disease of 2019 (COVID-19) has spread around the world. The global impact of the disease has caused significant and repeated calls for quick action towards new medicines and vaccines. In response, researchers have adopted open science methods to begin to combat this disease via global collaborative efforts. We summarise here some of those initiatives, and have created an updateable list to which others may be added. Though open science has previously been shown as an accelerator of biomedical research, the COVID-19 crisis has made openness seem the logical choice. Will openness persist in the discovery of new medicines, after the crisis has receded?

OPENNESS=THE
LOGICAL
CHOICE

Version 1. [F1000Res.](#) 2020; 9: 1043. PMID: PMC7590891
Published online 2020 Aug 25. **2020** PMID: 33145011
doi: [10.12688/f1000research.26084.1](#)

Open science approaches to COVID-19

[Edwin G. Tse](#). Conceptualization, Resources, Writing – Original Draft
Preparation, Writing – Review & Editing, [Dana M. Klug](#). Conceptualization



Raphaël Lévy
@raphavisses

[#OSEC2022](#) [@BoukacemZeg](#)

(applauded by [@stephen_curry](#)) concludes her talk with a quote from a young research who left science saying "GAME OVER: The pandemic is a life-size experiment that reminded us that the ultimate goal is to advance knowledge, not egos, not numbers"

[Traduci il Tweet](#)

[Feb. 4 2022](#)

5:10 PM · 4 feb 2022 · Twitter Web App



tech economy 2030
Digital transformation for sustainability

2020

Home · #SDG3 · Open Science è una necessità, non una noia burocratica

#SDG3 In Evidenza Sostenibilità Culturale

Open Science è una necessità, non una noia burocratica

By [Elena Giglia](#) · 23/03/2020

OPEN SCIENCE IS A MUST

Publishing research openly is not just a 'nice to have'

[JISC, 2021](#)



by [Anne Mills](#) on 18 May 2021

The response to the global pandemic has demonstrated the huge value of open science, and a united front is needed to accelerate the transition toward this new way of working.

THE PANDEMIC IS A LIFE-SIZE
EXPERIMENT THAT REMINDED US THAT
THE ULTIMATE GOAL IS TO ADVANCE
KNOWLEDGE, NOT EGOS, NOT NUMBERS

Lessons learned from COVID / 2

Digital Science Report
The State of Open Data 2021
The longest-running longitudinal survey and analysis on open data
Foreword by Natasha Simons, Australian Research Data Commons (ARDC)
Nov. 29 2021
November 2021

Open data saves lives. The global pandemic has highlighted beyond anything that came before it the importance of data sharing in solving the big challenges of our time. COVID-19 data may be the



WE NEED DATA
[FAIR BY DESIGN]
(AND NOT ONLY
THE FINAL
SYNTHESIS OF
THE RESEARCH,
I.E. THE ARTICLE)

The Value of RDA for COVID-19

RDA

[Home](#) » [Get involved](#) » [The Value of RDA for...](#) » [The Value of RDA for COVID-19](#)

📅 13 July 2020 | 📖 16426 reads | 📘 Facebook | 🐦 Twitter

Under public health emergencies, and particularly the COVID19 pandemic, it is fundamental that data is shared in both a timely and an accurate manner. This coupled with the harmonisation of the many diverse data infrastructures is, now more than ever, imperative to share preliminary data and results early and often. It is clear that open research data is a key component to pandemic preparedness and response.



Lessons learned from COVID

TRADITIONAL SUBSCRIPTION
BASED JOURNALS: FIRST
ARTICLES (WITH NO DATA) AT
THE EARLIEST IN DEC. 2020
(9-18 MONTHS AVERAGE PUBLICATION TIME)

...AND WE NEED RESULTS
IMMEDIATELY...

STUDIES SHOULD BE AVAILABLE
IMMEDIATELY...NOT SEGREGATED
FOR MONTHS WAITING FOR A «PEER
REVIEW» WHICH CAN BE DONE IN A
FASTER AND MORE EFFECTIVE WAY,
OPENLY

Sanjee Baksh, PhD @S_Baksh · 21h

Congratulations to the authors but I am not strong enough for this

Mostra questa discussione

<https://doi.org/10.1038/s41586-022-04627-y>

Received: 25 June 2019

Accepted: 4 June 2021

Published online: 20 April 2022

VIEWPOINTS

Opinion: A Lesson of the Pandemic: All Prints Should Be Preprints

*A flourishing of Covid-19 literature dispels
the idea that pre-publication peer review is
essential for academic rigor.*

Visual: Wenjin Chen / Getty Images

2020

Lessons learned from the pandemic

Implications of pandemic for publications



NEED TO RETHINK THE ORDER

- 1) PUBLISH
 - 2) OPEN PEER REVIEW
 - 3) EARN IMPACT
- FOR REAL, NOT USING THE TOXIC IMPACT FACTOR (AWARDING MEDALS BEFORE THE RACE HAS RUN)

• Need to rethink publishing

- 1st Publish
- 2nd Open (meta) peer review
- 3rd Earn impact

• Why have impact factors?! - Like awarding the medals BEFORE the race has run

• Traditional publishing model is no longer fit for purpose too slow and no guarantee of quality

• It feels like we're running electric cars on steam train tracks



Impact Factor is a toxic indicator



Use of pre-prints – calling time on subscription



- WHO repository IRIS 150 publications relating to Covid-19 - 25% referencing pre-prints
- NEW development WHO [Living Guidelines](#) available online via the MAGICapp
- 3 WHO Living guidelines for Covid-19. Therapeutics 6 versions since November 2020.

Analysis of version 5 March 2021

- 44% of its references as pre-print
- 33% unpublished results shared with WHO
- Therefore < 25% from traditional published literature.....

<25% FROM TRADITIONAL LITERATURE INCLUDED IN WHO GUIDELINES
THEY FAILED US RIGHT WHEN WE NEEDED THEM MORE



<https://app.magicapp.org/#/guidelines>

Lessons learned from COVID / 5

raise questions about the way science-as-usual is practised.

Vincent Larivière is an information scientist and professor at the University of Montreal, who studies the way science is disseminated. He said the move to speed up publication and share research is a tacit admission that business-as-usual in research slows down science.

"[They say] we're opening everything because it's important that we advance things fast. Well, the flip side of this argument is that your normal behaviour is to put barriers to science."

"This virus is dangerous and deadly, but there's lots of other diseases that are dangerous and deadly, and for which opening could save lives. So if you really want to go in that direction, just open everything."



University of Montreal researcher Vincent Larivière said the climate of open science suggests that science-as-usual creates barriers. (Amélie Philibert)

Health · Second Opinion

'We're opening everything': Scientists share coronavirus data in unprecedented way to contain, treat disease

Feb.1, 2020

...SCIENTIST ARE **NOW** OPENING AND SHARING DUE TO COVID-19...

THE FLIP SIDE IS THAT OUR NORMAL BEHAVIOUR IS TO PUT BARRIERS TO SCIENCE

nature

Feb 4, 2020

Subscribe

EDITORIAL · 04 FEBRUARY 2020

Calling all coronavirus researchers: keep sharing, stay open

As the new coronavirus continues its deadly spread, researchers must ensure that their work on this outbreak is shared rapidly and openly.

The purpose of scholarly communication

The virus is reminding us that the purpose of scholarly communication is not to allocate credit for career advancement, and neither is it to keep publishers afloat. Scholarly communication is about, well, scholars communicating with each other, to share insights for the benefit of humanity. And whilst we've heard all this before, in a time of crisis we realise afresh that this isn't just rhetoric, this is reality.

the coffin will be closed?!" If we've created a generation of scholars who are just in it for the glory of papers in glamorous journals, and not to do good research that changes the world a little bit, then we really are in trouble.



WONKHE ABOUT US EVENTS LATEST JOBS SUBSCRIPTION SUS Q
Apr. 22, 2020

The purpose of publications in a pandemic and beyond



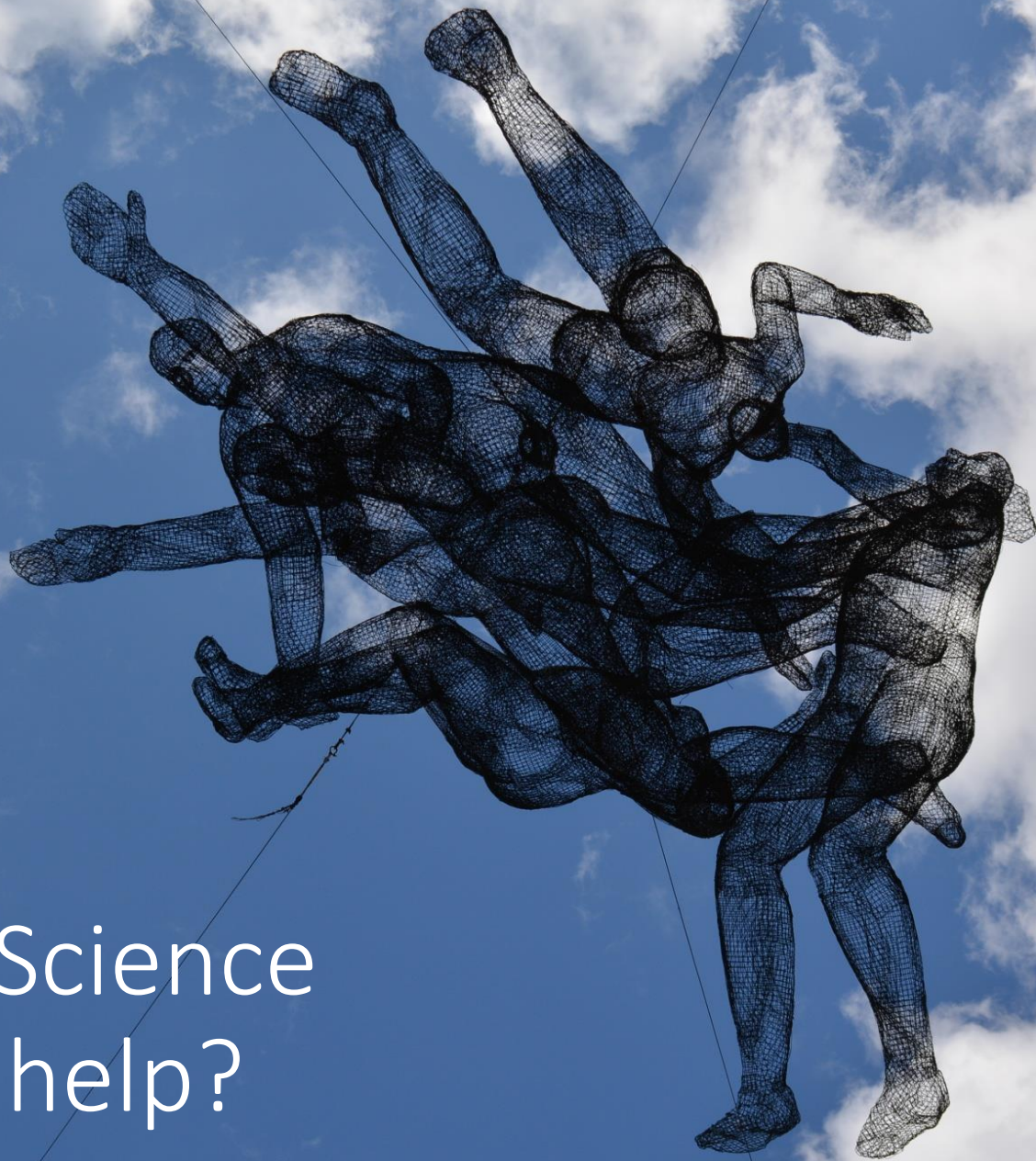
Plan S
Roorick, June 2020

Why Plan S Principles and Implementation cOAlition S Apply for Transformative Journal status Contact

Open Access lessons during Covid-19: No lockdown for research results!

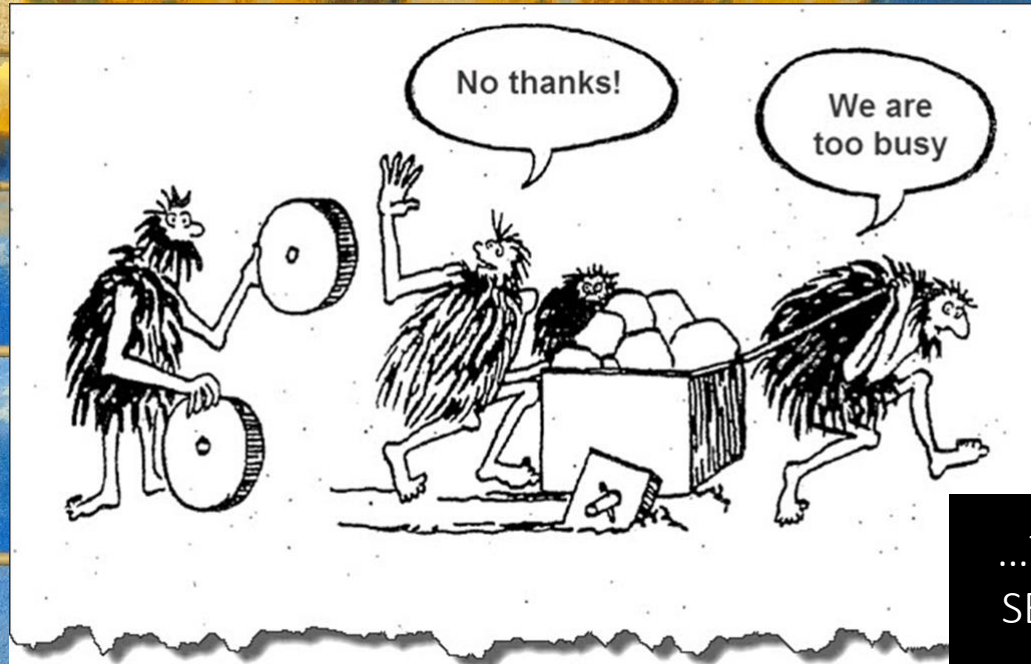
WE DON'T KNOW WHICH RESEARCH PAPERS THAT TODAY REMAIN LARGELY INACCESSIBLE COULD INSPIRE SOLUTIONS AND BRIGHT IDEAS FOR TOMORROW'S CHALLENGES

Open Science
might help?



Open Science?

OPEN SCIENCE IS NOT THE FINAL GOAL.
OPEN SCIENCE IS JUST FUNCTIONAL TO A
BETTER AND SOUNDER SCIENCE, MORE
RESPONSIVE TO SOCIETAL NEEDS



...THAT'S WHY WE'LL
SEE MORE REASONS
THAN RULES

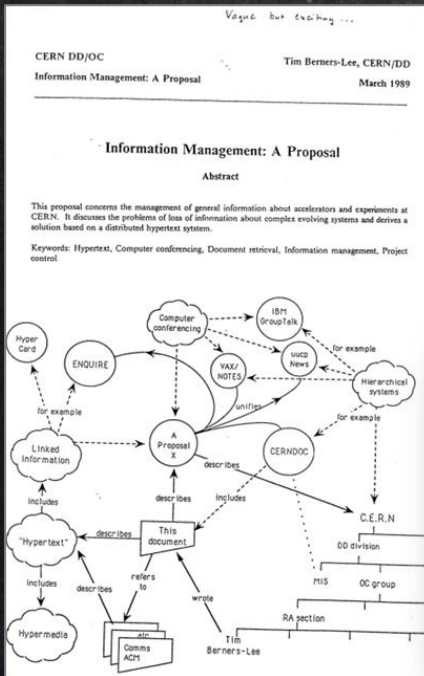
...OPEN SCIENCE HOLDS A HUGE
TRANSFORMATIVE POTENTIAL... IF YOU DON'T
FOCUS ON ITS REAL VALUE, IT WILL BE SEEN AS
THE UNPTEENTH ADMINISTRATIVE BURDEN

Open Science in practice?

"Vague but exciting"

CERN

www.cern.ch



...THE HTTP PROTOCOL, WHICH CHANGED OUR LIVES – IT USED TO BE AN INTERNAL TOOL, CERN DECIDED TO OPEN IT UP

...a bit of inspiration...

The best thing about **Internet** is that it's **open**. In every field it let us **share and innovate**.

In science, **OPENNESS IS ESSENTIAL**.

Open science doesn't mean ignoring economic reality.

Of course **we need business models to be sustainable**. But that **doesn't mean we have to carry on doing things the way they have always been done**.

So, wherever you sit in the value chain, whether you're a researcher or an investor or a policy maker, my message is clear:

let's invest in collaborative tools that let us progress...

Let's tear down the walls that keep learning sealed off.

And let's make science open.



Open Science – definition

Open Access | Lic. Info | Cite

Qeios

<https://doi.org/10.32388/838962>

Open Science

'Open Science' stands for the transition to a new, more open and participatory way of conducting, publishing and evaluating scholarly research. Central to this concept is the goal of increasing cooperation and transparency in all research stages. This is achieved, among other ways, by sharing research data, publications, tools and results as early and open as possible.

Open Science leads to more robust scientific results, to more efficient research and (faster) access to scientific results for everyone. This results in turn in greater societal and economic impact.

<https://www.accelerateopenscience.nl/what-is-open-science/>

NEW WAY OF

- CONDUCTING
 - PUBLISHING
 - EVALUATING
- RESEARCH

SHARING

- DATA/TEXTS
 - TOOLS
 - RESULTS...
- AS EARLY AND OPEN AS POSSIBLE**

THIS IS THE REAL
PURPOSE

OS LEADS TO MORE ROBUST SCIENTIFIC RESULTS, MORE
EFFICIENT RESEARCH AND FASTER ACCESS
+ GREATER SOCIETAL AND ECONOMIC IMPACT

[From Prague, EOOSC symposium]

FOCUS ON BEFORE AND DURING
(CREATING KNOWLEDGE)
INSTEAD OF AFTER
(CIRCULATING KNOWLEDGE)

Some points of attention

- Align top down and bottom-up initiatives.
- Be inclusive and engage (better) with bottom up initiatives like the Open Science, research software engineers and data stewards communities.
- Address the main barriers for researchers (time, effort and financial costs, data protection and legal restrictions; lack of recognition).
- A stronger focus on Open Science activities before and during a research project (creating knowledge) instead of (mainly) after (circulating knowledge).
- Develop expertise (and capacity) in multiple disciplines (team science).
- Design research workflows and integrate local, national and international services in these workflows.
- Collaborate with Local Data Competence Centre, Thematic Data Competence Centre and EOOSC.
- Stimulate FAIR by design.

Laurents Sesink, SURF

Open Science – definition



FACT SHEET: Biden-Harris
Administration Announces
New Actions to Advance
Open and Equitable Research

Jan 11, 2023

- **OSTP and the National Science and Technology Council (NSTC)** today released an official definition of open science for use across the U.S. government: *“The principle and practice of making research products and processes available to all, while respecting diverse cultures, maintaining security and privacy, and fostering collaborations, reproducibility, and equity.”* A unified, official definition will galvanize federal efforts, promote interagency collaboration, and **drive progress.**

- RESEARCH PRODUCTS AND PROCESSES AVAILABLE TO ALL
 - RESPECTING DIVERSE CULTURES
 - MAINTAINING SECURITY AND PRIVACY
- FOSTERING COLLABORATION, REPRODUCIBILITY, AND EQUITY
 - TO DRIVE PROGRESS

[Houston, we have a problem -

NOT PEER-REVIEWED
*Peer Preprints is a venue for early communication or feedback before peer review. Data may be used for research purposes. Learn more about preprints or browse peer-reviewed articles instead.

Preprint
View 34 items

Ten myths around open scholarly publishing

[Literature review](#) [Science and Medical Education](#) [Science Policy](#)

1/12 Open Science is just a gimmick...	2/12 Open Science is all about publishing Open Access	3/12 Open Science is a plot against publishers	4/12 I already deposit my works on ResearchGate
5/12 An open access dissertation has less chances of being published	6/12 I'm afraid of plagiarism	7/12 There is no open access journal in my discipline	8/12 Open Science is for STEM. As a researcher in SSH this is not important to me
9/12 Science is for researchers only. Citizens cannot improve my research	10/12 A Data Management Plan is useless	11/12 I am not a Data Manager	12/12 Open access to research data is not mandatory

Busting myths on Open Science with the YERUN OS Calendar 2021! Dec. 2021

10 Myths around Open Scholarly Publishing March 11, 2019

Myth 1 Preprints will get your research 'scooped' Preprints typically provide a time-stamp and a DOI, therefore establishing priority of discovery	Myth 6 Copyright transfer is required to publish and protect authors Copyright transfer procedures do not protect authors nor contribute to the advancement of scientific progress
Myth 2 JIF and journal branding are measures of quality for researchers The JIF is a flawed metrics that was never meant to be used for evaluation of research and researchers	Myth 7 Gold Open Access is synonymous with the APC business model Most DOAJ-indexed journals do not have APCs and are funded from other sources, such as research institutes and grants
Myth 3 Approval by peer review proves that you can trust a research article The current peer review system is prone to a number of flaws including corruption, human bias and ghostwriting	Myth 8 Embargo periods on 'green' OA are needed to sustain publishers Traditional journals can peacefully coexist with zero-embargo self-archiving policies on author manuscripts
Myth 4 Without journal peer review, the quality of science suffers Researchers are more than responsible and competent enough to ensure their own quality control as part of intrinsic scientific integrity	Myth 9 Web of Science and Scopus are global databases of knowledge Neither represent the sum of current global research knowledge including Africa, Latin America and Southeast Asia
Myth 5 Open Access has created predatory publishers Predatory journals have been around for a long time before the recent push towards Open Access publishing	Myth 10 Publishers add no value to the scholarly communication process Publishers are responsible for quite some key functions, from peer-review management to production and archiving of final version articles

**DIFFUSED MISCONCEPTIONS:
OPEN SCIENCE=OPEN ACCESS, YOU ALWAYS PAY TO PUBLISH,
OA= PREDATORY, I CAN'T OPEN «MY» DATA...**

Open Science definition




Open science increases scientific collaborations and sharing of information for the benefits of science and society




OPEN SCIENCE

UNESCO video



makes multilingual scientific knowledge openly available, accessible and reusable for everyone



opens the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community.

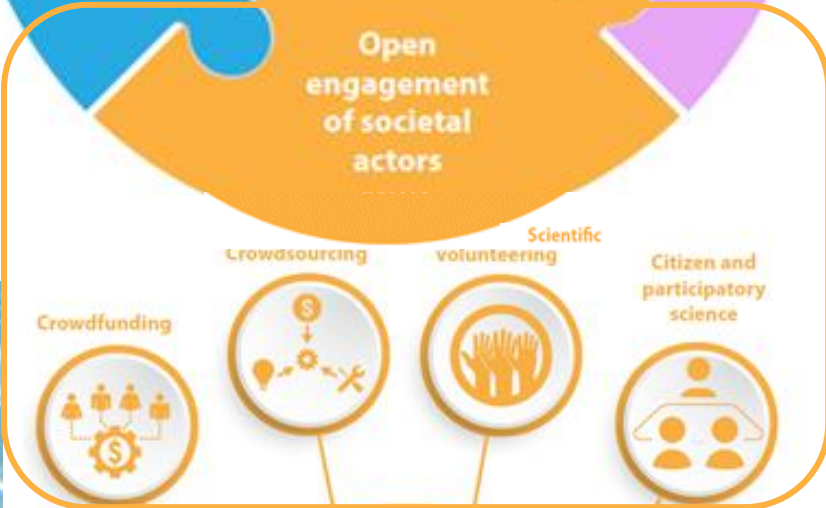
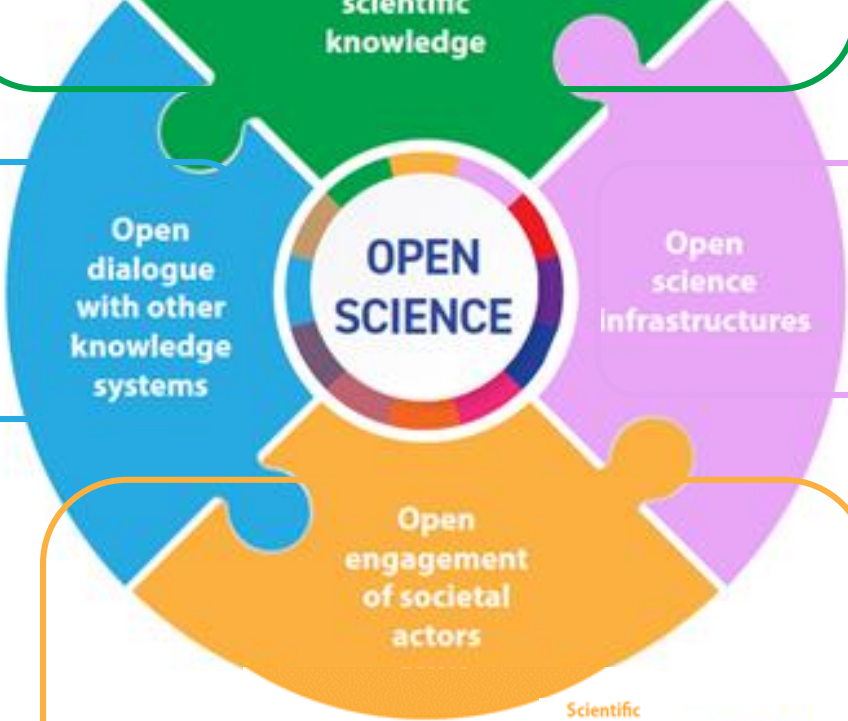
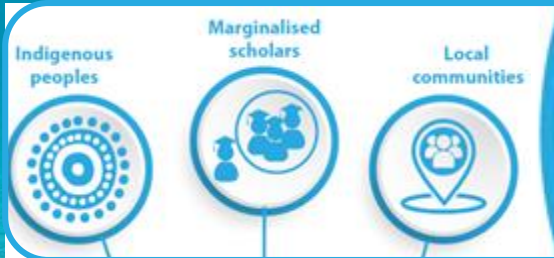
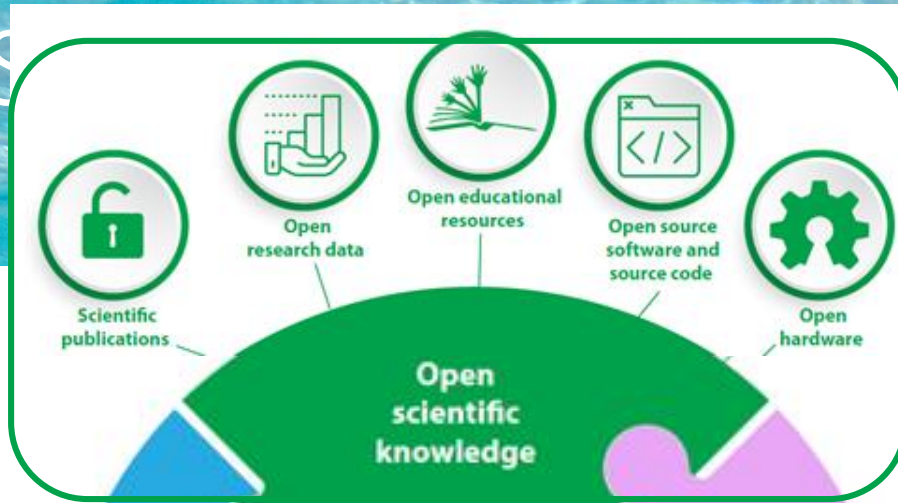
unes Nov. 23, 2021



UNESCO Recommendation on Open Science

...Open S

S



NOT ONLY SCIENTIFIC KNOWLEDGE. OPEN DIALOGUE, OPEN ENGAGEMENT OF SOCIETAL ACTORS

...Open Science in UFL

OPEN SCIENCE
≠ OPEN ACCESS



Components of Open Science

UNESCO

FOCUS ON THE ENTIRE PROCESS,
NOT ONLY THE FINAL SYNTHESIS
(ARTICLE)

Beyond the building blocks: ecology of knowledge

- SCIENTIFIC KNOWLEDGE IS JUST «ONE» OF THE KNOWLEDGE PRODUCED BY HUMANS
- OPEN DIALOGUE WITH OTHER KNOWLEDGE SYSTEMS MEANS A **TWO-WAY COMMUNICATION** [NOT ONLY «ACCESS», «SHARING» FROM ACADEMIA]



Connecting the building blocks of Open Science: an ecological approach Nov. 2022

Pierre Mounier (EHES)

Beyond the building blocks: towards an ecology of knowledge

In many texts about open science, starting with the definitions, there is often a versatile usage of “science” and “knowledge” that can be mentioned as if they were perfect synonyms. The UNESCO definition of open science is on the contrary very precise on this, considering science (or “scientific knowledge” as they put it) as one of the many types of knowledge that are produced in human societies. Hence, this challenging objective to “open dialogue with other knowledge systems”, which touches upon several dimensions of scientific communication: citizen science, DEI (Diversity, Equity and Inclusivity), education, societal engagement. If everyone agrees that open science is ultimately for the benefit of society, it is often conceived as a basic right for non-academic actors to access the results of academic research, or as an active action to disseminate the outputs of research to the society through various channels. But, by no means this is what we could consider as “an open dialogue” that would require, at least, bidirectional communication. It thus implies to consider science on an equal footing with other types of knowledge (produced by practitioners, journalists, educators, amateurs, communities for example) to contribute to a common good that extends beyond the borders of academia (Okune et al., 2019). In my

...but / 2

“Connecting the building blocks” of open science is thus much more than just creating connections: it is more than ensuring technical interoperability between different systems, more than coordinating various stakeholders, more than disseminating science in society: it is to create a *milieu* of knowledge, to build the community that supports it and to open it beyond the limits of academia. In other words, it is to consider that the sum is superior to the addition of its parts, and to adopt an encompassing approach that supports open knowledge as a whole. That is why I would like to submit to discussion the relevance of adopting an ecological approach to open science. The main consequence of it would be to focus primarily not on the “blocks” taken individually, and not even primarily on the individual interactions between them, but on the systems of interactions that structure open science. The proposition would be to start from open science considered as an ecosystem supporting the creation of open knowledge, and then look at the elements from that perspective. What is in focus then, is the web of communications and interactions that compose the ecosystem. The objective is no more to “connect the building blocks” of open science, as bricks are assembled in a wall, but to support symbiotic systems of relations between initiatives, platforms, tools, communities and practices that thrive for and by open knowledge.

Winch means, when considering or even evaluating open science initiatives, projects, services and tools, to flip the order or priorities and to pay attention first to the way they move in their ecosystem: how do they nurture from it, how do they fertilise it, how do they cooperate with others, rather than other criteria that are usually considered as more important; such as innovation, efficiency, excellence. And then, when we have a comprehensive representation of the full web of interactions and interdependencies maybe we could start asking the right questions: is it sustainable? Is it inclusive? Is it creative? Is it alive?

- FOCUS ON THE INTERACTIONS, NOT ON THE BLOCKS

- HOW DO THEY MOVE IN THE ECOSYSTEM? DO THEY NURTURE? DO THEY FERTILISE?

...THESE ARE THE CRITERIA, NOT «EXCELLENCE»

Members of the Open Science community react to the UNESCO Recommendation

We asked 11 leading experts and advocates of the Open Science and Open Access movement to share their views on the significance of the UNESCO Recommendation on Open Science adopted in late 2021. Here are their responses and their own recommendations for how to achieve the objectives set by UNESCO.



Barend Mons

DON'T PUT NEW WINE IN OLD WINESKINS (THE CURRENT JOURNAL SYSTEM)

Jan. 2022

...but / 1

IT'S NOT JUST PUTTING «OPEN» BEFORE THAT WE ARE DONE...

IT'S US TO BLAME!

recommendations. But, so far, most continue to put this still-fermenting new wine into the old wineskins of their current reward systems and publishing requirements. Ultimately, the escape from the 17th-century scholarly communication prison is *not* about blaming the publishers, but about facing our own, dried-out, elitist, and anachronistic ivory-tower scholarly communication practice (from which the publishers live lavishly).

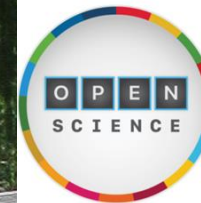
primarily communicated via human-readable narrative. However, we must realise that the evidence on which we base our knowledge should be centered on data and relevant, reproducible, observations and patterns that lead to precise claims[2], rather than on storytelling. Narrative is necessary but is *supplementary* to data and actual claims.

fortunate people of their playful youth and natural resources so that we in the Global North can have our electric cars and cleaner cities? Why would science be different? The (almost) universally agreed-upon (among intellectuals) new wine, *although wonderful and tasty*, goes quickly into the old wineskins of the current, journal-based scholarly communication and reward system, which *will resist until it finally bursts*. Many



[still, the focus is on a one-way communication]

PERFECT. AGREED 100%. BUT...
IT'S STILL «DISSEMINATION»
[ONE WAY FROM ACADEMIA]



UNITED NATIONS, NEW YORK | 8-10 FEBRUARY 2023

3rd Open Science Conference

Accelerating the Sustainable Development Goals,
Democratizing the Record of Science

#OpenScienceUN

What we have

Predominantly pay to access, pay to publish scholarly publishing system

Focus on the "article"

Lengthy lag times from submission to publication

(Excessively high) 'pay to access' fees or 'pay to publish' fees (APCs)

Consolidation and centralization

Closed collections

Print legacy systems



What we need

A universal, quality-controlled research communications system

All valuable research outputs

Rapid sharing of preprints with open peer review


Public infrastructure for dissemination of research with no transaction fees

Distributed ecosystem to support bibliodiversity

Open content (AI and TDM)

Utilize the potential of the open web

Open Science

 **Jon Tennant** ✓
@Protohedgehog

Following

What is the difference between open science and good science? If research papers are inaccessible, with no code or data, cherry picked results, inability to even attempt to reproduce, is that really even science? Science without openness is more anecdote and faith than science.

Tennant Sept.2018



VALUES

Quality and integrity

Collective benefit

Equity and fairness

Diversity and inclusiveness

**OPEN SCIENCE:
JUST
SCIENCE
DONE RIGHT**

PRINCIPLES

Transparency, scrutiny, critique and reproducibility

Equality of opportunities

Responsibility, respect and accountability

Collaboration, participation and inclusion

Flexibility

Sustainability

Recommendations (summary)

1. Communicate about Open Science and Research Integrity in a positive way, as two fundamental and complementary pathways towards excellent science and greater social impact of research. Indeed Open Science and Research Integrity both ultimately relate to the need to foster responsibility and trust in research and innovation.
2. Commit to reforming the research assessment system to provide the right recognition, incentives and rewards for methodological rigour, for enabling the wider uptake of open science practices, and to move at the same time towards a system that supports integrity and that rewards the plural characteristics of highquality research.
3. Journals and publishing platforms should be transparent about their editorial processes, including peer reviewing, and promote reproducibility of research through support of FAIR data and, whenever possible, by facilitating open access to data, codes and methodologies.
4. Make sure that researchers (at every stage of their career), as well as other involved stakeholders (like university lawyers or funders), receive adequate training on research integrity and Open Science.

+ Open Science]

OPEN SCIENCE + RESEARCH
INTEGRITY ARE
COMPLEMENTARY TOWARDS
EXCELLENT RESEARCH AND
MORE SOCIETAL IMPACT
KEYWORD: TRANSPARENCY

9. Promote cooperation between Open Science and Research Integrity offices at a national and institutional levels. This is essential to develop training and materials that contribute to supporting researchers in practicing open science and ensure that high standards of research integrity are complied with. It would also help ensuring that fast pace developments in the area of Open Science are taken into account and appropriately reflected in codes of conduct for Research Integrity.
10. Publicize information and enhance visibility about main Open Science and Research Integrity policies/documents/guidelines at a national and institutional level, notably through websites that could be considered as general knowledge hubs in this regard.

Library Element Report

SWG OSI Guideline Report on Research Integrity and Open Science

2021

Uploaded by RRI Tools on January 26, 2022

Open Science and reproducibility

SHARE OPEN
METHODS
FULLY DOCUMENT
SHARE DATA

1. Share Open Methods

Reproducibility is in the details. It's difficult to reproduce results—much less adapt a methodology for reuse—based on the information in a research article alone. Whether your methods include protocols, code, or something else, making them accessible inspires trust, facilitates reuse, and extends the life of the work.

2. Fully document and report materials

Materials are just as important to reproducibility as the procedures, protocols, and analytical tools used in conducting a study. From human specimens to microbes, the specific identity and provenance of samples can profoundly impact outcomes. In the sciences, the [MDAR checklist](#) provides researchers with a framework for capturing and reporting these details.

3. Post Open Data in a public repository

Open data provides the detail



ITALIAN
REPRODUCIBILITY
NETWORK

SEMINARS ON OPEN SCIENCE

International course open to everyone, focused on Master classes covering open science topics and practices.

SAVE THE DATE

OpenCoffee" will be held on June 15th, 3:30 pm (CEST), the event will be online, and "A manifesto for reproducible science" by Munafó et al., 2017 will be discussed.

PLOS BLOGS

The Official PLOS Blog

2022

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Browse all

5 Open Science practices that improve reproducibility & support trust in science

July 12, 2022 / PLOS / Open Access Open Data Open Science Preregistration

4. Publish complementary or "scooped" research

When different research groups achieve similar results around the same time, it reinforces the validity of both studies. That makes both investigations well worth sharing.

publish replication and validation studies

Researchers who take the time to validate, replicate, and reanalyze previous work provide a valuable service—one which can underscore the rigor of the research, add nuance and deepen understanding, or help to correct the scientific record.

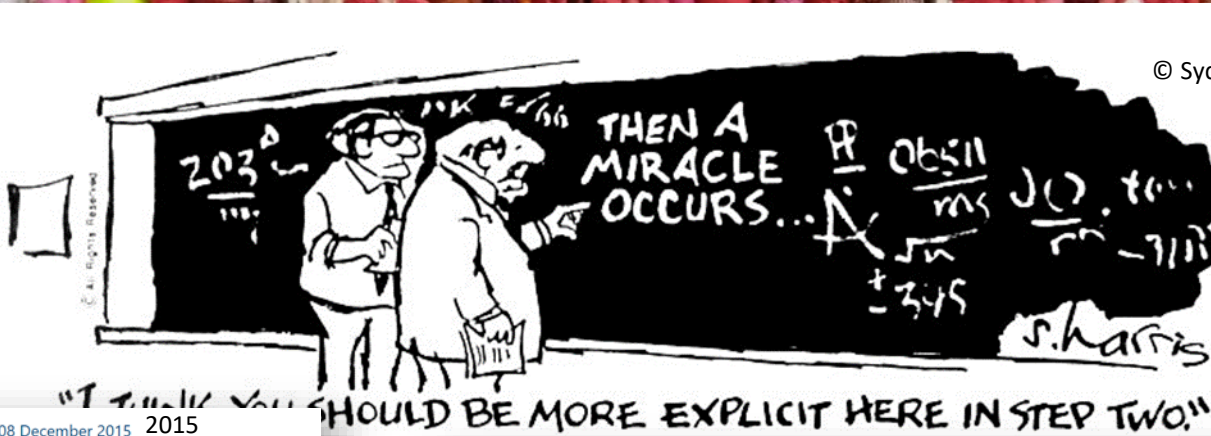


We ask you for a few minutes of your time to answer some questions about the use of Open Research practices in your research. This is the link to participate: [RN survey](#)

Your responses will provide a provisional benchmark of where we are, and data will be used to shape future ITRN initiatives around Open Research. Thank you for your valuable contribution.

[selfis

© Sydney Harris 1977



e]

Comment | Open Access | Published: 08 December 2015 | 2015

Five selfish reasons to work reproducibly

Florian Markowitz

Genome Biology 16, Article number: 274 (2015) | Cite this article

18k Accesses | 38 Citations | 456 Altmetric | Metrics

Reason number 1: reproducibility helps to avoid disaster

“How bright promise in cancer testing fell apart” titled a *The New York Times* article published in summer 2011 [1] highlighting the work of Keith Baggerly and Kevin Coombes, two biostatisticians at M.D. Anderson Cancer Center. Baggerly and Coombes had exposed lethal data analysis problems in a series of high-impact papers by breast cancer researchers from Duke University [2].

Reason number 2: reproducibility makes it easier to write papers

Transparency in your analysis makes writing papers much easier. For example, in a dynamic document (Box 1) all results automatically update when the data are confident your numbers, figures and tables are up-to-date. Additionally, they are more engaging, more eyes can look over them and it is much easier to write.

Reason number 3: reproducibility helps reviewers see it your way

Most of us like to moan about peer review. One of the complaints I hear most often is: the reviewers didn't even read the paper and had no idea what we were really doing.

This starkly contrasts with my experience during the review process of a recent paper [4], for which I had well-documented code easily accessible to the reviewers. The reviewer made a slight change to some analyses, and because he had access to the code, he could directly try out his ideas on our data and see how the results turned out. He was completely on board, the only thing left to discuss was the best way to present the data. I know how a constructive review should be. And it would have been a much more prompt and reproducible presentation of our analyses.

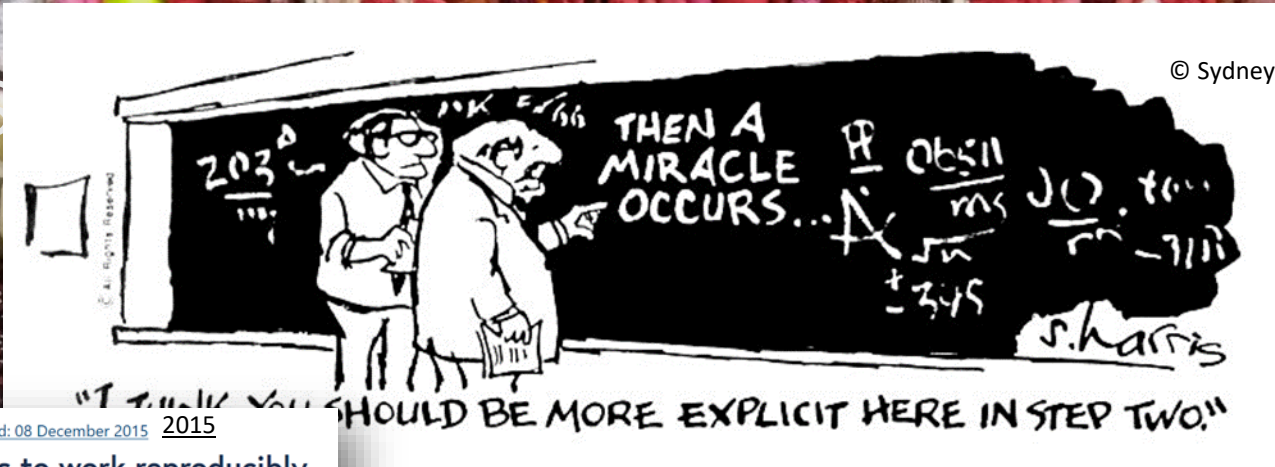
Reason number 5: reproducibility helps to build your reputation

For several papers, we have made our data, code and analyses available as an Experiment Package on Bioconductor [5]. When I came up for tenure, I cited all of these packages as research output of my lab. Generally, making your analyses available in this way will help you build your reputation.

Reason number 4: reproducibility enables continuity of your work

I would be surprised if you hadn't heard the following remarks before, maybe you have even said them yourself: “I am so busy, I can't remember all the details of all my projects” or “I did this analysis 6 months ago. Of course I can't remember all the details after such a long time”

[selfis



Comment | Open Access | Published: 08 December 2015 | 2015

Five selfish reasons to work reproducibly

Florian Markowetz

Genome Biology 16, Article number: 274 (2015) | Cite this

18k Accesses | 38 Citations | 456 Altmetric | Metrics

What's holding you back?

Have I convinced you? Maybe not. Here is a collection of responses I sometimes get to my insistence on reproducible research (as well as my answers to them):

"It's only the result that matters!" You are wrong.

"I'd rather do real science than tidy up my data". If you don't work reproducibly, you are not doing science at all [7].

"Mind your own business! I document my data the way I want!" Yes, please do! There are many ways to work reproducibly [8] and you can pick whatever suits you best.

"Excel works just fine. I don't need any fancy R or Python or whatever". The tool you mention might work well if lots of manual curation is needed, but as soon as you do data analysis, less clicking and more scripting are the way to go. Imagine you have to do a simple analysis such as a regression plot 5 times (10 times, 20 times) and compare doing it by hand 5 times (10 times, 20 times) to writing a simple loop to do it for you. Now imagine having to do it again 3 weeks later because the data have slightly changed. R and Python are clearly the way to go.

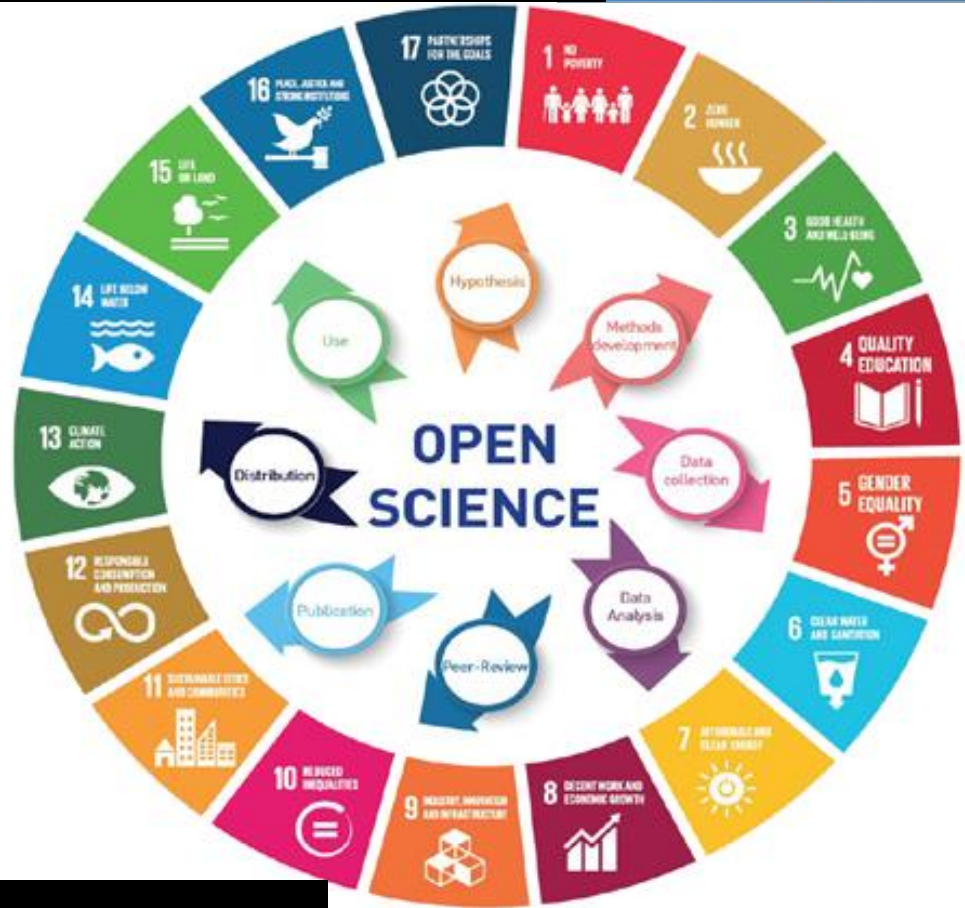
Open Science

OPEN SCIENCE HAS THE
POTENTIAL OF INCREASING
QUALITY AND MAKING THE ENTIRE
PROCESS MORE TRANSPARENT



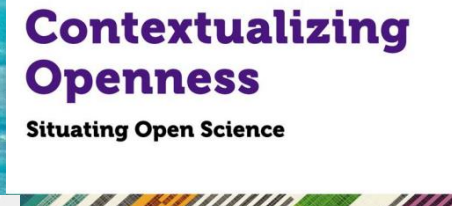
Open Science has the potential of increasing the quality of science and making the entire scientific process more transparent, collaborative and inclusive.

Open Science can accelerate progress towards SDGs and it can be a true game changer in bridging the science, technology and innovation gaps between and within countries and fulfilling the human right to science.



OPEN SCIENCE AS
ACCELERATOR TOWARDS
SDG – A GAME CHANGER

Open [collaborative] Science – being inclusive



Beyond Diversity and Inclusion: Challenging Structural Racism and Systemic Biases in Academic Knowledge Production

Leslie Chan
Global Development Studies
Knowledge Equity Lab
University of Toronto Scarborough
@lesliekwchan @knowequitylab

Main points

- Contemporary inequity in knowledge production has deep historical roots – tracing back to colonialism and the spread of imperial science
- Addressing compositional diversity doesn't address the underlying problems of structural racism and systemic biases rooted in whiteness
- Structural racism is about the maintenance and reproduction of power

Uncritical acceptance of "openness" risks reproducing and amplifying existing inequities

Design principles based on epistemic justice and knowledge equity are possible – Centering Human Relations and Solidarity

UNCRITICAL ACCEPTANCE OF «OPENNESS» RISKS REPRODUCING AND AMPLIFYING EXISTING INEQUITIES

- D3.1 RRI and Open Science Datasets*
- D3.2 Cumulative Advantage in Open Science and RRI: A Large-Scale Quantitative Study*
- D3.3 Uptake of Open Science and Responsible Research and Innovation in Policy and Training*
- D4.1 Synthesis of previous research and specifications of research methods*
- D4.2 Drivers and barriers to uptake of Open Science resources in industry*
- D4.3 Quantifying the influence of Open Access on Innovation and patents*
- D5.1 Scoping report of previous research on the role of Open Science resources in deliberative policy-making*
- D5.2 Results of a survey on the uptake of Open Science in information seeking practices in policymaking*
- D5.3 Networks of participation*
- D6.1 Investigating transition*
- D6.2 Scenario for transition*
- D6.3 Synthesis of research*
- D6.4 Final guide for maximising e

Assoc. Prof. Leslie Chan March 31 2022
University of Toronto at Scarborough

Why are the "rich" in open science getting richer? Reflections on structural inequities and knowledge production

22.03.2022 #onmerritlive onmerrit

It's time to talk explicitly about inclusiveness

We have talked enough about diversity in an **implicit** way but we have not focused on it in an **explicit** way and we may therefore have missed the real point: **equity, diversity and inclusiveness are non-negotiable** and they must be built into the foundation of what we do.



Stephen Curry

64.823 Tweet

Sept. 19, 2019

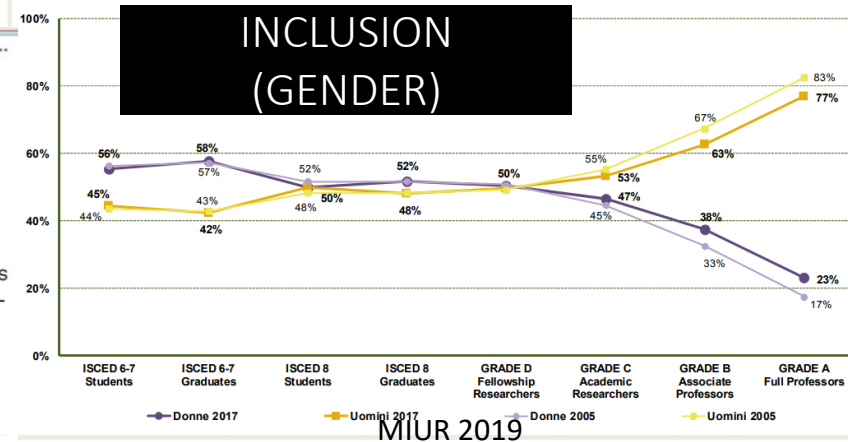
Following

LERU @LERUnews · 19 set

Important message to bring to university leadership is that we miss out on talent by not making equality and diversity a priority. Mixed teams work better. Addressing diversity issues is a win-win-win situation for students, staff and institutions, says @Stephen_Curry



Grafico 1: Proporzione di donne e uomini in una tipica carriera accademica: studenti e personale docente e ricercatore - Anni 2005 e 2017



SEARCH IN TITLE (MAHAKAMI) Feb. 13 2022

SCOPUS= 170 DOCS

EARTH

LENS= 1100+ DOCS

CROSSREF= 7000+ DOCS

SUPER PLANET SATURN TOI-849B

D@sapta Erwin Irawan @dasaptaerwin

I searched for in title (mahakami) then I came up with this visualization. Scopus gets 170 docs (earth), @TheLensOrg gets 10x more docs (saturn), @CrossrefOrg gets 40x times more docs (super planet TOI-849b). #scicomm #sciart with @canva.

Traduci il Tweet

8:43 AM · 13 feb 2022 · Twitter for iPad

2 Retweet 2 Tweet di citazione

Research must be communicated in multiple languages

Access to research and greater interaction between science and society can only be possible if research is communicated in multiple languages, including those actually used in speech and writing locally.

In the ongoing reform of the research assessment system, the call for multilingualism is the most notable omission.

INCLUSION ALSO MEANS MULTILINGUALISM

Comite pour la science ouv... @ouvriarscience

#OSEC2022 #PFUE2022

Le multilinguisme, un oublié de la réforme de l'évaluation, Emanuel KULCZYCKI (Adam Mickiewicz University in Poznań) - @ekulczycki - @ScholarlyCommRG

Traduci il Tweet

10:26 AM · 5 feb 2022 · TweetDeck

2 Retweet 1 Mi piace

Twitta la tua Rispondi

@JFSmith434

"If we are not careful, we will have an open science that perpetuates the inequalities in academia and science." @mendulla #osfair2017

46.24 Inclusive Open Science, 7 Sept. 2017

Equity, diversity, inclusion

Piv Gopalasingam, OLS6 2022

Equity, Diversity, Inclusion and Accessibility



DIVERSITY



Is the representation of various identities and differences

EQUITY



Focuses on fair treatment, equal opportunity and equal access to resources

INCLUSION



Is the active engagement of the contributions and participation of all people

DIVERSITY ASKS

WHO
— IS IN —
THE ROOM

EQUITY ASKS

WHO IS
— TRYING TO —
GET IN THE ROOM
BUT CAN'T

INCLUSION ASKS

— HAVE —
EVERYONE'S
IDEAS BEEN
HEARD

- 1) WHO IS IN THE ROOM
- 2) WHO IS TRYING TO GET IN BUT CAN'T
- 3) HAVE EVERYONE'S IDEAS BEEN HEARD?

source: <https://diversecitylabs.com/>

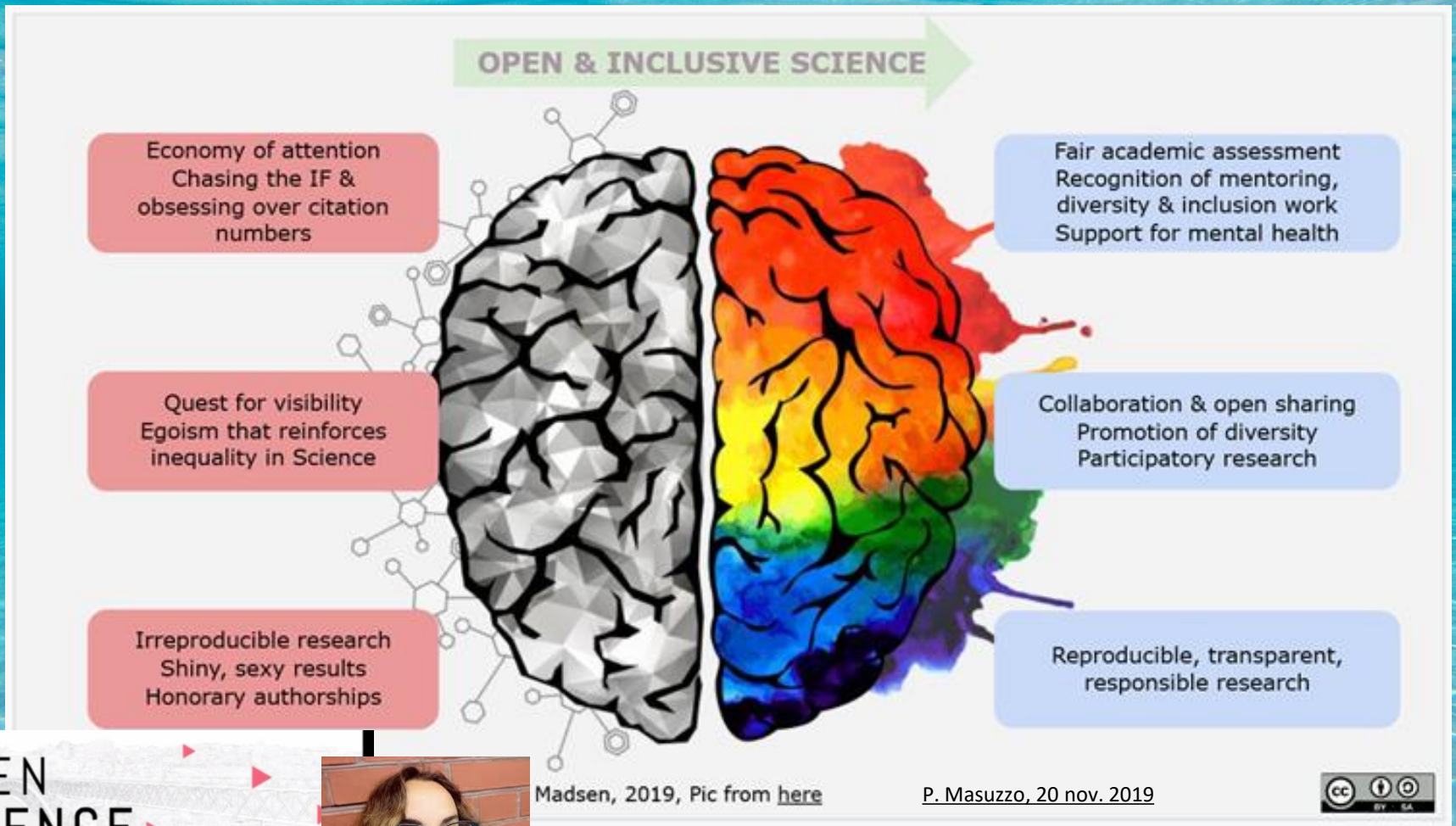
You can weave diversity and inclusion into your work

- There are many resources available - read and share!
 - [Wellcome's anti-racist toolkit](#)
- Find allies and collaborate - move the needle!
- Embed D&I into as many facets of your work - safe spaces
 - Add as a regular Agenda item in meetings, check if your work is inclusive
 - Ask "where are my/our blindspots, who are we leaving behind?" and work to counteract this



[Wellcome anti racist toolkit](#)

Open and inclusive science



OPEN
SCIENCE
FAIR



Synergies for Sustainable, Open & Responsible Research
P. Masuzzo, Keynote, Sept. 2019

Open Science

ARTICLES? ALSO DATA,
CODE, PROTOCOLS...

recognize that formal papers and
manuscripts are not the only units of
scientific knowledge



REDEFINE
«EXCELLENCE»...

redefine research excellence towards
values: leadership, diversity work,
mental health support



put science back at
the heart of society

invest in tools, services, and
community-driven initiatives to help
make science better by engaging more
people to participate in the process



tell it like it is: redefine failure, nurture
slower, responsible science, shift the focus
from the outputs to the practice



TAKE BACK CONTROL,
ENGAGE PEOPLE...



@pcmasuzzo
Oct.5, 2020

TELL IT LIKE IT IS: TAKE BACK YOUR
RIGHT TO BE WRONG, REDEFINE
«FAILURE», **FOCUS FROM
OUTPUTS TO PRACTICE**

...in a nutshell...

It was really helpful to have in mind there is an alternative way [Open Science] that gives us the chance of being treated with dignity and truly focus on the essence of our work

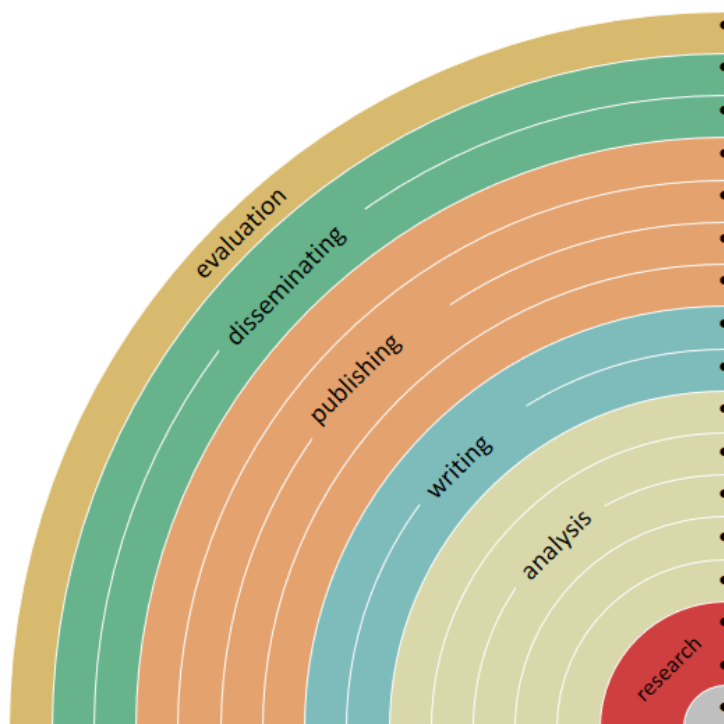
[Petra, PhD, May 2020]

BREAK ...
QUESTIONS?



ANY COMPONENT OF THIS RAINBOW SHOULD COUNT AS «RESEARCH OUTPUT»

YOU CAN MAKE YOUR WORKFLOW MORE OPEN BY...



- adding alternative evaluation, e.g. with [altmetrics](#)
- communicating through social media, e.g. [Twitter](#)
- sharing posters & presentations, e.g. at [FigShare](#)
- using open licenses, e.g. [Creative Commons BY](#)
- self archiving in [archives](#) or publishing on [Open journals](#)
- using open peer review, e.g. at [PubPeer](#) o [F1000](#)
- sharing preprints, e.g. at [OSFpreprint](#), [arXiv](#) o [bioRxiv](#)
- using actionable formats, e.g. with [Jupyter](#) o [CoCalc](#)
- open XML-drafting, e.g. at [Overleaf](#) o [Authorea](#)
- sharing protocols & workflows, e.g. at [Protocols.io](#)
- sharing notebooks, e.g. at [OpenLabNotebook](#)
- sharing code, e.g. at [GitHub](#) licensing [GNU/MIT](#)
- sharing data, e.g. at [Dryad](#), [Zenodo](#) o [Dataverse](#)
- pre-registering, e.g. at [OSFregistry](#) o [AsPredicted](#)
- commenting openly, e.g. with [Hypothes.is](#) o [Pundit](#)
- using shared reference libraries, e.g. with [Zotero](#)
- sharing (grant) proposals, e.g. with [RIO Journal](#)



TECHNICALLY, IT'S THERE.
WHAT IS STILL NEEDED IS THE CULTURAL SHIFT...
AND YOUR FIRST STEP!



YES, BUT...
WE ARE STILL
EVALUATED BY
IMPACT FACTOR

OS-CAM, the Career Assessment Matrix

MATRIX NOT METRICS

- Research output
- Research Process
- Service & Leadership
- Research Impact
- Teaching and supervision
- Professional Experience

HANDBOOK ON Research Assessment in the Social Sciences

Edited by Tim C.E. Engels & Emanuel Kulczykcki



CAREER DIVERSIFICATION
RESPECT OF INDIVIDUALS
AND TEAM WORK
QUALITY
OPEN SCIENCE
LEADERSHIP

Room for everyone's talent

towards a new balance in the recognition and rewards of academics

THE WORLD IS CHANGING, OUT THERE

- Not with what others' value (external drivers)
- Not with available data sources (the 'Streetlight Effect')

CONTEXT considerations

- WHO are you evaluating? (Entity size)
- WHY are you evaluating?
- Do you need to evaluate at all?

OPTIONS for evaluation

- Consider both individual and collective
- Be careful with data sources
- Evaluate with care

YOU EVALUATE WHAT YOU VALUE

PROBE deeply

- WHO might your evaluation approach discriminate against?
- HOW might your evaluation approach be gamed?
- WHAT might the unintended consequences be?
- Does the cost outweigh the benefit?

EVALUATE your evaluation

- Did your evaluation achieve its aims?
- Was it formative as well as summative?

- 1 Start with what you value
- 2 Context considerations
- 3 Options for evaluating
- 4 Probe deeply
- 5 Evaluate

VALUES FRAMEWORK
Live your values. Transform the academy.

EQUITY
Accessibility | Equitable Access | Inclusivity | Public Good | Social Justice

OPENNESS
Accountability | Candor | Learning From Failure | Open Process | Open Source | Transparency

COLLEGIALITY
Ethical Imagination | Kindness | Generosity | Empathy | Self Care | Respect

SOUNDNESS
Knowledge Advancement | Creativity | Integrity | Intentionality | Originality | Boundary Pushing | Reproducibility

COMMUNITY
Attunement | Connection | Engagement | Holism | Leadership | Preservation

humetricshss.org

2022



The Declaration Signers Case Studies Resources Blog

Reimagining academic assessment stories of innovation and change

Case studies of universities and national consortia highlight key elements of institutional change to improve academic career as

Tampere University FINLAND

University College London UNITED KINGDOM

University of Jiaxing CHINA

Ghent University BELGIUM

University of Oslo NORWAY

TRIPLE: Team Spirit as the default approach to working in academia 2021



- IMPACT
- PROFESSIONAL PERFORMANCE
- RESEARCH
- EDUCATION
- LEADERSHIP
- TEAM

STEPS FOR REALISING THE VISION FOR FAIRer ASSESSMENTS 2021

- 1 MAKE IT MEANINGFUL
- 2 MAKE IT POSSIBLE
- 3 MAKE IT REWARDING

FAIRer ACADEMIC ASSESSMENTS

Recognise and value diversity and disciplinary differences of academic work

- Output
- Mission
- Impact

Diversity needs to be represented in information supporting assessment

Diversity of outputs, activities and missions need to be included among assessment criteria

ACKNOWLEDGE DIVERSITY

EXAMPLE RESEARCH DATA

Identify practices (e.g.):

- Sharing research data
- Creating FAIR data
- Using open data
- FAIR expertise

Develop infrastructures for:

- Publishing and sharing research data
- Integrating metadata and indicators for research data practices

Reward researchers for (e.g.):

- Sharing datasets
- FAIR datasets
- Data citations
- Data stewardship

...changing

nature

June 2021

Explore content



V.1.1 July 2021



Horizon Europe

Programme Guide

Finally, in **part A of their proposals**, proposers are asked to list up to five relevant publications, widely used datasets or other achievements of consortium members that they consider significant for the action proposed. Open access is expected for publications, in particular journal articles, while datasets are expected to be FAIR and 'as open as possible, as closed as necessary'. If publications are not open access, proposers are strongly encouraged to deposit them retroactively in repositories and provide open access to them when possible. The significance of publications will not be evaluated on the basis of the Journal Impact Factor of the venue they are published in, but on the basis of a qualitative assessment provided by the proposers for each publication.

HORIZON EUROPE DOES NOT CONSIDER IMPACT FACTOR

nature > career news > article

DUTCH UNIVERSITIES ABANDON IMPACT FACTOR

CAREER NEWS | 25 June 2021

Impact factor abandoned by Dutch university in hiring and promotion decisions

Faculty and staff members at Utrecht University will be evaluated by their commitment to open science.

ERC ABANDONED IMPACT FACTOR



About DORA

The Declaration Signers Case Studies Resources Blog

Sign

July 2021

European Research Council (ERC)

The number of peer reviewed publications and preprints that can be listed is limited to ten (five for Starting Grant applicants). While it is expected that the publications have a significant reach, applicants are explicitly asked not to include the Journal Impact Factor.

I believe in a research culture that recognises a diversity of contributions to science and society; that celebrates high quality and impactful research; and that values sharing, collaboration, integrity and engagement with society, transmitting knowledge from generation to generation.

Mariya Gabriel

Commissioner for Innovation, Research, Culture, Education and Youth



Coalition for Advancing Research Assessment

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.

...TO BE SIGNED!!!

EUROPEAN COMMISSION INITIATIVE TOWARDS A REFORM OF RESEARCH ASSESSMENT (UNIBO JOINED THE COALITION, AS WELL AS ANVUR)

- SIGNATURE OF THE AGREEMENT
- IN 1 YEAR SHOW A ROADMAP
- IN 5 YEARS SHOW THE EFFECTS

NEWS | 18 January 2022 | Brussels, Belgium | Research and Innovation

Process towards an agreement on reforming research assessment

EC process

The Commission has called for organisations to express their interest in being part of a coalition on reforming research assessment.

COARA, the timeline



Nov. 2021
Scoping report

Towards a reform of the research assessment system

Scoping Report



July 2022 Text of the Agreement

The Agreement full text



Sept. 2022 official launch of COARA

CoARA

Coalition for Advancing Research Assessment

2021

2022 Jan.

2022 July

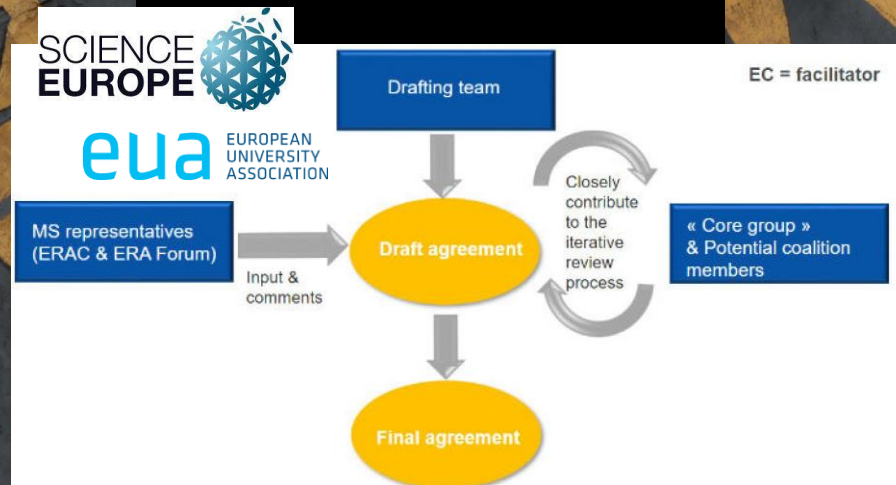
2022 Sept.

2022 Dec.

SURVEY/
BILATERAL
MEETINGS

COLLABORATIVE WRITING

STEERING BOARD ELECTED
DEC. 2



- 12/02/2022

Coalition for Advancing Research Assessment (CoARA) launched, Steering Board elected

CoARA, the timeline



March 28, 2023

WORKING GROUPS
AND NATIONAL
CHAPTERS

Home > News > First Call for Working Groups and National Chapters

First Call for Working Groups and National Chapters

March 28, 2023

On 28 March 2023, CoARA launched a call to all Coalition members for proposals of Working Groups and National Chapters. This is the first time such a call is launched since the Coalition's inception in December 2022. This call is a significant step in the Coalition's action responding to the need to reform research assessment. Operating as 'communities of practice' under the principles of mutual learning and collaboration, the developed outputs of these Working Groups will support CoARA members in their implementation of the [commitments](#) agreed upon when joining

National Chapters

In addition, CoARA calls for proposals of National Chapters. National Chapters will contribute to CoARA's work by facilitating the exchange of knowledge, mutual learning and discussions on CoARA-relevant issues specific to different types of organisations of a given country. There is no limit as to the number of National Chapters that can be approved, however for now there cannot be more than one per country. Proposals for National Chapters will continuously be assessed on a monthly basis starting 6th of June 2023.

Compositions of Working Groups

Three types of Working Groups (interest, discipline and institutional communities) are aimed to be formed, with the objective to build upon what is already being done within the community and to add value. In addition, inclusivity is a major driver for the composition of the Working Groups, as they are expected to involve organisations of varying types and sizes, from different geographical areas, and participants of all career stages. Following a three staged approach, Expressions of Interest are submitted by April, 27, followed by a community discussion, cumulating in a full working group proposal by June, 6. All applicants submitting a working group proposal will be informed of the outcome of the selection process by 13 July 2023. A short evaluation report will also be provided.

Why / 1 [distorting science]

- CURRENT INDICATORS (MOSTLY IMPACT FACTOR) ARE NO LONGER ALIGNED TO THIS NEW WAY OF DOING RESEARCH
- PUBLISH OR PERISH CULTURE COMES AT THE EXPENSE OF QUALITY, INTEGRITY, AND TRUST IN RESEARCH



Nov. 21

Towards a reform of the research assessment system

Scoping Report

These major evolutions are not aligned with the metrics that often dominate assessment: the number of publications and citations, and the quantity of publications in journals with high Journal Impact Factor (JIF). The race for publications – the so-called publish-or-perish culture – comes at the expense of quality, integrity, and trust in research. Also, using the JIF as a proxy for quality of research is shown to be inappropriate. Despite this, moving away from the use of JIF is non-trivial because it is easy to use and is engrained in academic culture, conferring prestige to authors and their institutions publishing in high JIF journals; whereas additional efforts may be required by alternatives such as more qualitative assessment methods.

Why / 2

THE CURRENT SYSTEM RELYING ON JOURNALS

- DOES NOT RECOGNISE THE DIVERSITY OF CONTRIBUTIONS
- NEGATIVELY AFFECTS QUALITY AND INTEGRITY
 - BOOSTERS PREDATORY PUBLISHING
 - SUPPORT THE SUBSCRIPTION SYSTEM IN PRESTIGIOUS JOURNALS
- [REMINDER: WE ARE TALKING PUBLIC MONEY]
- REDUCE INNOVATIVE IDEAS AS «RISKY»
- IT'S A WASTE OF TIME AND MONEY AS THEY DON'T PUBLISH NEGATIVE RESULTS

CoARA

[Agreement - full text](#)



Coalition for Advancing Research Assessment



The Agreement full text

Assessment processes relying predominantly on journal- and publication-based metrics are known to result in a 'publish or perish' culture that falls short of recognising diverse approaches and could come at the expense of quality – The dominance of narrow journal- and publication-based metrics, which are often used inappropriately in research assessment, can be a hurdle to the recognition of diverse contributions and may negatively affect the quality and impact of research. For example, this dominance can: promote quantity and speed at the expense of quality and rigour; lead to the emergence of predatory journals and conferences; encourage publishing in paywalled journals because of their high impact factors, despite the availability of open access alternatives; lead to risk-aversity because taking risks may reduce the chances of publication; generate excessive attention to rankings that hinders collaboration; and waste efforts, time and resources through the duplication of work as 'negative' findings go largely unreported. Research assessment

How / 1

Coalition for Advancing Research Assessment



The Agreement full text

the duplication of work as 'negative' findings go largely unreported. Research assessment practices should induce a research culture that recognises collaboration, openness, and engagement with society, and that provides opportunities for multiple talents.

The principles / 1

- FOCUS ON QUALITY
- QUALITY MEANS TRANSPARENCY, REPRODUCIBILITY, REUSE
- ...HENCE A STRONG LINK TO OPEN SCIENCE, CO-CREATION, OPEN COLLABORATION
- STRIVE FOR (AND MEASURE) A REAL IMPACT ON SOCIETY



The Agreement full text

Principles for assessment criteria and processes

Quality and impact

Agreement

- Focus research assessment criteria on quality. Reward the originality of ideas, the professional research conduct, and results beyond the state-of-the-art. Reward a variety of research missions, ranging from basic and frontier research to applied research. Quality implies that research is carried out through transparent research processes and methodologies and through research management allowing systematic re-use of previous results. Openness of research, and results that are verifiable and reproducible where applicable, strongly contribute to quality. Openness corresponds to early knowledge and data sharing, as well as open collaboration including societal engagement where appropriate. Assessment should rely on qualitative judgement for which peer review is central, supported by responsibly used quantitative indicators where appropriate.
- Recognise the contributions that advance knowledge and the (potential) impact of research results. Impact of research results implies effects of a scientific, technological, economic and/or societal nature that may develop in the short, medium or long-term, and that vary

The principles / 2

- RECONGIZE THE DIVERSITY OF RESEARCH ACTIVITIES AND OUTPUTS
- REWARD EARLY SHARING AND OPEN COLLABORATION
- CONSIDER THE FULL RANGE OF TASKS (PEER REVIEW, MENTORSHIP LEADERSHIP...)
- CONSIDER ALL THE OUTPUTS (NOT ONLY PUBLICATIONS)
- REWARD INTERACTION WITH SOCIETY



The Agreement full text

Diversity, inclusiveness and collaboration

Agreement

- Recognise the diversity of research activities and practices, with a diversity of outputs, and reward early sharing and open collaboration. Consider tasks like peer review, training, mentoring and supervision of Ph.D candidates, leadership roles, and, as appropriate, science communication and interaction with society, entrepreneurship, knowledge valorisation, and industry-academia cooperation. Consider also the full range of research outputs, such as scientific publications, data, software, models, methods, theories, algorithms, protocols, workflows, exhibitions, strategies, policy contributions, etc., and reward research behaviour underpinning open science practices such as early knowledge and data sharing as well as open collaboration within science and collaboration with societal actors where appropriate. Recognise that researchers should not excel in all types of tasks and provide for a framework that allows researchers to contribute to the definition of their research goals and aspirations.

The principles / 3

- RESPECT THE VARIETY OF DISCIPLINES
- VALORISE THE DIVERSITY ON ROLES
- ACKNOWLEDGE MULTI AND TRANS DISCIPLINARITY
- VALUE OPEN SCIENCE SKILLS AND TEAM SKILLS
- ENSURE GENDER EQUALITY AND INCLUSIVENESS



The Agreement full text

- Use assessment criteria and processes that respect the variety of scientific disciplines, research types (e.g. basic and frontier research vs. applied research), as well as research career stages (e.g. early career researchers vs. senior researchers), and that acknowledge multi-, inter-, and trans-disciplinary as well as inter-sectoral approaches, when applicable. Research assessment should be conducted commensurately to the specific nature of scientific disciplines, research missions or other scientific endeavours.
- Acknowledge and valorise the diversity in research roles and careers, including roles outside academia. Value the skills (including open science skills), competences and merits of individual researchers, but also recognise team science and collaboration.
- Ensure gender equality, equal opportunities and inclusiveness. Consider gender balance, the gender dimension, and take into account diversity in the broader sense (e.g. racial or ethnic origin, sexual orientation, socio-economic, disability) in research teams at all levels, and in the content of research and innovation.

How / 2



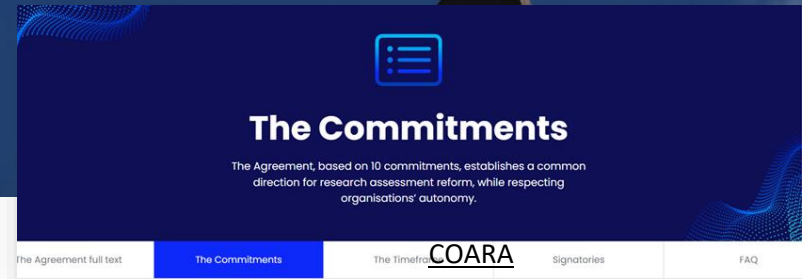
The Agreement full text

- ENGAGE THOSE BEING ASSESSED
- SHARE BEST PRACTICES
 - COORDINATE

Annex 3 – Reform journey: a suggested process for achieving the Commitments Agreement

- 1 **Allocate resources**, whether in terms of capacity or budget, to actively engage in the reform journey
- 2 **Communicate your intention to reform**, explain how you have started the process of reviewing or developing criteria, tools and processes in line with the core commitments
- 3 **Evaluate current assessment practices** in terms of alignment with the Principles and Commitments, consider also what currently works well and how this can be retained in parallel to any new practice - *Re-evaluate at fixed intervals, whenever broad reforms to*
- 4 **Engage those being assessed in the development and design of assessment criteria and processes**, work with researchers to enable consideration of differences between disciplines and career levels
- 5 **Develop existing and design new assessment criteria, tools, and processes** with assessors and those that are assessed; consider the diversity of contributions including: diverse outputs beyond journal publications and in different languages; diverse practices including those that contribute to robustness, openness, transparency, and inclusiveness of research and the research process including peer review, teamwork and collaboration; and diverse activities including teaching, leadership, supervision, training, and mentoring, according to the nature of each research discipline
- 6 **Interrogate developed and new approaches** by working with assessors and those that are assessed (e.g. who might new approaches discriminate against; how might they be gamed; what are the potential unintended consequences)
- 7 **Implement developed and new assessment criteria, tools, and processes** according to the Principles and Commitments; consider awareness raising, rewards, policies, training, infrastructure, and capacity building and include data collection to support monitoring, evaluation and mutual learning
- 8 **Evaluate developed and new assessment criteria, tools, and processes**
- 9 **Share data / information, participate in mutual learning within and beyond the Coalition**, supported by mechanisms developed by the Coalition
- 10 **Coordinate with other organisations at national and international level, and promote international coordination and harmonisation**
- 11 **Continue to evolve assessment criteria, tools, and processes based on learning from own evaluations and those of others**

Commitments / 1



The 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



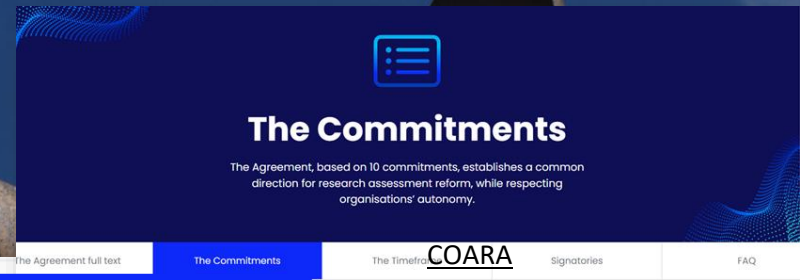
4. Avoid the use of rankings of research organisations in research assessment



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



Commitments / 2



6. Review and develop research assessment criteria, tools and processes



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



Commitments / 3

The Timeframe

- The signatories of this Agreement agree to share with each other and with their community how their organisation has started the process of reviewing or developing criteria, tools and processes in line with the core Commitments and according to an action plan with defined milestones, **by the end of 2023 or within one year of signing the Agreement.**
- Signatories of this Agreement agree to regularly demonstrate progress towards reviewing, developing and evaluating criteria, tools and processes that fulfil the core Commitments, with a touch point **at end of 2027 or within five years of signing the Agreement**, by which time they will have worked through at least one cycle of review and development of their assessment criteria, tools and processes.

Signatories that are not assessing research projects, researchers, research units or research performing organisations commit to contribute to the reform and share progress with each other and the community respecting the same timeframe. Timeframe

[there are legal basis]

A REFORM OF RESEARCH ASSESSEMENT IS A NEED (COUNCIL CONCLUSIONS ON THE FUTURE GOVERNANCE OF THE ERA – COM 14308/21)

14308/21

Dec. 2021

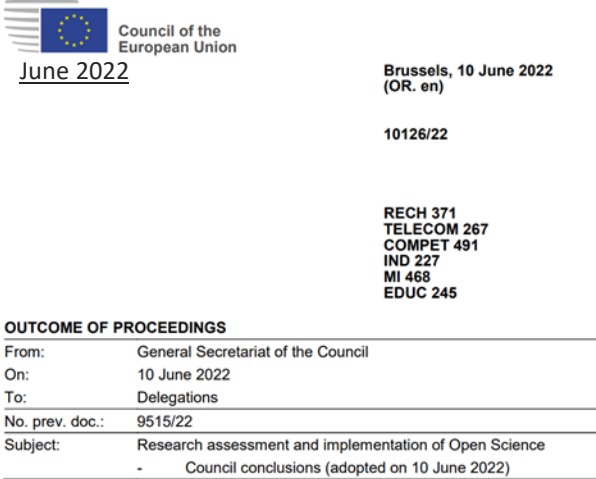
RECH 538
COMPET 865

OUTCOME OF PROCEEDINGS

From: General Secretariat of the Council
On: 26 November 2021
To: Delegations
No. prev. doc.: 14126/21
Subject: Future governance of the European Research Area (ERA)
- Council conclusions (adopted on 26/11/2021)

Open data directive

RESEARCH ASSESSEMENT HAS TO CHANGE (RECOMMENDATION 790/2018)



COUNCIL CONCLUSIONS ON RESEARCH ASSESSEMENT (10126/2022 JUNE)

[ERA policy agenda]

European 2022 Research Area Policy Agenda

Overview
of actions for
the period
2022-2024

FIRST 3 ACTIONS OF THE NEW EUROPEAN RESEARCH
AREA (ERA) ARE ABOUT OPEN SCIENCE

of the
in Union

Brussels, 26 November 2021
(OR_en)

14308/21

RECH 538
COMPET 865

OUTCOME OF PROCEEDINGS

From: General Secretariat of the Council
On: 26 November 2021
To: Delegations **Dec. 2021**
No. prev. doc.: 14126/21
Subject: Future governance of the European Research Area (ERA)
- Council conclusions (adopted on 26/11/2021)

Priority Area: Deepening a truly functioning internal market for knowledge

ERA Actions

Outcomes

1. Enable the open sharing of knowledge and the re-use of research outputs, including through the development of the European Open Science Cloud (EOSC)

- Deploy Open Science principles and identify Open Science best practices
- Deploy the core components and services of EOSC and federate existing data infrastructures in Europe, working towards the interoperability of research data
- Establish a monitoring mechanism to collect data and benchmark investments, policies, digital research outputs, open science skills and infrastructure capacities related to EOSC

2. Propose a EU copyright and data legislative and regulatory framework fit for research

- Identify barriers and challenges to access and reuse of publicly funded R&I results and of publications and data for scientific purposes, and identify potential impacts on research, through an analysis of relevant provisions under EU copyright and data legislation and related regulatory frameworks, and of relevant institutional and national initiatives
- Propose legislative and non-legislative measures to improve the current EU copyright and data legislative and regulatory frameworks

3. Advance towards the reform of the Assessment System for research, researchers and institutions to improve their quality, performance and impact

- Analysis of legal and administrative barriers at national and trans-national level for a modern research assessment system
- Create a coalition of European research funders and research performers who agree on a new approach for research assessment, following wide and inclusive consultations at European and international level
- Implementation plan of the coalition to roll-out the new approach, including pilots in different domains

[Open Science in EU]

COUNCIL CONCLUSIONS ON RESEARCH EVALUATION (2022)

2. ACKNOWLEDGES that in order to accelerate the implementation and the impact of Open Science policies and practices across Europe, action has to be taken to move towards a renewed approach to research assessment, including incentive and reward schemes, to put in place a European approach in accordance with the Pact for Research and Innovation in Europe, and strengthen capacities for academic publishing and scholarly communication of all research outputs, and encourage where appropriate, the use of multilingualism for the purpose of wider communication of European research results;

ACKNOWLEDGES THAT THE CURRENT ASSESSMENT LEAD TO NEGATIVE BIASES IN TERMS OF INTEGRITY AND QUALITY

I. Reform of research assessment systems in Europe

3. ACKNOWLEDGES that research assessment systems should focus on quality and impact, and RECALLS that the current research assessment systems are nowadays to a great extent too focused on the use of some quantitative journal- and publication-based indicators and the evaluation of a narrow range of research outputs; CONSIDERS that such an approach may lead to negative biases in terms of research quality, reproducibility and integrity; STRESSES that research assessment should include other research outcomes and processes and promote early knowledge sharing and collaboration to accelerate the implementation of Open Science policies and practices;

OUTCOME OF PROCEEDINGS

From: General Secretariat of the Council
10 June 2022
Delegations
c.: 9515/22
Research assessment and implementation of Open Science
- Council conclusions (adopted on 10 June 2022)



8. SUGGESTS that the evolution of the research assessment systems in Europe should be guided by the following principles, while respecting the autonomy of research institutions and the freedom of scientific research, as well as the diversity of national and disciplinary contexts, and taking into account their consistency with international initiatives:

- a. moving to a more balanced approach between the quantitative and the qualitative evaluation of research, by strengthening the qualitative research assessment indicators while developing the responsible use of quantitative indicators;
- b. recognising all forms of research and innovation output and processes, including *inter alia*, datasets, software, codes, methodologies, protocols and patents, and not only publications; STRESSES that data should be findable, accessible, interoperable and reusable, in line with the FAIR principles;
- c. taking into consideration diverse career pathways and all research and innovation activities, including mentoring, leadership roles, entrepreneurship, data management, teaching, knowledge valorisation, industry-academia cooperation, support for evidence-informed policy making, interaction with society, including citizen science and public engagement;
- d. taking into consideration the specificities of the various research disciplines, the range from basic to applied research, the stages of research careers and the missions of research institutions;
- e. ensuring that ethics and integrity are accorded the highest priority and are not compromised by counter-incentives;
- f. ensuring diversity, gender equality, and actively promoting women in science;



COUNCIL CONCLUSIONS ON RESEARCH EVALUATION (2022)

PRINCIPLES OF THE NEW EVALUATION

...if you want to know more

2022

ELITE LINO

BSP

The National Centre for Research and Innovation

European research assessment reform: why and when?

WEBINAR
Date: Tuesday 31 May 2022
Time: 14h00 CET/15h00 EST

Open Science Café

GIOVEDÌ 10 NOVEMBRE, 14.30 - 15.30

L'iniziativa europea per la riforma della valutazione della ricerca

Silvia Bottaro, Commissione Europea
Introduce: Elena Giglia, Università di Torino

NOVEMBRE

0:31 / 1:06:25

Open Science Café - L'iniziativa europea per la riforma della valutazione della ricerca Nov. 2022

zenodo

December 14, 2022

Dec. 14 2022

Una questione di qualità o una formalità? L'Agreement on Reforming Research Assessment e il processo di riforma della valutazione della ricerca in Europa

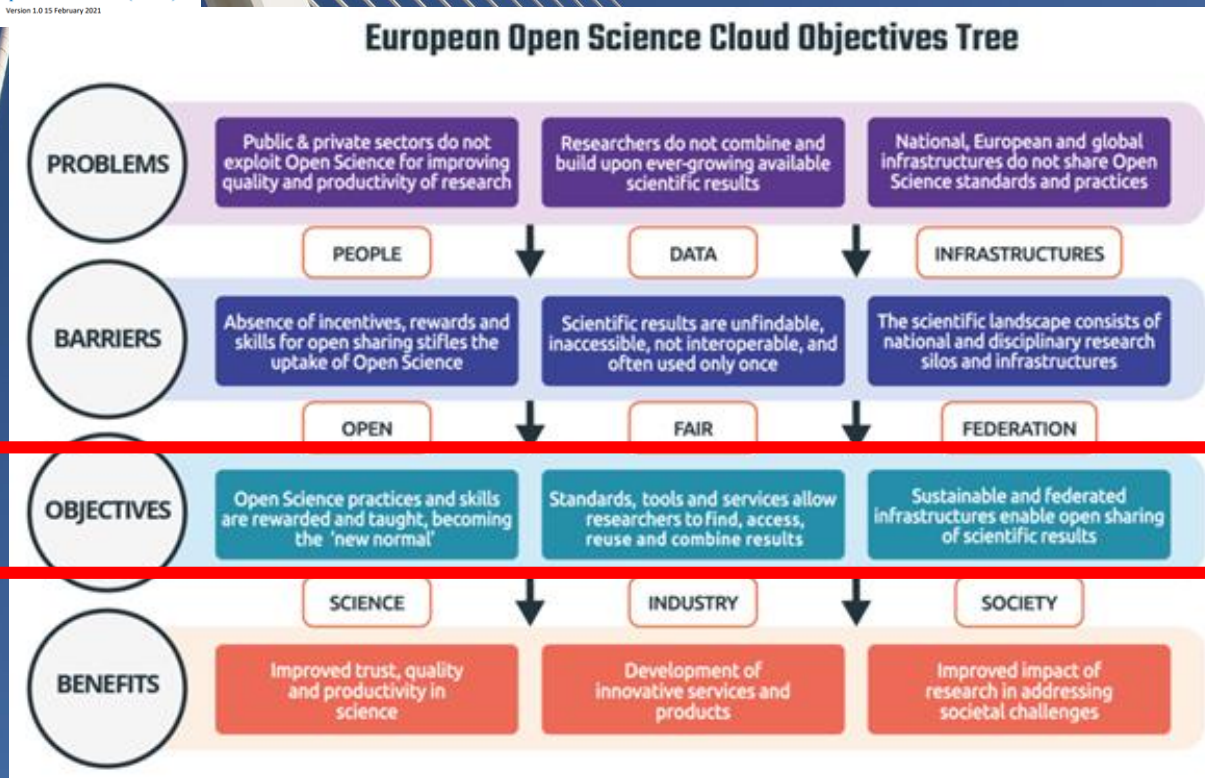
Francesca Di Donato

L'Agreement on Reforming Research Assessment è stato pubblicato il 20 luglio 2022, al termine di un processo avviato dalla Commissione europea all'inizio del 2021. L'articolo espone gli elementi fondamentali dell'accordo, ricostruisce la genesi e le tappe del processo e presenta il contesto culturale e politico in cui si è definito. Inoltre, vengono proposti alcuni primi elementi per la definizione di roadmap e piani d'azione necessari a tradurre i principi e gli impegni dell'accordo in una serie di criteri e indicatori per la valutazione di istituzioni, di progetti di ricerca e di singoli ricercatori. In conclusione sono presentate alcune riflessioni sulle sfide da affrontare e sulle opportunità che la riforma della valutazione offre.

BTW – Open science as the new normal

«OPEN SCIENCE PRACTICES ARE TAUGHT AND REWARDED BECOMING THE NEW NORMAL» IS THE OBJECTIVE OF THE EOSC ASSOCIATION

Strategic Research and Innovation Agenda
SRIA 1.0 (SRIA)
of the
European Open Science Cloud (EOSC)
Version 1.0 15 February 2021



EOSC IS NOT A BIG BOX]

THE EUROPEAN OPEN SCIENCE CLOUD? SOME NUANCES AND DEFINITIONS

Imagine a federated, globally accessible environment where researchers, innovators, companies and citizens can publish, find and re-use each other's data and tools for research, innovation and educational purposes. Imagine that this all operates under well-defined and trusted conditions, supported by a sustainable and just value for money model. This is the environment that must be fostered in Europe and beyond to ensure that European research and innovation contributes in full to knowledge creation, meet global challenges and fuel economic prosperity in Europe. This we

EOSC IS NOT A
REPOSITORY NOR A
«CLOUD»

YOU MAKE YOUR
DATA FAIR SO THAT
EOSC *SERVICES*
CAN «FIND» THEM...

A SUPPORTING
ENVIRONMENT
FOR OPEN SCIENCE
AND NOT AN
«OPEN CLOUD»
FOR SCIENCE

YOU DON'T
«UPLOAD» YOUR
DATA INTO EOSC

AND GIVE SEAMLESS
ACCESS TO 20 M EU
RESEARCHERS

OBJECTIVES

EOSC SRIA 1.0

Open Science practices and skills
are rewarded and taught, becoming
the 'new normal'

EOSC / what

A CROSSCUTTING DATA SPACE FOR RESEARCH AND INNOVATION

eosc Item 08: Work Plan 2023 eosc Focus
Delivering Added Value / Partnerships and Data Spaces 2022

Position of EOSC according to the European Commission

 Health	 Industrial & Manufacturing	 Agriculture	 Finance	 Mobility	 Green Deal	 Energy	 Public Administration	 Skills
---	---	--	--	---	---	---	--	---

 **EOSC: a crosscutting data space for Research and Innovation**

“EOSC is the basis for a science, research and innovation data space that will bring together data resulting for research and deployment programmes and will be connected and articulated with the sectoral data spaces”
(European Data Strategy, COM(2020) 66 final)

eosc EOSC Strategy – Status Current Thinking

What

EOSC is a web of FAIR data and related services for research
Research data that is easy to find, access, interoperate and reuse (FAIR)
Trusted and sustainable research outputs are available within and across scientific disciplines

Why

Unlock the full potential of research data to accelerate discoveries and innovation

How

Access and interoperability of research data and results

- Define ownership, authorship and responsibility of data and research outputs
- Ensure long-term preservation of data throughout its lifecycle
- Enable the creation of standards for all research domains
- Make data machine-actionable
- Enable new scientific discovery methods and science disciplines
- Train researchers on adopting FAIR principles as an integral part in their activity

A sustainable coordinated infrastructure

- Establish and maintain a coordinated federated reference architecture
- Implement an operational infrastructure framework that is long term sustainable
- Ensure high quality of data and services
- Ensure secure access to data and services
- Define clear standards for API and interoperability of data and services
- Apply user friendly practices
- Inspire EOSC ambassadors to assist in on-boarding of researchers

Inspired people and robust governance

- Communicate an inspiring EOSC vision and strategy
- Implement an unambiguous and clearly mandated governance structure
- Establish a framework to engage human capital in institutions, countries and scientific communities
- Enable disciplinary and cross-disciplinary transnational research to find new insights from existing and new research data and outputs

[EOSC is based on data stewardship]

- WE NEED 500.00 DATA STEWARDS
- DATA STEWARDS ARE ONE OF THE CRITICAL SUCCESS FACTORS OF EOSC

Strategic Research and Innovation Agenda
(SRIA)
of the
European Open Science Cloud (EOSC)
SRIA 1.0
Version 1.0 15 February 2021

7.4. Critical success factors

The developments and expected impacts described above will not happen spontaneously. For these benefits to materialise a number of critical success factors (CSFs) must be in place. The following CSFs have been identified for EOSC:

- Researchers performing publicly funded research make relevant results available as openly as possible;
- Professional data stewards are available in research-performing organisations in Europe to help implement FAIR principles and support Open Science;

What is data stewardship?



Data stewardship is the responsible planning and executing of all actions on digital data before, during and after a research project, with the aim of optimising the usability, reusability and reproducibility of the resulting data.

It differs from data management, in the sense that data management concerns all actual, operational data-related activities in any phase of the data lifecycle, while data stewardship refers to the assignment of responsibilities in, and planning of, data management.

DATA STEWARDSHIP IS THE RESPONSIBLE **PLANNING** AND EXECUTING OF ALL ACTIONS ON DIGITAL DATA BEFORE, DURING AND AFTER A RESEARCH PROJECT, WITH THE AIM OF OPTIMISING THE USABILITY, REUSABILITY AND REPRODUCIBILITY OF THE RESULTING DATA

What is data stewardship? / 2



experts and research roles. Three different, partly overlapping stakeholder fields (or working areas) of the data steward were characterised, which all have their own focus and thus different data steward role: policy, research and infrastructure. Together they form the data stewardship landscape. Each data steward role has eight competence areas:

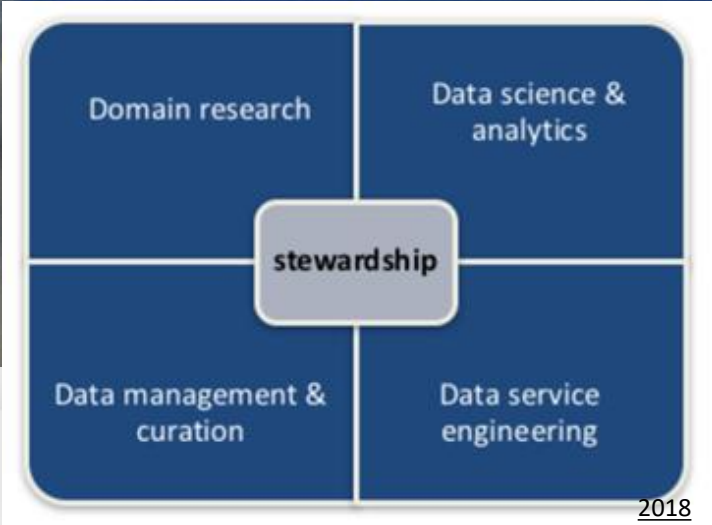
- Policy/strategy
- Compliance
- Alignment with FAIR data principles
- Services
- Infrastructure
- Knowledge management
- Network
- Data archiving

DATA STEWARD HAS 8 COMPETENCE AREAS
- ONE OF THE KEY AREAS IS ACTING AS A
**BRIDGE AMONG DIFFERENT
PROFESSIONALS** (DATA ENGINEER, LEGAL
ADVISOR...)

The responsibilities, tasks and KSAs were defined per competence area and differ between the data steward roles. The data steward role is often experienced as a role that is 'in between' different disciplines and professionals. Translation between different stakeholders and professionals is seen as a key element of the function of a data steward.



[competence profile]



Competence Profile

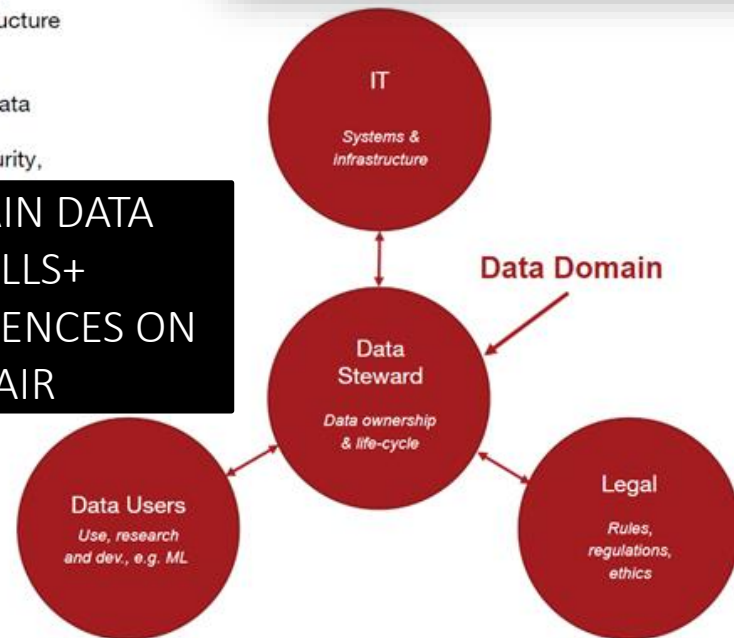
A data steward is a data specialist with strong domain-specific knowledge who understands and appreciates the relevance of data, data sources, data infrastructure and constraints within a scientific or other application domain.

The future Data Steward must assume ownership and responsibility for data, data quality, and the data life-cycle as their primary function. They should ensure collaboration and coherence between IT competences, quality assurance, security, rules & regulations, and facilitate the application and use of data internally and externally in the organisation.

Competence profile examples

- Domain-specific data understanding
- Ability to ensure that structured and unstructured data is modelled, harvested, stored, and maintained in documented, and regulated fashion with focus and findability, accessibility, interoperability, and reusability.
- Competences to facilitate HPC (High Performance Computing) during development and research through handling of large-scale data in public and private enterprises.
- Understanding of and competences within legal, ethical and security aspects of data handling, data sharing, e.g., integrity and GDPR.

DOMAIN DATA
SKILLS+
COMPETENCES ON
FAIR



[BTW, time to rethink...]

Time to re-think the divide between academic and support staff Apr. 2022

Research professionals should not be split into two categories, say Marta Teperek, Maria Cruz and Danny Kingsley.

In recent years, we have seen 'support' jobs become more important at research organizations, including roles such as data stewards, research software engineers, scientific community managers and programme managers. We have seen how a diversity of roles and contributions drives progress and success in research and innovation.

We have come to see the sharp distinction between 'academics' and 'support staff' as a barrier to effective research because it discourages a culture of collaboration and appreciation of a diversity of roles and contributions.

- DIVERSITY OF CONTRIBUTIONS IS A SUCCESS FACTOR
- CULTURE OF COLLABORATION

them versus mindset drives rift between academic and non-academic staff

present at conferences and workshops; and lead developments in our areas of expertise. We are knowledge brokers, able to translate generic infrastructure, tools and policies into practical solutions that make research more efficient.

As professionals, we make a significant contribution alongside conventional academics. Like many of our colleagues in 'support' roles, we are well connected with the academic community. We work in partnership with researchers, contributing unique expertise and skills. We have academic credentials. We write papers, books, grant proposals, reports and manuals. We train students and academic staff; manage projects; organize and

You need skilled people

Skills
4 eosc

ABOUT ▾

KERS

NEWS



<https://www.skills4eosc.eu/>

- Skills for the European
- Open Science
- Commons

SKILLS4EOSC PROJECT CURRICULA FOR DATA STEWARDS AND COMPETENCE CENTER COORDINATOR

Objectives of the project are:

1. **Map career profiles related to Open Science** and define, through co-creation the **"Minimum Viable Skillset" (MVS)** for each of them; create a shared framework for the recognition of competencies acquired by university students, trainers and new professionals as a part of an academic path or a lifelong learning process.
2. **Define a methodology and a Quality Assurance process** to ensure the quality and relevance of OS learning materials and the management of their life-cycle, thus enhancing their re-usability.
3. **Offer training on OS and the usage of data in evidence-based policy for civil servants** and policymakers and empower CCs, researchers and "honest brokers" through the offering of resources to carry out training for this target.
4. **Define "OS and data-intensive science essentials"** for inclusion in generic undergraduate, postgraduate and PhD curricula as a key skill that anyone doing research is expected to acquire.
5. Design and implement a **collaboration model between national and regional CCs and international Research Infrastructures** and communities to provide specialised OS competencies targeting the needs of researchers and thematic RI professionals.
6. **Support lifelong learning** through professional networks as an enabling environment to discuss, cocreate and exchange best practices and solutions among OS professionals and researchers.
7. **Coordinate national, regional and thematic Competence Centres on OS and EOSC** in Europe and leverage their expertise to create a widespread user support network and an environment that fosters and harmonises training and skills activities.
8. Create and implement a strategy for engaging with **relevant stakeholders to co-create and promote the project outputs** (Curricula, shared certification and QA frameworks, human networks), building partnerships to embed project activities and results among the broadest network of stakeholders.
9. **Establish synergies with key actors within the Member States and in the EOSC arena**, and with human capital and training programmes at the national, regional and European levels to maximise the impact of the project activities and results and pave the way for their long-term sustainability.

Data



We could then define data in the humanities broadly as all materials and assets scholars collect, generate and use during all stages of the research cycle. In this report we focus on digital assets.

DATA=ALL MATERIALS AND ASSETS COLLECTED, GENERATED AND USED DURING THE RESEARCH CYCLE

THINK OF ALL YOUR RESEARCH ASSETS AS RESEARCH DATA THAT COULD POTENTIALLY BE REUSED



RECOMMENDATIONS

» Think of all your research assets as research data that could be potentially reused by other scholars. Consider how useful it would be for your own work if others shared their data.

Data decision tree

USEFUL TOOL AS A FIRST APPROACH TO DATA MANAGEMENT [PLAN]

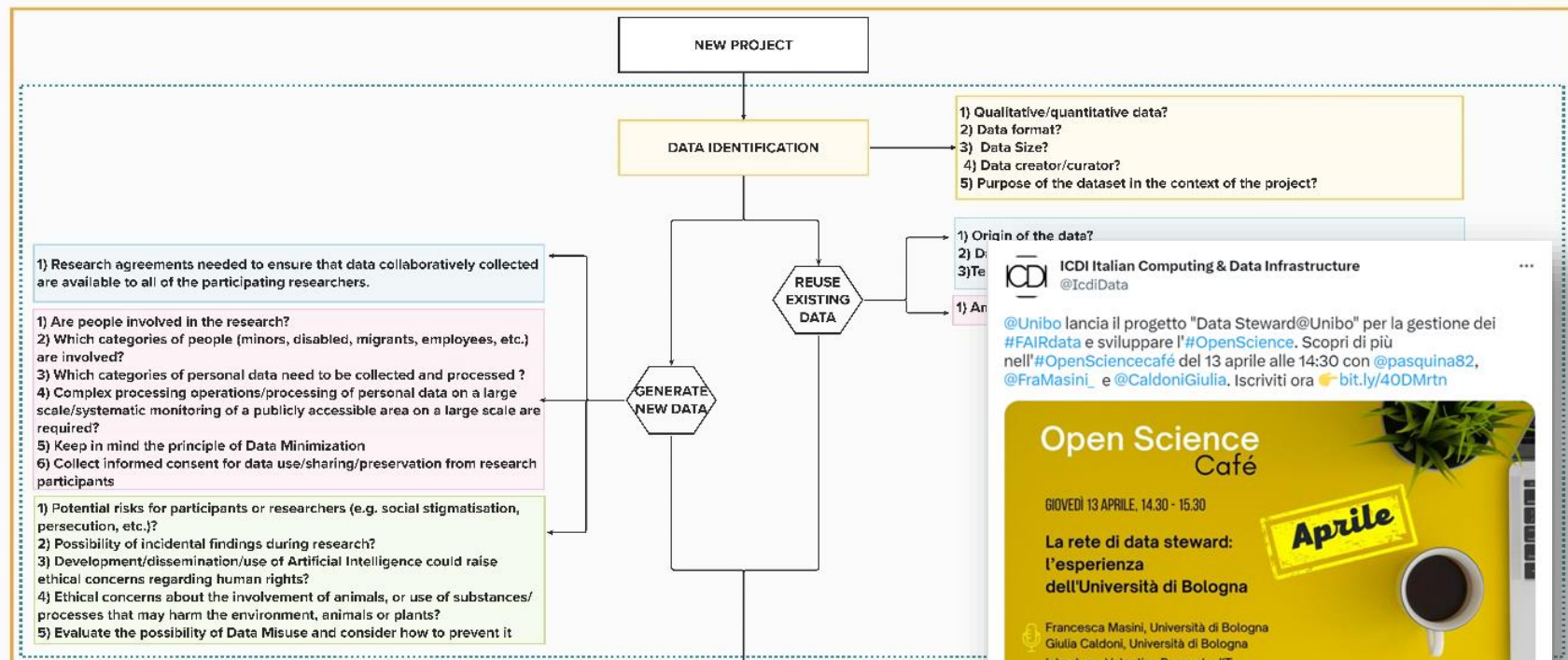
Caldoni, Giulia, Gualandi, Bianca, & Marino, Mario. (2022). Research Data Management Decision Tree

Legend:



DECISION TREE FOR DATA MANAGEMENT

Data management



ICDI Italian Computing & Data Infrastructure
@IcdiData

@Unibo lancia il progetto "Data Steward@Unibo" per la gestione dei #FAIRdata e sviluppare l' #OpenScience. Scopri di più nell' #OpenSciencecafé del 13 aprile alle 14:30 con @pasquina82, @FraMasini_ e @CaldoniGiulia. Iscriviti ora bit.ly/4ODMrtn

Open Science Café

GIOVEDÌ 13 APRILE, 14.30 - 15.30

Aprile

La rete di data steward: l'esperienza dell'Università di Bologna

Francesca Masini, Università di Bologna
Giulia Caldoni, Università di Bologna
Introduce: Valentina Pasquale, IIT

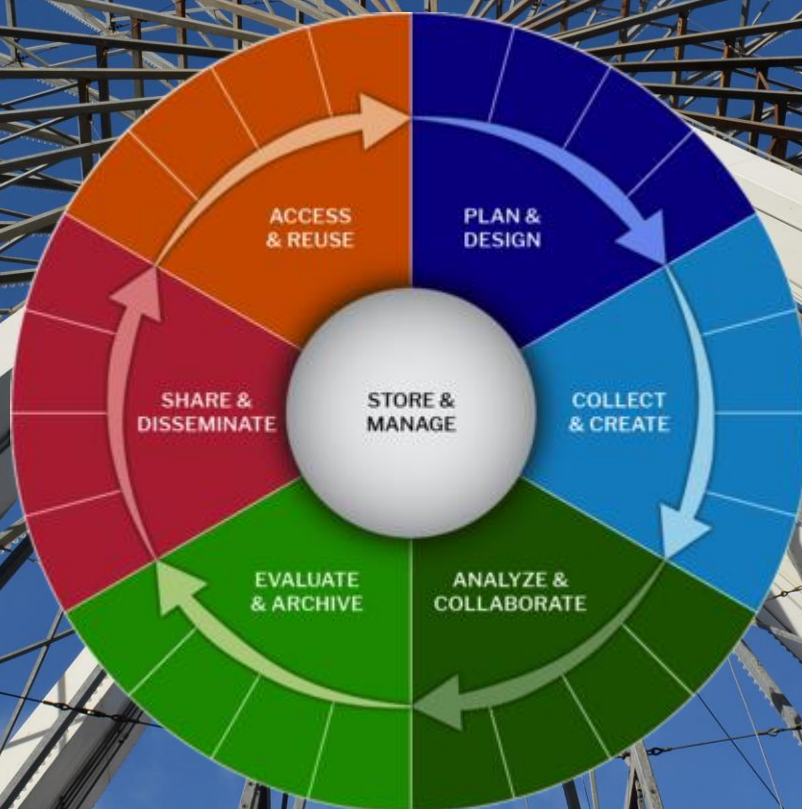
1. Data must be managed

ORGANIZATION
(file naming,
folders,
versioning...)

DESCRIPTION FOR
DISCOVERABILITY
(metadata)

BACKUP AND
STORAGE

LONG TIME
PRESERVATION



LEGAL ASPECTS

ALONG THE ENTIRE LIFE CYCLE

2. Data should be FAIR BY DESIGN

To be Findable:

- F1. (meta)data are assigned a globally unique and eternally persistent identifier.
- F2. data are described with rich metadata.
- F3. (meta)data are registered or indexed in a searchable resource.
- F4. metadata specify the data identifier.

TO BE ACCESSIBLE:

- A1 (meta)data are retrievable by their identifier using a standardized communications protocol.
- A1.1 the protocol is open, free, and universally implementable.
- A1.2 the protocol allows for an authentication and authorization procedure, where necessary.
- A2 metadata are accessible, even when the data are no longer available.

TO BE INTEROPERABLE:

- I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.
- I2. (meta)data use vocabularies that follow FAIR principles.
- I3. (meta)data include qualified references to other (meta)data.

TO BE RE-USABLE:

- R1. meta(data) have a plurality of accurate and relevant attributes.
- R1.1. (meta)data are released with a clear and accessible data usage li
- R1.2. (meta)data are associated with their provenance.
- R1.3. (meta)data meet domain-relevant community standards.

**«ACCESSIBLE»
DOES NOT MEAN «OPEN».
DATA CAN BE CLOSED,
PROVIDED YOU – AND
MACHINES - KNOW WHERE TO
FIND THEM AND UNDER
WHAT ACCESS CONDITIONS**

3. [WHENEVER POSSIBLE] Data should be Open

BECAUSE OPEN DATA
SAVE LIVES.

Digital Science Report The State of Open Data 2021

The longest-running longitudinal survey and analysis on open data

Foreword by Natasha Simons, Australian Research Data Commons (ARDC)

Nov. 29, 2021

November 2021

Open data saves lives. The global pandemic has highlighted beyond anything that came before it the importance of data sharing in solving the big challenges of our time. COVID-19 data may be the most visualized data in history and it was made publicly available on a daily basis to people all over the world. The urgent need to better understand and treat the virus in 2020 brought unprecedented collective and collaborative action from all research stakeholders on an international scale to bring down barriers to research and speed up analysis and testing. These efforts, combined with support from governments and industry, resulted in not one but many vaccines made available by the end of the year. This gives us a glimpse of what incredible research outcomes are possible when we start with collaboration to address a common threat. Imagine how much more we could do, how many more lives we could save, if research data was routinely made open and shared. So, why isn't data sharing the norm? The answers lie in the harmony needed between policies, infrastructure, and practices.

Better research

- Demonstrates research integrity, as there is transparency and accountability in the production of the data
- Encourages research enquiry and debate
- Promotes innovation and potential new discoveries
- Encourages the improvement of research methods
- Prevents research fraud

Better impact

- Enables peer scrutiny of the research findings, validating the work carried out
- Increases the visibility of the research
- Provides credit for the creation of the data
- Can lead to new collaborations
- Produces a public record of the research

Better value

- Avoids duplication of effort in data creation
- Provides resources for use in teaching and learning
- Meets funder requirements
- Ensures data can be re-visited for future research
- Maximises return on research investment
- Preparing data for sharing also prepares it for reuse

Sharing Data

Why share data

2. Why share data?



BETTER RESEARCH

- INTEGRITY
- DEBATE
- REUSE

BETTER IMPACT

- VISIBILITY
- CREDIT
- COLLABORATIONS

BETTER VALUE

- AVOID DUPLICATIONS
- MAX RETURN ON INVESTMENTS

FAIR/Open

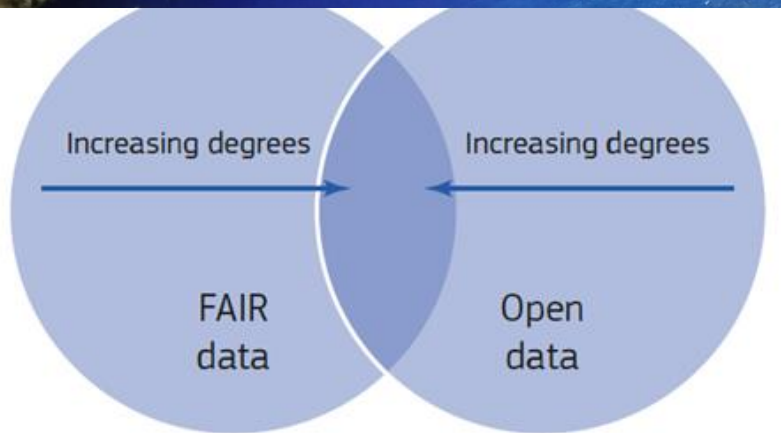


Figure 4. The relationship between FAIR and Open



THERE WILL BE AN INCREASING DEGREE IN OVERLAPPING.
BUT WE'LL ALWAYS HAVE PERFECTLY FAIR CLOSED DATA

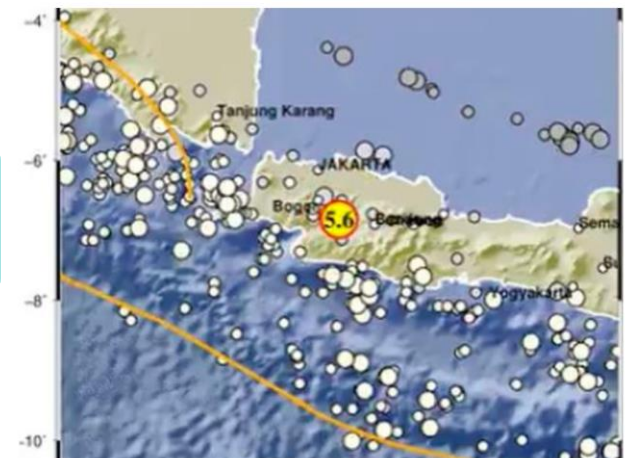
...a selfie...

How we can get those data

This was the best map that we can get (cited by the media)

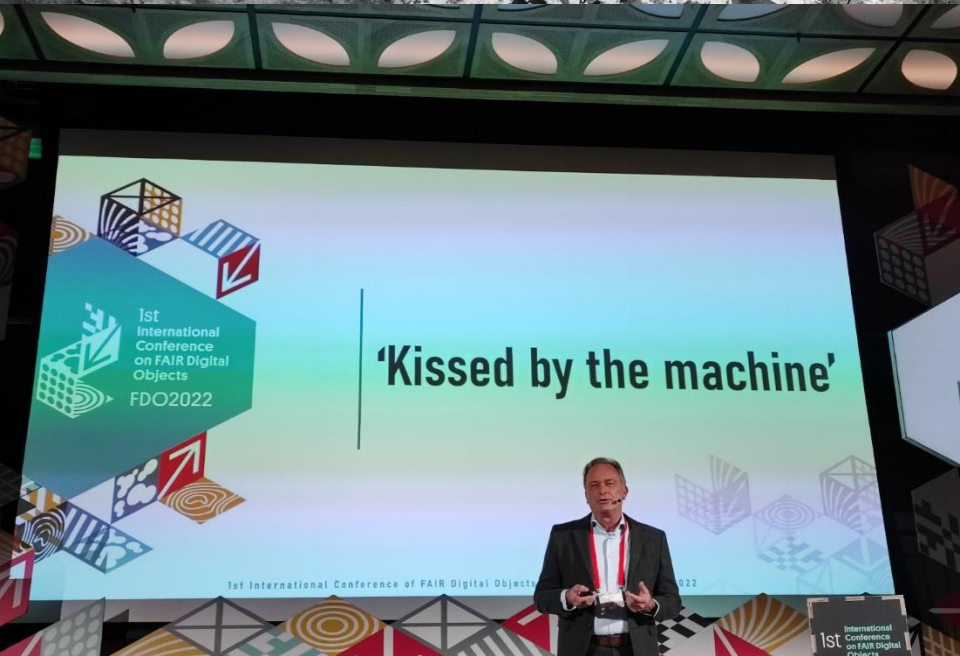
Those data points are not really data points. They're just a selfie of data points.

They're not reusable.



BE CAREFUL...
IF DATA ARE NOT REUSABLE THEY
ARE ONLY A **SELFIE OF DATA**
[Dasapta Erwin Irawan]

Kissed or missed?



FAIR PRINCIPLES ARE
«MACHINE ACTIONABLE»
(MORE THAN READABLE)
FAIR = FULLY AI READY
IF NOT... **YOU'LL BE MISSED (INSTEAD OF KISSED)** BY THE MACHINE



Decision making procedures in data management and data stewardship for Open Science

Connie Clare, PhD



Data-centric AI

Automated decision making using data.

Data is fundamental for training and deploying AI models.

Data management and/or curation is a crucial step to feed into AI model.

'Machine learning models are only as good as the data they're trained on' - <https://fairmlbook.org/datasets.html> (Chapter 8)

en

Clearbox AI

[Clearbox](#)

We are on a mission to harness powerful AI technologies to improve businesses and society in a trustworthy and human-centered way.

is flexible product / Rea

clearbox_{AI}

Your

Synthetic Data

provider



Data stewardship challenges & AI ethics

? **Black box AI** - Model inputs and operations remain a mystery. Unknown input data provenance and quality. Automated data retrieval lead to inconsistent results.



AI bias due to generalisation (insufficient representative input data), or unsuitable data collection, processing (cleaning), quality, mislabelling and model design. Synthetic (output) data generated inherits and propagates bias affecting scientific validity.



Data misuse - Using data as input for an AI model that causes harm.



Lack of standards, tools and mechanisms to evaluate data quality and whether datasets are fit for purpose.

ARTIFICIAL INTELLIGENCE

- WORKS IF DATA ARE GOOD
- THERE ARE ETHICAL ISSUES

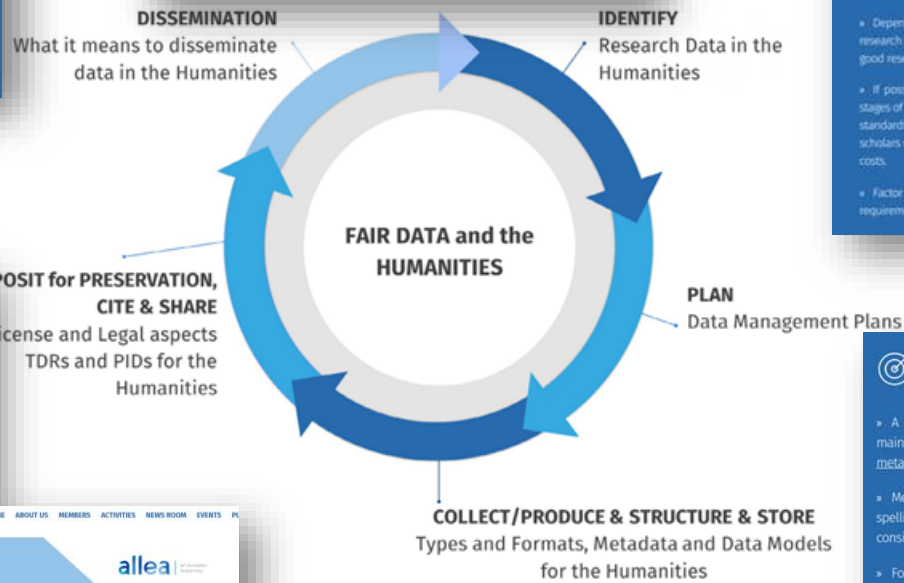
Research Data Management

RECOMMENDATIONS

- Clarify all legal issues at the beginning of your research project and include the findings of this process in the data management plan.
- Use checklists adequate to your research topic/discipline.
- Check the resources indicated by DARIAH-CLARIN. (See further reading).
- In the case of personal data ensure that only relevant people can access the data and that these are clearly identified (see GDPR).
- Ask for consent to share anonymised data and establish transparent and well-documented anonymisation routines that consider not just direct identifiers, but also how a combination of indirect identifiers could reveal identities. (See for example the guide on informed consent in the CESSDA data management expert guide).
- Avoid collection of (sensitive and non-sensitive) personal data when possible.
- Get legal support (IPR, copyright, patents, trademarks etc.) from your home institution. If there is no dedicated office for this purpose, try to get information from your university library, as its staff are often confronted with such issues.
- If you need permission from the copyright holder in order to use sources like images for your publication, try to get one that covers both printed and digital copies.
- Finally, check the recommendations in the section on Licences that are closely related to this section.

- To ensure the best possible stewardship of your data, choose to deposit it in a digital repository that is certified by a recognised standard such as the CoreTrustSeal. The [Registry of Research Data Repositories](#) (re3data) provides a good starting point, noting disciplines, standards, content types, certification status and more. [FAIRsharing](#) (manually curated information on standards, databases, policies and collections) allows you to search databases by subject, and includes entries tagged 'Humanities and Social Sciences'.
- Use disciplinary repositories where they exist, as they are more likely to be developed around domain expertise, disciplinary practices and community-based standards, which will promote the findability, accessibility, interoperability and ultimately the reuse and value of your data. The level of curation available in a repository is key to data quality and reusability.
- Datasets should be assigned persistent identifiers (PID). Most repositories that are designed for long-term preservation will automatically assign or 'mint' persistent identifiers for your datasets, so choosing a quality repository will automate this step. Consider as well signing up for ORCID, a free service that assigns persistent identifiers to individuals/authors.
- To facilitate findability of all research outputs, bidirectional links should be created between publications related outputs, such as data (using PIDs).
- Include the richest metadata possible with your deposited data so that others can find it, understand the parameters under which it was created, and understand the conditions under which they can access and/or reuse it. See recommendations in this report in the sections on [Licences](#) and [Metadata](#) for more information.

- If applicable, inform the body funding your research that your research has particular requirements for a DMP; or offers a template for framing your plan. If there is no required template, choose an existing appropriate one (e.g. via [DMPOnline](#)).
- Devise a DMP prior to collecting data. Define and plan for your data: all research projects deal with data. If your project includes the analysis of text corpora, for example, then the corpora themselves are data, and you should make sure they are clearly described, documented, and managed according to the FAIR principles so your research is reusable by others.
- Plan documentation of metadata: in order for your data to be comprehensible in the future and/or reusable by others, they will need descriptive metadata created according to a common schema to understand the content/purpose of the research. The richer the metadata, the more intelligible and useful the dataset (see section on [Metadata](#)).
- Use standardised terminology to increase interoperability. Consider employing vocabularies or ontologies that follow FAIR principles to increase interoperability and findability (e.g. see [EUI/Bharinwarp](#)).
- Consider the right questions to be answered in your DMP that can account for discipline-specific requirements. The DMP templates suggested by funders are quite high level and provide generic guidance for file naming or versioning conventions, database structuring and can be a good start. Tools like the [dmponline.ac.uk](#) provide discipline specific examples that can be of further reference.
- DMP as living documents: Update your data management plan regularly in order to take into account any potential relevant changes such as using new data types and/or models, technology, new institutional data management policies, reassessing legal aspects or licences for legal compliance etc.
- Depending on the size of the organisation: think of providing institutional support for research data management (RDM); organise information sessions to raise awareness about good research data management, and the risks of not managing it early.
- If possible, consider involving library and/or repository support staff from the initial stages of research data management planning to discuss the best solutions, specifications, standards and protocols along which the repository operates. Repository staff can also assist scholars with understanding any specific data management requirements and associated costs.
- Factor the cost of research data management (time or human resources) into budgetary requirements at the point of application.



RECOMMENDATIONS

- Data models go FAIR: the FAIR Guiding Principles, correctly applied, ensure data are findable, accessible, interoperable and reusable. Data modelling should take this into account by using formal, easily accessible languages for knowledge representation, providing persistent identifiers, open standards, well documented Application Programming Interfaces (API), generic user interfaces and rich metadata. The [FAIRification process](#), developed by the GO FAIR initiative offers a system on how to shape the data modelling.
- Use open standards, and wherever possible, standardised technologies and procedures should be used. The World Wide Web Consortium W3C maintains several standards relevant for data models like XML and RDF. Within XML the Text or Music Encoding Initiative (TEI/MEI) or specific expressions of them have become standards for text or music editions. The query language SPARQL and the representation tool for linked data ISON-LD are common standards for RDF (refers to FAIR principle 1).
- Prefer human and machine-readable systems: coding of data models and of the actual data that is both human and machine-readable in a unified way provides better sustainability and long-term accessibility than machine-readable only code (binary codes), that may use different formats for data model description and the actual data. For both, hierarchical data models and graph-based data, various serialisations (file formats) are available that fulfil this condition (XML, TEI/XML, Turtle, N3, RDF/XML), whereas SQL based technologies need bigger efforts.
- Normalise as much as possible: to avoid redundant information, the content of databases should be normalised as far as possible, using for example authority files like VIAF and identifiers like DOI, ARK, ISBN, GND and the like. To foster the exchange of data, standardised vocabularies and ontologies are needed as well, but an overall ontology for the humanities has not yet been established. The ontology CIDOC-CRM and especially some extensions are well on their way to become a reference model for cultural heritage information.
- Data models follow the data management plan (DMP): when establishing a data model, researchers should keep the whole lifecycle of their data in mind, as it should be outlined in a DMP. Therefore, an extensive documentation of the data model, its software and tools are highly relevant and facilitates the transfer of data in a secure and trusted repository in order to keep them accessible. The same is true here: the more you use open standards for your data model, the easier this task becomes.

RECOMMENDATIONS

- A good starting point is to consult the Metadata Standards Directory, a community-maintained directory hosted by the Research Data Alliance: <https://rd-alliance.github.io/metadata-directory/>.
- Metadata works best when terminology is consistent, e.g. naming conventions are followed, spelling is normalised, and so on. Depending on the complexity and size of your metadata, consider using a tool such as Open Refine to 'clean' your metadata.
- For greater searchability and interoperability, researchers should also consider using controlled vocabularies to identify common terminology when populating metadata fields. Library of Congress maintains a controlled vocabulary for subject headings: <https://www.loc.gov/standards/subject/>.
- Metadata should include a clear and explicit reference to the dataset with the inclusion of a PID in the metadata (see section on [Trustworthy Data Persistent Identifiers](#)).
- Provide as much metadata as possible in order to better contextualise your data and consider more detailed descriptions, and fuller provenance information, as well as a spectrum of available metadata fields.
- Metadata should be machine-readable.



Sustainable and FAIR Data Sharing in the Humanities

ALLEA Report | February 2020
February 2020

IT IS A FORMAL DOCUMENT ABOUT
HOW YOU MANAGED YOUR DATA
(ENSURING INTEGRITY)

CLEAR RULES = LESS
MISTAKES FROM THE
BEGINNING

A NEW WAY OF THINKING TO YOUR
RESEARCH, FROM THE PERSPECTIVE
OF YOUR DATA

IT IS A «LIVING
DOCUMENT»,
IT GROWS WITH THE
PROJECT

IT IS THE RIGHT VENUE TO
JUSTIFY OPEN/CLOSED
CHOICES


IT IS THE VENUE TO
EXSTIMATE COSTS

...LET'S BE CLEAR:
THE ISSUE HERE IS NOT «LEARNING»
HOW TO DRAFT A DMP
BUT **LEARNING HOW TO RESPONSIBLY
MANAGE FAIR DATA.**
DMP IS MIRRORING THAT



...you need a Data Management Plan

DMP?

A roller coaster car is shown upside down against a clear blue sky. The car is yellow and orange, with several passengers visible. The car is part of a larger yellow structure that is part of the roller coaster track.

DMP IS WHERE YOU «MAKE CLEAR» THE WAY YOU ARE GOING TO MANAGE YOUR DATA

IT'S NOT BUREAUCRACY, IT'S A RESPONSIBILITY AND A COMMITMENT (AND A POWERFUL TOOL, LIKE A MAP TO YOUR DATA)



Let's go back to publications

Open Access / green, gold, diamond

YOU PUBLISH WHEREVER YOU WANT AND THEN DEPOSIT

DEPOSIT

**INSTITUTIONAL/
DISCIPLINARY
REPOSITORIES**

- «**LIBERATE**» YOUR PAPER PUBLISHED IN A SUBSCRIPTION JOURNAL
- YOU **KEEP PUBLISHING IN THE MOST PRESTIGIOUS JOURNALS** AND YOU ARE COMPLIANT WITH THE CURRENT ASSESSMENT CRITERIA

ALWAYS CHECK ON

Sherpa Romeo

DOES NOT CHANGE THE CURRENT SYSTEM BASED ON JOURNALS BUT MAKES YOUR WORK OPEN TO ANYONE

YOU PUBLISH IN OPEN ACCESS

PUBLICATION

**FULL
OPEN ACCESS
JOURNALS
[AVOID HYBRID]**

COSTS:

- 32% ASK FOR APC
- **DIAMOND** (NOBODY PAYS)

- YOUR PAPER IS **IMMEDIATELY OPEN**
- **TEAR DOWN PAYWALLS**

- THERE MIGHT BE COSTS
- IT MIGHT NOT BE THE «**MOST PRESTIGIOUS**» JOURNAL

**PUBLISHING
PLATFORMS, PREPRINT
SERVERS, OPEN
NOTEBOOKS....**

- THEY ARE **INNOVATIVE**
- THEY **CAN DISRUPT THE CURRENT DYSFUNCTIONAL SYSTEM**

- THEY ARE STILL **NOT «RECOGNIZED»** IN RESEARCH EVALUATION/FOR CAREER
- YOU NEED TO BE «**BRAVE**» IF YOU WANT TO GO **EXCLUSIVELY** FOR THESE TOOLS
- ... PREPRINTS IN AUSTRALIA: YOU DRIVE THE CHANGE!
- **THE EU PROCESS TO REFORM RESEARCH EVALUATION IS GOING AT A SPEEDY PACE**

Pay attention!

SUBSCRIPTIONS

- PAID EVERY YEAR
- EVERY INSTITUTION PAY FOR THE SAME CONTENT
- INCREASE EVERY YEAR
- CLOSE THE CONTENT FOR THOSE WHO HAVE NO SUBSCRIPTION

APCs

- PAID ONCE AND FOREVER
- PAID ONLY BY THE AUTHORS' INSTITUTION
- OPEN THE CONTENT TO ALL

DON'T MIX

- **NATIVE OPEN ACCESS** PUBLISHERS [NO REVENUE BUT APCs]
- **TRADITIONAL PUBLISHERS** OFFERING AN «**OPEN OPTION**» [MAIN REVENUE STREAM IS STILL SUBSCRIPTIONS, ... SO DOUBLE DIPPING]

IMPORTANT IN HORIZON EUROPE AS HYBRID IS NOT REIMBOURED

In a nutshell

- > Hybrid has not facilitated a transition to Open Access (OA)
- > The research community pays twice (double dipping)
- > Hybrid journals are more expensive than fully OA journals
- > Hybrid journals provide a poor quality of service
- > Hybrid journals crowd out new, full OA publishing models
- > Reader access: a

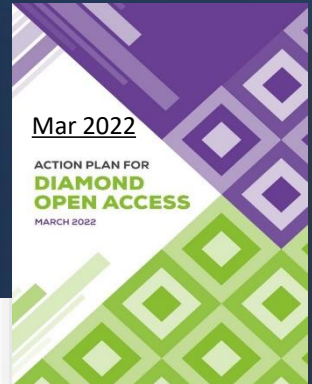
Plan S Making full & immediate Open Access a reality

Plan S Principles & Implementation 2021 cOAlition S News Resources FAQ Blog Contact

NEWS

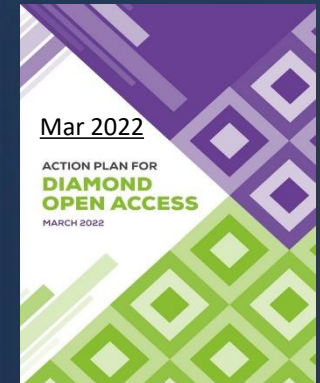
Why hybrid journals do not lead to full and immediate Open Access

Diamond Open Access



'Diamond' Open Access refers to a scholarly publication model in which journals and platforms do not charge fees to either authors or readers. Diamond Open Access journals represent community-driven, academic-led and -owned publishing initiatives. Serving a fine-grained variety of generally small-scale, multilingual, and multicultural scholarly communities, these journals and platforms embody the concept of bibliodiversity. For all these reasons, Diamond Open Access journals and platforms are equitable by nature and design.

Diamond Open Access



Despite these obvious strengths, Diamond Open Access is held back by challenges related to the technical capacity, management, visibility, and sustainability of journals and platforms. More dialogue and commitment is required between researchers, RFOs, RPOs, university libraries, university presses, faculties, departments, research institutes, scholarly societies, ministries, and service providers to properly support this part of the scholarly communication sector.

This Action Plan aims at substantially increasing the capacity of Diamond journals to provide innovative, valid, reliable, and accessible publishing services. Following up on the recommendations of the OADJS, the action plan aims to support Diamond Open Access by focusing on four central elements for its further development: efficiency, quality standards, capacity building, and sustainability.

Diamond Open

Introduction

This Action Plan provides a set of priority actions to further develop and expand a sustainable, community-driven Diamond scholarly communication ecosystem. It aims to bring together Diamond Open Access journals and platforms around shared principles, guidelines, and quality standards respecting the cultural, multilingual and disciplinary diversity that constitute the strength of the sector. Researchers, editors, and research institutions will benefit from this Action Plan.

1. Efficiency

Diamond Open Access currently represents an archipelago of relatively isolated journals and platforms. They would benefit from sharing common resources. This action plan proposes to undertake the following actions to increase efficiency and economies of scale:

- ▶ Flexibly align quality standards, create sustainability, and enhance trust for all stakeholders by promoting the sharing of infrastructures, standards, policies, practices, and funding streams while respecting cultural differences and disciplinary requirements.
- ▶ Make technical services and operations more accessible, interoperable, and streamlined for Diamond journals and platforms. Particular attention will be paid to the alignment and interoperability of submission systems, journal platforms, and metadata.
- ▶ Build synergies between Diamond journals and platforms in the same discipline, geographical location, or language via a network of existing organisations, groups, and societies to provide better service to researchers and readers in general.

2. Quality standards

Diamond Open Access journals and platforms have different practices to ensure quality standards and flexibly to undertake

- ▶ Flexibly develop and enhance Diamond

By strengthening the Diamond Open Access sector we are contributing to support a **scholarly publishing model that is equitable, community-driven, and academic-led and -owned.**

Lidia Borrell-Damián

Secretary General of Science Europe

3. Capacity building

Diamond Open Access journals and platforms differ in terms of editorial and management skills. To build capacity, this action plan proposes to consecutively undertake the following actions:

... for Diamond academic journals, Diamond Open Access editors, journals, and author and reviewer in a Common Access Point.

... researchers, RFOs, RPOs, departments, research, and make them aware of their roles

... on strategy about Diamond

... Diamond Publishing (CCDP) and training services and editors. Governance of the stakeholder communities, and diverse nature of the

... forms are scholar-owned and -led, their legal status and governance is often unspecified. Moreover, their revenue streams often depend on a patchwork of in-kind contributions, funding by various types of institutions, and temporary grant money. To improve the sustainability of the Diamond Open Access publishing ecosystem, this action plan proposes to undertake the following actions:

DIAMOND= NOBODY PAYS

BUILD AN ECOSYSTEM RESPECTFUL OF DIVERSITY

ACTION PLAN FOR DIAMOND OPEN ACCESS

MARCH 2022
Mar 2022

Diamond projects

Diamond future of open access

15.2.2023

Feb. 15 2023



Journals face similar challenges around the world. Funding and support are needed to make the high-quality open access publishing possible.

DIAMAS DIAMAS About Consortium The Results News & Events Contact

DIAMAS
Developing Institutional Open Access Publishing Models to Advance Scholarly Communication

DEVELOPING INSTITUTIONAL OPEN ACCESS PUBLISHING MODELS TO ADVANCE SCHOLARLY COMMUNICATION

2023

Project to support institutional publishing will start in January: CRAFT-OA

www.operas.eu.org/2023

SCIENCE EUROPE

ABOUT US OUR PRIORITIES WHAT'S GOING ON

VIOS

19-20 Sep. 2022

> Events **Diamond Open Access Conference**

Open Access Open Science

THE PROGRAMME

2022

...transformative = not public good

The unique opportunity to advance Science as a Global Public Good: **Open Science** in a world of contrasts

Arianna Becerril García
Autonomous University of the State of Mexico

2023



6

Transformative agreements

are not compliant with the *science as a global public good* approach

“those who fail to learn from history are condemned to repeat it”

Repeating historical errors (subscription model)

01

less-resourced researchers are excluded

02

Countries, academic institutions and the research community do not have any control beyond commercial agreements

03

The ownership determines the future of openness and future restrictions



Deconstruction needed

See what it is not seen

Understand hidden and damaging assumptions so to think on Science as a global and equal dialogue

OA is not an end in itself, but a means to other ends, above all to the equity, quality, usability, and sustainability of research... (BOAI20)

"Mainstream" vs "peripheral" science

Then the problems with APC are not: price, inflation, transparency...

Latin America is the living example of publishing infrastructure sustained collectively by the academic system.

Go back to the essence and values of science as a global enterprise

We should value science beyond the industry of prestige

The root of the problem is the commodification, ownership and control.

Publishing owned and led by the academic sector. The future of openness in its hands.

GLOBAL SUMMIT

AmelICA Conocimiento Abierto @AmelI_CA

Global Summit on #DiamondOpenAccess

A dialogue to strengthen #NonCommercialOpenAccess. October 23-27, 2023, venue @UAEM_mx, Toluca, Mexico. In-person/virtual Save the date and participate!

amelica.org/index.php/en/2...

#DiamondSummit #Act4DiamondOA

Reasons NOT to go Open Science?

Valid reasons not to participate in open science practices

Casper J. Albers*

Abstract

The past years have seen a sharp increase in the attention for open science practices. Such practices include pre-registration and registered reports, sharing of materials, open access publishing and attention to reproducibility of research. Despite the overwhelming amount of evidence highlighting the benefits of open science, some researchers remain reluctant. In this paper, I will outline valid reasons for researchers not to participate in open science practices.

Discussion

There are no valid reasons.

ONE DAY OR
DAY ONE
you decide.

THANK YOU!