Open Science - Introduction

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Outline

- What is Open Science
- Open Access
- Open Peer Review
- Open Data
- Open Source
- Q&A

Good research practices

Good research practice

"*Good research practice underpins high-quality science and supports the robust evidence base needed to drive improvements in practice.*"

Medical Research Council, 2012

- Strive for excellence and take responsibility
- Respect the law, ethics and professional standards
- Support a culture of transparency, openness and honesty towards the scientific community and society
- Maximize public benefits and avoid resource waste
- Continue learning and mentor others

Good research practice

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Open Science principles

- Support a culture of **transparency**, **openness** and **honesty** towards the scientific community and society
- Maximize **public benefits** and **avoid resource waste**

- Continue learning and mentor others

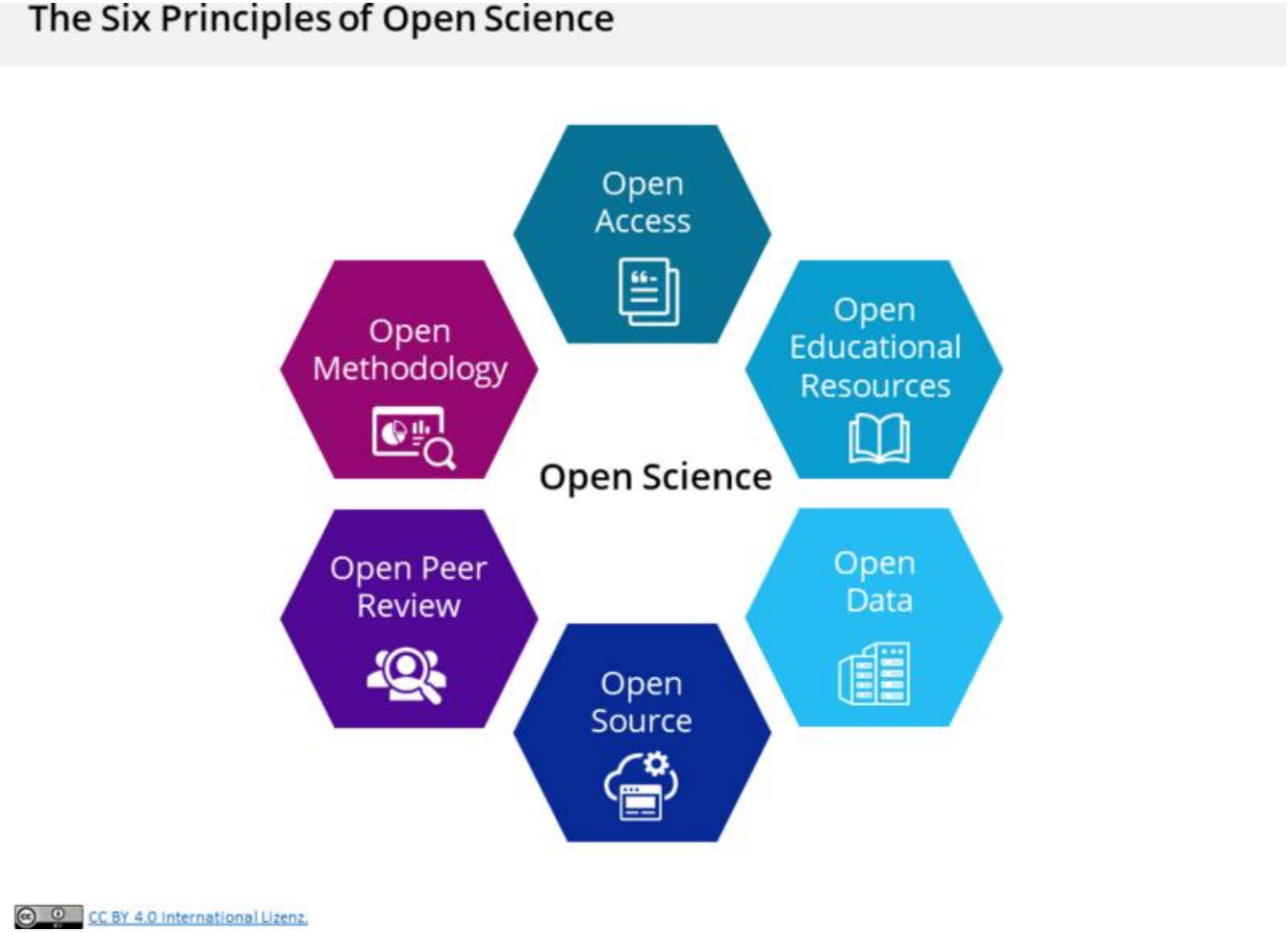
What is Open Science ?

What is “Open Science”?

- **Many definitions**:
  - "*Open science is a set of principles and practices that aim to **make scientific research** from all fields **accessible to everyone***" – UNESCO
  - “*Open Science (OS) is the movement to make **scientific research, data and their dissemination available to any member** of an inquiring society, from professionals to citizens.*” ORION Open Science
  - “*Open Science is a movement that aims to **make scientific research more transparent**, **collaborative** and **accessible to all**.*” ULiège Library

Take-home message:
Approach to make research/data/science accessible to ***ANYONE***

What is “Open Science”?

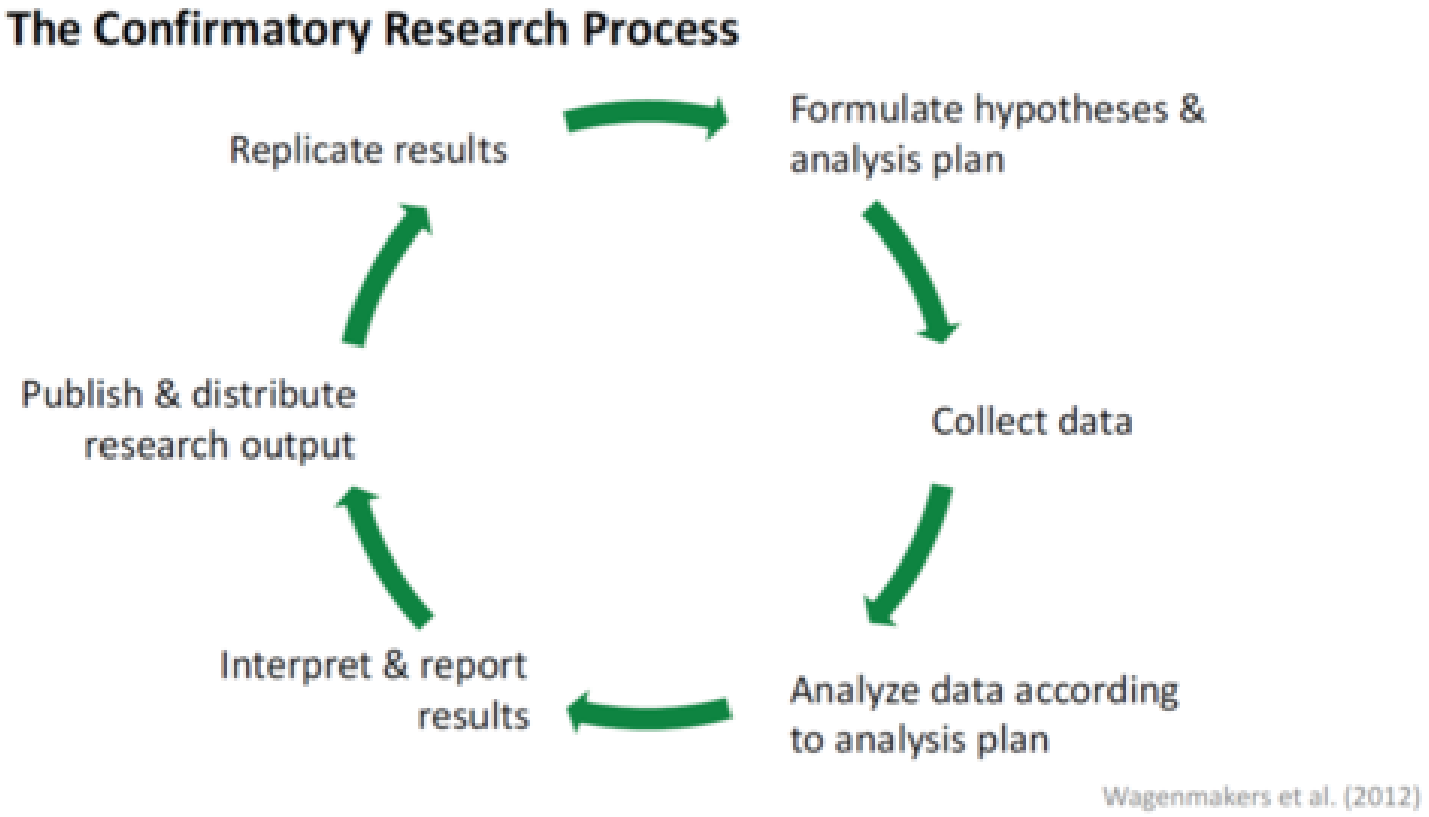


- Transparency
- Reproducibility
- Collaboration
- Return on investment

https://open-access.network/en/information/open-access-primers/what-does-open-access-mean#c8619

Why is transparency so important?

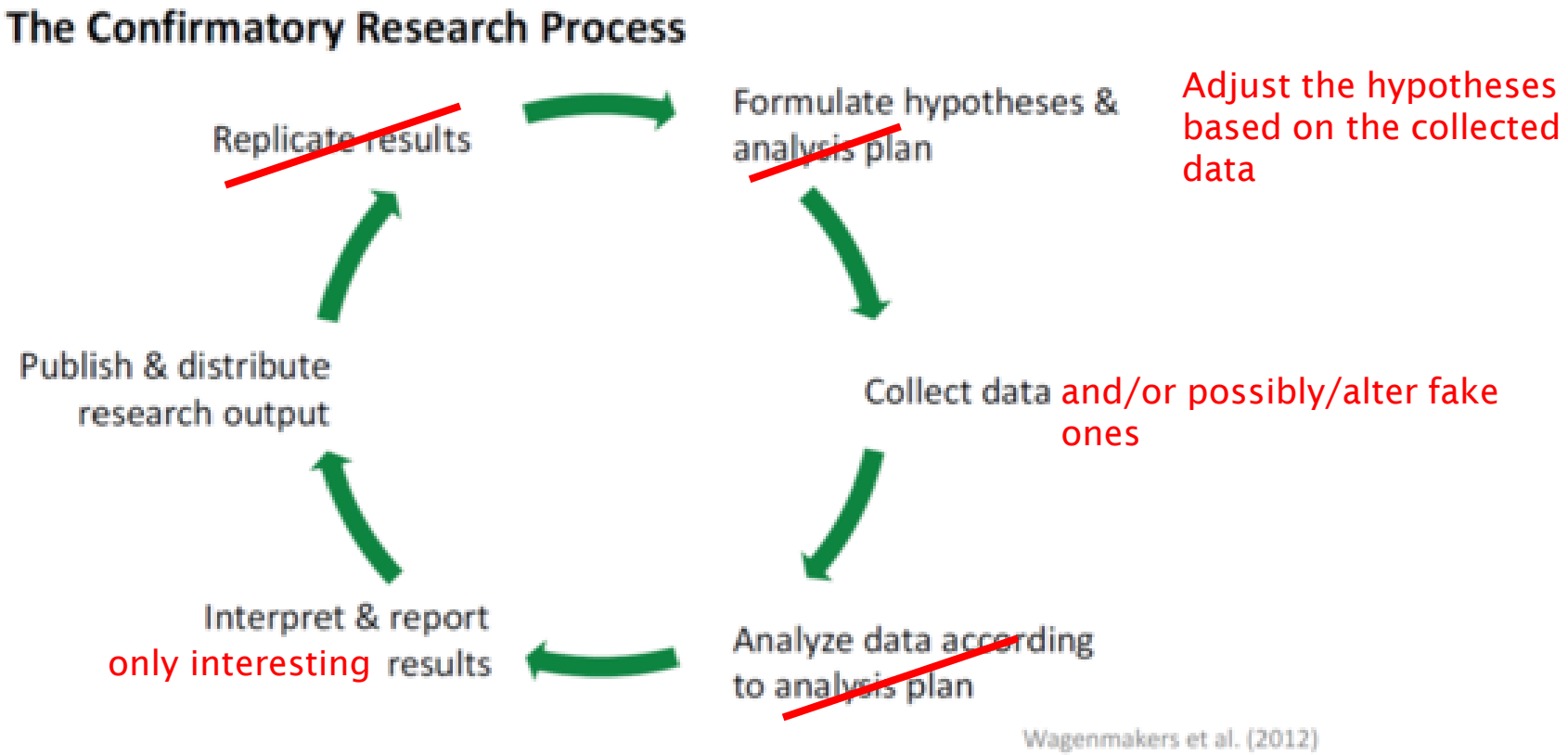
In principle:



Wagenmakers et al. (2012)

Why is transparency so important?

What if…



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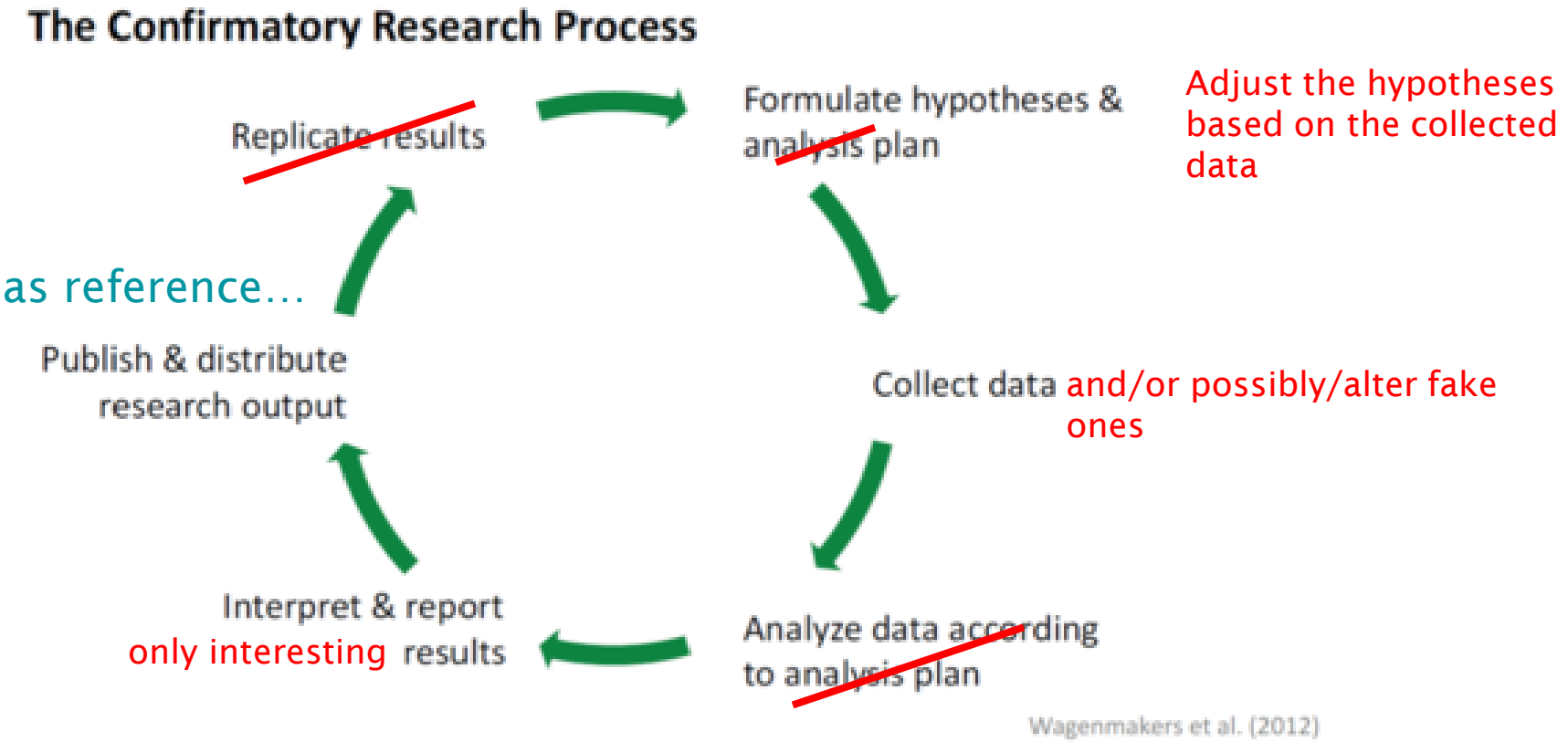
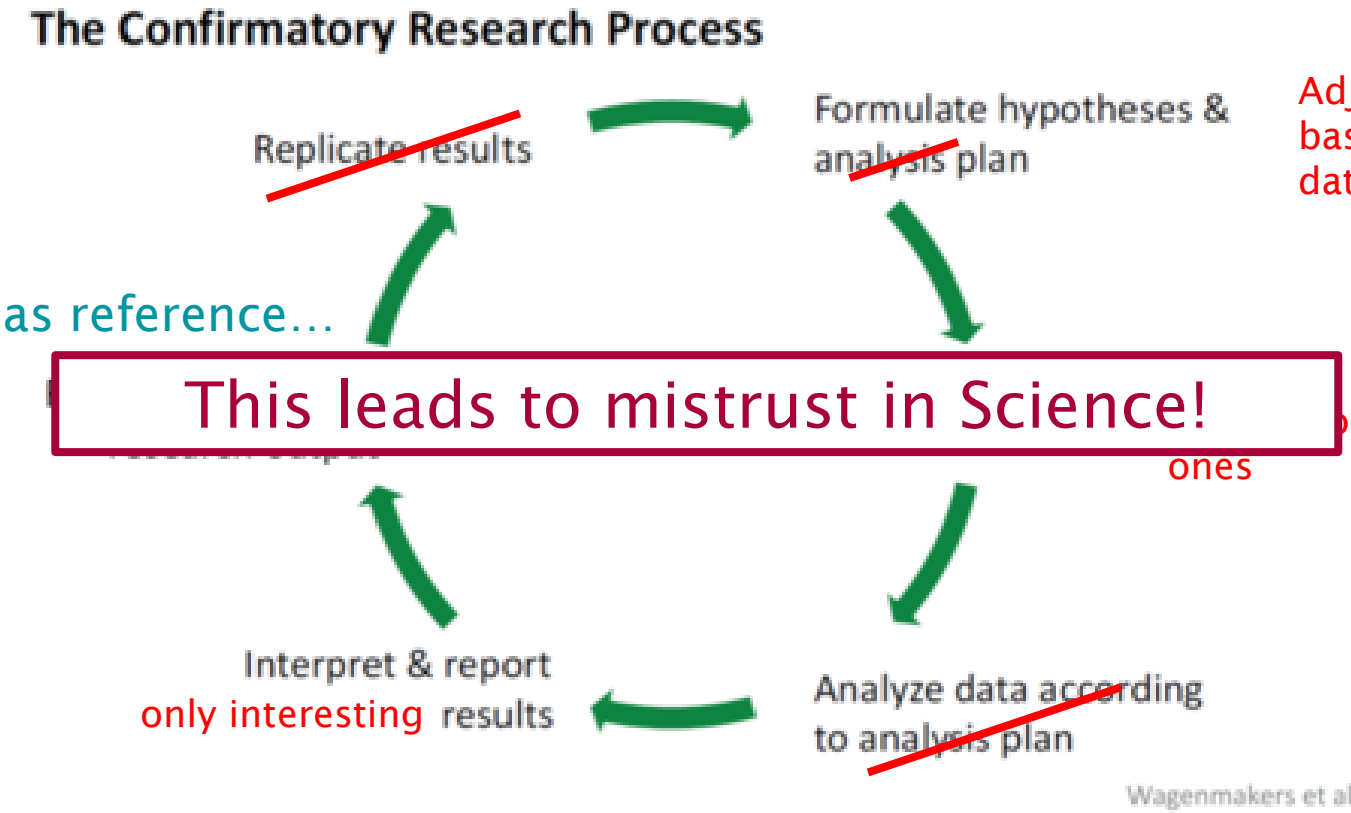


And you use that paper as reference…

Why is transparency so important?

What if…



https://open-access.network/en/information/open-access-primers/what-does-open-access-mean#c8619

The problem

As researchers, you are **forced to publish papers** as much as possible to have a chance for an academic carreer (***publish or perish***) because the number of publications is one of the few criteria used to assess researchers.

This leads to an **increasing amount of retractions**:

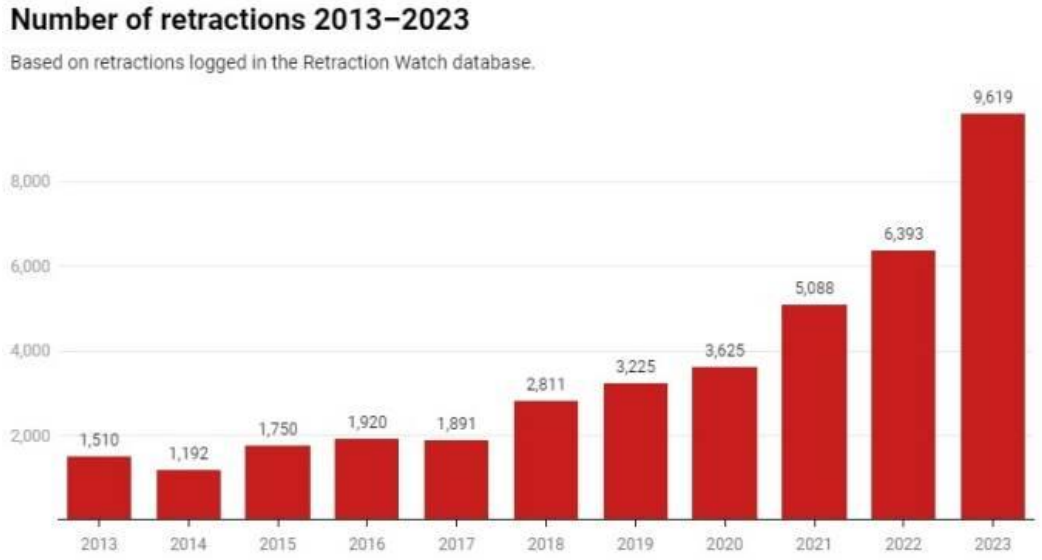


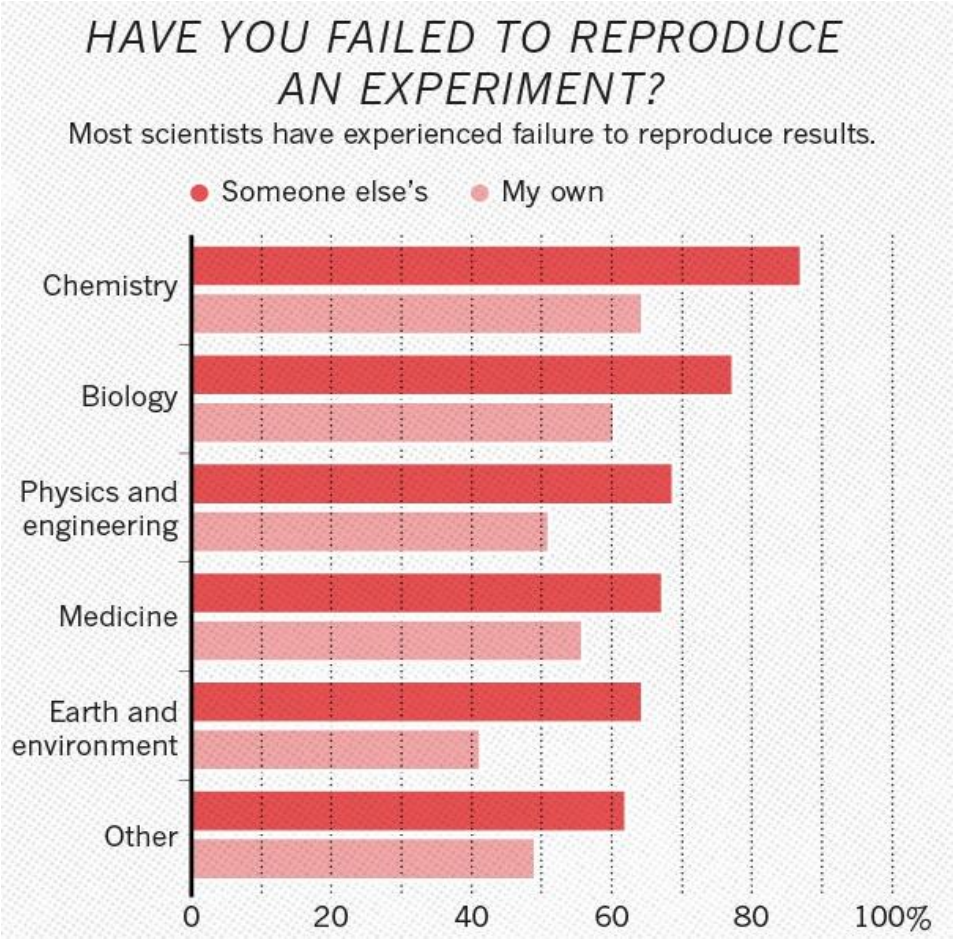
Chart: The ConversationSource: Retraction Watch
Get the data Embed Download image Created with Datawrapper

Nearly half the retractions were due to issues related to the authenticity of the data.

The 'publish or perish' mentality is fuelling research paper retractions – and undermining science - International Science Council

The problem

Reproducibility issue



Nature 533, 452–454 (26 May 2016) doi:10.1038/533452a

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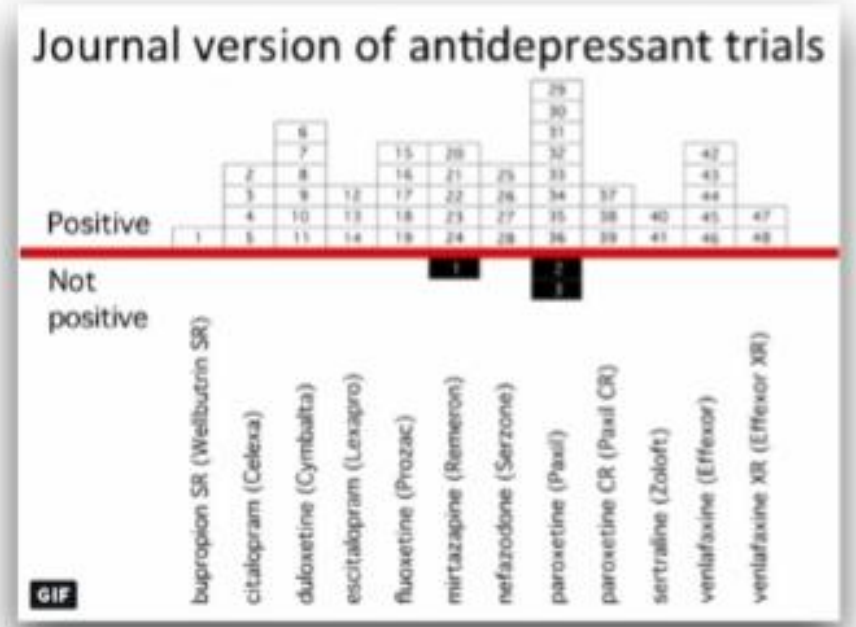
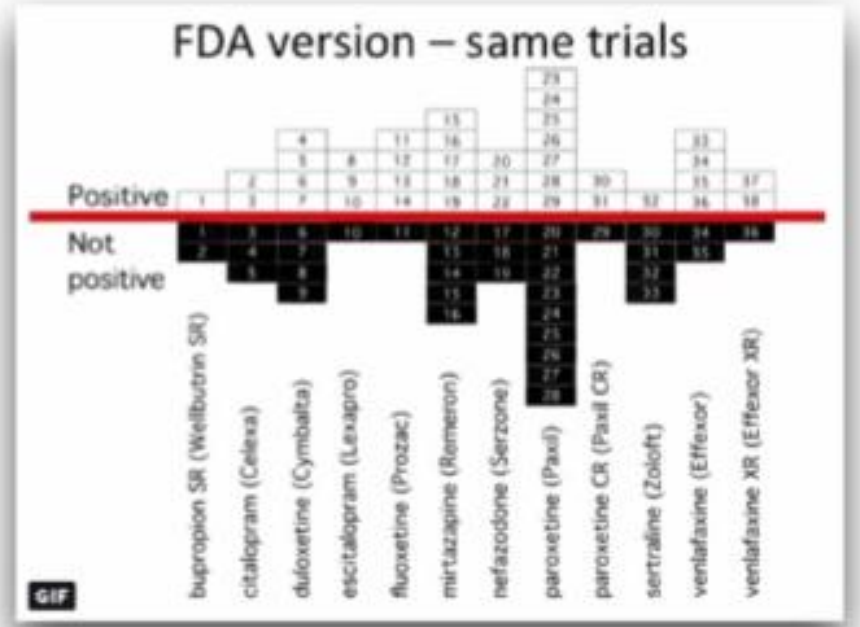
The problem

Publication bias: positive results are more likely to be published than negative results

Trials published in journals:
48 positive, 3 negative



Trials registered at FDA:
38 positive, 36 negative



Selective Publication of Antidepressant Trials and Its Influence on Apparent Efficacy | New England Journal of Medicine

The problem

Fortunately there are movements to change that: **CoARA – Coalition for Advancing Researchers Assessment**

Include more than just the number and « *quality* » of papers as evaluation criteria:

- Preprints
- Datasets
- Code
- Open peer-review
- …

Open Science

The problem

Practicing Open Science is a way to avoid these problems.

For everyone:

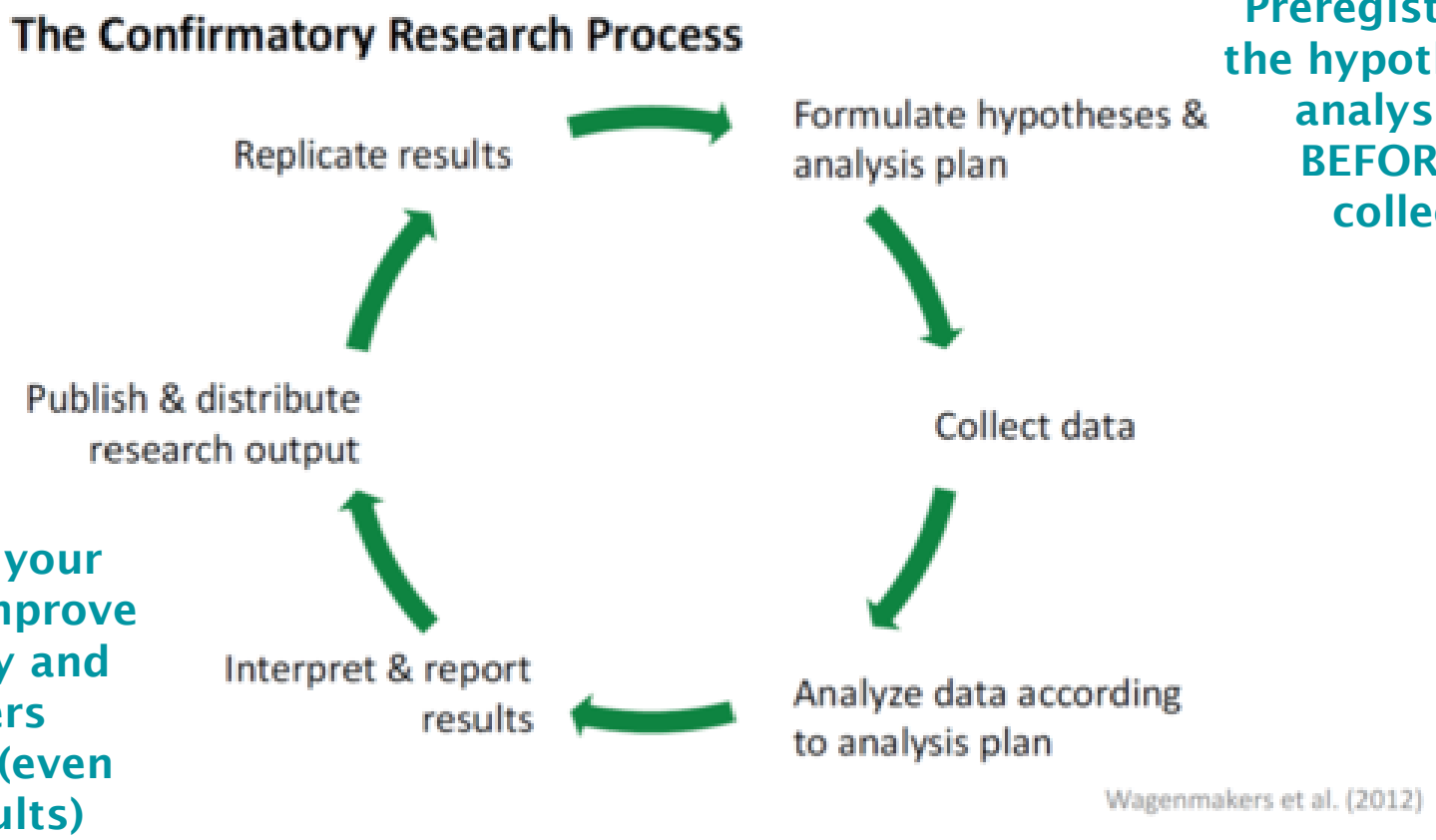
- Making Science **freely** accessible and accelerate progress.
- Making scientific publications more ethical by making the research process more transparent.
- Fair return to the society that indirectly funds researchers (public goods).

For you:

- Better dissemination of your scientific productions, increased impact of your research.
- Higher chance of reproducibility and hence a higher trust in your research outputs.

https://www.yearofopen.org/what-is-open-access/

The Open Research Process



Preregistration of the hypotheses and analysis plan BEFORE data collection

(Publish)/deposit in Open Access

Openly share your data/code to improve reproducibility and meet funders requirements (even negative results)

https://www.yearofopen.org/what-is-open-access/

FAIR Principles

Open Science & FAIR Principles

Open Science & FAIR principles go hand in hand

The FAIR principles are a set of instructions formulated to **maximize the (re)use of data** and other digital objects such as code and software.

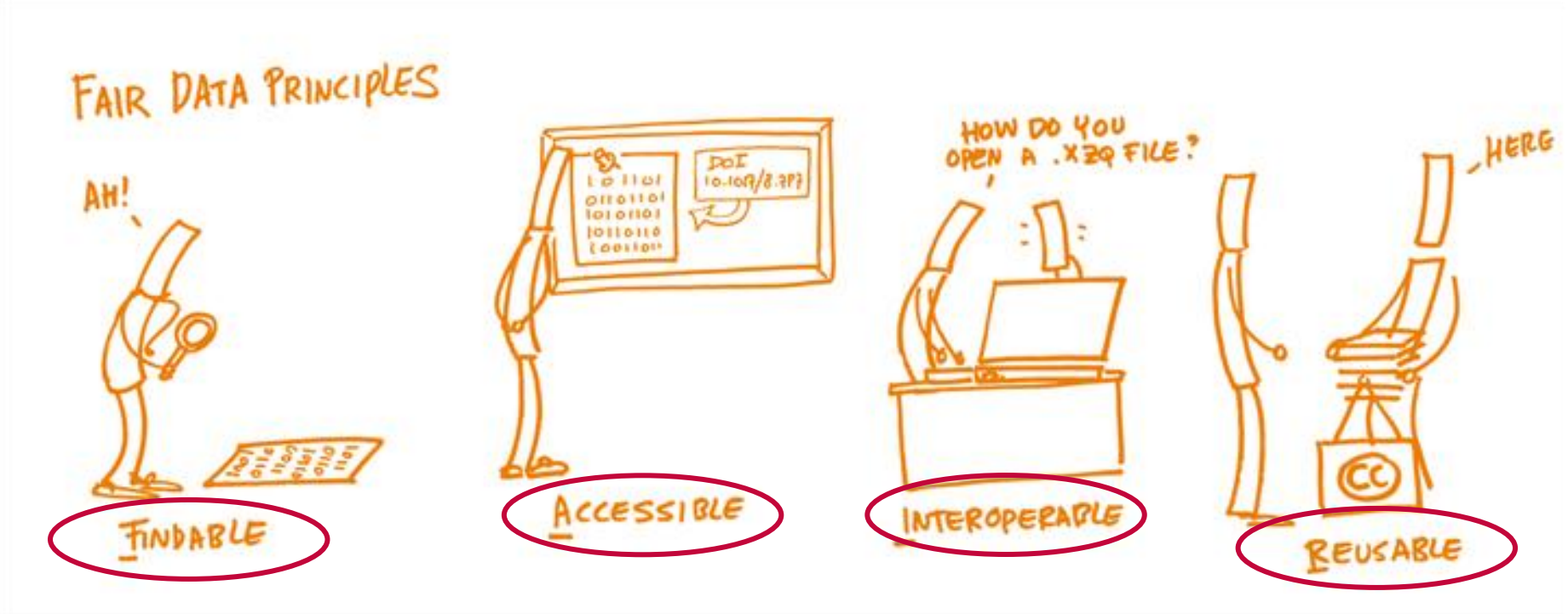
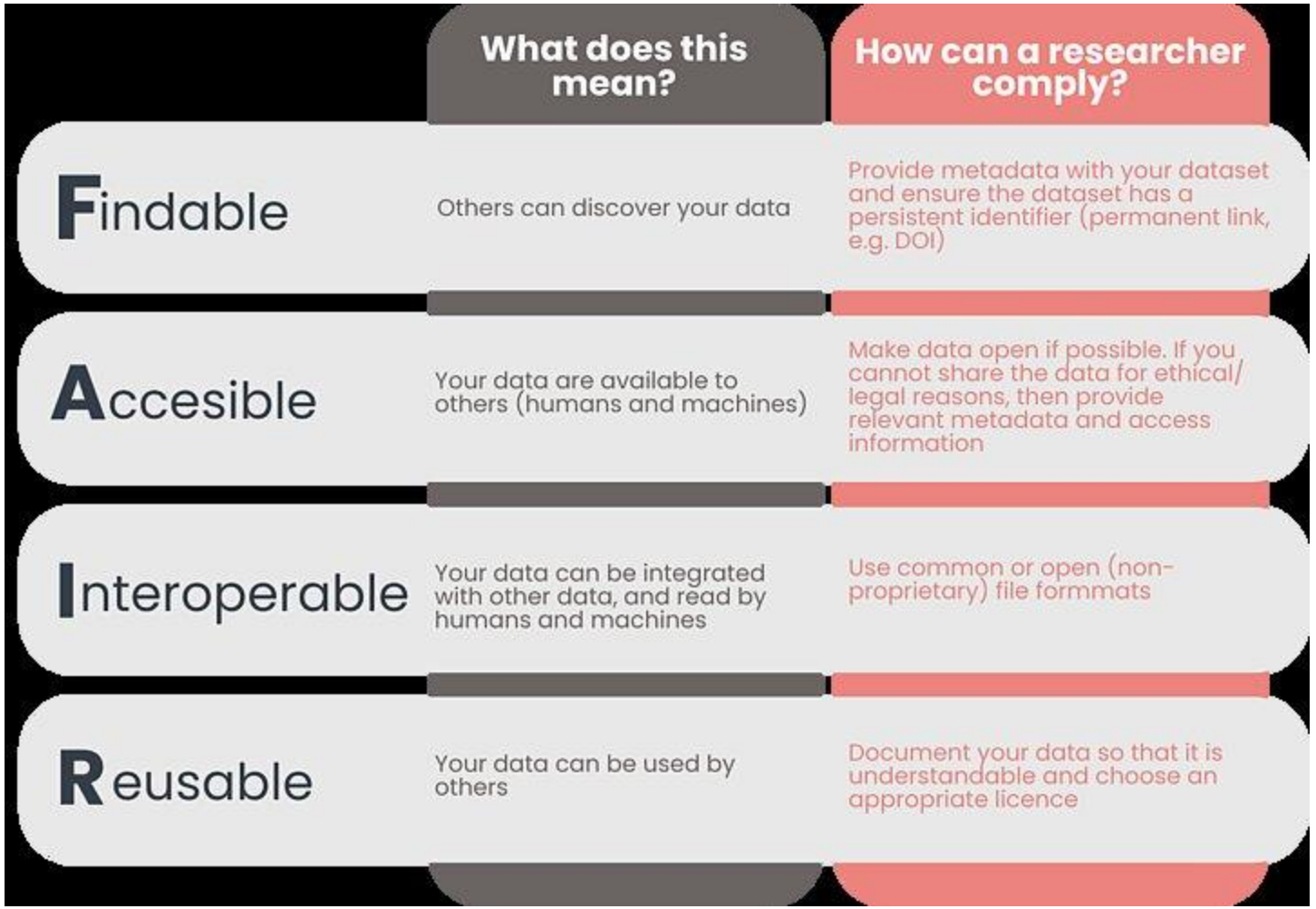


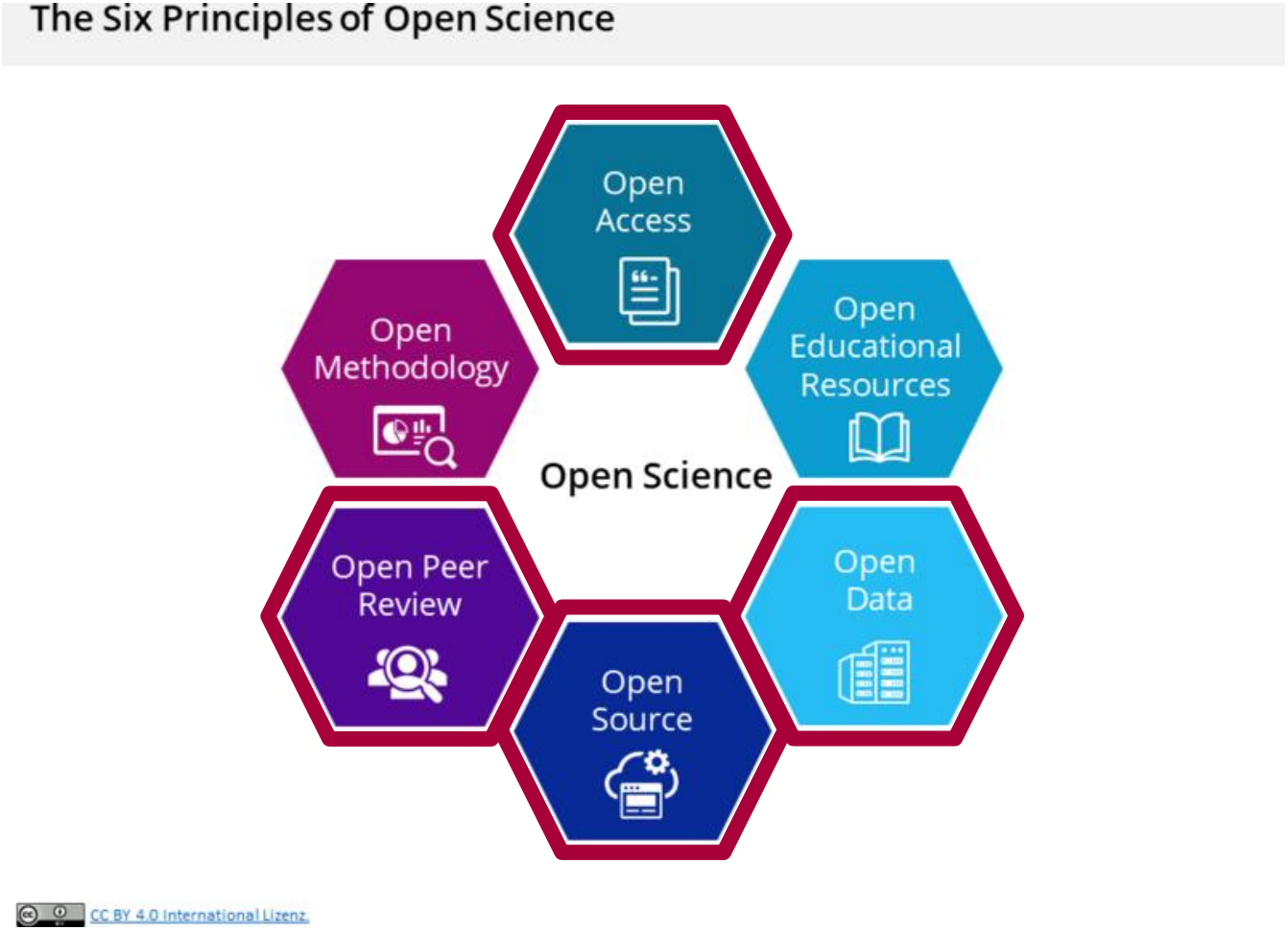
Image by Patrick Hochstenbach, CC0 1.0
The FAIR principles - Research Data Management Support - Utrecht University

Open Science & FAIR Principles



FAIR principles -- RODBUK

Topics



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Open Access

Open Access

Scientific Publishing Models

- **Traditional paid mode**: researchers submit their work to journals that charge readers or institutions for access to articles on article-by-article basis or subscription.

- **Open Access**: researchers/universities submit their work **and may pay** so that ***ANY*** readers can freely access the article.

- **Hybrid**: researchers may either pay to make it open or not and will be only available in a subscription, but you need a subscription anyway to have access to the journal…

Publish

Open Access

Different roads to <u>publish</u> in Open Access: Diamond, Gold

Gold Open Access

Gold Open Access is the most prevalent way of publishing in open access.

You submit a paper to a journal, it gets peer-reviewed and if it gets accepted, you **pay** fees called **Article Processing Charges (APC)** to make it openly available for free to others.

The fees are typically between 1.000 and 10.000 € !!! Fees keep rising…

https://www.scienceeurope.org/our-priorities/open-access/diamond-open-access/
https://www.unige.ch/biblio/en/openaccess/understand/roads/
https://lib.uliege.be/fr/news/les-apc-payes-par-les-chercheurs-uliege-ont-encore-fortement-augmente-en-2023

Gold Open Access

(Most of these fees are paid with public money)

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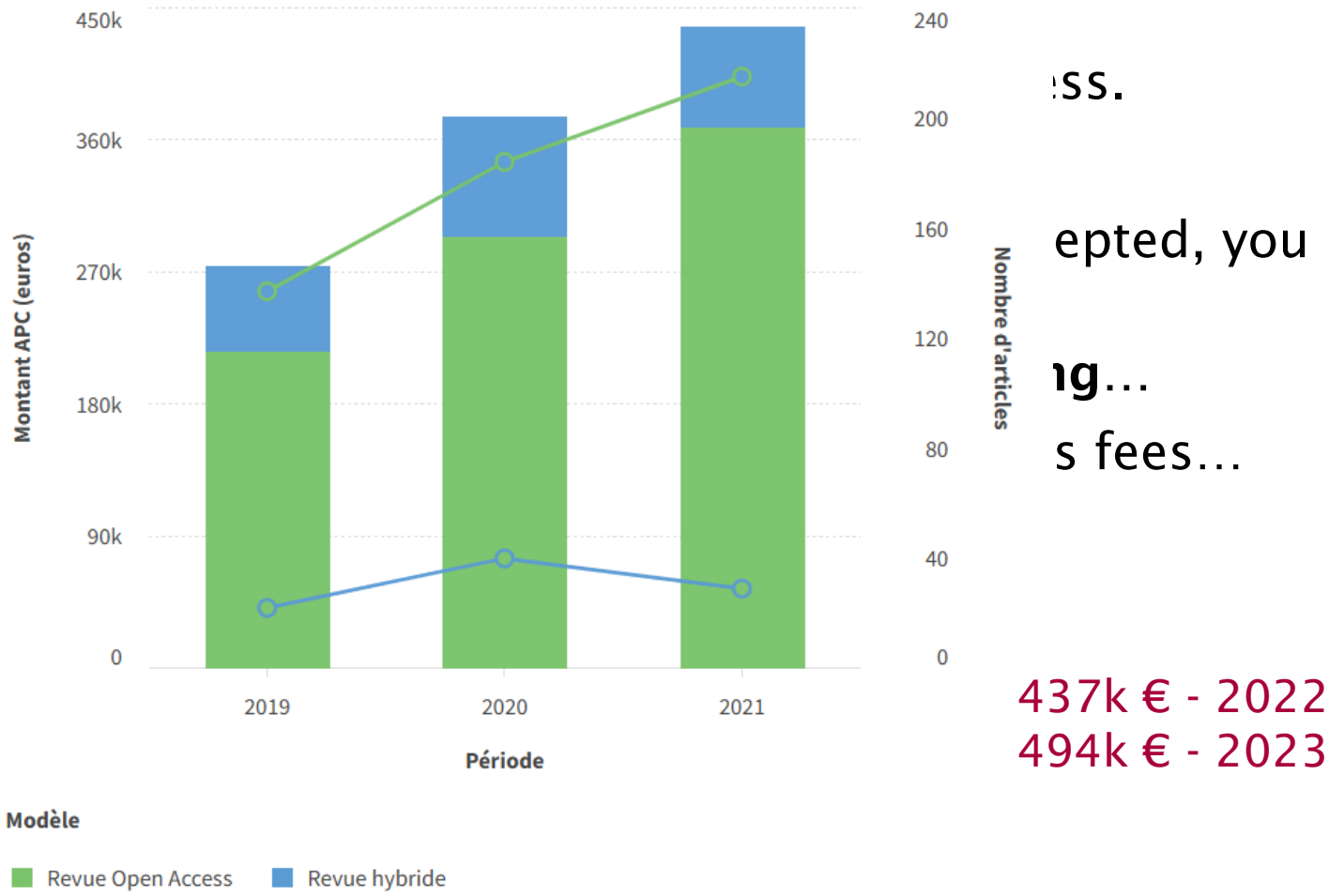
Hybrid journals earn eve s fees…



437k € - 2022
494k € - 2023

[Open APC | ULiège Library]

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https://www.unige.ch/biblio/en/openaccess/understand/roads/
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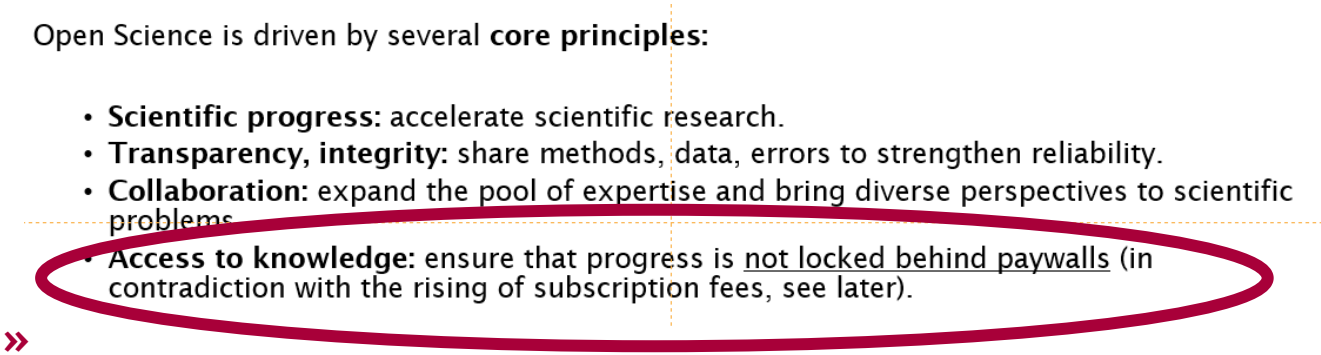
Hybrid journals earn even more than before: subscription + open access fees…

Not really respecting the OS principles…

« unfair gold open access »


Open Science is driven by several **core principles:**

- **Scientific progress:** accelerate scientific research.
- **Transparency, integrity:** share methods, data, errors to strengthen reliability.
- **Collaboration:** expand the pool of expertise and bring diverse perspectives to scientific problems.
- **Access to knowledge:** ensure that progress is not locked behind paywalls (in contradiction with the rising of subscription fees, see later).

https://www.scienceeurope.org/our-priorities/open-access/diamond-open-access/
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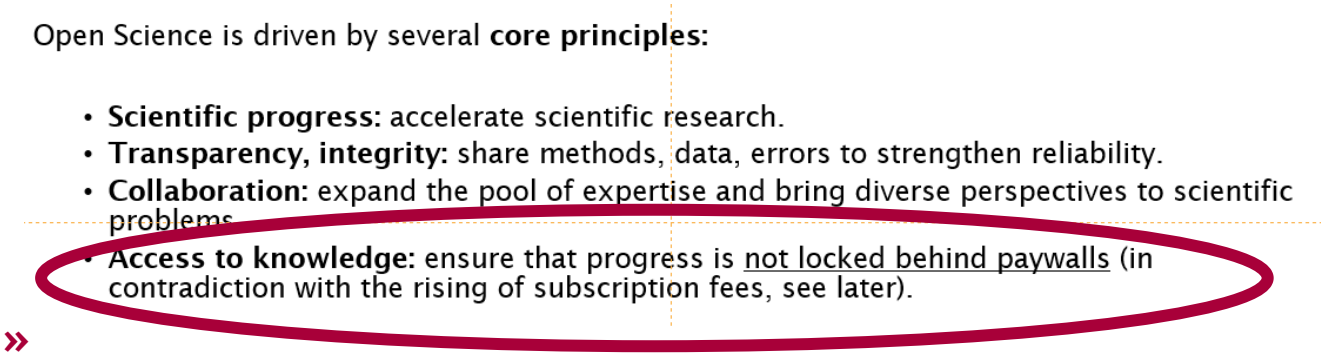

1h Webinar (in French) about open access and APC from the Data Ambassadors Network

https://www.scienceeurope.org/our-priorities/open-access/diamond-open-access/
https://www.unige.ch/biblio/en/openaccess/understand/roads/
https://lib.uliege.be/fr/news/les-apc-payes-par-les-chercheurs-uliege-ont-encore-fortement-augmente-en-2023

Gold Open Access

It does not mean Gold Open Access is a bad practice (**1000€ or less is acceptable**).

« All work deserves to be rewarded »

It means publishers of such Gold Open Access journals (>2k€) are **not really ethical**.

They make a **huge profit** on the back of researchers because of the Open Access movement.

Researchers are pushed to publish as much as possible (***publish or perish***) and open access is more and more an important evaluation criterion/requirement for funders (ex.: Horizon Europe) (*see later*).

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Gold Open Access

Note : ***predatory journals***

Shady pseudo-journals/editors of poor quality that only want to generate money (no real peer-review process, fake committees, etc.).

Tool to check if the journal you envisage is legit or not: Compass to Publish

Few hints: invitation to publish by email, manuscript submitted by email, very fast publication rate, etc.

More info on:

- https://scienceouverte.univ-rennes1.fr/les-revues-predatrices

The situation is getting better thanks to global awareness so spread the word!

https://www.scienceeurope.org/our-priorities/open-access/diamond-open-access/
https://lib.uliege.be/fr/news/les-apc-payes-par-les-chercheurs-uliege-ont-encore-fortement-augmente-en-2023
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0224541

Diamond Open Access

There are **no APCs**, their quality is as good as traditional journals.

Such journals are generally funded by institutions, volunteer workers, etc.
It means if the funding ends, the journal ends too…

But fairer and more ethical option! And more and more initiatives.

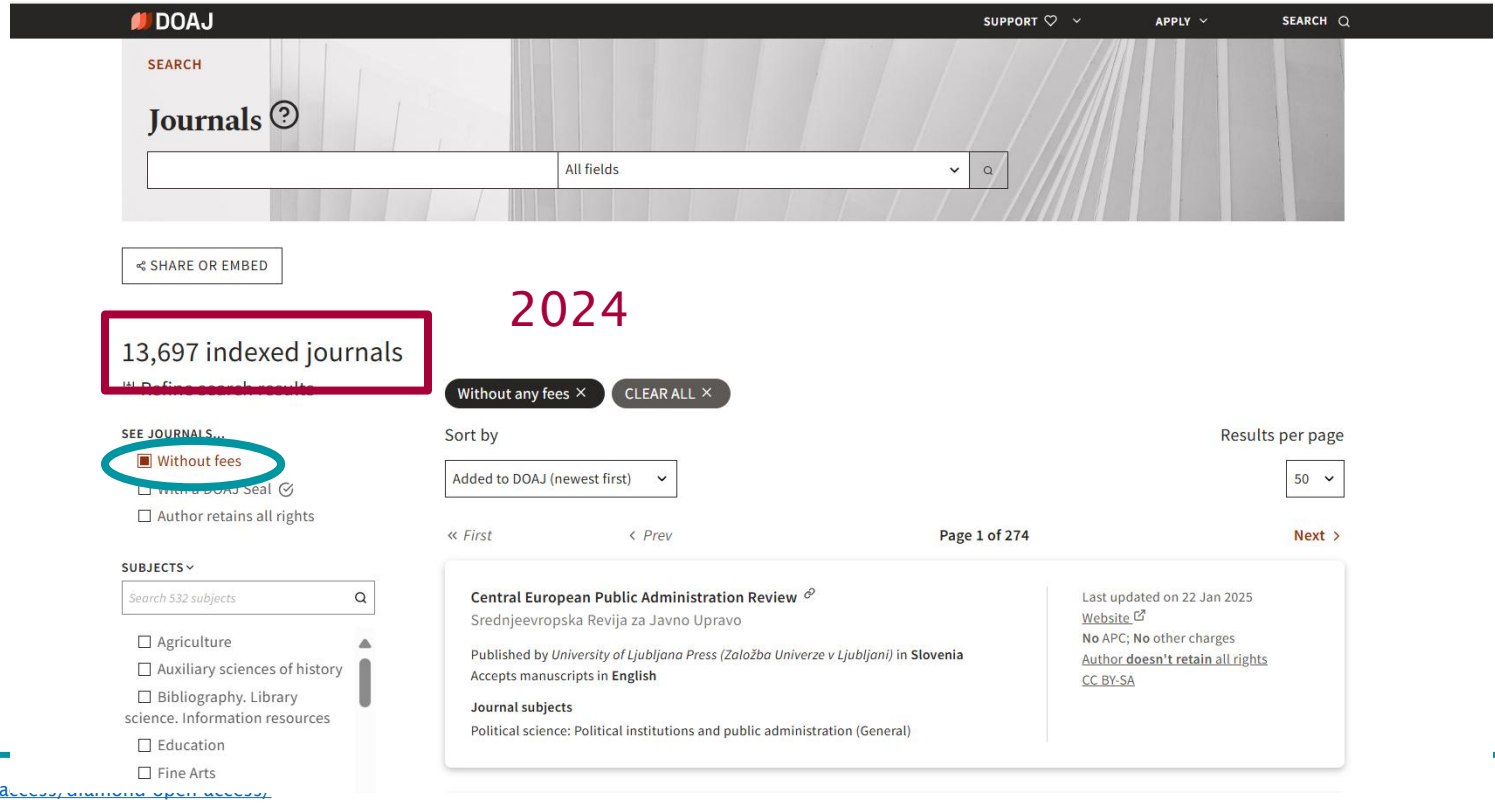
Many Diamond Open Access journals also work with *Open Peer-Review* (see later).

https://www.scienceeurope.org/our-priorities/open-access/diamond-open-access/
https://lib.uliege.be/fr/news/les-apc-payes-par-les-chercheurs-uliege-ont-encore-fortement-augmente-en-2023
https://www.diamondopen.com/

Diamond Open Access

How to find Diamond Open Access journals?

Directory of Open Access Journals: [Journals - DOAJ]



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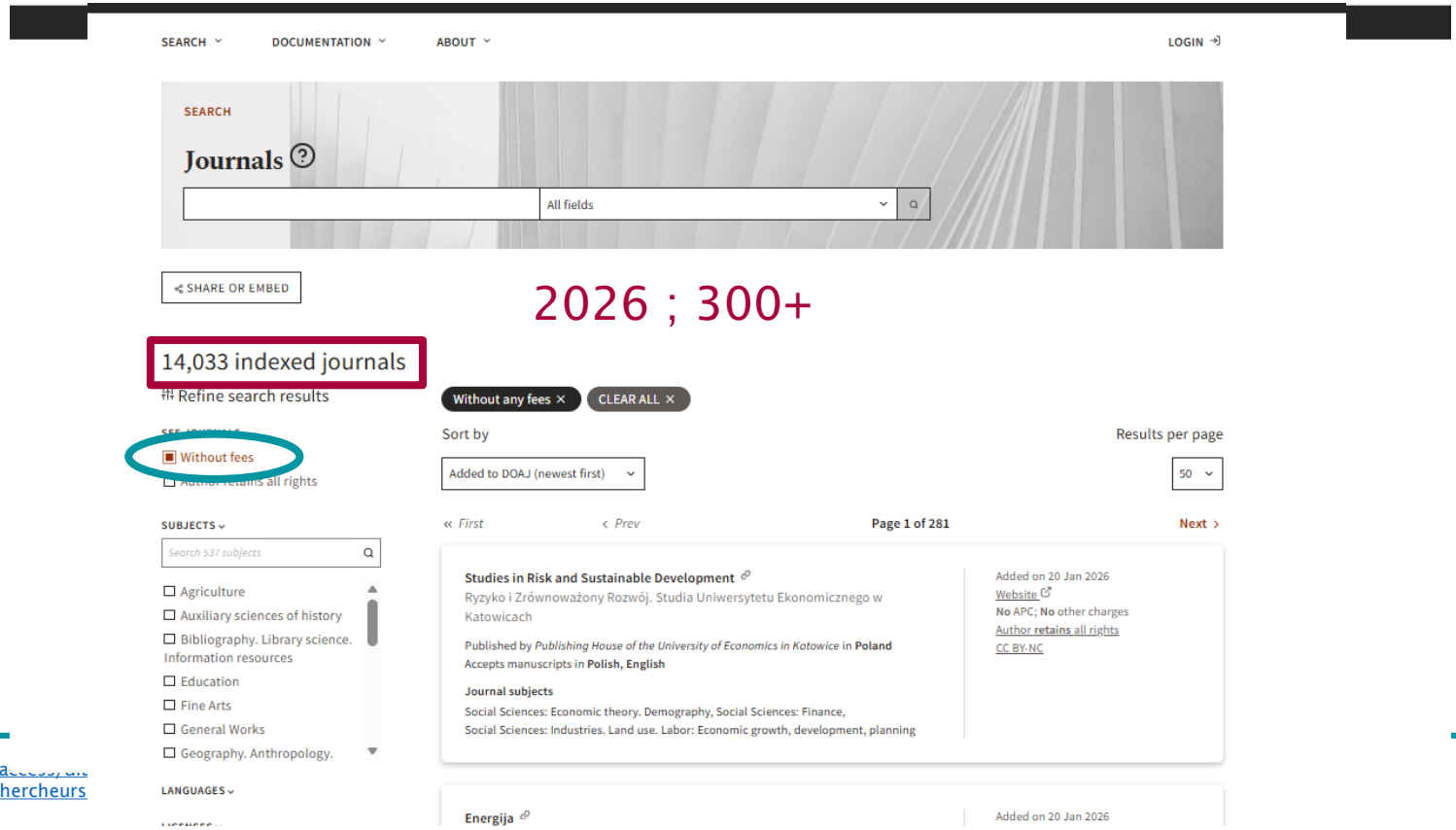

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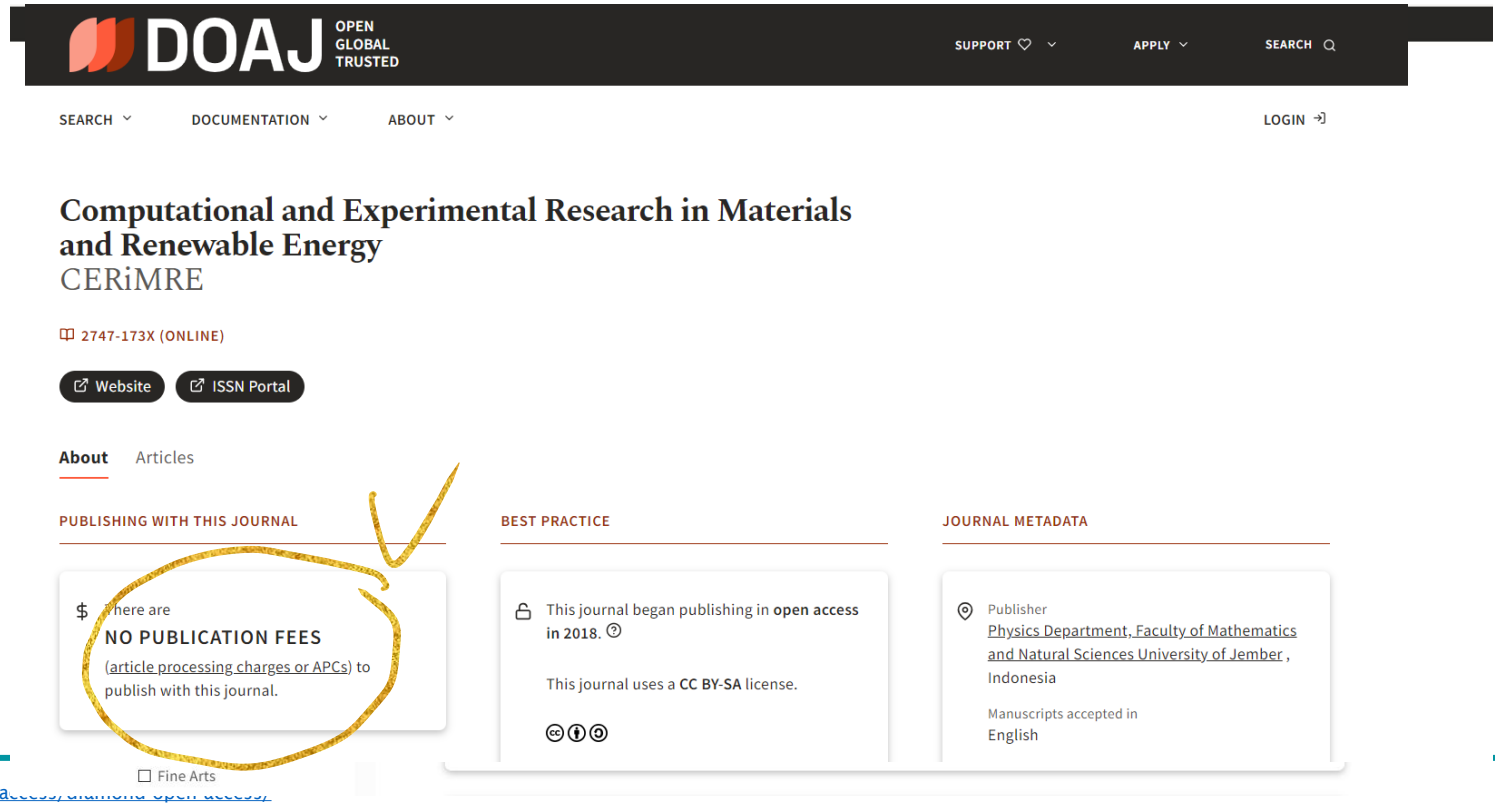

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https://www.diamondopen.com/

Diamond Open Access

Advertisement: Circular Materials and Chemistry (CMC)

Diamond Open Access journal created in the framework of the CoARA FWB project

Focuses on Circularity, Circular Chemistry, and Life Cycles of Materials. It aims to investigate how chemistry and materials production can be developed according to ecological, environmental and societal principles.

https://pindare.cref.be/fr/thematique/circular-materials-and-chemistry/

Home – Circular Materials and Chemistry

https://www.scienceeurope.org/our-priorities/open-access/diamond-open-access/
https://lib.uliege.be/fr/news/les-apc-payes-par-les-chercheurs-uliege-ont-encore-fortement-augmente-en-2023
https://www.diamondopen.com/

Deposit

Another way: Green Open Access

Green Open Access is not about ***publishing*** in Open Access but about ***depositing*** in Open Access.

You can publish in traditional journals and still provide your manuscript in Open Access!

Decree from September 2018

CHAPITRE IV. - Obligation pour les chercheurs de déposer leurs publications en libre accès

Article 5. - Les chercheurs déposent dans une archive numérique institutionnelle toutes leurs publications issues de leurs recherches réalisées en tout ou en partie sur fonds publics émanant totalement ou partiellement de la Communauté française, in extenso, immédiatement après l'acceptation de l'article par un éditeur.

Another way: Green Open Access

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Decree from Septe

Activities report period

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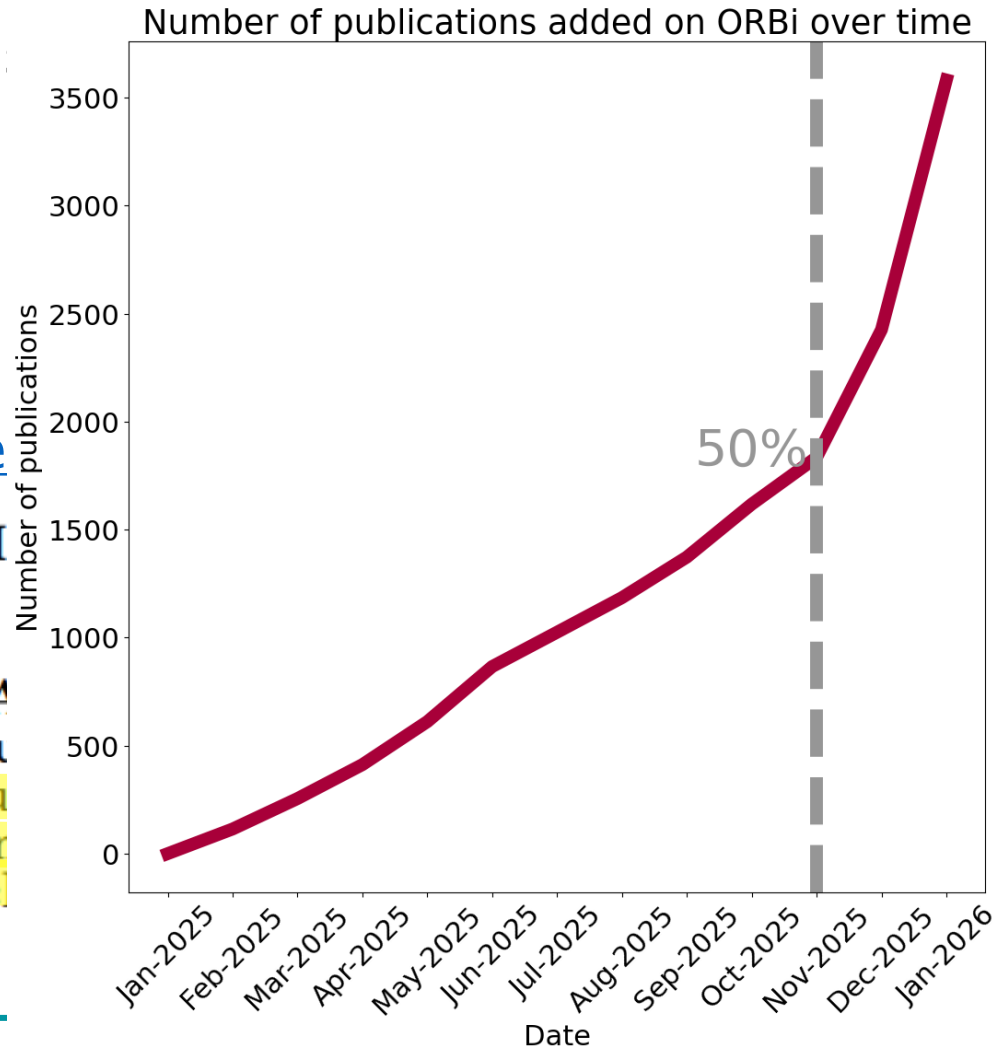


https://orbi.umons.ac.be/

Another way: Green Open Access

Docu 45142 **p.3**

Article 8. - L'accès aux publications déposées dans une archive numérique institutionnelle est immédiatement libre à l'initiative du chercheur.

Dans le cas où l'éditeur l'exige par contrat, cet accès a lieu à l'expiration d'un délai courant à compter de la date de la première publication. Ce délai ne peut dépasser six mois pour une publication dans le domaine des sciences, des techniques et de la médecine humaine ou vétérinaire et douze mois dans celui des sciences humaines et sociales.

= embargo

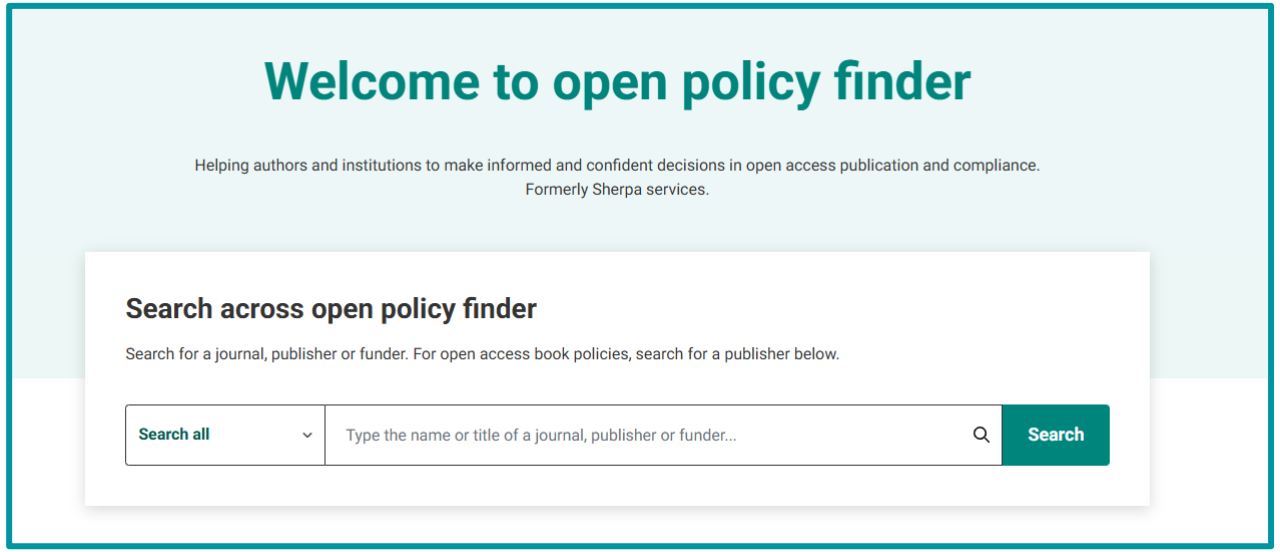
Lorsque une publication ne peut être mise en accès immédiatement libre en vertu de l'alinéa précédent, le chercheur est tenu de déposer le manuscrit dans l'archive numérique institutionnelle et peut en fournir l'accès en expédiant une copie à l'intéressé sur demande personnalisée.

Another way: Green Open Access

You can **ALWAYS** deposit the **accepted** version of your manuscript in Open Access (with an embargo if needed). You should still check the editor policy for the embargo period, but the open access decree protects the researchers (as long as they embargo of 6 or 12 months is respected, when there is one).

1. How to identify the editor/journal policy?

Open Policy Finder



Another way:

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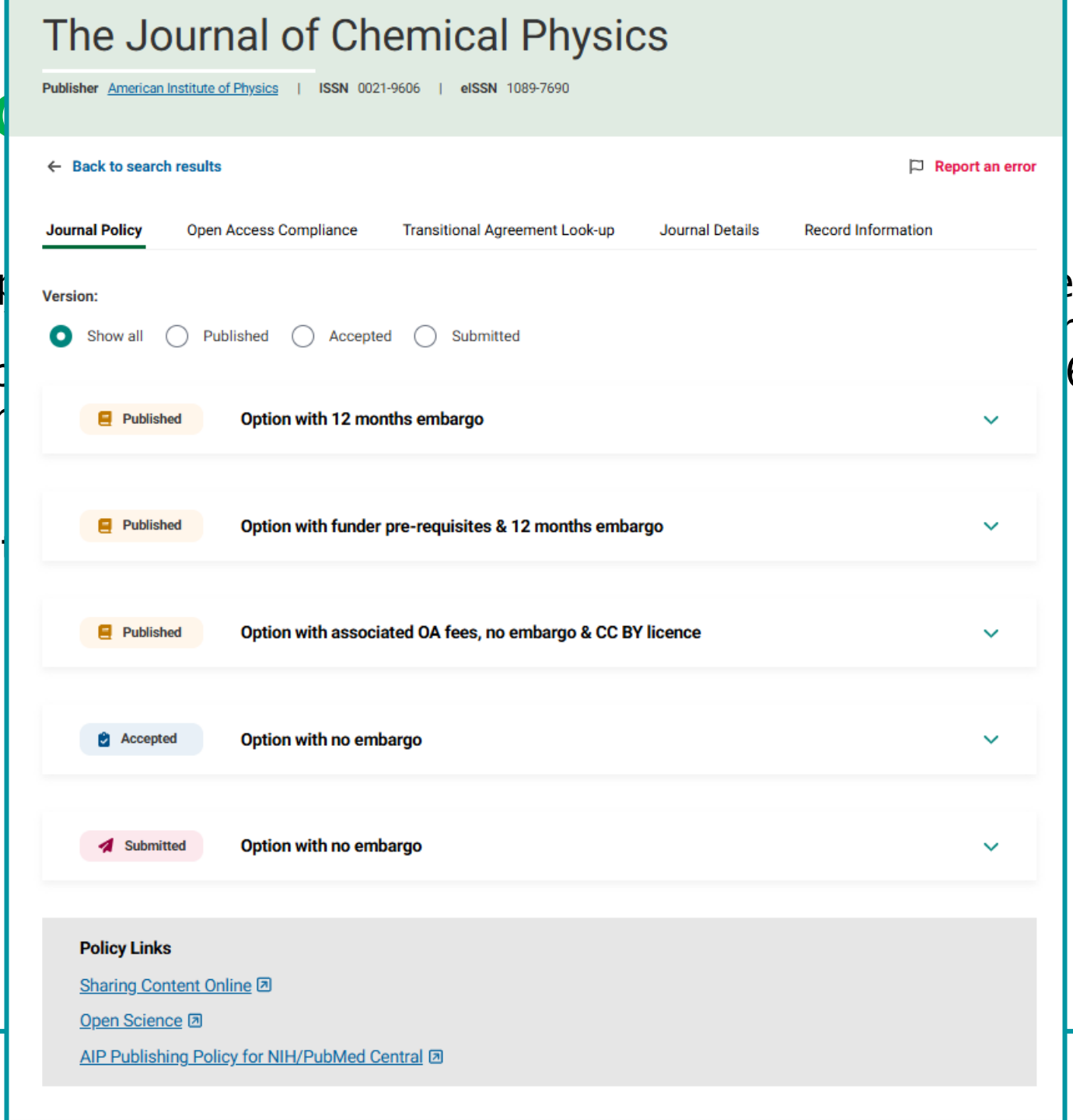

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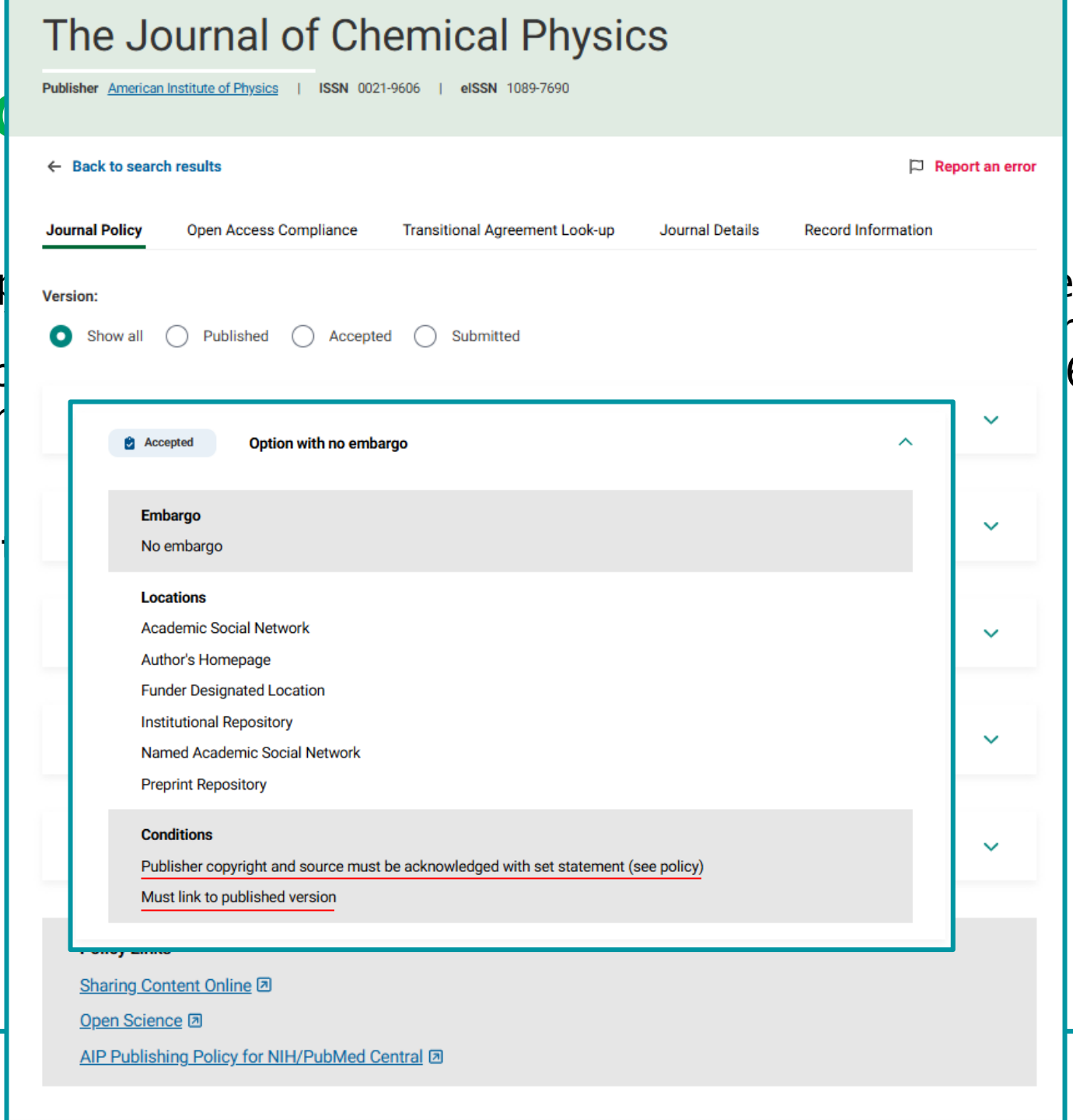

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2. What is the « accepted » version?

It's the final peer-reviewed version that was accepted by the editor (*the unformated document*).

3. Where to deposit?

On our institutional repository, ORBi

Anothe

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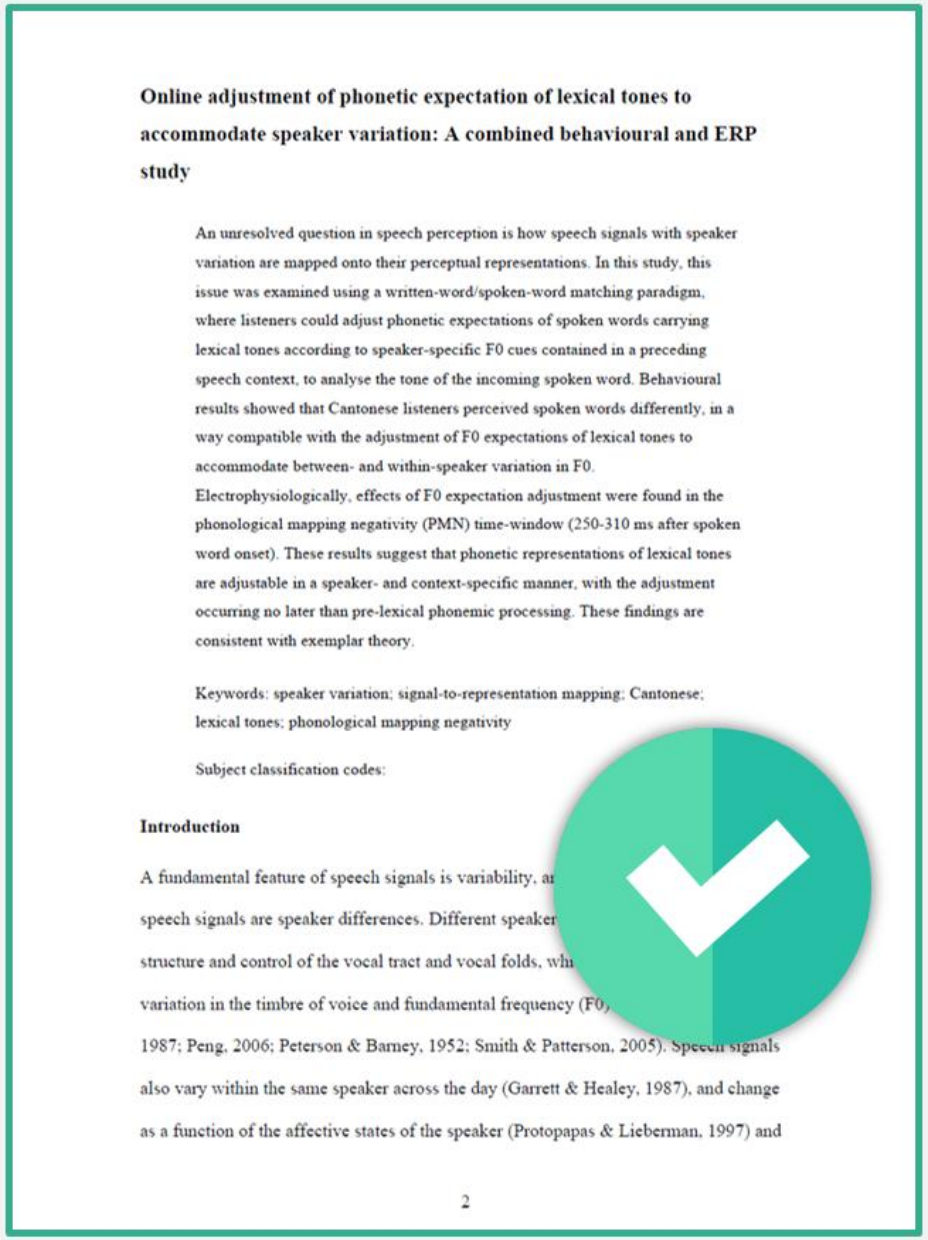
2. What

It's the fir
document

3. Where

On our in

Final Accepted Manuscript
(Post-print; Author's version)



Online adjustment of phonetic expectation of lexical tones to accommodate speaker variation: A combined behavioural and ERP study

An unresolved question in speech perception is how speech signals with speaker variation are mapped onto their perceptual representations. In this study, this issue was examined using a written-word/spoken-word matching paradigm, where listeners could adjust phonetic expectations of spoken words carrying lexical tones according to speaker-specific F0 cues contained in a preceding speech context, to analyse the tone of the incoming spoken word. Behavioural results showed that Cantonese listeners perceived spoken words differently, in a way compatible with the adjustment of F0 expectations of lexical tones to accommodate between- and within-speaker variation in F0. Electrophysiologically, effects of F0 expectation adjustment were found in the phonological mapping negativity (PMN) time-window (250-310 ms after spoken word onset). These results suggest that phonetic representations of lexical tones are adjustable in a speaker- and context-specific manner, with the adjustment occurring no later than pre-lexical phonemic processing. These findings are consistent with exemplar theory.

Keywords: speaker variation; signal-to-representation mapping; Cantonese; lexical tones; phonological mapping negativity

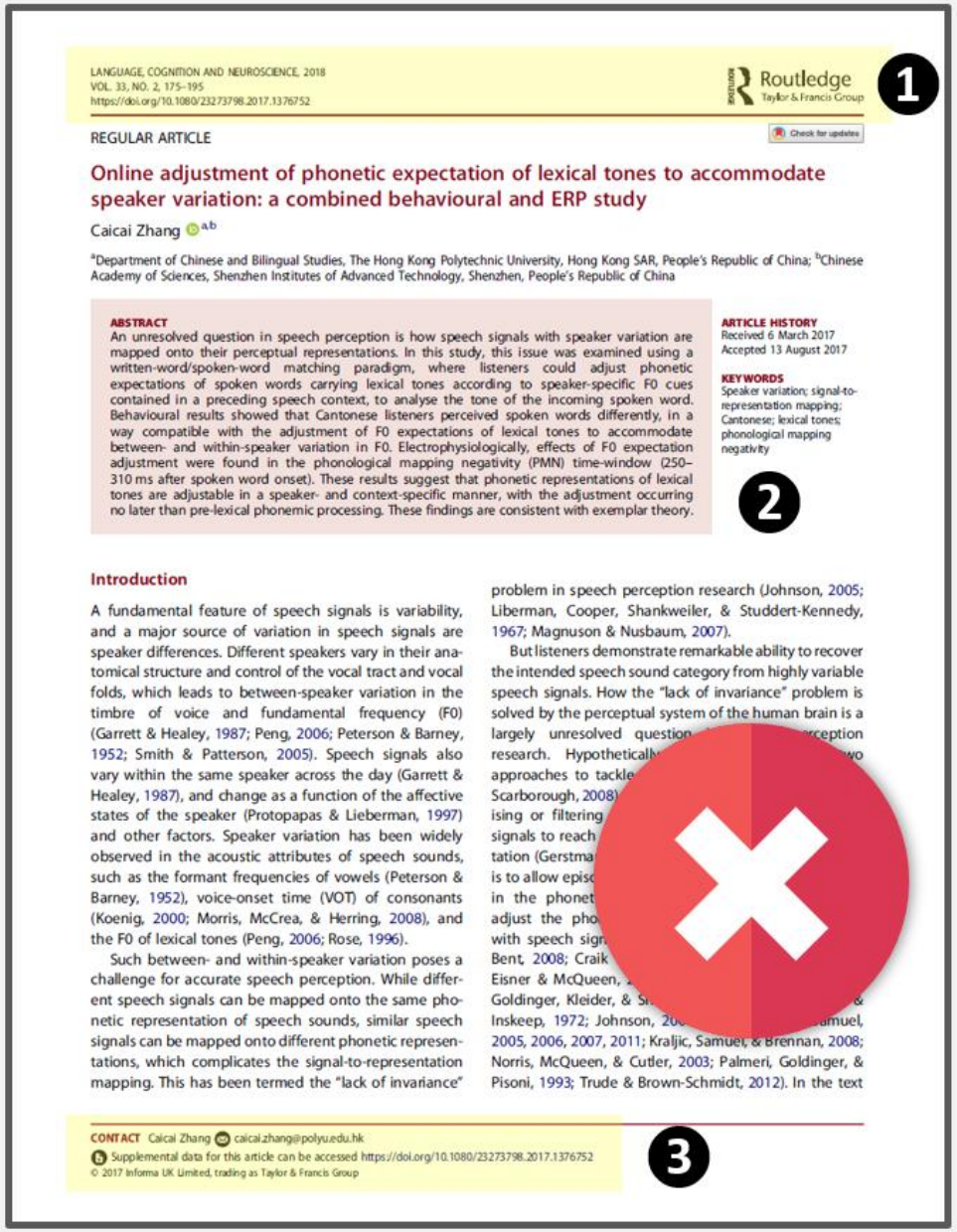
Subject classification codes:

Introduction

A fundamental feature of speech signals is variability, a
speech signals are speaker differences. Different speaker
structure and control of the vocal tract and vocal folds, wh
variation in the timbre of voice and fundamental frequency (F0)
1987; Peng, 2006; Peterson & Barney, 1952; Smith & Patterson, 2005). Speech signals
also vary within the same speaker across the day (Garrett & Healey, 1987), and change
as a function of the affective states of the speaker (Protopapas & Lieberman, 1997) and

2

Published Version
(Version of Record; Publisher's version)



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VOL. 33, NO. 2, 175–195
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REGULAR ARTICLE

Check for updates

Online adjustment of phonetic expectation of lexical tones to accommodate speaker variation: a combined behavioural and ERP study

Caicai Zhang [a,b]

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ABSTRACT
An unresolved question in speech perception is how speech signals with speaker variation are mapped onto their perceptual representations. In this study, this issue was examined using a written-word/spoken-word matching paradigm, where listeners could adjust phonetic expectations of spoken words carrying lexical tones according to speaker-specific F0 cues contained in a preceding speech context, to analyse the tone of the incoming spoken word. Behavioural results showed that Cantonese listeners perceived spoken words differently, in a way compatible with the adjustment of F0 expectations of lexical tones to accommodate between- and within-speaker variation in F0. Electrophysiologically, effects of F0 expectation adjustment were found in the phonological mapping negativity (PMN) time-window (250–310 ms after spoken word onset). These results suggest that phonetic representations of lexical tones are adjustable in a speaker- and context-specific manner, with the adjustment occurring no later than pre-lexical phonemic processing. These findings are consistent with exemplar theory.

ARTICLE HISTORY
Received 6 March 2017
Accepted 13 August 2017

KEYWORDS
Speaker variation; signal-to-representation mapping; Cantonese; lexical tones; phonological mapping negativity

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Introduction

A fundamental feature of speech signals is variability, and a major source of variation in speech signals are speaker differences. Different speakers vary in their anatomical structure and control of the vocal tract and vocal folds, which leads to between-speaker variation in the timbre of voice and fundamental frequency (F0) (Garrett & Healey, 1987; Peng, 2006; Peterson & Barney, 1952; Smith & Patterson, 2005). Speech signals also vary within the same speaker across the day (Garrett & Healey, 1987), and change as a function of the affective states of the speaker (Protopapas & Lieberman, 1997) and other factors. Speaker variation has been widely observed in the acoustic attributes of speech sounds, such as the formant frequencies of vowels (Peterson & Barney, 1952), voice-onset time (VOT) of consonants (Koenig, 2000; Morris, McCrea, & Herring, 2008), and the F0 of lexical tones (Peng, 2006; Rose, 1996).

Such between- and within-speaker variation poses a challenge for accurate speech perception. While different speech signals can be mapped onto the same phonetic representation of speech sounds, similar speech signals can be mapped onto different phonetic representations, which complicates the signal-to-representation mapping. This has been termed the "lack of invariance" problem in speech perception research (Johnson, 2005; Liberman, Cooper, Shankweiler, & Studdert-Kennedy, 1967; Magnuson & Nusbaum, 2007).

But listeners demonstrate remarkable ability to recover the intended speech sound category from highly variable speech signals. How the "lack of invariance" problem is solved by the perceptual system of the human brain is a largely unresolved question
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Supplemental data for this article can be accessed https://doi.org/10.1080/23273798.2017.1376752
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- **Preprint author**: submitted version of the manuscript (generally relevant for open archives such as arXiv, chemarXiv, etc.).

ARTICLE (PÉRIODIQUES SCIENTIFIQUES)

Higher-order effects and validity of the point-dipole approximation for conjugated extended molecular emitters near plasmonic nanostructures.

Hantro, Mhamad ; MAES, Bjorn ; ROSOLEN, Gilles *et al.*

2025 • In *Journal of Chemical Physics, 162* (3)

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DOI
10.1063/5.0242123

PubMed
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Documents

Texte intégral

Higher-order_effects_and_validity_of_the_point-dip.pdf
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The Journal of Chemical Physics

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ACCEPTED MANUSCRIPT

Higher-order effects and validity of the point-dipole approximation for conjugated extended molecular emitters near plasmonic nanostructures

Mhamad Hantro[a)], Bjorn Maes[b)], Gilles Rosolen[b)], Colin Van Dyck[a)]*
[a)]Theoretical Chemical Physics Group, Research Institute for Materials Science and Engineering, University of Mons, 20 Place du Parc, 7000 Mons, Belgium.
[b)]Micro- and Nanophotonic Materials Group, Research Institute for Materials Science and Engineering, University of Mons, 20 Place du Parc, 7000 Mons, Belgium.
[*]Corresponding author: Colin.VanDyck@umons.ac.be

Abstract: Rapid advancements in nanotechnology have allowed for the characterization of single molecules, by placing them in the vicinity of nanoplasmonic structures that are known to confine light to sub-molecular scales. In this study, we introduce a theoretical framework that captures higher-order effects, and we explore the limits of the standard description of a molecular emitter as a point-dipole. We particularly focus on the role played by the emitter chain length and the electron conjugation. Strong deviations are observed from the point-dipole approximation, which demonstrates that higher order effects

Mhamad Hantro, Bjorn Maes, Gilles Rosolen, Colin Van Dyck; Higher-order effects and validity of the point-dipole approximation for conjugated extended molecular emitters near plasmonic nanostructures. *J. Chem. Phys.* 21 January 2025; 162 (3): 034303. https://doi.org/10.1063/5.0242123

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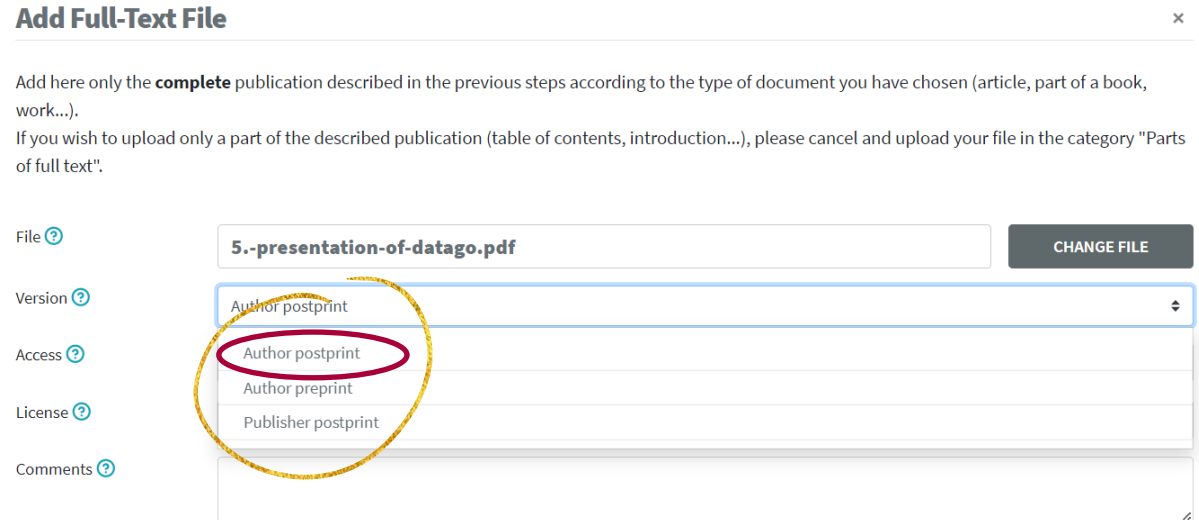

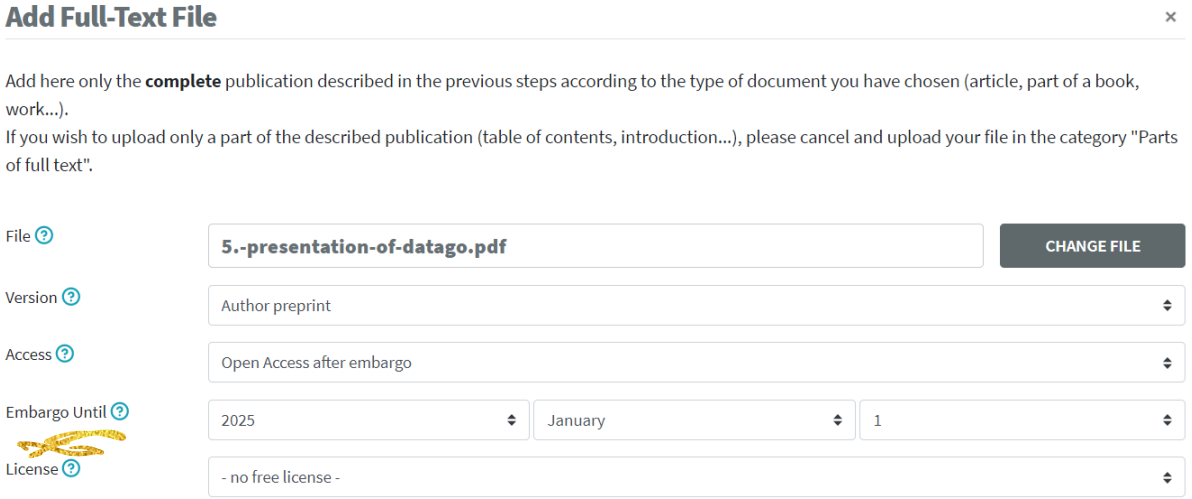

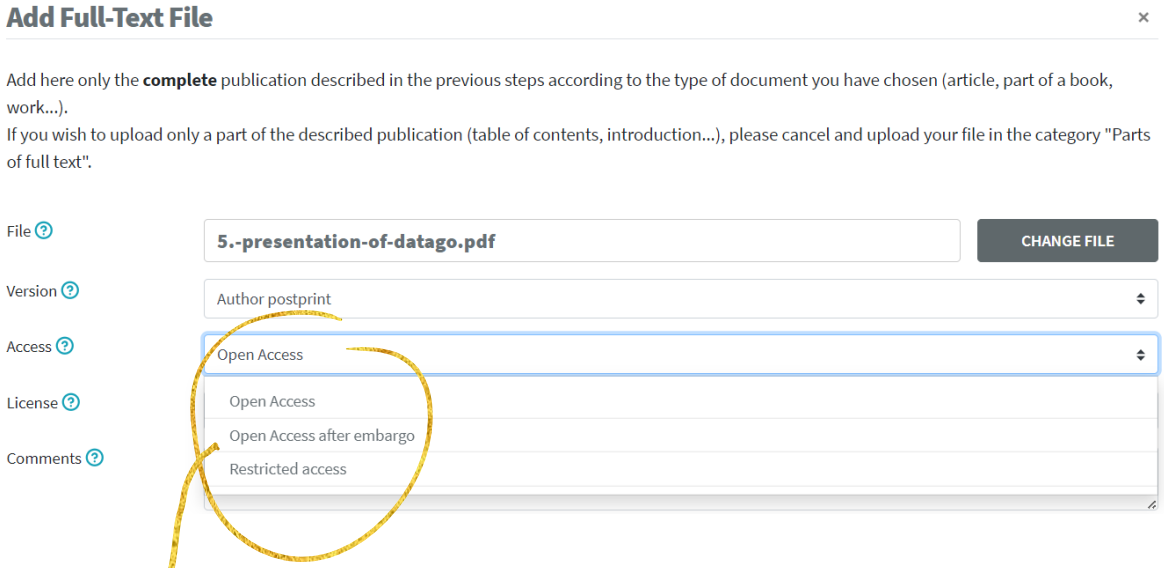

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  + content harvested by other platforms (Google Scholar, Pubmed, etc.).
- More impact through the improved visibility.
- Often, a higher citation rate.
- **More visibility for your career, your research unit and our University!**

https://www.yearofopen.org/what-is-open-access/

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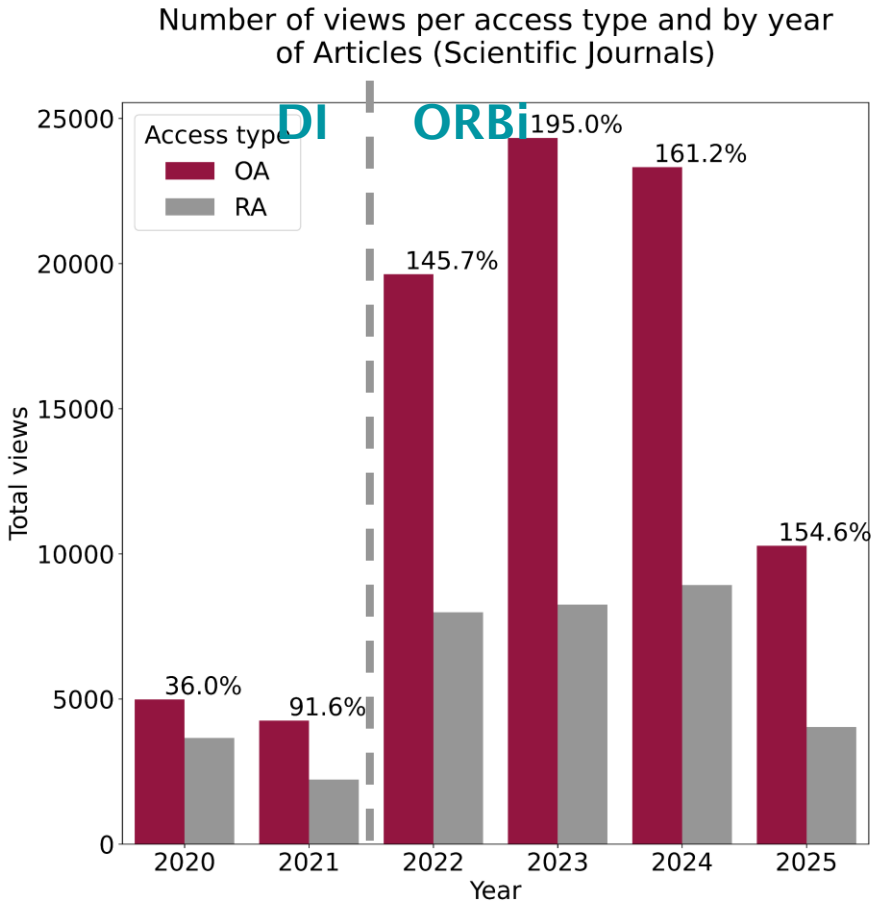

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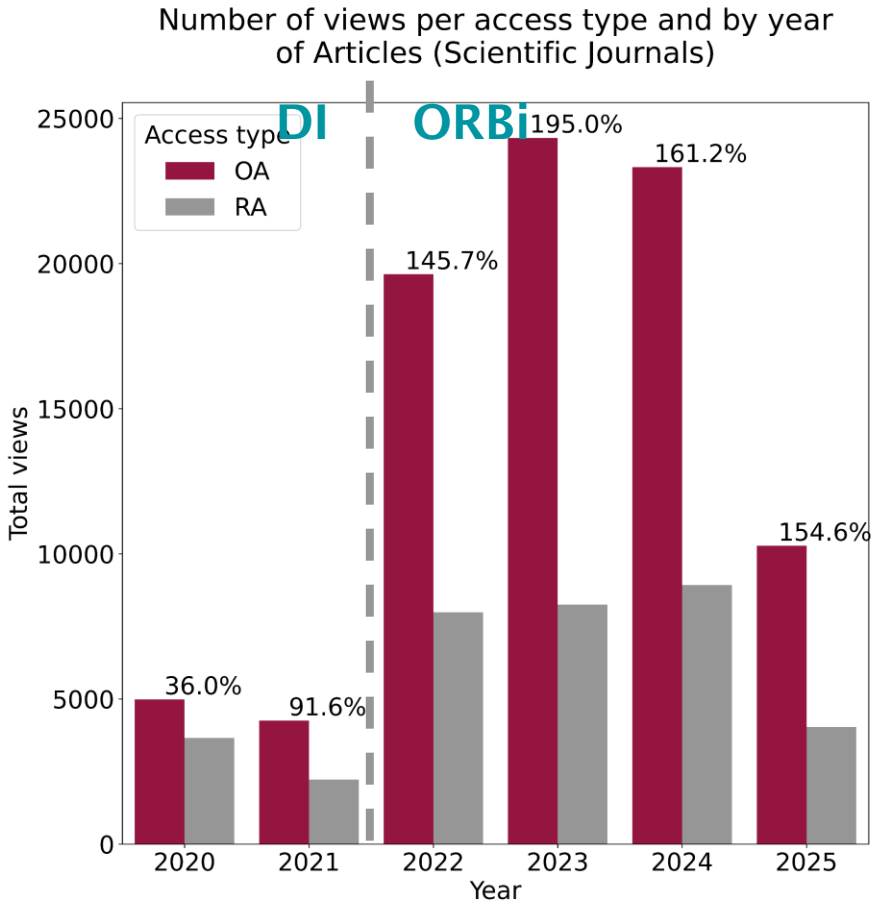

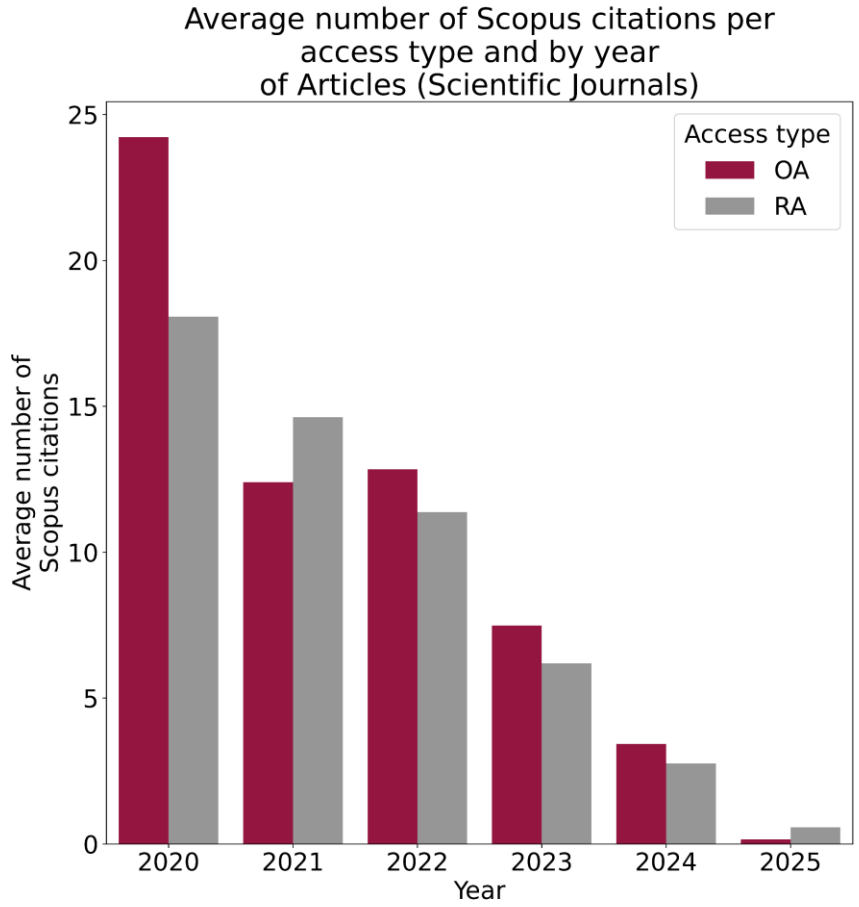

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More information on our Intranet webpage dedicated to ORBi:

15/04 – *ORBi: Amplifying Your Research Visibility and Impact* (EN)

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Open Peer Review

Peer-review is the process of reviewing the content of a paper submitted to a journal.

The reviewers are anonymous, they rate the papers and provide some comments.

That's it.

Not transparent at all!

Conflict of interest or collaborative interests, biases, etc.

Pros and cons of open peer review. *Nat Neurosci* **2**, 197–198 (1999). https://doi.org/10.1038/6295

Open Peer Review

Open peer review aims at making the whole reviewing process **completely transparent**.

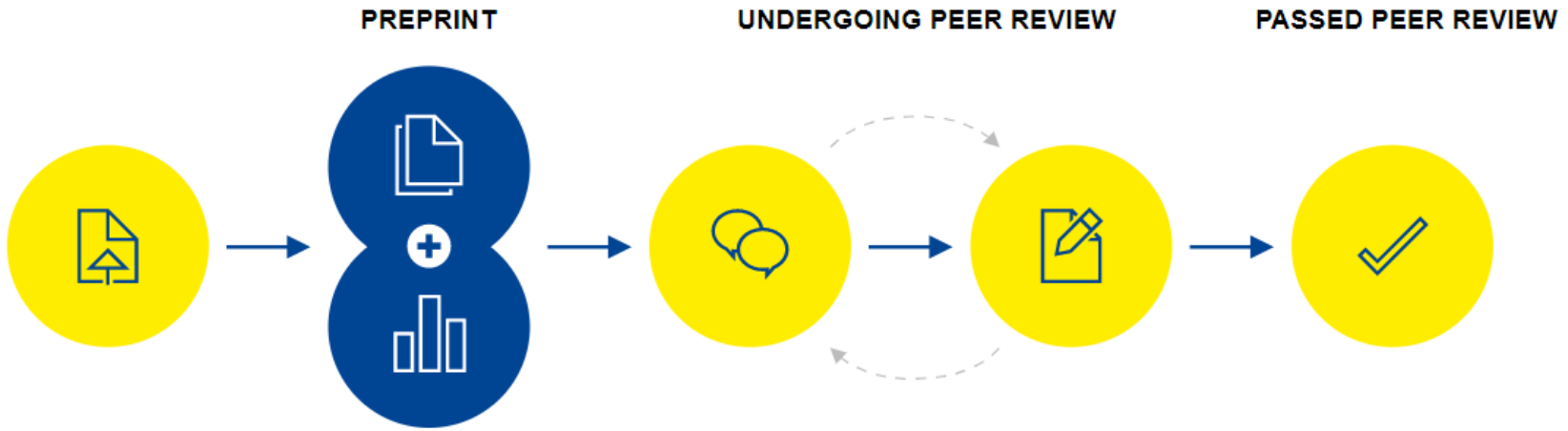
The reviewers are publicly identified, their review is available online and anyone can participate to the review.

This procedure is often present in Diamond Open Access journals.

→ Open Research Europe: https://open-research-europe.ec.europa.eu/

→ DOAJ: Journals – DOAJ

Open Peer Review



Article Submission

Submission is via a single-page submission system. The in-house editorial team carries out a comprehensive set of prepublication checks to ensure that all policies and ethical guidelines are adhered to.

Publication & Data Deposition

Once the article has passed the prepublication checks, the preprint version is published within 10 days, enabling immediate viewing and citation.

Open Peer Review & Article Revision

Expert reviewers are selected and invited, and their reviews and names are published alongside the article, together with the authors' responses and comments from registered users. Authors are encouraged to publish revised versions of their article. All versions of an article are linked and independently citable.

Send to Indexers & Repositories

Articles that pass peer review are sent to major indexing databases and repositories.

Transparency!

Open Peer Review

OPEN LETTER

REVISED **Open science in energy research**

[version 2; peer review: 2 approved with reservations, 2 not approved]

Raquel Alonso Pedrero, Felipe Van de Sande Araujo

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This article is included in Research Ethics and Integrity collection

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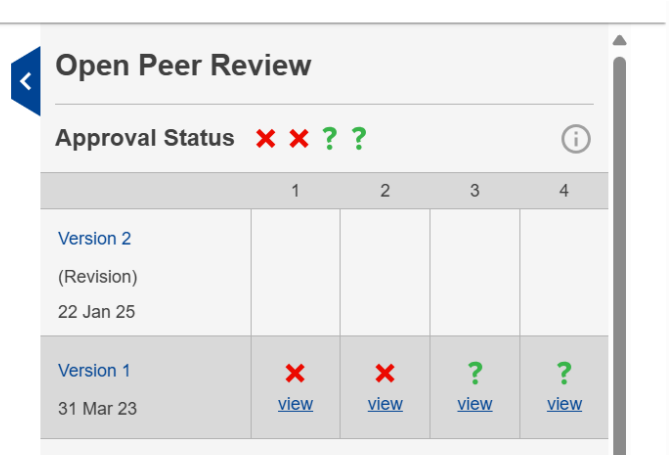

REVISED **Amendments from Version 1**

The paper has undergone significant revisions to provide a clearer background and a more focused discussion on open science in energy research. Based on the reviewers' feedback, we identified that the previous manuscript lacked coherence and a comprehensive storyline. To address this, we narrowed the scope of the paper, setting aside the ethical discussion to concentrate exclusively on open science. This shift is reflected in the updated title: **"Open Science in Energy Research."**

You will also notice substantial changes in the structure, designed to better guide readers through the arguments and discussions. Additionally, we have incorporated new and relevant references to ensure the essay remains current and well-supported.

See the detailed response from the author(s) to the review by Sacha Hodencq
See the detailed response from the author(s) to the review by Stephan Ferenz and Thomas Wolgast
See the detailed response from the author(s) to the review by Rosie Robison and Ami Crowther

Open Data

Open Data

Making research data and findings **openly** and **FAIRly** available to the global community (not only outputs, but also inputs, methods, etc.) → **mandatory in European funded projects**.

Same spirit as before:

- Avoid reinventing the wheel and fund the same research multiple times.
- Improved reproducibility.
- Improved scientific integrity.
- …

Of course, everything cannot be made openly available (data under patent, personal data, etc.)

As open as possible, as closed as necessary

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- …

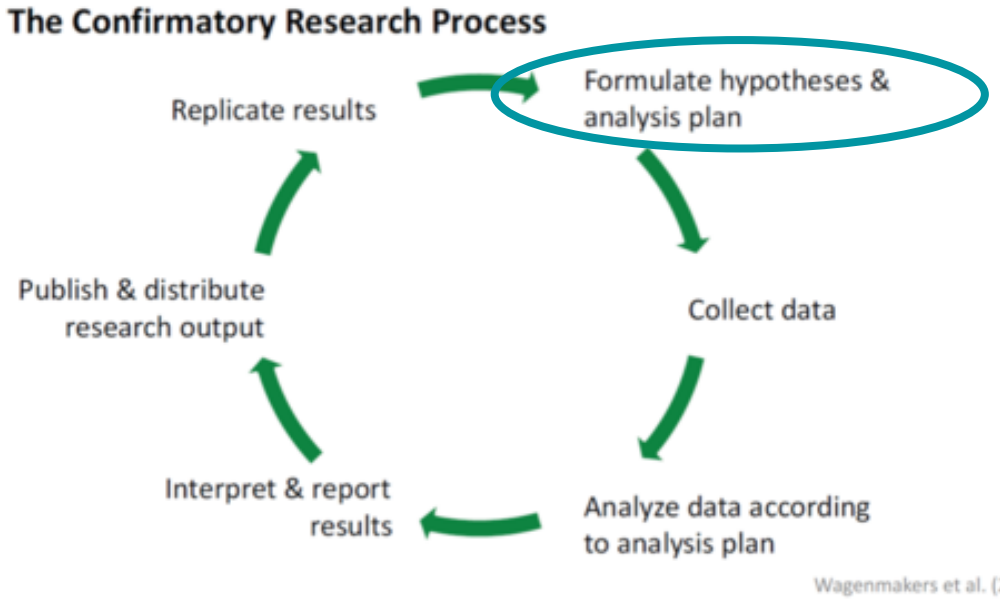
Of course, everything cannot be made openly available (data under patent, personal data, etc.)

As open as possible, as ~~closed~~ protected as necessary

A word about pre-registration

Before sharing or even collecting data, you typically emit hypotheses and have an analysis plan.

Sharing this in a pre-registration repository such as OSF or protocols.io reinforces the trust people can have in your research (transparency).



Open Data & FAIR principles

FAIR and Open data are more and more important, **even for publishing results in scientific journals**:

> Retraction of an article because access to the underlying data was not granted.

*"[...] Because all the authors were not granted access to the raw data and the **raw data could not be made available to a third-party auditor, we are unable to validate the primary data** sources underlying our article, "Cardiovascular Disease, Drug Therapy, and Mortality in Covid-19." We therefore **request that the article be retracted**. We apologize to the editors and to readers of the journal for the difficulties that this has caused.""*

How to make open data?

Apply the **FAIR principles**:

- **Findable**: upload your clean dataset on a trusted data repository with a unique identifier.
- **Accessible**: provide metadata that describes the dataset and that explains if there are restrictions for data access.
- **Interoperable**: use open formats as much as possible (CSV, text, etc.), convert data from a proprietary file format to an open format.
- **Reuse**: improve the reuse of the data by specifying under which conditions they can be reused (license) and a thorough documentation to maximize the reproducibility.

How to make open data?

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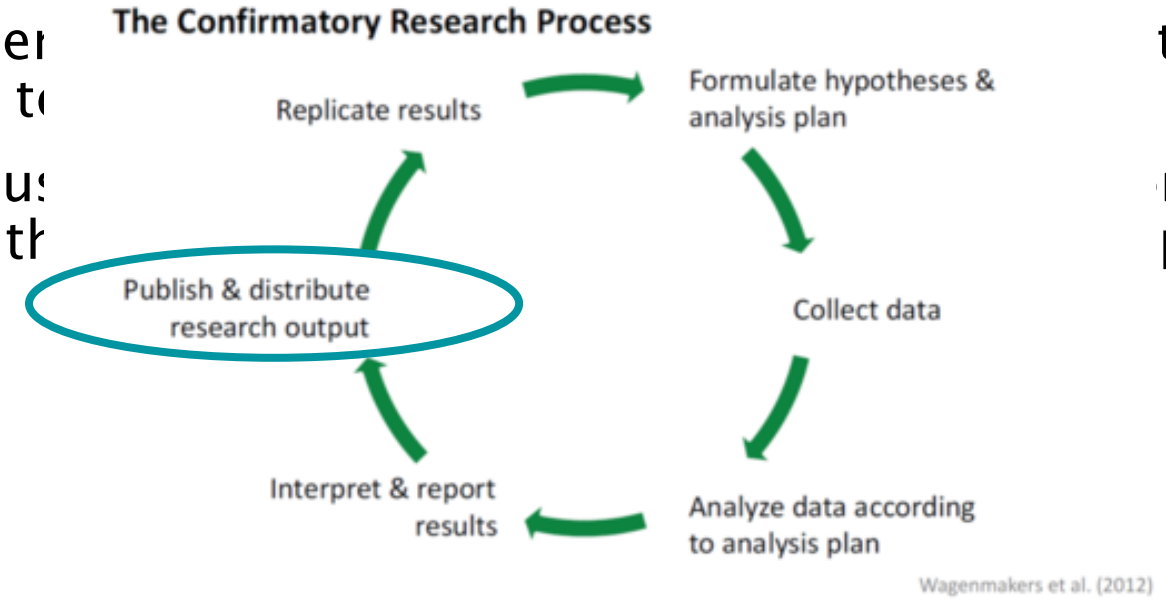

Wagenmakers et al. (2012)

Open Data: how to choose a data repository?

A trusted digital repository provides reliable **long-term access** to managed digital resources to its designated community, now and in the future!

It assigns a **unique and persistent identifier** (DOI, handle).

Content harvested by multiple platforms: increase of **visibility** and **impact**.

- Zenodo: http://zenodo.org
- SODHA: https://www.sodha.be/ (the federal Belgian data archive for social sciences and the digital humanities)
- … and many more: re3data.

UMONS Recommandation for Data Repository

Open Data: how to choose a data repository?

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re3data.org

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BioGRID

Biological General Repository for Interaction Datasets

Subject(s)	Life Sciences Biology
Repository type(s)	disciplinary
Provider type(s)	serviceProvider
Country	Canada United States United Kingdom

The Biological General Repository for Interaction Datasets (BioGRID) is a public database that archives and disseminates genetic and protein interaction data from model organisms and humans. BioGRID is an online interaction repository with data compiled through comprehensive curation efforts. All interaction data are freely provided through our search index and available via download in a wide variety of standardized formats.

The USA National Phenology Network

USA-NPN

Subject(s)	Life Sciences Biology Plant Sciences
Repository type(s)	disciplinary
Provider type(s)	

Open Data: how to choose the data?

What is needed to validate or reproduce your research?

You should preserve everything that allows to reproduce the results/conclusions:

- Inputs (answers from surveys*, measurements, etc.).
- Thorough documentation (how data were collected, processed, analyzed).
- Code/script for the analysis (generally, on suitable platform such as Github).
- Outputs (as much as possible in an “open” format).

Open Data: how to choose the data?

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*Personal data require special attention: **you must ensure GDPR is respected!**

You must to obtain the consent by informing the participants how their data will be handled, processed and implement data protection measures.

To put personal data in open data, you must either obtain the consent or anonymize the data.

RGPD: FAQ et recommandations

Open Data: how to choose the data?

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- Code/script for the analysis (generally, on suitable platform such as Github).
- Outputs (as mu

If you have questions about personal data, contact our Data Protection Officer
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*Personal data re **!**

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To put personal data in open data, you must either obtain the consent or anonymize the data.

Open Data: should I restrict the access?

In case you **cannot anonymize** the data, the **access must be restricted**.

However, the metadata can remain open if they do not contain sensitive information.

Open Data: negative results

“negative” results, *i.e.*, results that do not support a study's initial hypothesis, fail to show a statistically significant effect, or contradict existing literature are most of the time **not published**.

You should still make them available (provided they do not reveal things about data submitted for patent, etc.).

There are some journals that publish such study, but you can also share on preprint repositories like arXiv, biorXiv, psyRxiv, etc. which will assign a DOI and allow them to be cited.

Such output should be valorized (CoARA) as they can save money and time to others that would try to do the same.

Open Data: valorization in the annual Activities Reports

Since December 2025, datasets referenced in ORBi are now valorized in the activities reports!

ORBi UMONS: Reference a dataset

Open Data: a word about licenses

Data without a license cannot be properly used.

There are different licenses that define what can and cannot be done (very similar to the Creative Commons licenses related to bibliographical data).

Typical licenses for open datasets:

- CC0 Public Domain Dedication
- Open Data Commons Attribution License (attribution)
- Open Data Commons Open Database License (attribution and share-alike)
- Open Licence Etalab

Need help?
Contact legal-avre@umons.ac.be

In more details: SPDX License List | Software Package Data Exchange (SPDX)

Resources from the Data Ambassadors Network

- You may need help processing those information or have questions about RDM:
- The Data Ambassadors Network is there for you!
- It is a inter-university network with representatives in each university with the mission to help and guide you with data in general.
- **UMONS Data Ambassadors:**

VISEUR	Robert	Business and Economics	Robert.VISEUR@umons.ac.be
GALLAS	Mohamed-Anis	Architecture	Mohamed-Anis.GALLAS@umons.ac.be
VILLERS	Agnès	Medicine	Agnes.VILLERS@umons.ac.be
PATRIS	Stéphanie	Medicine	Stephanie.PATRIS@umons.ac.be
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SIMOES LOUREIRO	Isabelle	Psychology	Isabelle.SIMOESLOUREIRO@umons.ac.be

- + webinars (data anonymization, how to archive data, etc.)

Resources from the Data Ambassadors Network

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Données sensibles et valorisables	22/04/2022	Données sensibles et valorisables - Webinaire DA FWB-20220422_140413-Enregistrement de la réunion.mp4
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Archivage des Données de Recherche - pourquoi, comment, et pour qui	29/11/2023	Archivage des Données de Recherche _ pourquoi, comment, et pour qui -20231129_143540-Enregistrement de la réunion.mp4

Open Source

Open Source

Closed source software is distributed under licenses that do not allow users to see or modify the source code (like Microsoft Word). The publisher retains full control, and usage is limited to the conditions defined in the license.

Open source software, on the contrary, makes its source code publicly accessible. Anyone can inspect it, reuse it, modify it, and redistribute it - within the limits defined by the license. The main goal is to encourage transparency, collaboration, and reproducibility.

Philosophy & Principles

Open source emerged from academic and hacker communities in the 1980s–1990s, with a strong emphasis on:

- **Transparency**: the code is visible, so errors and biases can be identified and corrected.
- **Collaboration**: development benefits from contributions by a diverse community.
- **Reproducibility**: others can rerun the code to verify results, **provided sufficient documentation accompanies the code.**
- **Freedom of use**: users are not tied to one vendor or platform.

Open Source: where to deposit my code?

There are multiple platforms:

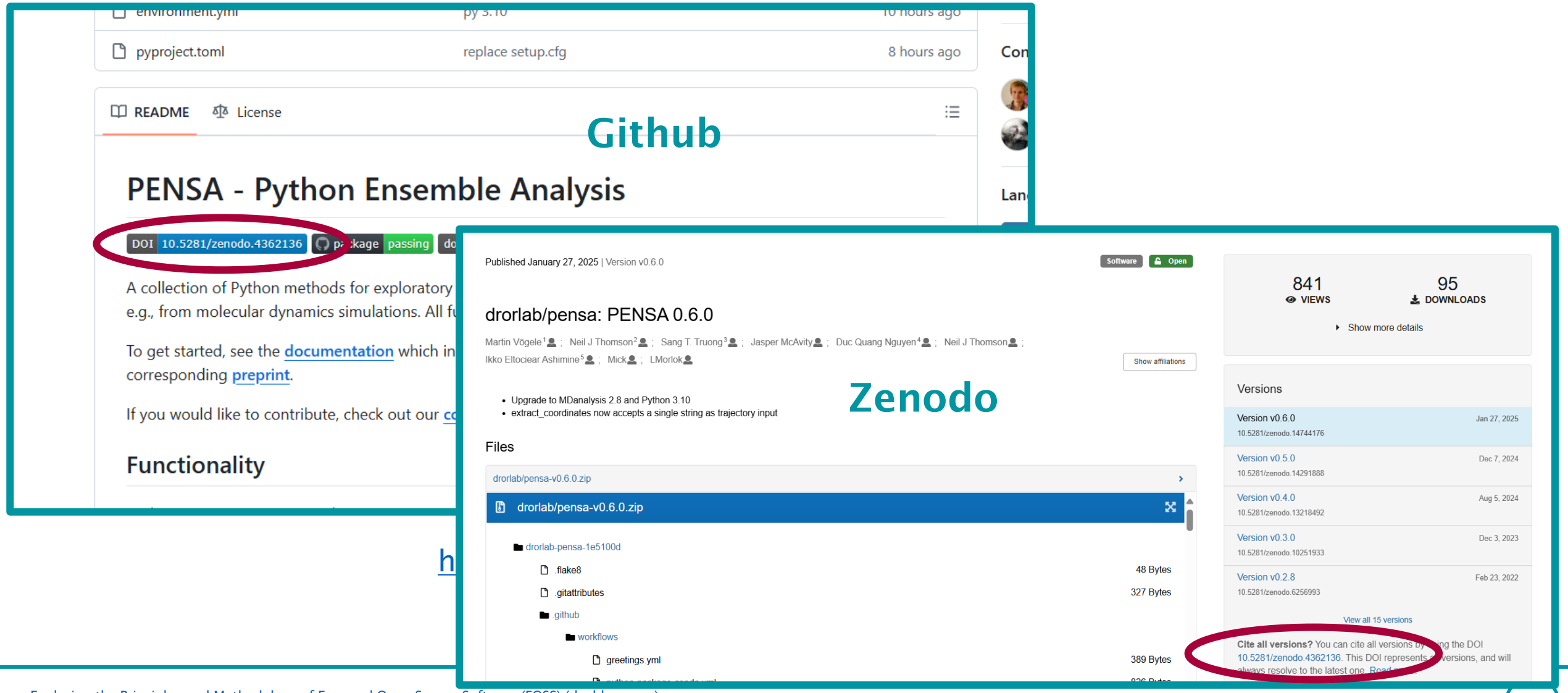
- GitHub
- GitLab
- Bitbucket

However, they do not offer a unique identifier like in a data repository and thus prevent people from properly citing your work.

Solution: add your code repository to a data repository like Zenodo!

https://youtu.be/A9FGAU9S9Ow?feature=shared

Open Source: where to deposit my code?



Open Source: where to deposit my code?

Depositing the code publicly does not mean it is open source!

You must **define a license** that clearly states ***how*** and ***if*** people can use the code.

If there are no attached license, people cannot (*in principle*) use your code, except if they contact you and your provide them an agreement.

Open Source: license

Copyright: related to intellectual property, grants exclusive rights to the authors.

Open source licenses can be categorized as “**permissive**” or “**copyleft**”.

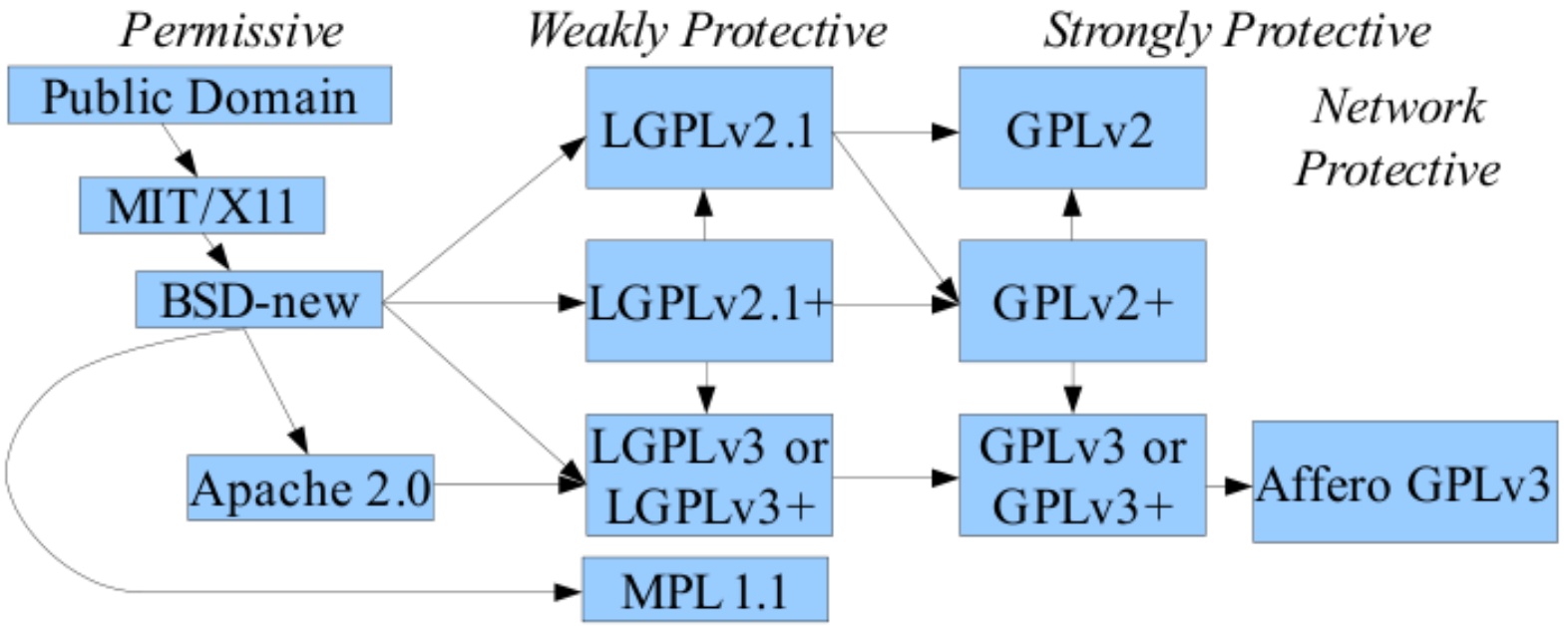
Permissive basically means “do what you want”. It can be used in proprietary softwares and the source code may not be public (**MIT, BSD, Apache-2.0**).

Copyleft is the counterpart of copyright and ensures the software remains free and open source by forcing to distribute derivatives under the same license (**GPL, AGPL, LGPL**).

Open Source: license

There are many licenses related to open source projects.

Here is a non-exhausitive list of compatibility:



Open Source: license

Given the complexity of choosing a license, if you are working on a software or piece of code and want to release it under proprietary terms or under an open source license

Feel free to reach out
Sandrine.BROGNAUX@umons.ac.be
Legal-avre@umons.ac.be

You can also fill in a document to help identifying the needs:

- Software disclosure (.docx)
- Software disclosure (.pdf, fillable)

Open Data: valorization in the annual Activities Reports

Since December 2025, codes referenced in ORBi are now valorized in the activities reports!

Note: Next year, preprints should also be valorized.

Q&A
If I was not able to answer your question, feel free to reach out

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Additional resources

- https://www.budapestopenaccessinitiative.org/read : Budapest Declaration on Open Access
- Some examples of OER: - http://www.podcasts.ox.ac.uk/open , www.oercommons.org, www.fr.khanacademy.org
- https://www.openaire.eu/ : European Commission Open Science Resources
- https://ec.europa.eu/digital-single-market/en/citizen-science : more info about Citizen Science
- https://eosc-portal.eu/belgium : Open Science portal of Belgium
- os-primers (openaire.eu)
- guides (openaire.eu)
- factsheets (openaire.eu)