

Open Science & Open Access

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This presentation

What is Open Science?

What is open access?

- Publishing & open access routes
- Funder requirements
- Predatory publishing

The UNESCO definition is often used



Building on the essential principles of academic freedom, research integrity and scientific excellence, **open science sets a new paradigm** that integrates into the scientific enterprise practices for **reproducibility, transparency, sharing and collaboration** resulting from the increased opening of scientific contents, tools and processes'

Why make science open?

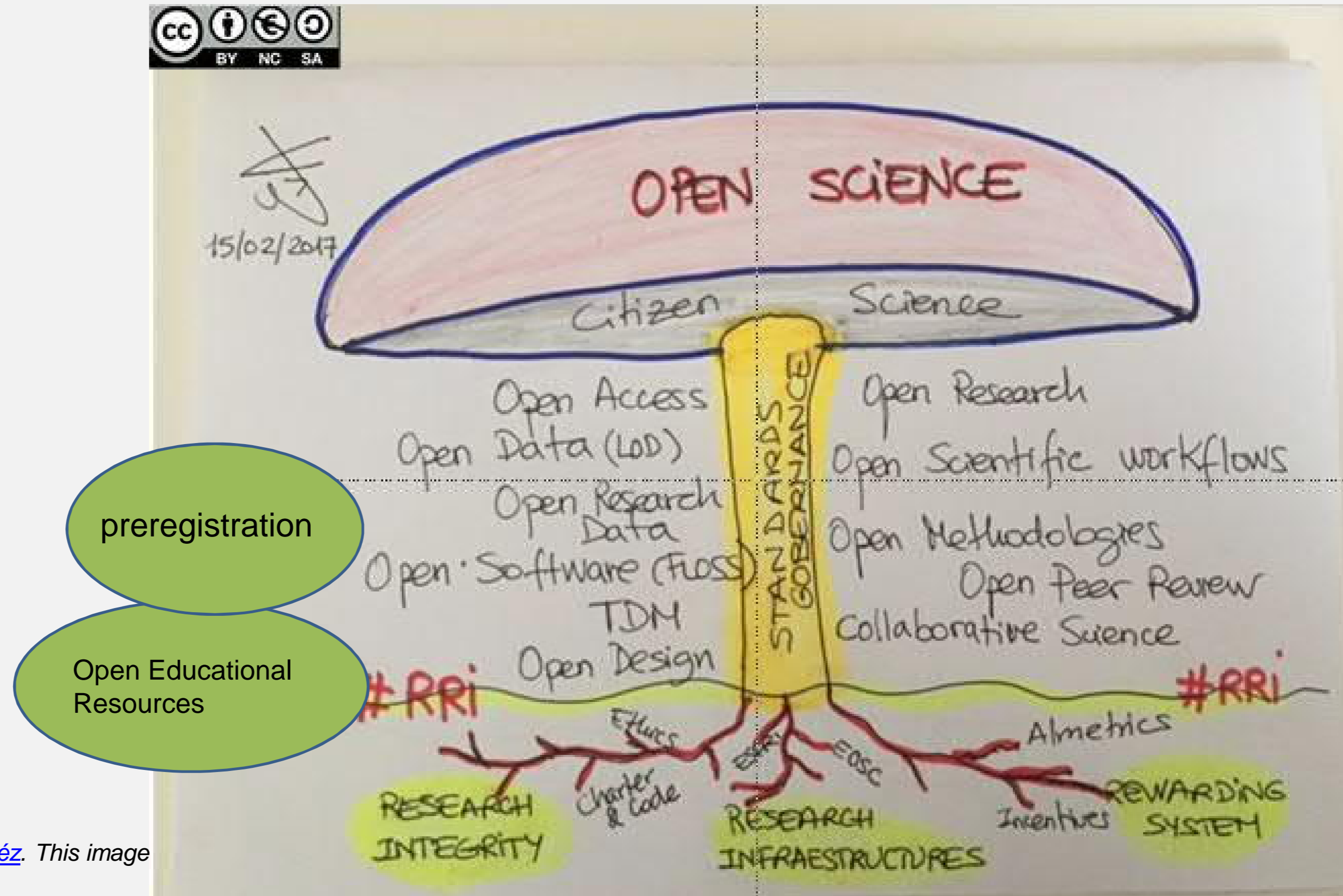
- ❑ It makes scientific processes more efficient, transparent, replicable and effective.
- ❑ Opening research supports validation, reproducibility and reduces cases of misconduct
- ❑ It helps maximize the impact of research and provides the foundations for others to build upon.
- ❑ Applying open science in daily workflows is part of good research practice



OPEN SCIENCE:
JUST
SCIENCE
DONE RIGHT

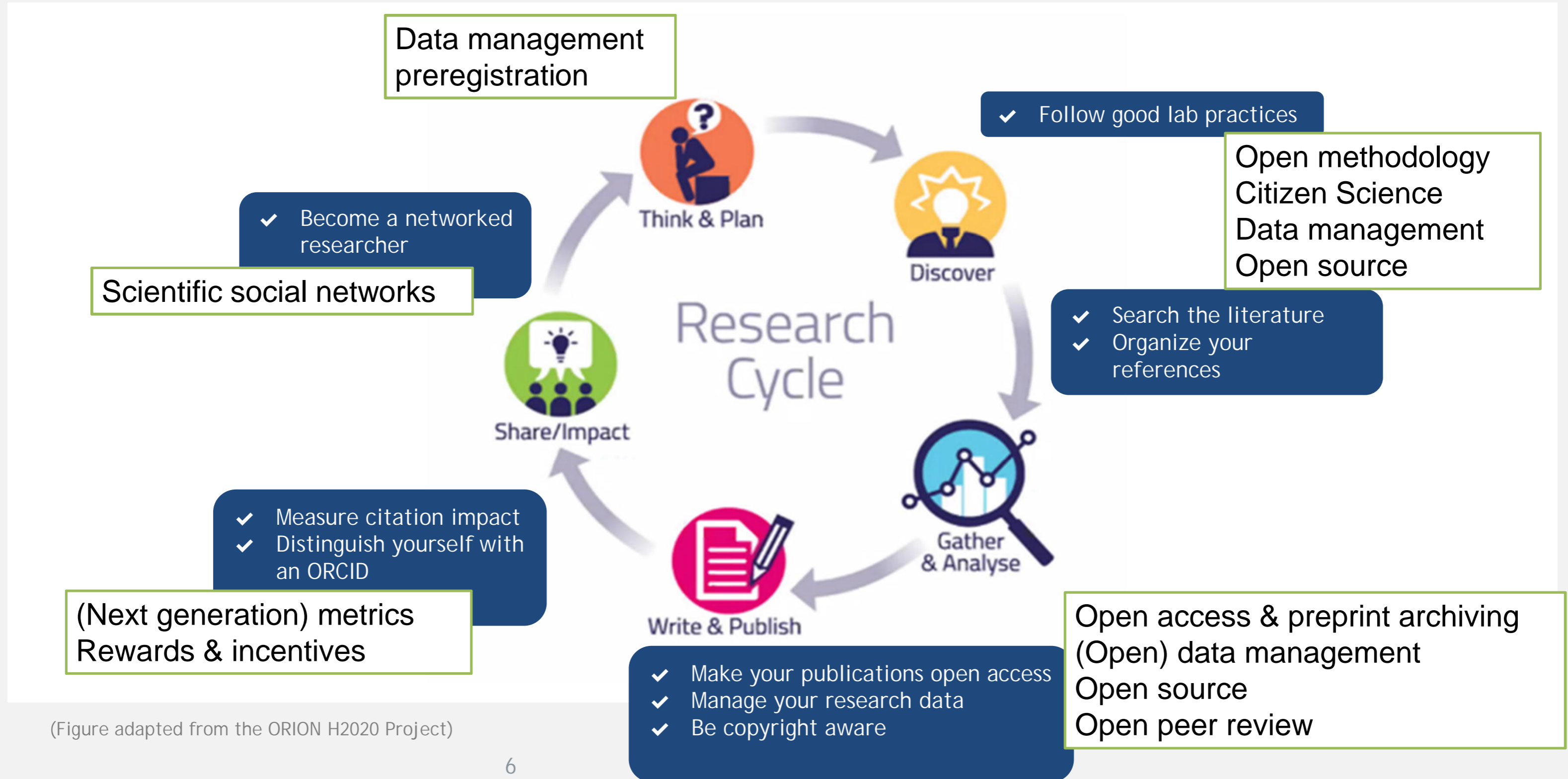
J. Tennant

Open science is an umbrella term



Open Science as an organism, by [Eva Mendéz](#). This image is shared with a [CC-BY-NC-SA license](#)

It affects the whole research cycle and its stakeholders



(Figure adapted from the ORION H2020 Project)

Open Access

WHY PUBLISH IN OPEN ACCESS



No legal, technological, or financial barriers for readers of publications/output derived from publicly funded research

Anyone can read, download, copy, distribute, print such output

WHY PUBLISH IN OPEN ACCESS



Barrier-free access to scientific knowledge, information and data strengthens the basis for development (research), transfer (education), and valorization of knowledge.



Current subscriptions will be untenable for research institutions in the long run



OA enhances visibility and impact → OA publications are retrieved, downloaded and cited more frequently



Funders (and some institutions) demand open access

WHY YOU MAY NOT WANT TO PUBLISH IN OPEN ACCESS



Proliferation of (Open Access) journals, some of which do not yet have the same established **reputation** as traditional journals



You may not have the money to pay for an Article Processing Charge (APC)



Predatory Open Access journals represent a risk for researchers



Double dipping: Publishers receive double income, making it expensive

QUESTION: Do you also need to publish in open access?

THE CURRENT PUBLISHING LANDSCAPE

Subscription journals	Hybrid journals	Full open access journals	... and there's other stuff...
<ul style="list-style-type: none">• 'traditional' option• Businessmodel = subscriptions (library pays)• No costs for authors• Rapidly declining in number	<ul style="list-style-type: none">• The old 'regular' subscription journals ... but with OA as an option• Author decides what option to select	<ul style="list-style-type: none">• Only publishes articles in OA (no subscription option)• Payment of Article Processing Charge	<ul style="list-style-type: none">• Pre-print servers• Diamond open access• Repositories• Platforms (Social media)• Etc.

FULL OA & OA PLATFORMS

Full open access journals (publishers)	Publishing platforms
<ul style="list-style-type: none">• There are 20.000+ open access journals<ul style="list-style-type: none">• Use Directory of Open Access Journals (DOAJ)• Examples: BioMed Central (15 % discount), PLoS, Frontiers, Nature Communications, etc.• Payment of Article Processing Charge (APC)<ul style="list-style-type: none">• Costs vary: €0-8000+• Often no library funding• <u>No payment = no publication.</u>	<p>Publishing platforms (free):</p> <ul style="list-style-type: none">• SCOAP3 - High Energy Physics• SciPost - Physics• Open Library of Humanities• SIGMA- Mathematics• arXiv/bioRxiv• Open Research Europe (currently only for EU funded publications)

HYBRID JOURNALS AND BIG DEALS

The hybrids	Open Access deals
<ul style="list-style-type: none">• Subscription = default OA = optional (NOTE: for some deals: vice versa)• A variant of gold (but sometimes treated as separate entity)• OA is OA: unlimited and cannot be retracted• OA = APC payment, except for... ...Open access deals with publishers	<ul style="list-style-type: none">• Partial or complete portfolio of (usually) major publishers (Elsevier, Wiley, Springer, etc)<ul style="list-style-type: none">◦ Most traditional <u>high impact factor</u> journals (hybrid journals)• Fully or partially <u>free of charge</u> for institutional corresponding authors• Workflow varies per publisher

GREEN OPEN ACCESS (THE 'REPOSITORY ROUTE')

What is it?

A Repository = database of an institution

- Of a university, a funder, but also centred around a topic
- Contains metadata (author, DOI, abstract, etc.) of all relevant/related publications

What is OA about it?

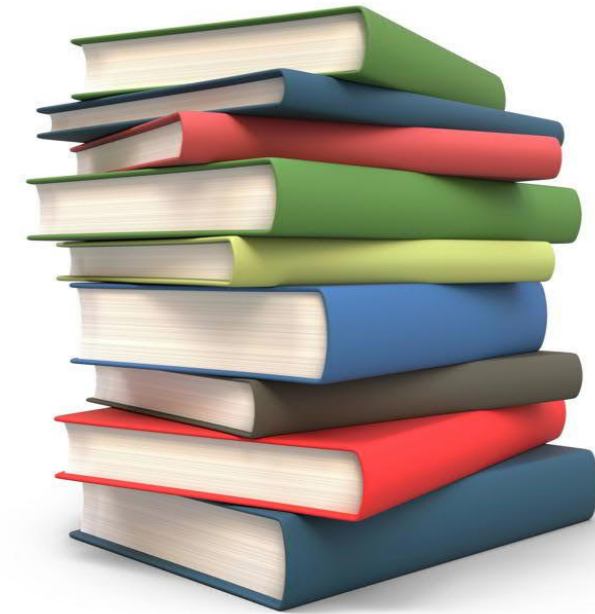
- Attach 'a' version of your paper to your paper's entry, and make it publicly available (OA) free of charge

Why doesn't everybody use it?

- Most publishers require embargo period: period during which paper cannot be made OA in repositories
- Many publishers only allow for upload of post-prints
- 'Free' only in combination with hybrid/closed access journals.
- Only useful for when you already published somewhere else!

OA MONOGRAPHS

- In development
- Not mandatory
- No/limited funding/deals
- High BPC (Book Processing Charges) €6000++

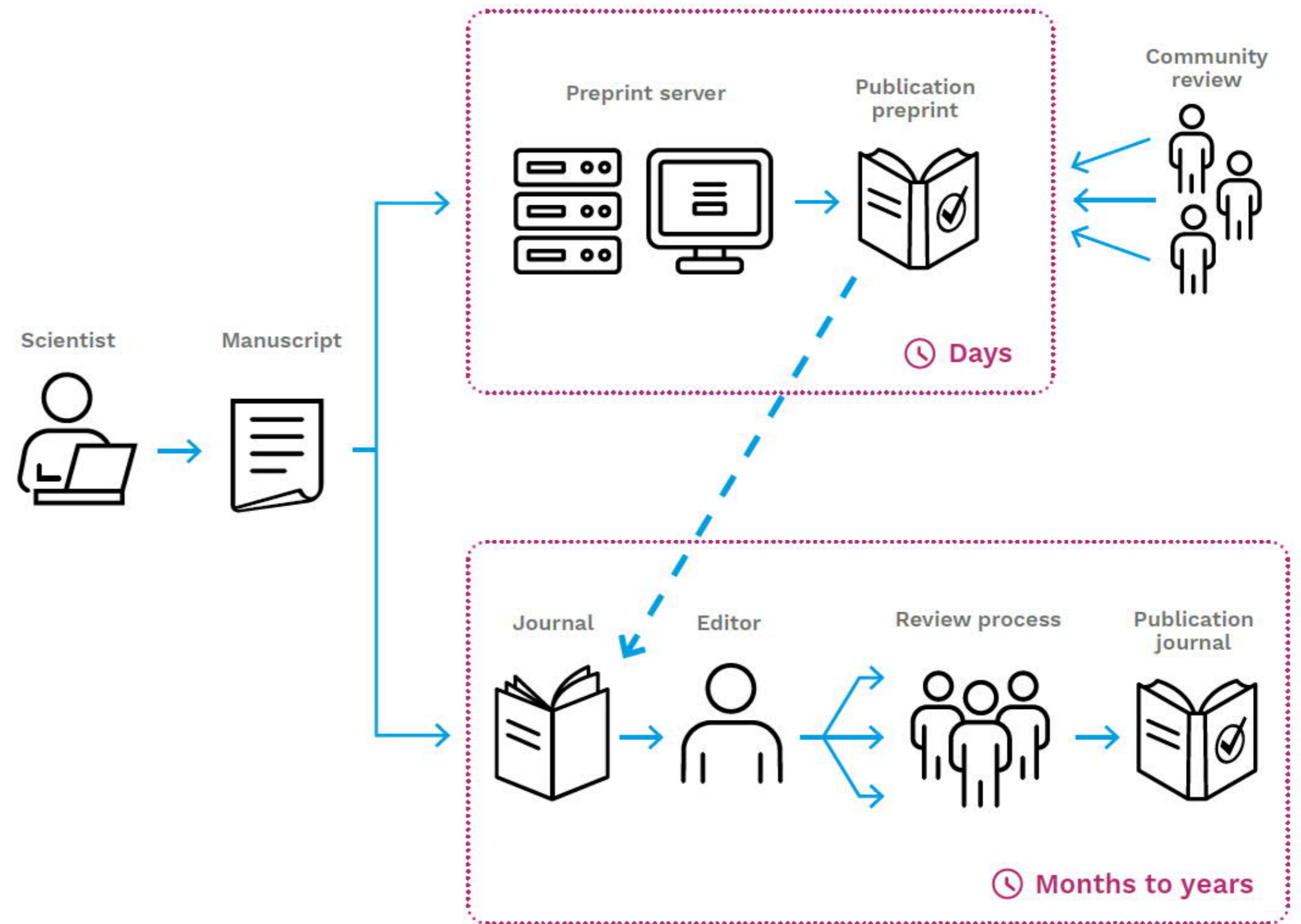


OAPEN

- [Database+](#) for OA books
- [DOAB](#) > Directory of Open Access Books
- OA Books Toolkit: <https://oabooks-toolkit.org/>

THE PRE-PRINT SERVER

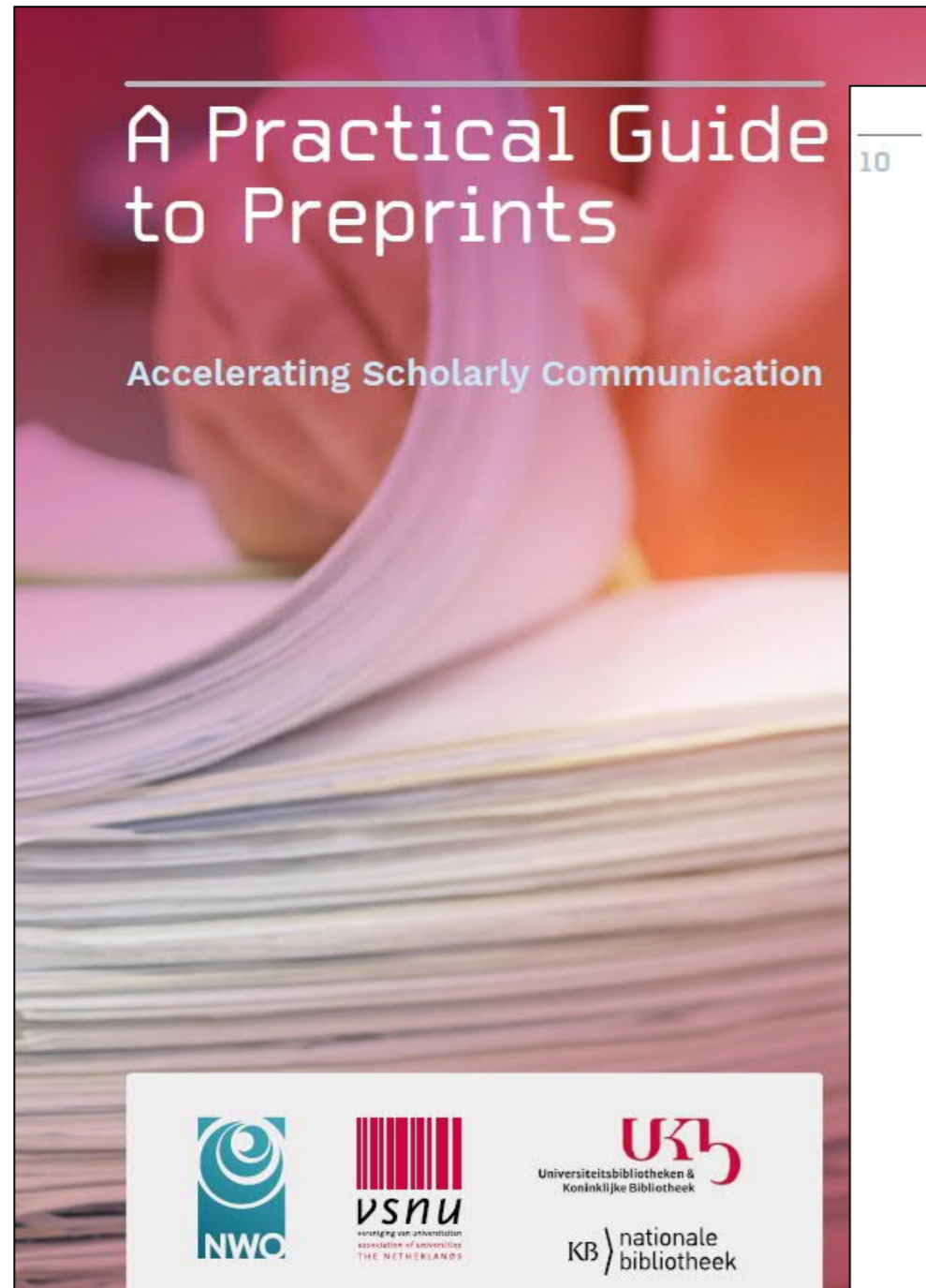
- Online platform where researchers can publicly share draft versions of papers
- Allows for early sharing of findings
- Allows for unofficial peer review
- Paper can be submitted to a journal afterwards
- Pre-print (usually) gets a DOI
 - Pre-print DOI \neq Published version DOI
 - Once published, link publisher version (DOI) to metadata preprint
- Older versions can be replaced with newer versions



Source: <https://zenodo.org/record/5600535>

PREPRINT GUIDE

<https://zenodo.org/record/5600535>



A Practical Guide to Preprints
10 Practical guide

What to consider before selecting a preprint server

Significant questions to answer are:

- What is your target audience? Choose a server that targets this audience. Note that when using a generic or multi-disciplinary archive you can still do a lot yourself for reaching your audience once you have shared your document, like sharing the link/DOI in post on mailings lists and on social media.
- What services does the preprint server offer to fit your needs? For example:
 - a **PID** (e.g., DOI) for your preprint
 - basic quality checks (e.g., correct metadata, plagiarism, completeness, non-scientific content, health or biosecurity risks)
 - long-term guarantees that the preprint server will stay online
 - **open licence** schemes
 - indexing by search engines, such as Google Scholar
 - services that support reviews and endorsements
 - services that support version control and up-to-date preprints after revisions.

This information can often be found on the website of the preprint server. If not, then contact the preprint server. For further reading, a publication on preprint servers' policies was published in [JAMA](#) with additional information on the preprint server [Research Square](#).

How to post a preprint

What to consider before posting a preprint

Check the journal's policy. Most journals allow preprints, but check the journal's preprint policy anyway before you submit your paper. [Sherpa Romeo](#) collects this information for [journals](#). If the policy is not clear or not findable, you can always ask the journal's editor.

Get co-author consent. Make sure your co-authors consent to the submission, including license type and archive choice.

Share data, code and reagents (where applicable). Does your preprint have related data, code or reagents? Consider sharing these as well, link to their identifiers from the preprint record and cite them in the preprint. Preprint servers often offer the possibility to already reserve a DOI when creating a preprint record. This DOI can then be included in the preprint document and also cited from the data/code/reagents record. Some preprint servers also act as data or code repositories (like Zenodo or the Open Science Framework), but most do not. Do not forget to attach a licence to the data and/or code as well. Please also check the policy of your institution regarding sharing data, code and reagents beforehand and/or contact your [library open access contact](#).

A Practical Guide to Preprints
Practical guide 11

How to prepare a preprint

A preprint should be prepared at least as well as a journal submission, so make sure your article's structure is logical, the numbers add up and the language is checked, preferably by a native speaker.

How to upload a preprint

Upload instructions differ between preprint servers, but the process can be compared to a journal's submission process. It is expected to at least enter the title and abstract of the paper, state the co-author details and upload the preprint file, but sometimes the procedure is much more elaborate. Adding metadata such as keywords will help the findability of your paper.

What licence to choose for a preprint

Although attaching a licence to a preprint is not always mandatory, it is highly recommended so that it is clear how your preprint can be (re)used and to make sure that the copyright remains with the authors. Many preprint servers provide a range of open licences with different levels of restriction to choose from. For an overview of standard licence (Creative Commons) types and tips for choosing a licence, see [this web page](#) or for a more elaborate guide go to [this web page](#).

Keep in mind that the available and/or required licences may differ per preprint server and – if applicable – your research funder. Please note that you can choose a different licence for your preprint than for the Version of Record.




Photo: Shutterstock - sdeconet

AND THERE'S OTHER (OPEN ACCESS) STUFF...

Bronze

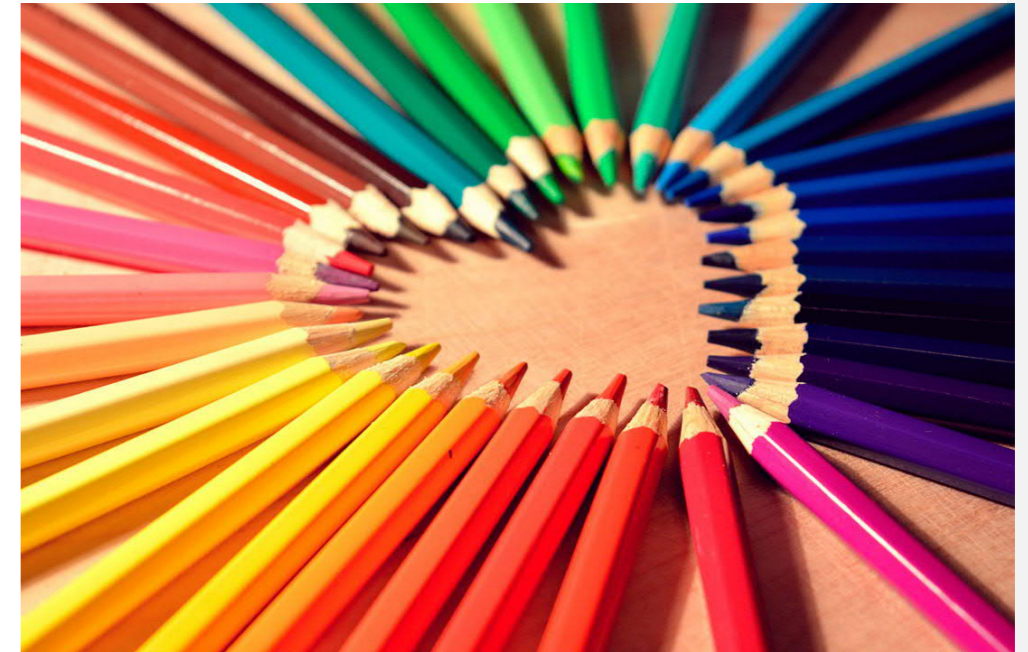
- Publisher decides to open paper, often temporarily
- Not OA → true OA is unlimited and cannot be retracted

Grey

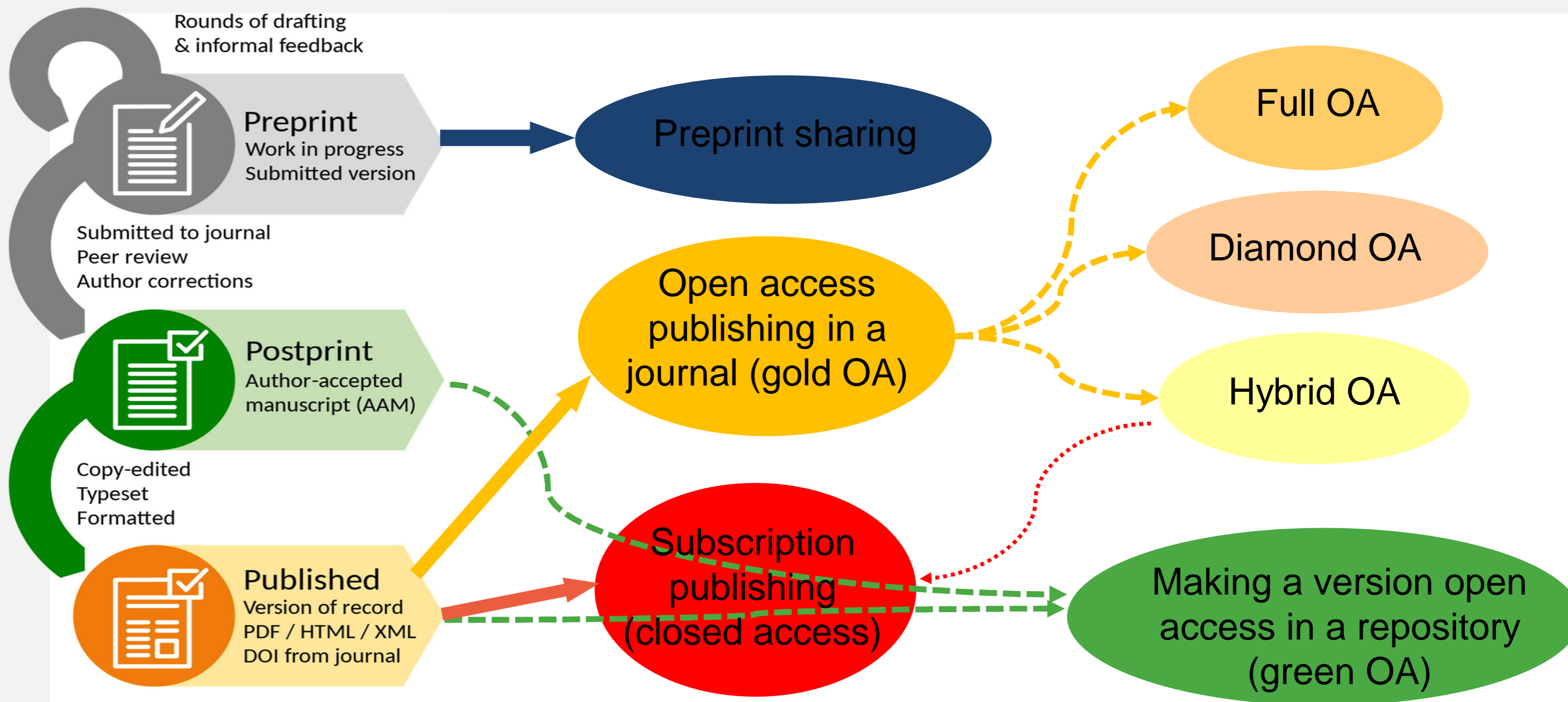
- making paper available on author website or social media
- Not (recognized) OA → for funders and policy-makers, paper needs to be available on recognized platform/journal (+ using publisher version is often illegal)

Black

- Illegally acquired papers (example: Sci-Hub)
- Not OA → OA is legal and properly licensed

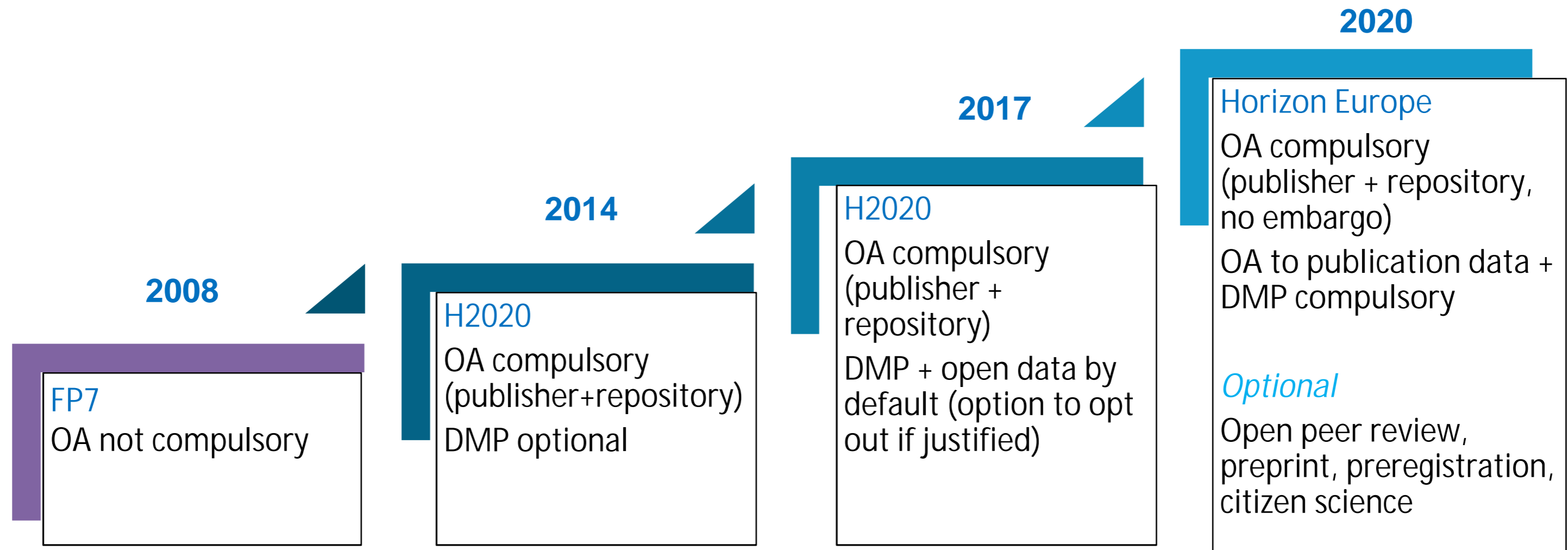


Summary: Open access in the publishing landscape



Funders demand open access (and encourage open science)

Evolution of EC's Open Science requirements



FUNDERS: OA REQUIREMENTS

Funders

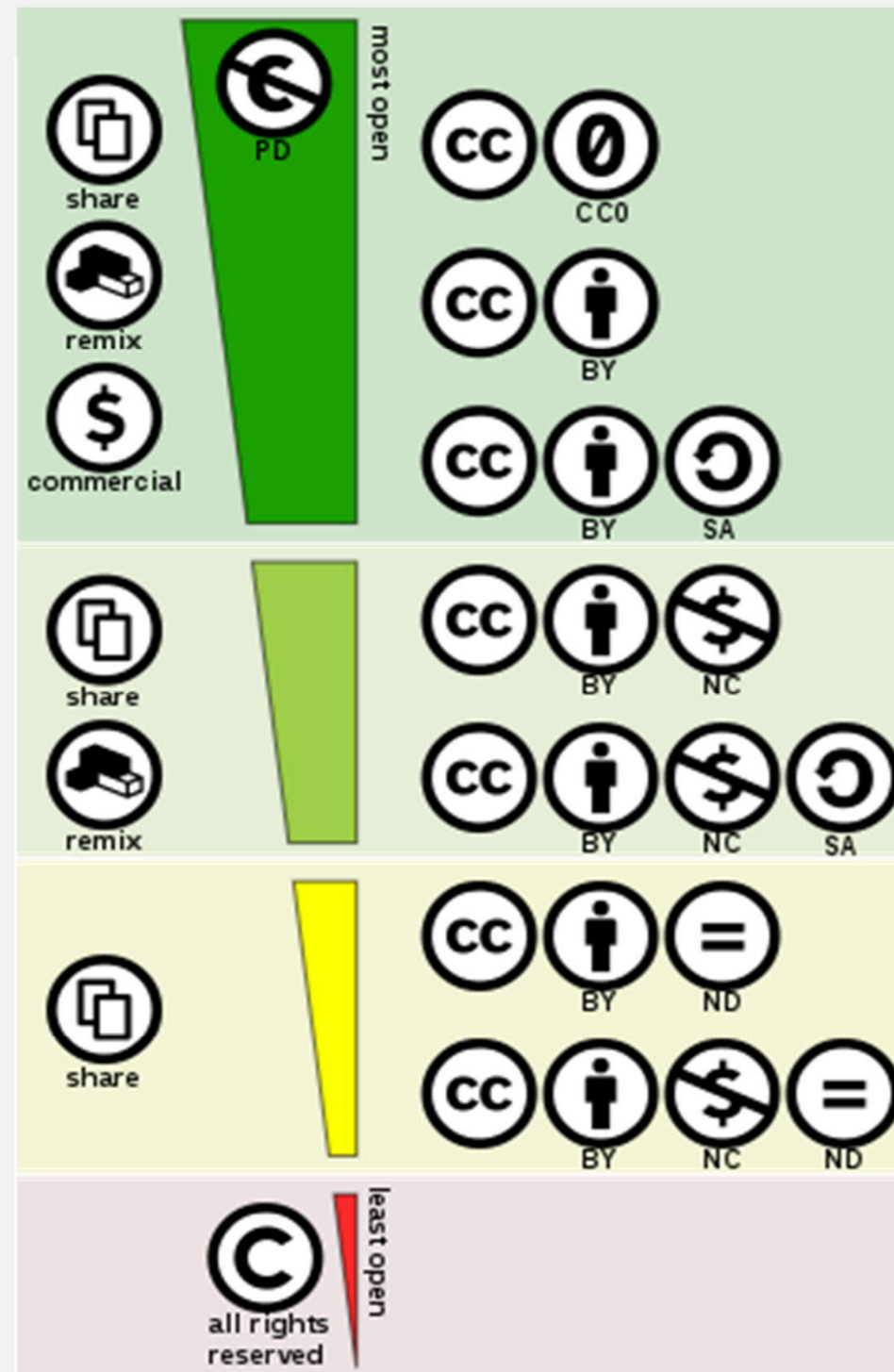
- **NWO/ZonMw (part of Plan S)**
 - Immediate OA on publication of funded research (green allowed, but 0 embargo)
 - APC funding (at application), but only full OA is allowed (**NO hybrids**)
 - Non-commercial license not allowed; non-derivatives only exception
- **HorizonEurope (active projects):**
 - Immediate OA on publication of funded research (green allowed, but 0 embargo)
 - APC funding (at application), but only full OA is allowed (**NO hybrids**)
 - Limited number of licenses allowed
- **Bill&Melinda Gates foundation:** immediate OA on publication *in journal*; APC payment for all journals; only CC-BY 4.0 allowed
- **WHO:** max 12 months embargo (in PubMed Central); APC payment for all journals; various licenses allowed



Check yourself:

<https://v2.sherpa.ac.uk/juliet/>

CREATIVE COMMONS LICENSES






- Most commonly used open access licence
- Used by most publishers
- Can be assigned by authors themselves

Guide CC-BY licences:




<https://zenodo.org/record/4741966#.Yg4nkOjMJPY>

Creative commons licenses (part 1)

Licence designation	Licence name	What does this mean for you as an author?
<p>CC BY</p> 	<p>Attribution</p>	<p>The most liberal of the CC licences apart from CC0 Public Domain Dedication. This licence allows others to distribute, remix, tweak, and build upon a work – also commercially – provided they credit the author for the original creation and clearly indicate that changes were made to the work, if any.</p>
<p>CC BY-SA</p> 	<p>Attribution ShareAlike</p>	<p>Similar to CC BY; however, others must licence new creations under identical terms. Therefore, all new works reusing (parts of) such work will need to carry the same licence and any derivatives will also allow commercial use.³</p>
<p>CC BY-ND</p> 	<p>Attribution NoDerivatives</p>	<p>This licence allows for redistribution, commercial and non-commercial, provided it is passed along unchanged and in whole, with credit to the author.</p>

Source: https://zenodo.org/record/4090923#.Y0_ZwXZBxPY

Creative commons licenses (part 2)

Licence designation	Licence name	What does this mean for you as an author?
<p>CC BY-NC</p> 	<p>Attribution Non-Commercial</p>	<p>With this licence others must not remix, tweak, or build upon the original work for commercial purposes. Although new works must also acknowledge the author and be non-commercial, reusers do not have to licence their derivative works on the same terms.</p>
<p>CC BY-NC-SA</p> 	<p>Attribution Non-Commercial ShareAlike</p>	<p>This licence lets others remix, tweak, and build upon the author's work non-commercially, provided they credit the author and licence their new creations under the identical terms.</p>
<p>CC BY-NC-ND</p> 	<p>Attribution Non-Commercial NoDerivatives</p>	<p>This is the most restrictive of the six licences, only allowing others to download works and share them with others as long as they credit the author, but they cannot change them in any way or use them commercially.</p>

Source: https://zenodo.org/record/4090923#.Y0_ZwXZBxPY

Open access vs closed access: WHAT ABOUT QUALITY?

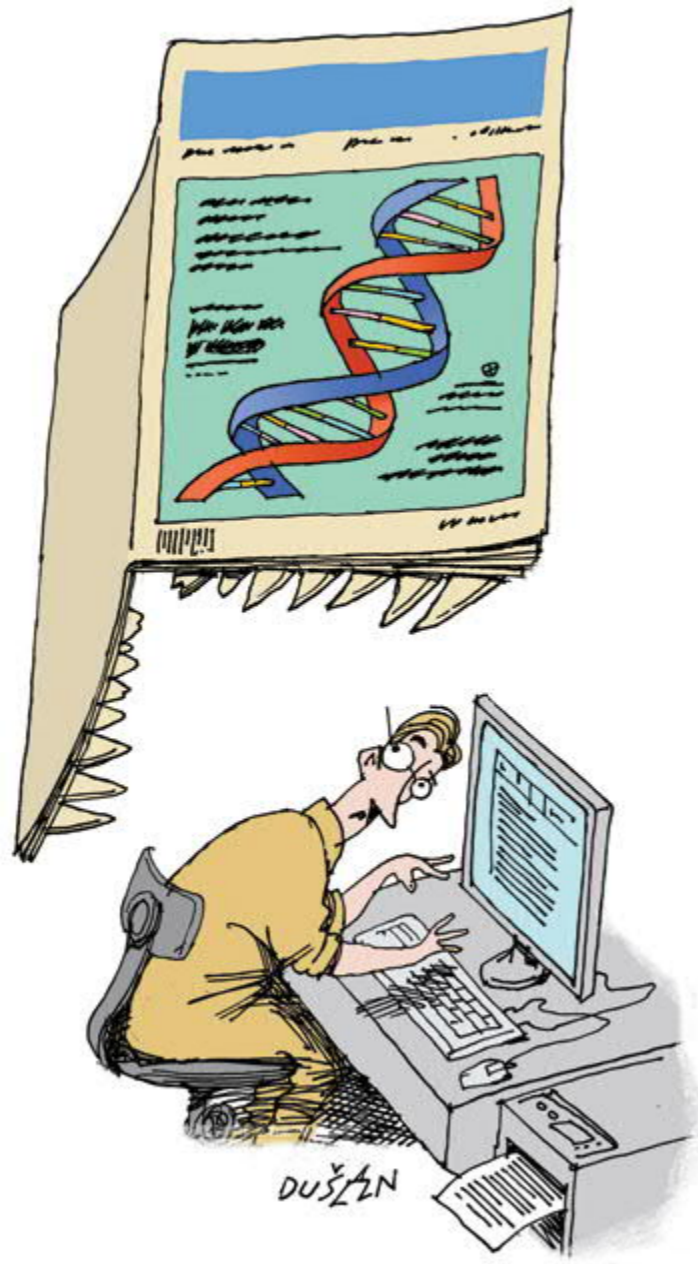
There is no difference in quality between OA and non-OA journals!

(there *is* a difference in quality between various journals in general, but that is not necessarily related to its OA character)

(... with the **exception of predatory journals**...)

(... and possibly the odd publisher that focuses on speed too much ...)

'PREDATORY PUBLISHERS'



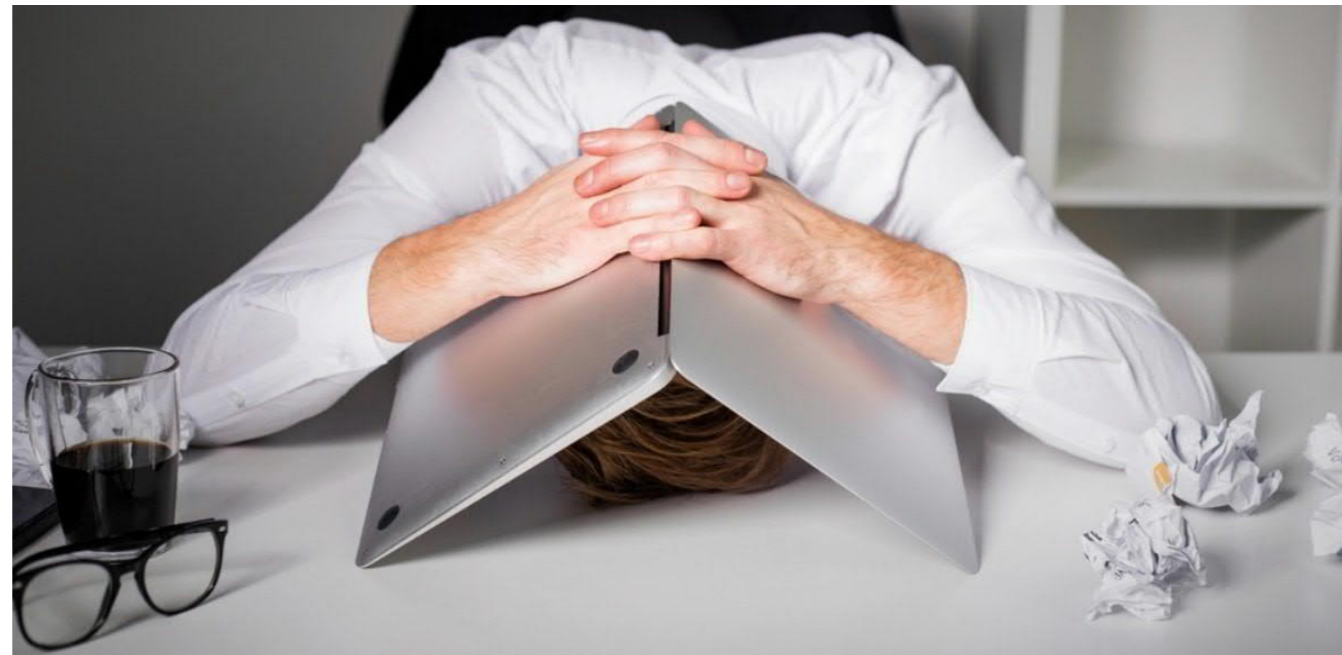
- (almost) always full open access journals
 - APC payment in advance open for misuse
- Gives the impression of providing a full and qualitative service...but:
 - provides no/limited service
 - limited/no quality check
 - No transparency regarding peer review process
- Additionele charges may add up
 - Initial costs APC relatively low, but extra payment may be required

AAARGGGHHHHH...



Problem: you cannot simply retract your paper!!

- They will charge you for retraction
 - ...or publish your paper if you do not pay
 - ...(thus making your paper useless for a legitimate journal)



but there are: COUNTERMEASURES

White lists (quality assessors)

- [DOAJ \(Directory Open Access Journals\)](#)
- [OASPA \(Open Access Scholarly Publishers Association\)](#)
- [COPE \(Committee on Publication Ethics\)](#)

Checklists

- [Think, check, submit checklist](#)

Blacklists

- ['list of predatory publishers'](#) (a.k.a. Beall's list)
 - Watch out: unknown criteria!



4 tips for
managing your
(open access)
publications

1. Be aware of OA from the start

Check requirements

(BEFORE submission, but preferably before writing)

- [SHERPA/JULIET](#)
- Institutional policies, Funder policies etc. Inquire at your University Library

4. Funding & deals

Check for deals

- [Dutch Universities OA Journal Browser](#)
- Check your institution library

2. Check a journals options

Is there an OA option?

Is it a full OA journal

What is the green policy?

- [SHERPA/ROMEIO](#)

4. Predatory publisher

- [DOAJ](#), [COPE](#), [OASPA](#)
- [Think, check, submit](#)

QUESTIONS

