The manuscript life cycle: from preprints to the version of record

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Transferring knowledge

Why are we here (in Academia)?

- Teaching/training
    - Knowledge transfer, degree awarding
- Research
    - Findings using a systematic scientific method
    - Innovation, transfer (i.e. to industry)

What do these activities have in common?

- Results/knowledge/methods delivery and **dissemination**

Disclaimer: academic fields

Audience today: sociology, engineering, computer science, psychology, stats, medicine, bioinformatics, cancer research, arts…

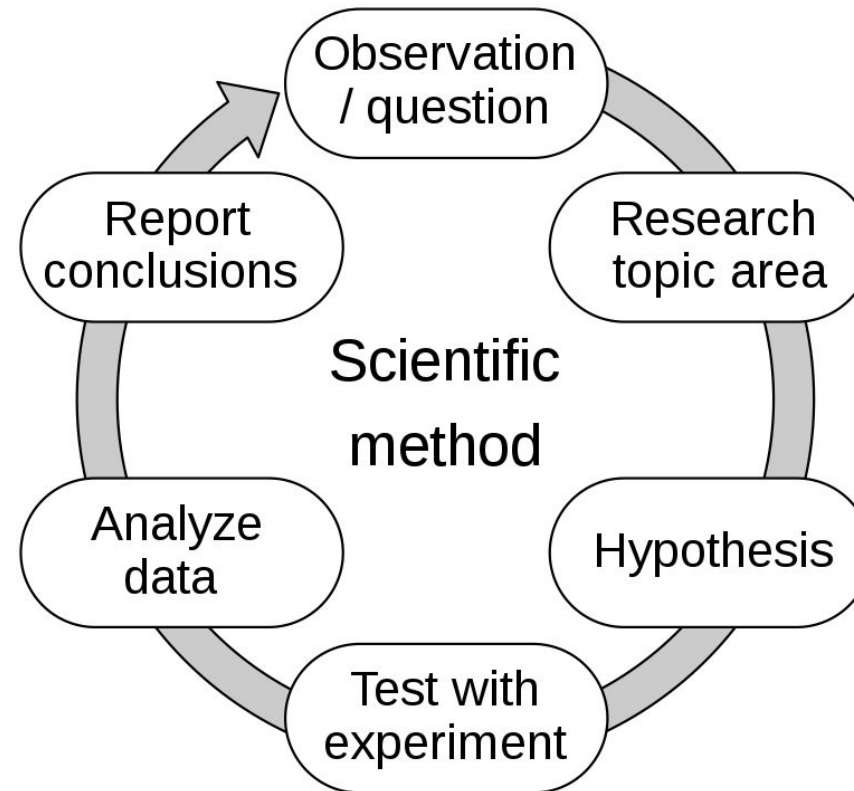Academic publishing strategy varies across disciplines

Subfield-specific variants (that I'm aware of)

- Natural sciences
  - Journals
- Computer science
  - Journals
  - Conferences proceedings
- Social sciences
  - Journals
  - Professional magazines and books
- Humanities
  - Journals
  - Books

The scientific method (in empirical sciences)

- Do we agree disseminating results is the last step?
- Why? What do we gain for reporting conclusions?

Adapted from Efbrazil,
https://commons.wikimedia.org/w/index.php?curid=102392470

Scientific publishing

- Aims
  - Disseminate ideas, approaches, results to a selected or broad audience
  - Define authorship
  - Define priority (being the first scientist reporting a finding)

- "Academic" procedure
  - Manuscript/conference/book/letter writing
  - Peer review
  - Editorial management, printing, file serving

What do we need to effectively disseminate results?

- Reach out the "right" audience
  - Broad or specialist

- Get validation by peers/peer-review

- Obtain a tangible, citable publishing "record" (identifier)

Early days of academic publishing
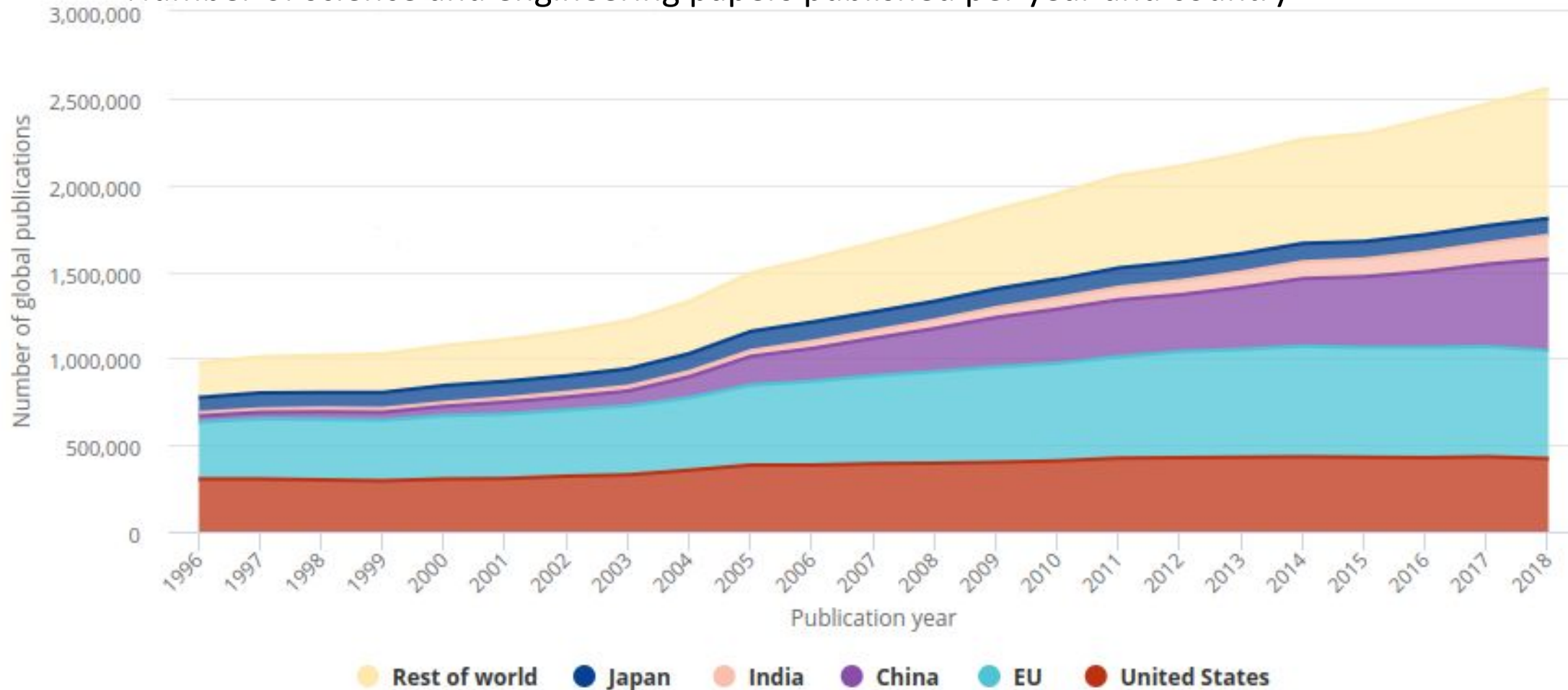
Newton's second letter to Leibniz (Oldenburg), 1677

"The foundations of these operations is evident enough, in fact; but because I cannot proceed with the explanation of it now, I have preferred to conceal it thus: **6accdae13eff7i3l9n4o4qrr4s8t12ux**. On this foundation I have also tried to simplify the theories which concern the squaring of curves, and I have arrived at certain general Theorems."

Source: https://www.mathpages.com/home/kmath414/kmath414.htm

Modern days of academic publishing

Number of science and engineering papers published per year and country

National Science and Engineering indicators, 2018 https://ncses.nsf.gov/pubs/nsb20206/

Who is behind academic publishing?

- (Non-profit) scientific societies
  - (1665) Philosophical Transactions of the Royal Society

- **Commercial** publishers
  - Elsevier, Springer, Wiley-Blackwell, etc

- Non-profit (article processing charges-free publishers)
  - Diamond Open Access

Steps to disseminate an academic work

1. Draft manuscript
2. Submit to peer review
   a. Get feedback
3. Improve the manuscript
4. Go to 2, until accepted
5. Copy editing, typesetting
6. Approve proof-read version
7. Maybe transfer copyright to publisher
8. Release version of record
9. Reach readers
   a. Set a paywall?

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Naming the manuscripts by stage

- Author's Original (AO) – manuscript ready for submission
- Submitted Version Under Review (SMUR) – manuscript under peer review
- Accepted Manuscript (AM) – version accepted for publication
- Proof (P) – copy-edited version of AM

  ← Formal publication

- Version of Record (VoR) – fixed version of journal article formally published
- Corrected Version of Record (CVoR) – VoR in which errors have been corrected
- Enhanced Version of Record (EVoR) – enhanced VoR with supplementary material

(National Information Standards Organization Working Group, 2008)

Recommended read: Haustein, Bowman, and Costas (2015) arXiv:1505.00796

Open Access: short definition

"Open Access is a new way of disseminating research information, made possible because of the World Wide Web."

Alma Swan, 2012 (UNESCO)

https://unesdoc.unesco.org/ark:/48223/pf0000215863

Open Access: longer definition (excerpts)

"The literature that should be freely accessible online is that which scholars give to the world without expectation of payment."

"By open access to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search"

"The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited."

Budapest Open Access Initiative

What does "closed access" mean?

- Closed access (or toll access), is the opposite of open access: readers can access publications for a **fee**
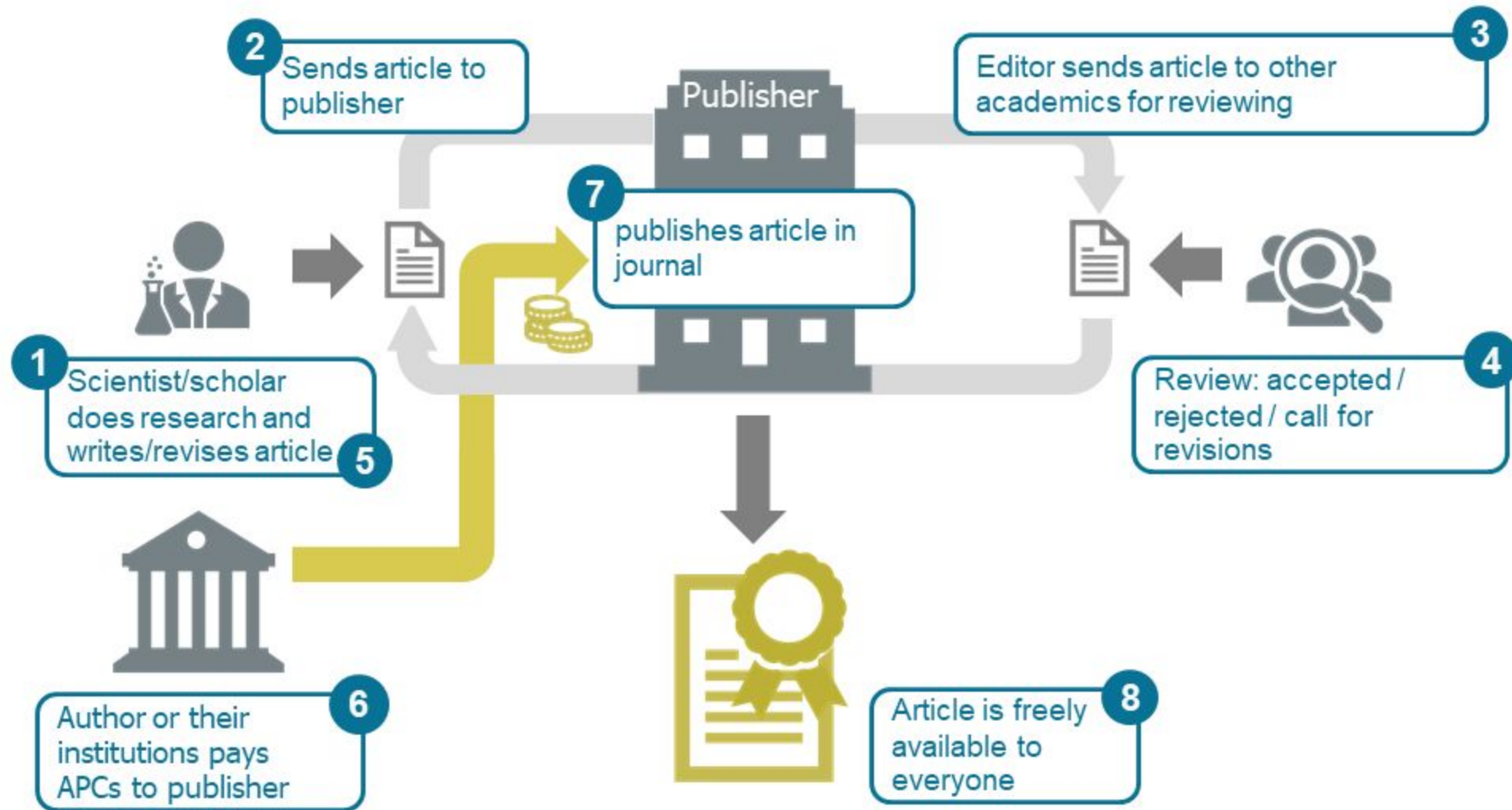 - (the fee can be paid by their library)

Is there only one Open Access flavour?

- We aim to make the research outputs **open to the reader**
  - **What?** The accepted manuscript? the ongoing manuscript draft?
  - **Where?** Publisher web, author's web?
  - **When?** After publication, before publication?
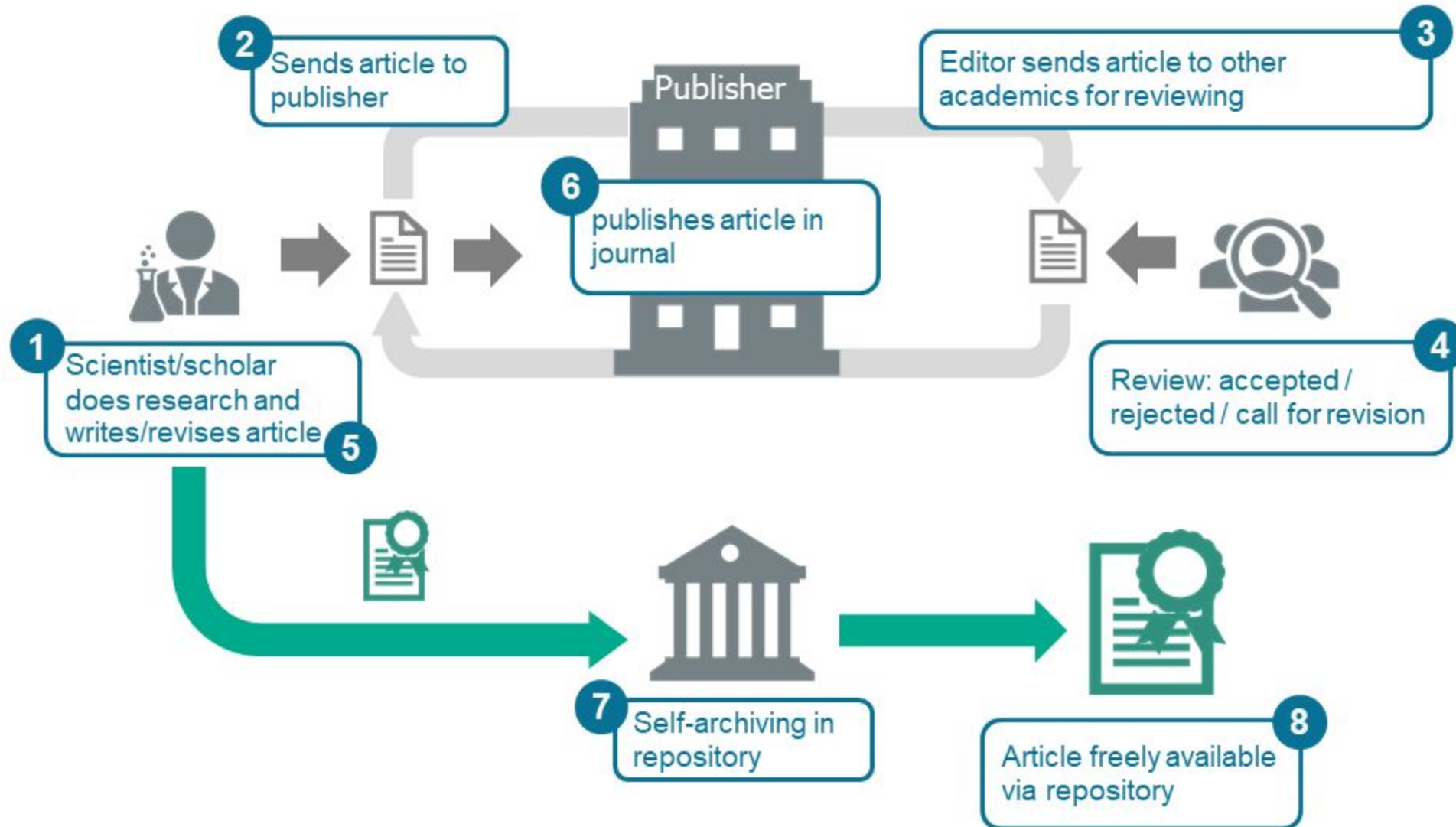 - If the reader reads for free, **who pays**?

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	OA version	Open where?	Timing	Restrictions	Who pays?
	Green	Institutional/disciplinary/funder repository	Embargoed (approx. 6-12 months)	AM	Reader (when embargoed)
	Gold	Publisher	Upon publication	VoR	Author, institution, or funder
	Platinum	Publisher	Upon publication	VoR	Institution or funder
	Diamond	Publisher	Upon publication	VoR	Professional society
	Bronze	Publisher	Embargoed or upon publication	VoR; No reuse license	Author, institution, or funder

https://pubs.acs.org/doi/full/10.1021/acsguide.10503

Academic Publishing: Gold Open Access

By open-access.network https://open-access.network/informieren/open-access-grundlagen/open-access-gruen-und-gold

Academic Publishing: Green Open Access (Post-Prints)

2 Sends article to publisher

3 Editor sends article to other academics for reviewing

Publisher

6 publishes article in journal

1 Scientist/scholar does research and writes/revises article

4 Review: accepted / rejected / call for revision

5

7 Self-archiving in repository
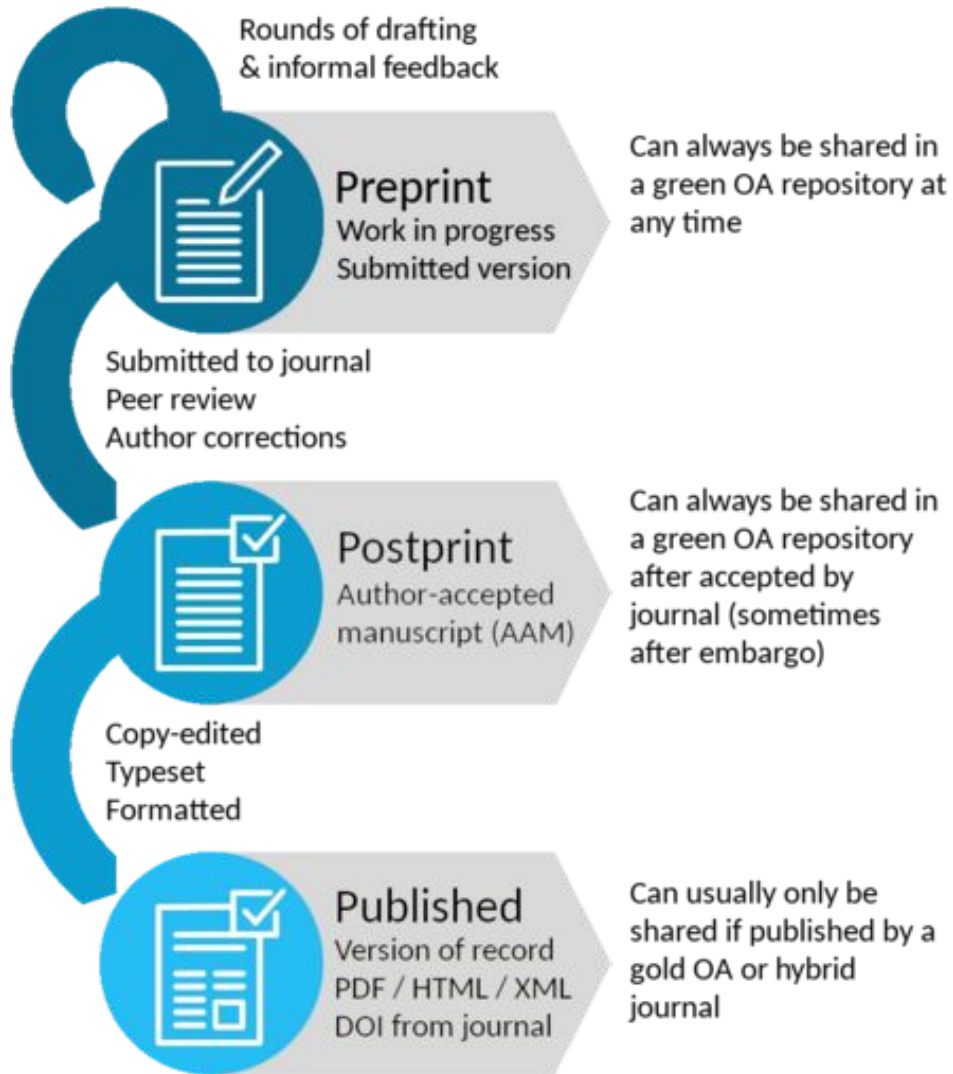
8 Article freely available via repository

What is a preprint?

A preprint is a not peer-reviewed manuscript

Can be deposited (Open Access) in a preprint server (BioRxiv, arXiv, medRxiv…)

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	Gold	Publisher	Upon publication	VoR	Author, institution, or funder
	Platinum	Publisher	Upon publication	VoR	Institution or funder
	Diamond	Publisher	Upon publication	VoR	Professional society
	Bronze	Publisher	Embargoed or upon publication	VoR; No reuse license	Author, institution, or funder

https://pubs.acs.org/doi/full/10.1021/acsguide.10503

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Rounds of drafting & informal feedback

Preprint
Work in progress
Submitted version

Can always be shared in a green OA repository at any time

Submitted to journal
Peer review
Author corrections

Postprint
Author-accepted manuscript (AAM)

Can always be shared in a green OA repository after accepted by journal (sometimes after embargo)

Copy-edited
Typeset
Formatted

Published
Version of record
PDF / HTML / XML
DOI from journal

Can usually only be shared if published by a gold OA or hybrid journal

Regardless of the version of record, preprints and postprints can be shared

Source: By open-access.network
https://open-access.network/informieren/open-access-grundlagen/open-access-gruen-und-gold

Based on: Shafee, Thomas (2020). Typical publishing workflow for an academic journal article (preprint, postprint, and published) with open access sharing rights per SHERPA/RoMEO

But, then, what is a "published" manuscript?

- Author's Original (AO) – manuscript ready for submission
- Submitted Version Under Review (SMUR) – manuscript under peer review
- Accepted Manuscript (AM) – version accepted for publication
- Proof (P) – copy-edited version of AM

    ← Formal publication

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(National Information Standards Organization Working Group, 2008)

More details at Haustein, Bowman, and Costas (2015) arXiv:1505.00796

Recap till here: transferring knowledge

- Aims
  - Disseminate ideas, approaches, results to a selected or broad audience
  - Define authorship
  - Define priority (being the first scientist reporting a finding)

- Open Access-friendly procedure
  - Draft the manuscript
  - Deposit in a preprint server
  - Submit to a journal, maybe Open Access
  - Deposit the postprint (i.e. in ZORA, if from University of Zurich)

Open Access Policy UZH from 2008

University of Zurich UZH

OA as Strategic Goal

Data Management Support

Data Repositories

Open Access Publication Funding

ZORA Publication Platform

ZORA for Submitters and Editors

HOPE OA Journal Publication

Basics & Backgrounds

Open Science Delegates

Data Management Basics

Data Management Requirements

OA Basics

UZH Open Access Policy

OA as Strategic Goal

Copyright

ORCID

1. The UZH obliges its researchers to deposit a complete version of all published scientific works in the Zurich Open Repository and Archive (ZORA), if there are no legal objections.

2. The UZH encourages its researchers to publish their scientific works in an appropriate Open Access journal and provides the necessary support.

3. The Annual Reports of the UZH are based on ZORA. In the Annual Reports, publications are only considered if they have previously been deposited in ZORA.
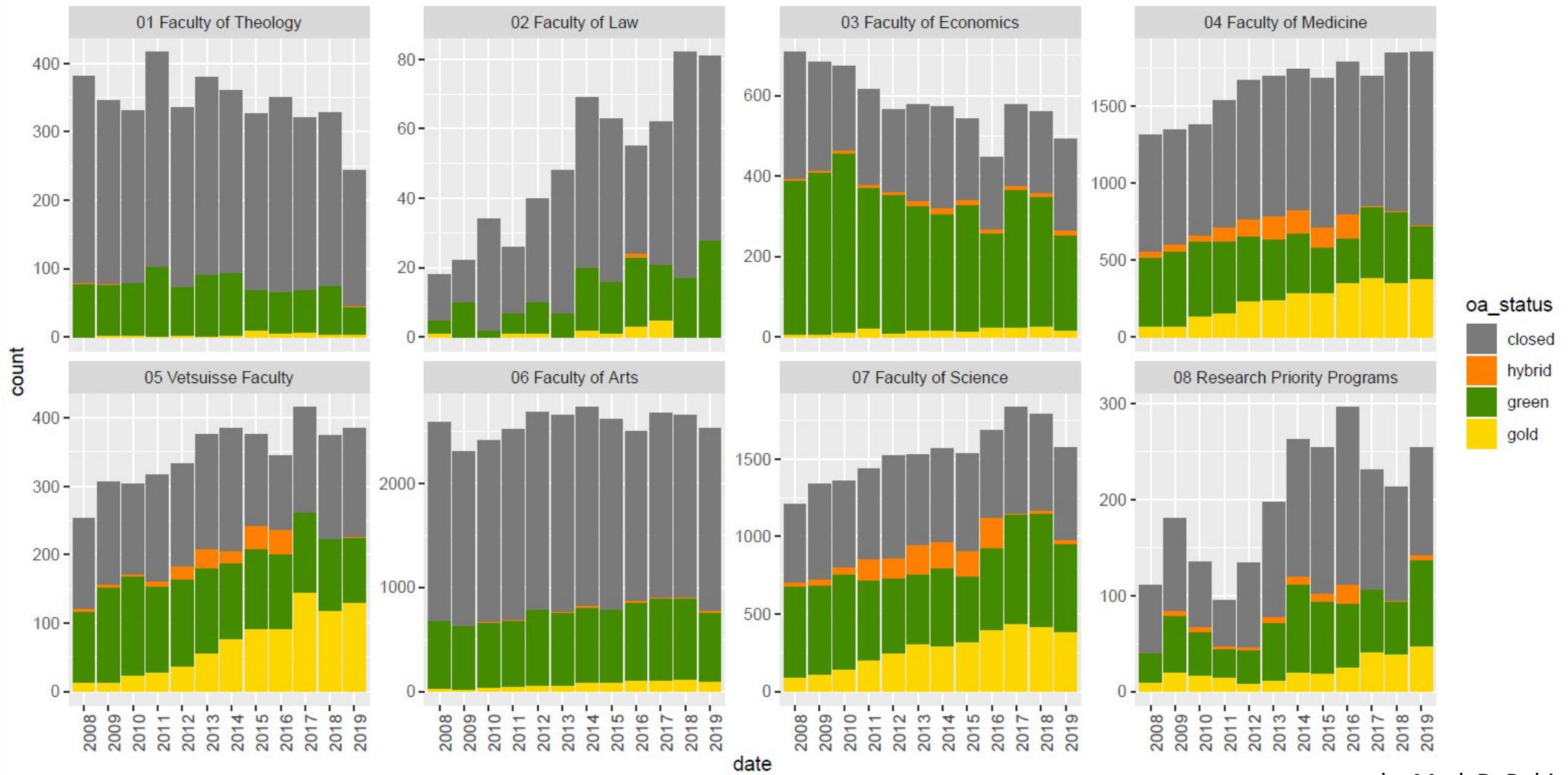
Open Access Policy UZH from 2021

UZH expects its researchers to deposit all their published scientific works in the Zurich Open Repository and Archive (ZORA). The UZH Academic Reports are based on ZORA.

UZH supports Open Access structurally (operation of repositories, Open Access journals, journal flipping, etc.) and individually with financial resources and administrative support (for example Article Processing Charges[APC] / Book Processing Charges [BPC]).
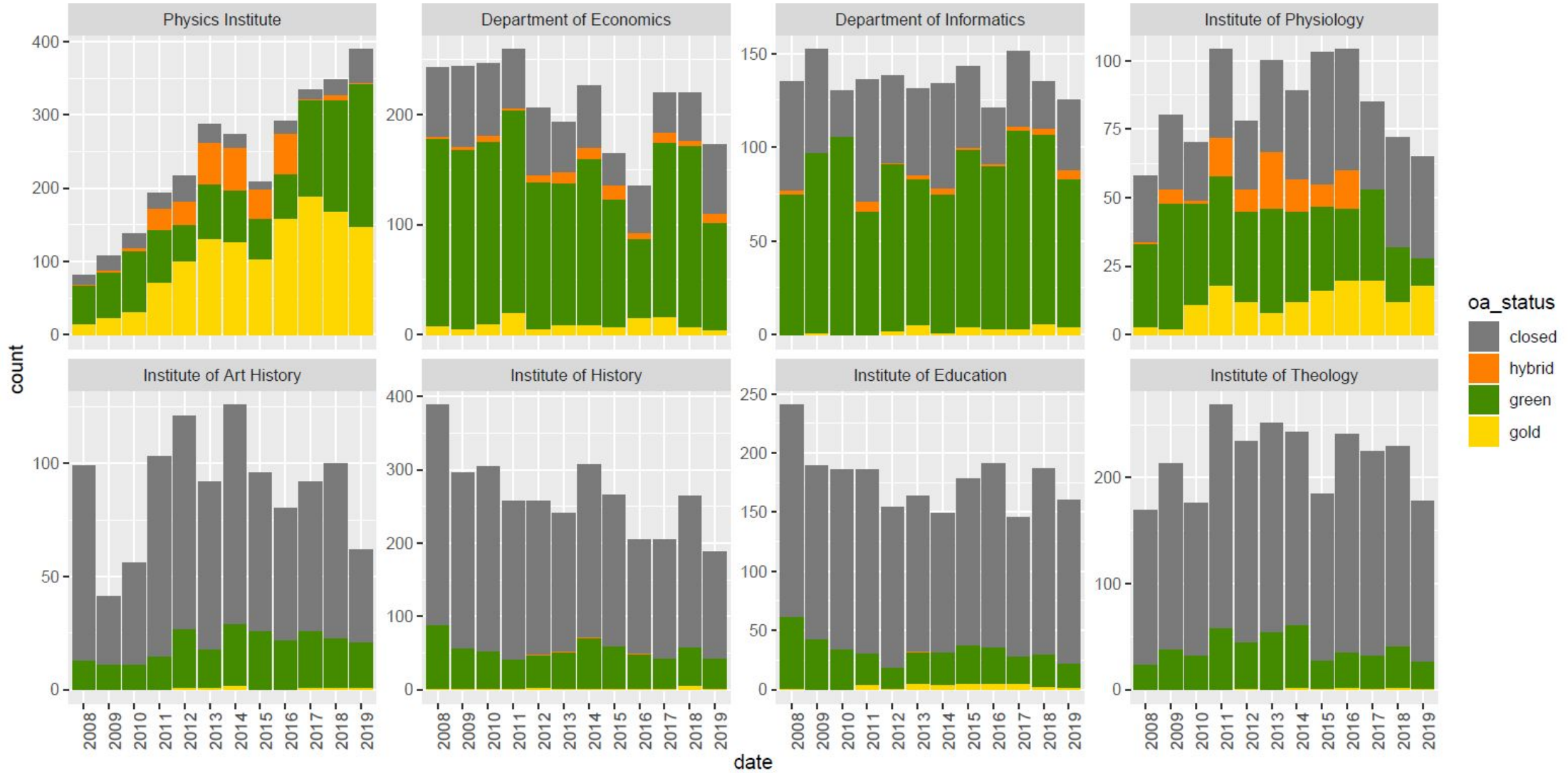
https://www.openscience.uzh.ch/en/definition/policy.html

Open Access by Faculty (UZH)

by Mark D. Robinson

Open Access by Institute (UZH): Top/Bottom 4

by Mark D. Robinson

Extra food for thought

What do we do with data, methods, etc? Is Open Access publishing enough for Open Science ?

Thank you

More questions?

On being scooped

https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1005473

Bourne, Philip E., et al. "Ten simple rules to consider regarding preprint submission." PLOS Computational Biology 13.5 (2017): e1005473.

The free software parallel

- 1950s: computer industry/universities delivered hardware plus software without separate licenses
  - free and open source code, with rights to fix bugs and add new functions
- 1970s: AT&T starts providing gratis software but without permission to update/edit
  - free (gratis) as in free beer
- 1974: software is a matter of copyright
- 1983: Richard Stallman starts GNU
  - free to edit/study as in free speech; and gratis

The four freedoms of free software

1. Right to use
2. Right to study
3. Right to share
4. Right to improve