



Bibliometrics and academic publishing

PhD Course in Statistics
Library Labs: Module III
December 10 2020



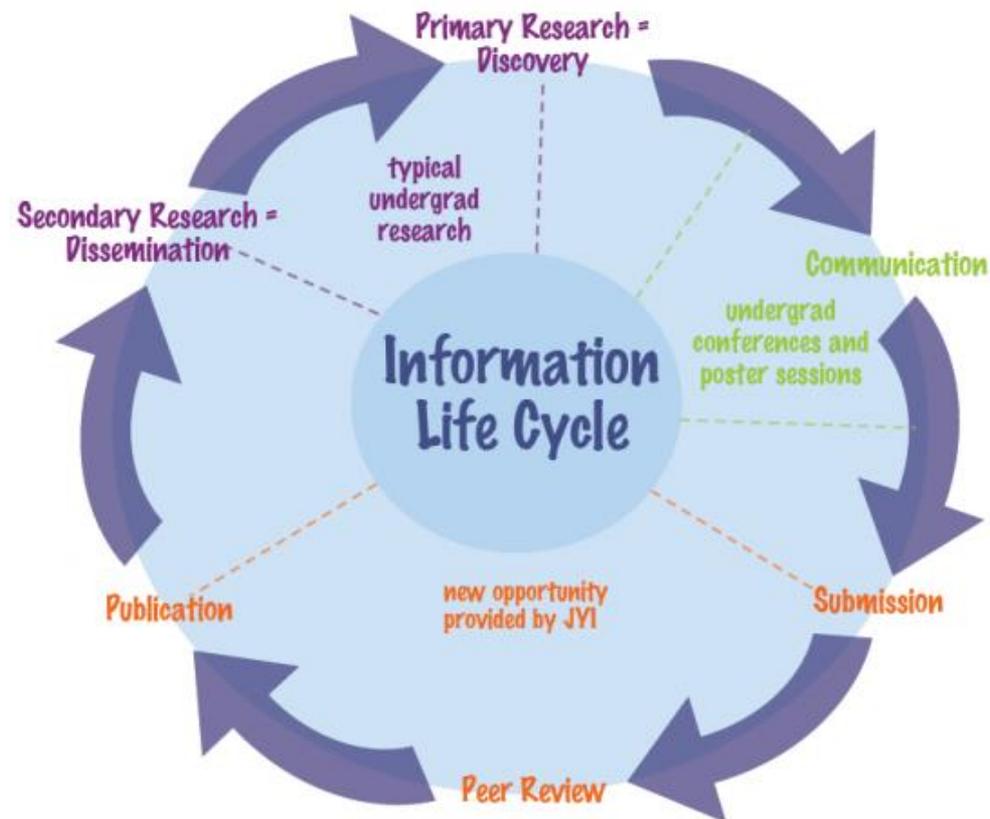


What we will see today:

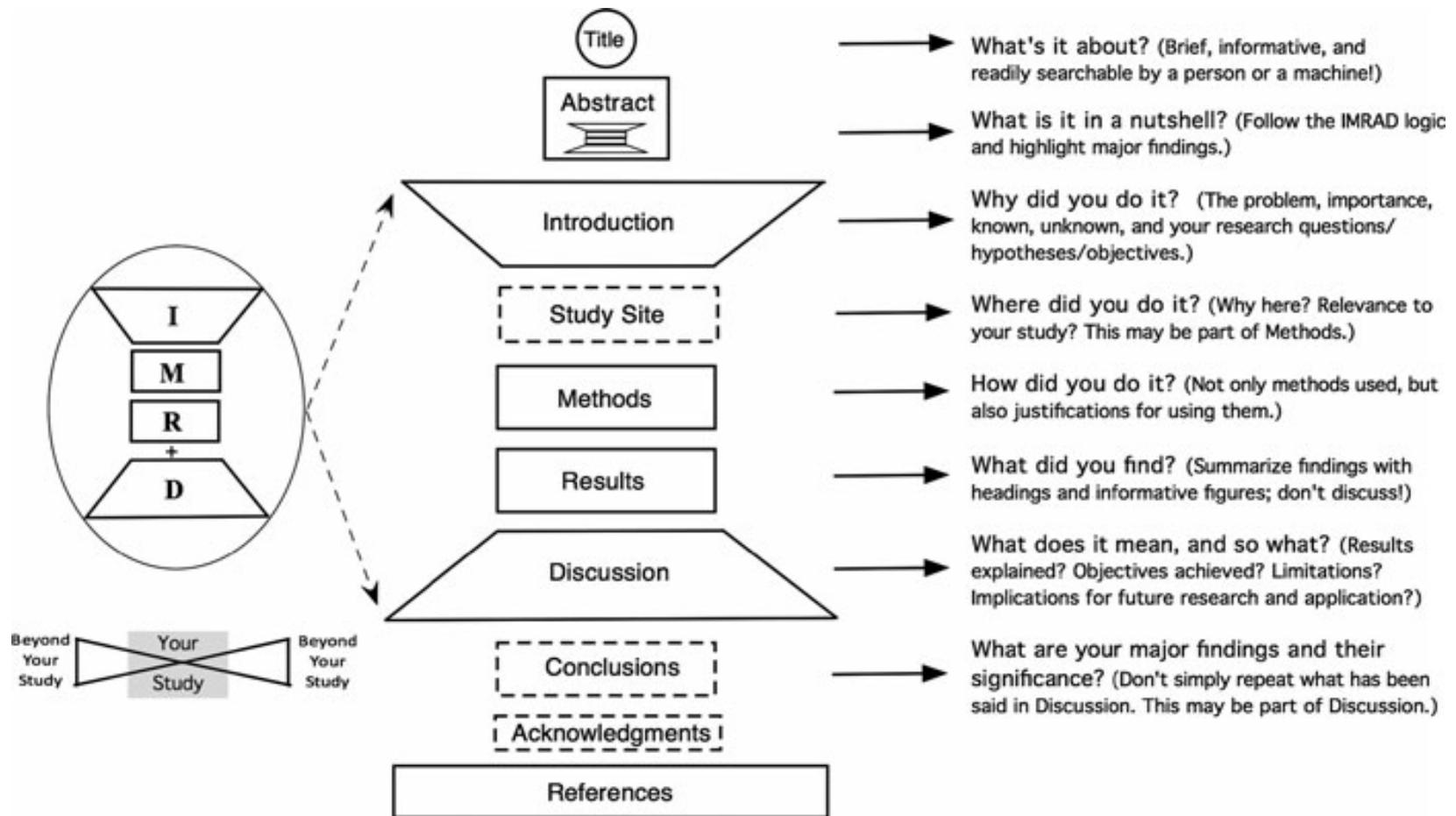
- **Scholarly Communication:** traditional academic publishing and Open Access
- **Bibliometrics:** traditional and innovative tools for scientific evaluation

Scientific communication

» the process of publication and dissemination of research findings



Scientific writing: structure of a scientific paper





Scientific journals

STM (Scientific, Technical and Medical) Journals

Journal or Serial

=

publication that appears in intervals of time longer than 24 hours

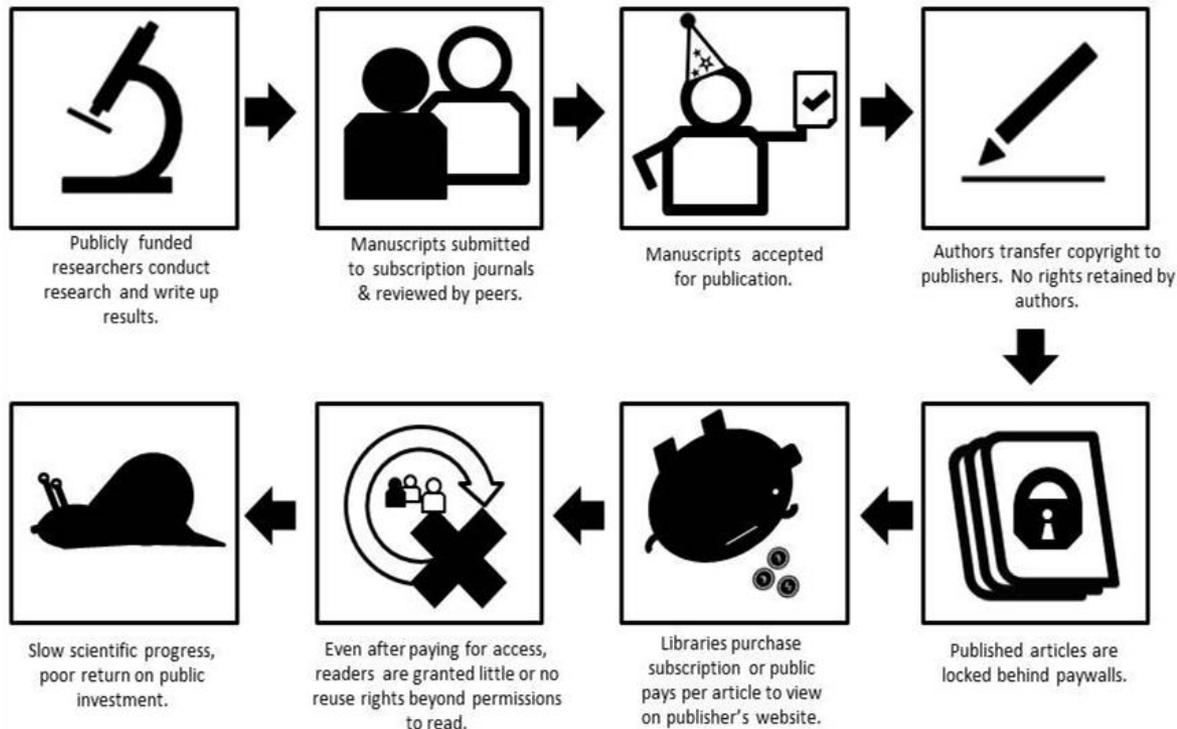
- Addressed to the scientific community (expert audience)
- With selected contents
- Referee system

In STM field it is imperative to publish research as soon as possible, so journals are the main way to **quickly disseminate information**

The Traditional Academic publishing model



limited dissemination, economic efficiency & social impact



Model and text adapted from Timothy Vollmer and Teresa Sempere Garcia "Research article cycles" http://wiki.creativecommons.org/File:Research_articles_cycles.jpg



Paula Callan & Sarah Brown, QUT 2014 CC-BY 4.0

The traditional business model of academic publishers is to archive and disseminate works whose authors have transferred exclusive publication rights to the publisher. The revenue of publishers is based upon providing paid access to the papers.

Many Scholarly or Academic Journals require authors to sign away their rights to their own articles!





Intellectual property

Intellectual Property (IP) protects different types of intellectual creations. It is usually divided into two parts:

1. Industrial property
comprises ...

- **Designs and models** protects the **new design** of an utilitarian object
- **Patent law** protects **new inventions**

- **Trademark law** protects **signs** used in commerce to distinguish the origin of goods or services

2. Literary and artistic property
comprises mainly ...

Copyright / author's rights

Italian context into the European law framework



- Civil Code (art. 2575-2583)

- Legge 22 aprile 1941 n. 633,
"Protezione del diritto d'autore e
di altri diritti connessi al suo
esercizio"

Amended by

- Legge 18 agosto 2000 n. 248,
"Nuove norme di tutela del diritto
di autore"

Italian context into the European law framework



International Conventions

- Berne Convention for the Protection of Literary and Artistic Works
- TRIPS Agreement
- [Directive \(EU\) 2019/520 of 19 March 2019](#) (Copyright in the Digital Single Market)
Member States shall transpose the Directive by 24 months.

Authorship VS Ownership



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DI ATENEIO

~~NON-TRANSFERABLE~~

Moral
Rights

Authorship is a moral right
(paternity):
it can't be transferred, bought or
sold.

Exploitation is an economic
right:
it can be transferred, bought or
sold.

~~TRANSFERABLE~~

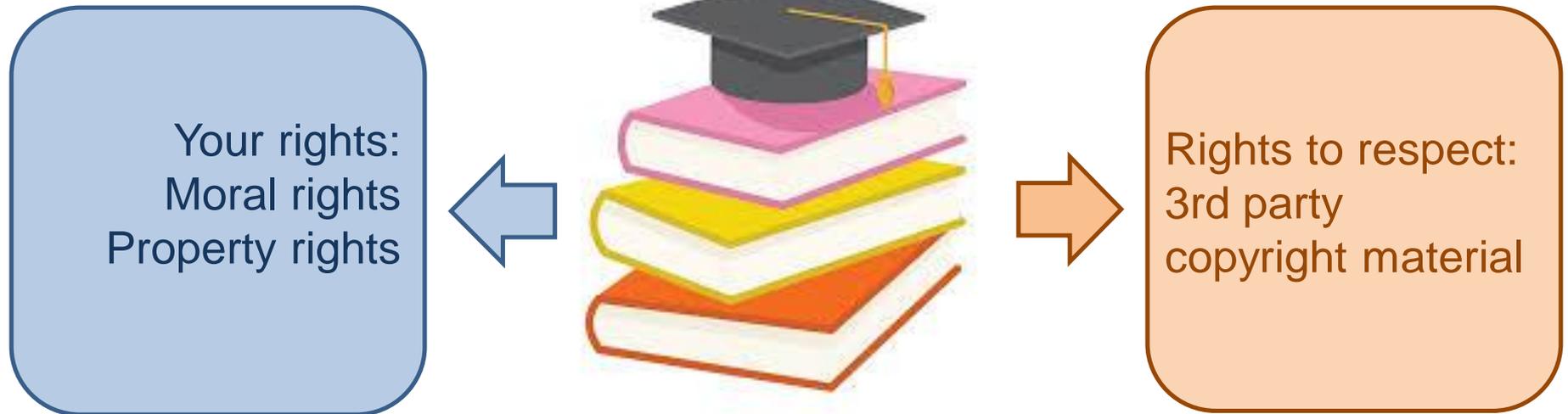
Economic
Rights





Focus on...

Copyrights on doctoral thesis



Be careful: your PhD thesis is public!



"Digital" editorial model

The Web allows new kinds of documents, technologies and editorial policies: e-books, e-journals, databases, full text, Open Access ...

THAT MEANS

- for authors: self-publishing and cooperative text sharing, more dynamic revision process, self-archiving (especially in OA)
- for publishers: reduction of printing and distribution costs
- for readers: easily available documents, interoperability and content reuse



OPEN ACCESS

Without costs
for the reader

Accessible

Open access (OA) literature is digital, online,
free of charge, and free of most copyright and licensing
restrictions

Possibility
to reuse

**Open Access without barriers and restrictions to
scientific knowledge**

Open Access



It is a type of (open) access to digital contents

Any type of digital content can be openly accessible

OA particularly refers to academic, technical and scientific content

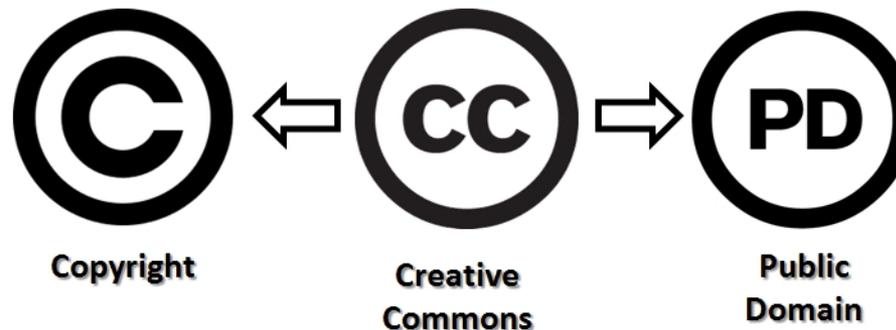
It is NOT a business model, a type of license or content!

There are several [editorial models](#) and licenses compatible with OA, in constant evolution

Copyright and Creative Commons



For researchers and authors a wide variety of publishing models are emerging that do not follow the traditional academic pattern of outright assignment of copyright to publishers or data owner...



CREATIVE COMMONS LICENSES

		COPY & PUBLISH	ATTRIBUTION REQUIRED	COMMERCIAL USE	MODIFY & ADAPT	CHANGE LICENSE
	PUBLIC DOMAIN	✓	✗	✓	✓	✓
	CC BY	✓	✓	✓	✓	✓
	CC BY-SA	✓	✓	✓	✓	✗
	CC BY-NC	✓	✓	✗	✗	✓
	CC BY-NC-ND	✓	✓	✗	✗	✓
	CC BY-NC-SA	✓	✓	✗	✓	✗
	CC BY-NC-ND	✓	✓	✗	✗	✓

You can redistribute (copy, publish, display, communicate, etc.)	You have to attribute the original work	You can use the work commercially	You can modify and adapt the original work	You can choose license type for your adaptations of the work.



Which are the benefits?

Nowadays, it is widely recognized that **making research results more accessible contributes to better and more efficient science, and to innovation in the public and private sectors.**

European Commission, Horizon2020

<https://ec.europa.eu/programmes/horizon2020/en/h2020-section/open-science-open-access>

Which are the benefits?



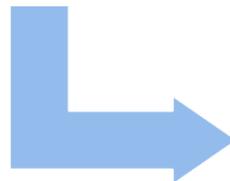
European recommendations



- [COMMISSION RECOMMENDATION of 17 July 2012 on access to and preservation of scientific information \(2012/417/EN\)](#)



- [Towards better access to scientific information: Boosting the benefits of public investments in research](#)



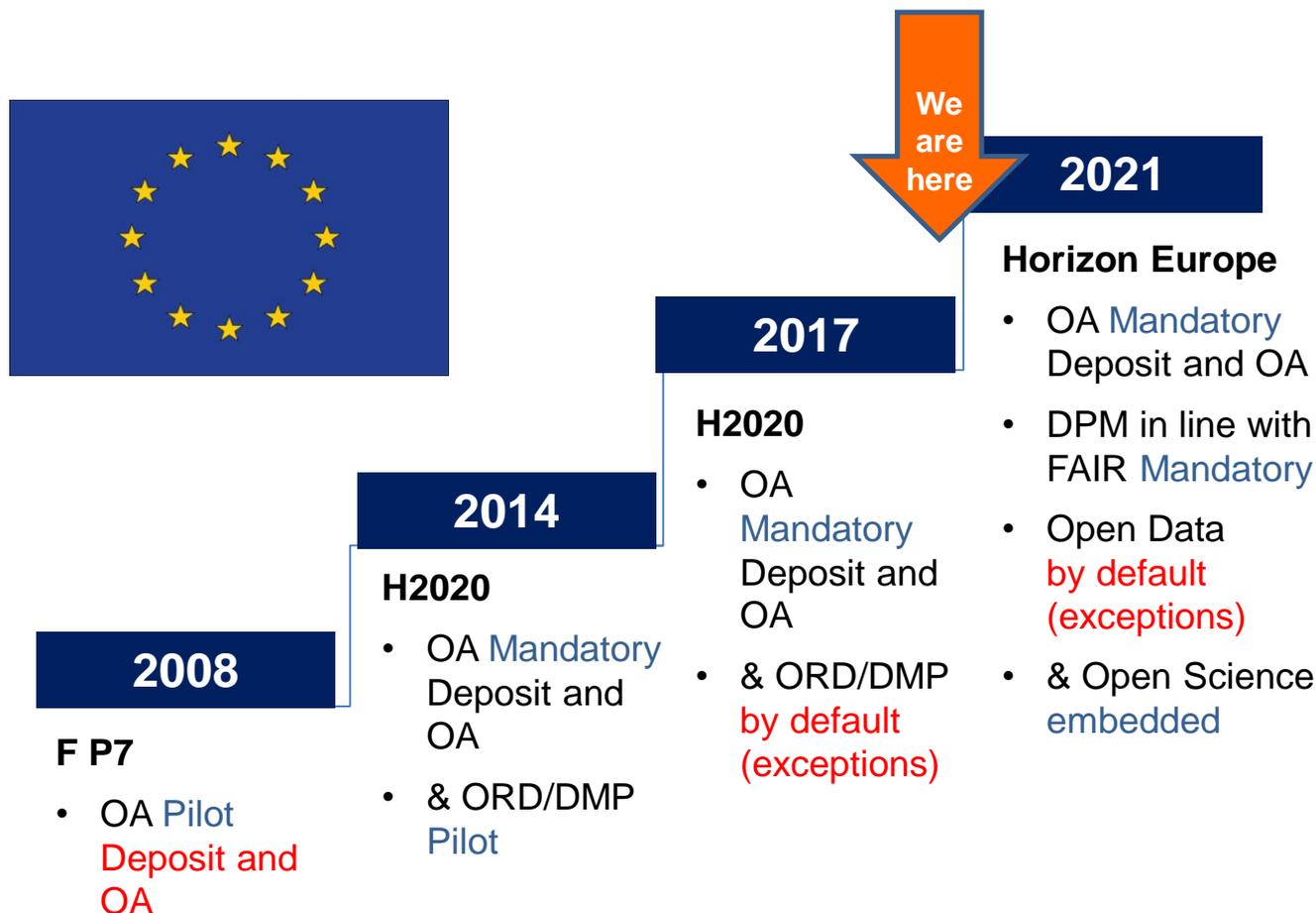
- [COMMISSION RECOMMENDATION \(EU\) 2018/790 of 25 April 2018 on access to and preservation of scientific information](#)

When publishing in Open Access is mandatory



- projects funded with public funds (Horizon 2020, Marie Curie, ERC)
- projects funded by private foundations or entities (e.g. Bill & Melinda Gates Foundation or Wikimedia Foundation)
- projects funded by institutions or research networks that adhere to [Plan S](#)

Funding programs



Plan S



Plan S

Access to research publications that are generated through funded grants must be fully and immediately open

The plan is structured in ten principles:

<https://www.coalition-s.org/10-principles>

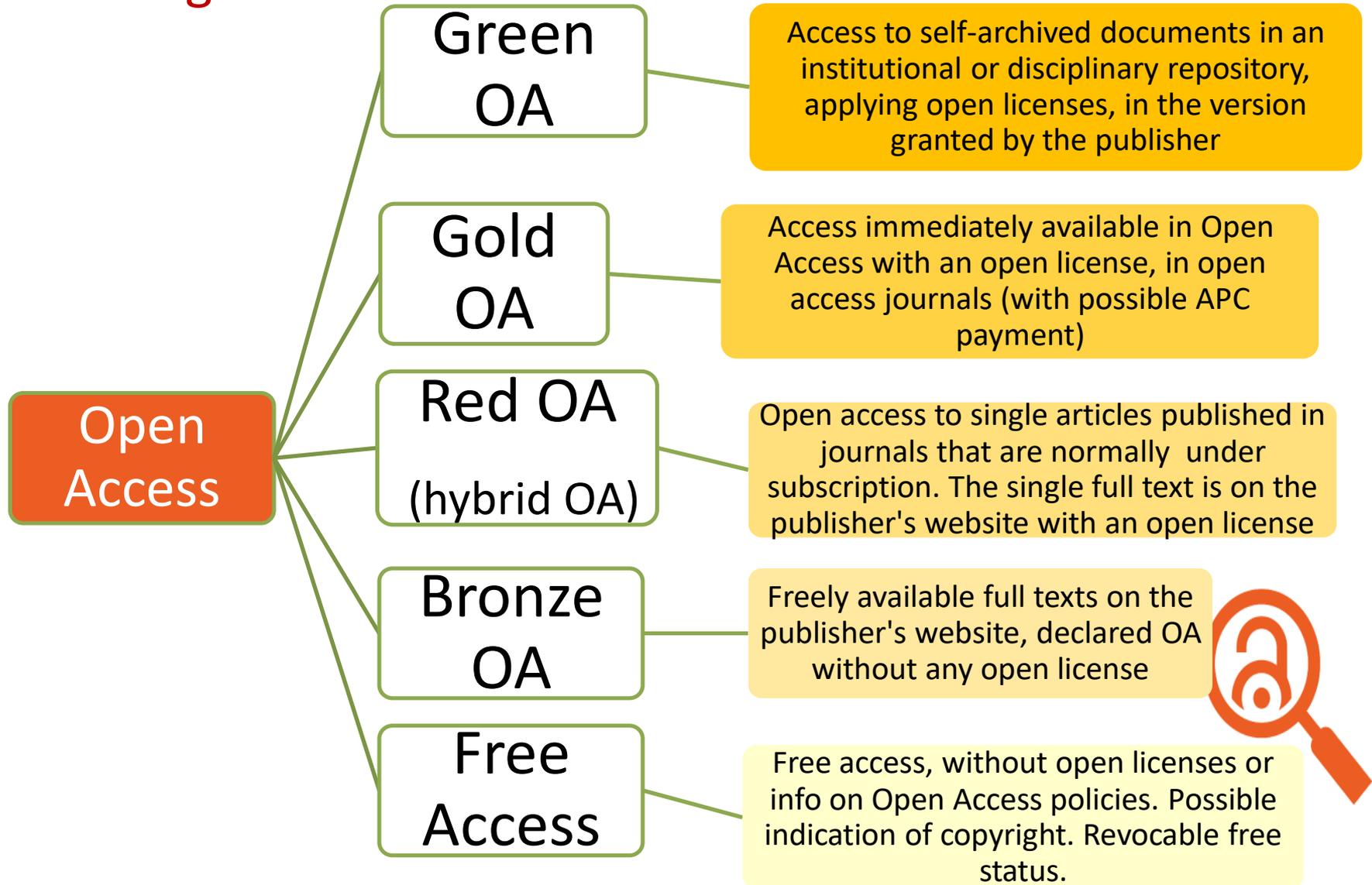
- immediate publication, without embargo, in Open Access journals / archives;
- authors retain copyright;
- publication fees aren't covered by individual researchers;
- commitment to create OA journals and platforms;
- limit to APC costs;
- no financing for publication in journals with double dipping.



Plan S

Making full and immediate Open Access a reality

Open Access and academic publishing models



Process of publication of a scientific paper



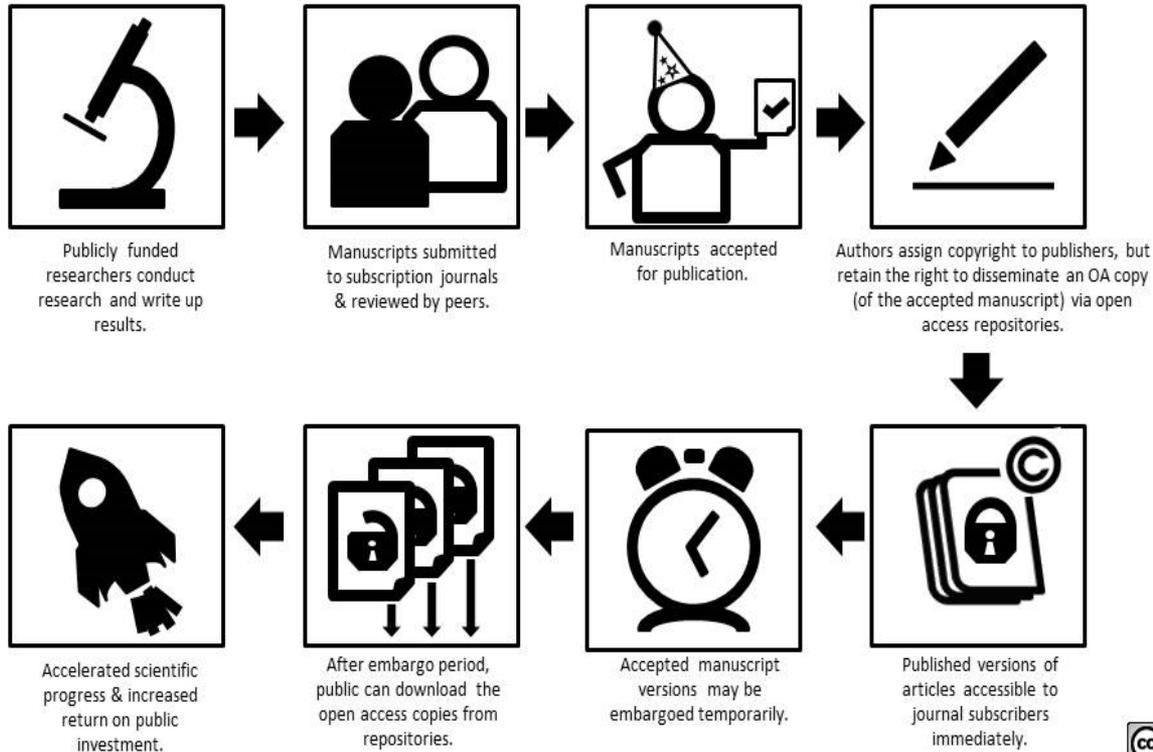
<https://aoasg.files.wordpress.com/2013/12/hefce-publishing.jpg>



The green road

GREEN OPEN ACCESS

increased dissemination, economic efficiency & social impact



Model and text adapted from Timothy Vollmer and Teresa Sempere Garcia "Research article cycles"
http://wiki.creativecommons.org/File:Research_articles_cycles.jpg



Paula Callan & Sarah Brown, QUT 2014 CC-BY 4.0

SELF-ARCHIVING
IN
OPEN INSTITUTIONAL OR DISCIPLINARY ARCHIVES



Open archives

disciplinary repositories

<p>Economics</p>  <p>http://repec.org/</p>	<p>Physics</p>  <p>https://arxiv.org/</p>
<p>Medicine</p>  <p>https://www.ncbi.nlm.nih.gov/pmc/</p>	<p>Biology</p>  <p>THE PREPRINT SERVER FOR BIOLOGY https://www.biorxiv.org/</p>

interdisciplinary repositories





Institutional Repositories vs. Academia.edu or ResearchGate



[A social networking site is not an open access repository](#)

Often researchers submit their products in Social Networks of Research without taking care of publishers' policies:

are they really aware of the medium they are using and the rights related to published outputs?

Institutional Repositories vs. Academia.edu or ResearchGate



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R^G

A

	Open access repositories	Academia.edu	ResearchGate
Supports export or harvesting	Yes	No	No
Long-term preservation	Yes	No	No
Business model	Nonprofit (usually)	Commercial. Sells job posting, services, sells data.	Commercial. Sells ads, job, posting services, data.
Sends you lots of e-mails (by default)	No	Yes	Yes
Wants your address book	No	Yes	Yes
Fulfills requirements of Unipd's OA policies	Yes	No	No



<http://creativecommons.org/licenses/by/4.0/> University of California OSC

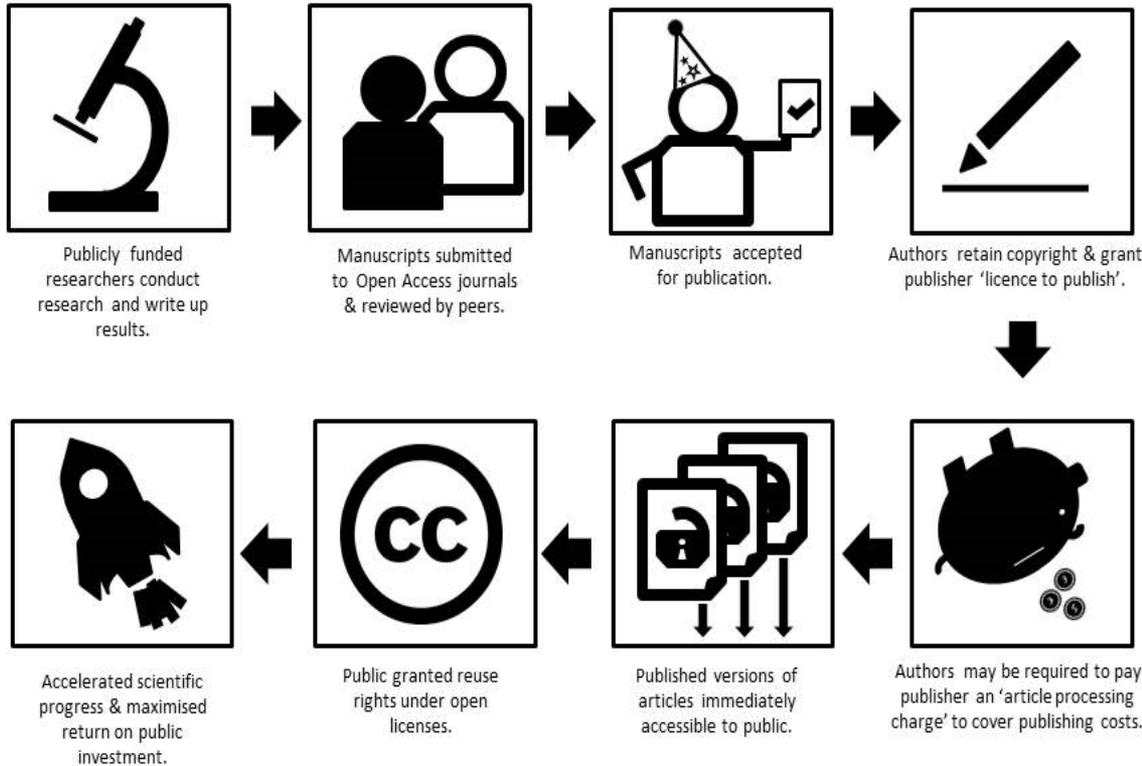
<http://osc.universityofcalifornia.edu/2015/12/a-social-networking-site-is-not-an-open-access-repository>

The gold road



GOLD OPEN ACCESS

maximised dissemination, economic efficiency & social impact



Model and text adapted from Timothy Vollmer and Teresa Sempere Garcia "Research article cycles" http://wiki.creativecommons.org/File:Research_articles_cycles.jpg



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**PUBLISHING IN OA
JOURNALS**

**POSSIBLE ARTICLE
PROCESSING
CHARGES (APC)**



The publishing models of Open Access: green and gold

WILEY

<https://authorservices.wiley.com/author-resources/Journal-Authors/open-access/index.html>

Springer

Search

Home Subjects Services Springer Shop About us

Author & reviewer tutorials

Open Access

- » What is Open Access?
- » Benefits of Gold Open Access
- » Article Processing Charges
- » Copyright and license
- » Mandates and funding
- » OA vs. subscription journals
- » Quiz
- » Further information

What is Open Access?

At it's most fundamental Open Access is when publications are freely available online to all at no cost and with limited restrictions with regards reuse. The unrestricted distribution of research is especially important for **authors** (as their work gets seen by more people), **readers** (as they can access and build on the most recent work in the field) and **funders** (as the work they fund has broader impact by being able to reach a wider audience).

There are two routes to open access:

Gold open access - Gold OA makes the final version of an article freely and permanently accessible for everyone, immediately after publication. Copyright for the article is retained by the authors and most of the permission barriers are removed. Gold OA articles can be published either in fully OA journals (where all the content is published OA) or hybrid journals (a subscription-based journal that offers an OA option which authors can chose if they wish). An overview of fully OA journals can be found in the [Directory of Open Access Journals \(DOAJ\)](#).

TP: just because a journal offers free access to content this does not mean it is Open Access. As described above Gold OA also allows the re-use of the work as long as the authors are acknowledged and cited as they retain the copyright. Simply allowing everyone with an internet connection to read the content does not constitute gold OA.

Green open access - Green OA, also referred to as self-archiving, is the practice of placing a version of an author's manuscript in a repository, making it freely accessible for everyone. The version that can be deposited into a repository is dependent on the funder or publisher. Unlike Gold OA the copyright for these articles usually sits with the publisher of, or the society affiliated with, the title and there are restrictions as to how the work can be reused. There are individual self-archiving policies by journal or publisher that determine the terms and conditions e.g. which article version may be used and when the article can be made openly accessible in the repository (also called an embargo period). A list of publishers' self-archiving policies can be found on the [SHERPA/JoMEO](#) database.

SPRINGER

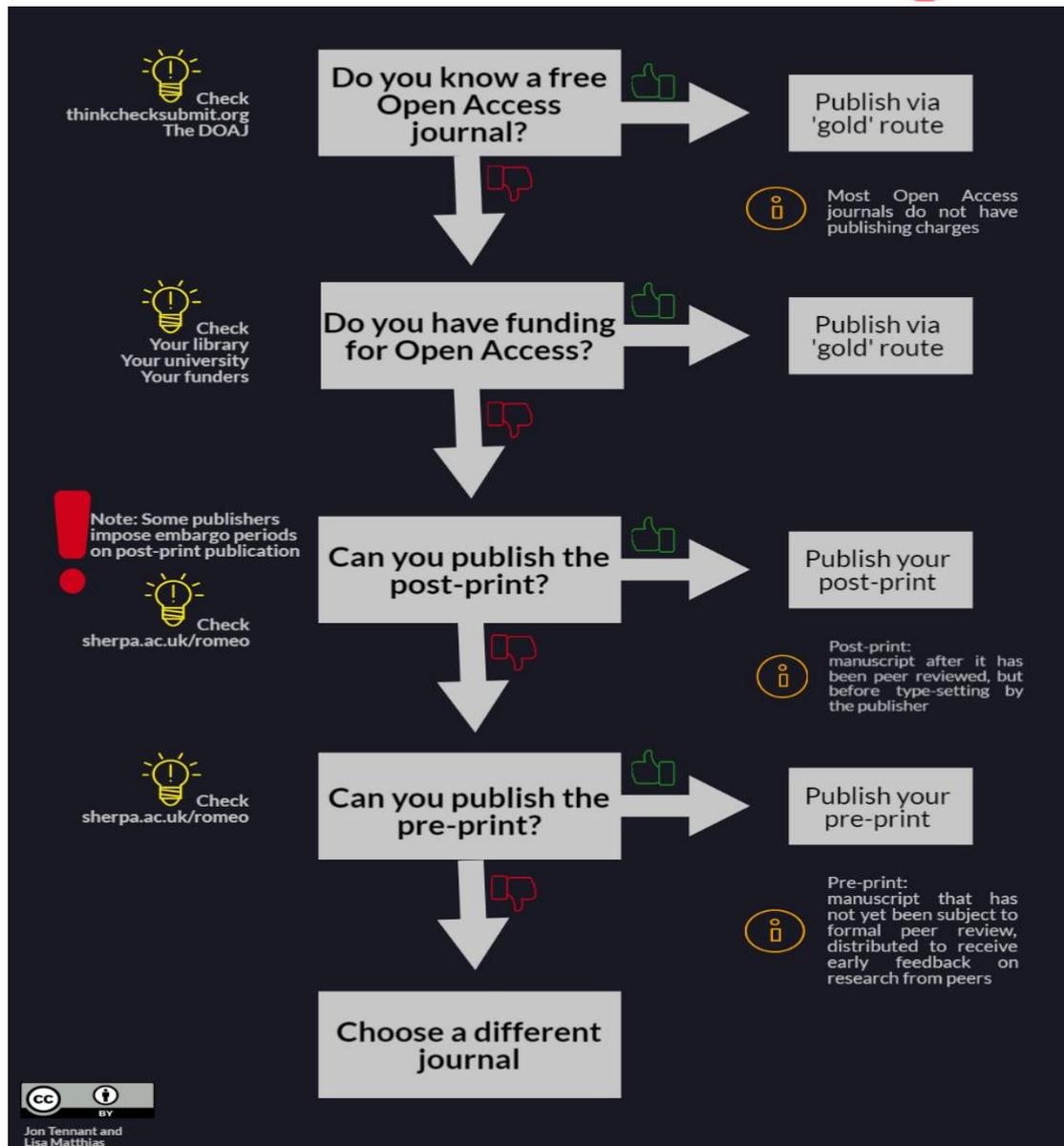
<https://www.springer.com/gp/authors-editors/authorandreviewertutorials/open-access/what-is-open-access/10286522>

Gold Open Access	Green Open Access
<p>What is it?</p> <p>The author pays an Article Publication Charge and the article is immediately freely available online for all to read, download, and share</p>	<p>What is it?</p> <p>The author self-archives a version of the subscription article in an online repository or website</p>
<p>Options</p> <p>Wiley offers two ways to publish gold open access, authors may publish in a:</p> <ol style="list-style-type: none"> 1. Fully open access journal - journals where every article is published open access 2. Subscription journal offering OnlineOpen - an open access option that most Wiley journals offer 	<p>Options</p> <p>Self-archiving requirements vary depending on the article version being archived. Authors may archive the:</p> <ol style="list-style-type: none"> 1. Submitted version on acceptance 2. Accepted version with a 12-24 month embargo - embargo period varies by journal (Use our Author Compliance Tool to check)
<p>License</p> <p>Open Access Agreement with a Creative Commons license</p>	<p>License</p> <p>Standard CTA or ELA</p>
<p>Charge</p> <p>Article Publication Charge - amount varies by journal (Visit our Article Publication Charge page to learn more)</p>	<p>Charge</p> <p>No charge</p>
<p>Learn more</p>	<p>Learn more</p>



Advice to Authors: you are the owner of copyrights!

1. Read your contracts and retain some of rights → [SPARC Author Addendum](#)
2. Find out more about publishers' open access policies → [SHERPA RoMEO](#)
3. Pick your publisher carefully and consider to publish in an open access journal → [Directory of Open Access Journals](#)
4. Be careful of predatory journals → [Beall's list of predatory journals and publishers](#)
5. Need Help? Ask the [Library Helpline](#) of Padua University



How to make your research open access

https://figshare.com/articles/How_to_make_your_research_open_access_For_free_and_legally_/5285512/3



What we will see today:

- **Scholarly Communication:** traditional publishing and Open Access
- **Bibliometrics:** traditional and innovative tools for scientific evaluation

Shanghai ranking: Unipd prima tra gli atenei italiani

L'università di Padova prima, tra gli atenei italiani, nel ranking – pubblicato il 15 agosto 2017 – di Shanghai. La [classifica ARWU](#) (*Academic ranking of world universities*) è una delle più autorevoli insieme a quelle britanniche di Times Higher e Qs, stilata dalla Jiao Tong University di Shanghai.

10 GENNAIO 2018

Dipartimenti d'eccellenza del Miur: Unipd ai primi posti

Tredici dipartimenti su 15 ammessi a finanziamento. Un ottimo risultato per l'università di Padova: l'elenco dei *dipartimenti di eccellenza* selezionati dall'Anvur e pubblicato il 9 gennaio 2018 premia abbondantemente l'ateneo di Padova. I *dipartimenti di eccellenza* rappresentano un intervento

3 LUGLIO 2018

UNIVERSITÀ E SCUOLA

Censis e gli altri: è tutta questione di ranking

Sgomberiamo ogni dubbio: l'università di Padova, con il Censis, migliora la sua posizione rispetto al 2017, riagguantando il secondo posto in classifica tra i mega atenei a pari merito con l'università di Firenze e dietro all'eterna rivale di sempre: Bologna, prima in Italia: “Rimaniamo sempre ai vertici – dice il rettore Rosario Rizzuto – siamo tornati al secondo posto generale con un primato nella comunicazione – i nostri atenei su cui vogliamo continuare a insistere”.

IN ATENE0

12 LUGLIO 2018

Europe teaching ranking 2018: l'università di Padova è seconda

L'università di Padova si conferma ai vertici delle classifiche italiane. Dopo l'ottimo secondo posto registrato nella classifica italiana del [Censis](#), l'ateneo di Padova **conferma la sua posizione** (in Italia) anche secondo lo [Europe Teaching ranking 2018](#), redatto dal *Times Higher*

<https://ilbolive.unipd.it/>

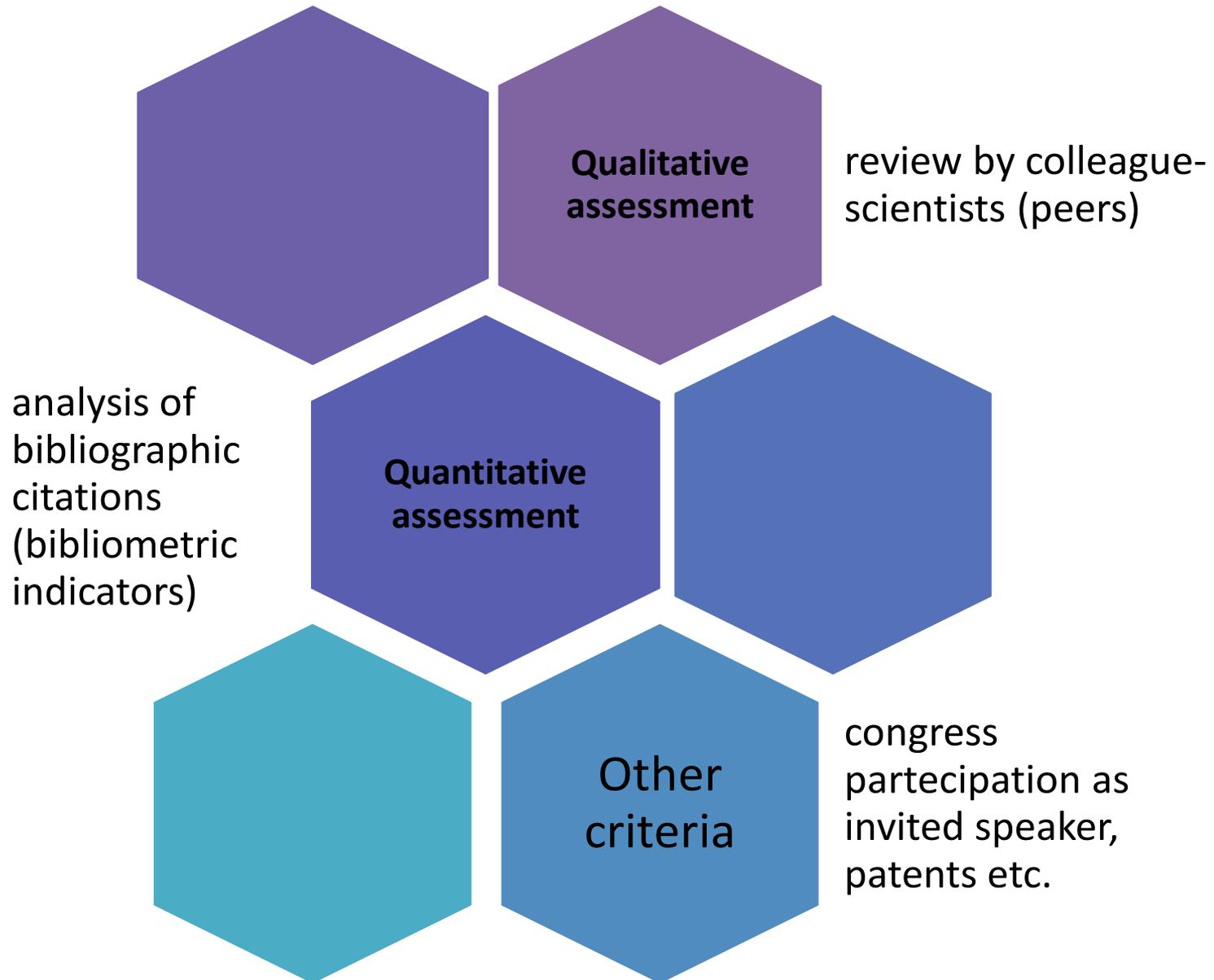


Evaluation of research: why?





Evaluation of research: how?





Evaluation of research: Italy

The **National Committee of Guarantors for Research** (*Comitato Nazionale dei Garanti per la Ricerca – CNGR*) Consultative body to the **Ministry of Education, University and Research (MIUR)**, tasked to promote the quality of research and ensure proper functioning of peer reviews.



The **National Agency for the Evaluation of the University and Research Systems** (*Agenzia Nazionale di Valutazione del sistema Universitario e della Ricerca – ANVUR*) Reports to the MIUR and, on the basis of autonomy, impartiality, professionalism and transparency, works to ensure the quality of higher education and research in Italy.



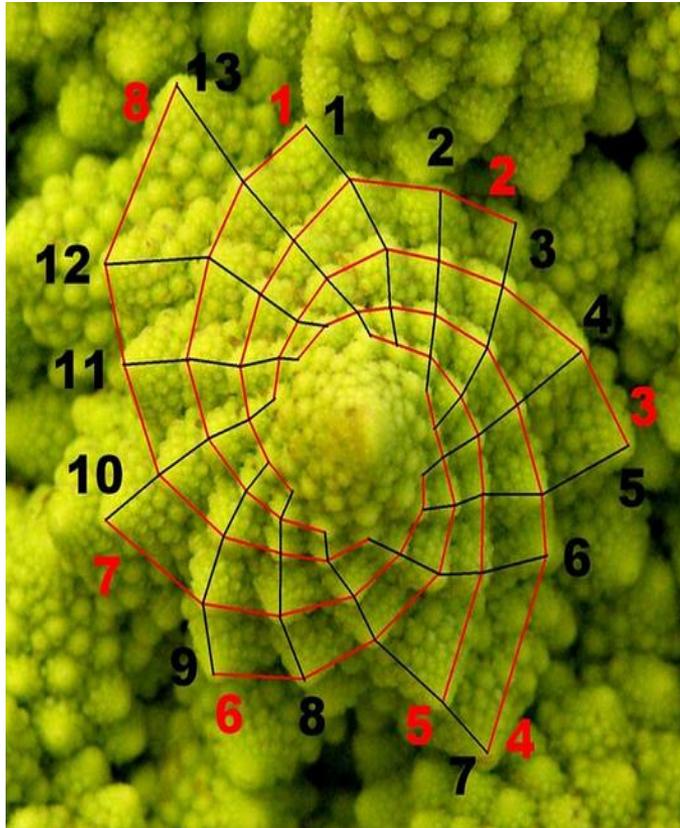
Bibliometrics

Bibliometrics is the use of statistical methods to analyse books, articles, and other publications.

It produces a **quantitative analysis** that can help to make decisions about where to publish a research or to get information about the impact of published research.



Citations analysis



Citation analysis is a way of measuring the relative importance or impact of an author, an article or a publication by **counting the number of times that author, article, or publication has been cited by other works.**

«... the number of citations received by a **publication** is seen as a quantitative measure of the resonance and impact that this publication has created in the scientific community».

https://www.researchgate.net/publication/241700153_Data_Sources_for_Performing_Citation_Analysis_An_Overview/download

Bibliometric indicators



Impact
factor

Altmetric

PlumX

Scimago
Eigenfactor

Bibliometric indicators are **indexes** generally used to evaluate the quantity of the impact of research within the **community** of an author.

h-
index

Google
Scholar

Web of
science
Scopus

The Impact Factor

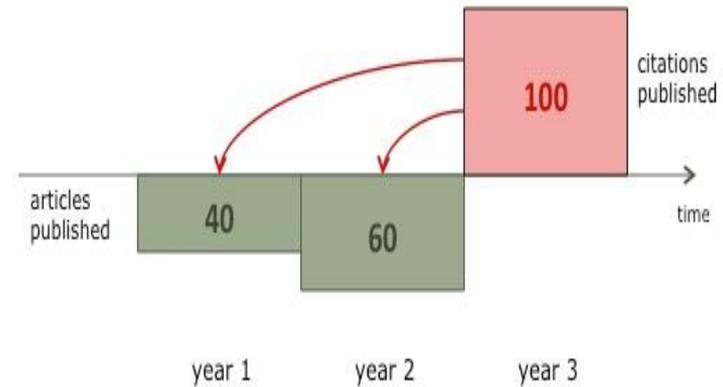


The **impact factor (IF)** or **journal impact factor (JIF)** of an academic journal is the average between the number of citations of the works published in the journal and the total number of works published by the same journal in the two previous years.

It is a copyrighted index, and can be consulted only through the products of the publisher **Clarivate Analytics**, and in particular the [Journal Citations Reports](#) database.

The Impact Factor

Introduced in 1950's by Eugene Garfield: ISI



$$IF(\text{year 3}) = 100 / (40 + 60) = 1$$

Alternative metrics (Altmetrics)

Altmetrics are **non-traditional** bibliometrics proposed as an alternative or complement to more traditional citational impact metrics. They measure the impact of articles by taking **data from social media, websites, and other internet resources**.



Altmetric.com: data science company that tracks where published research is mentioned online, and provides tools and services to institutions, publishers, researchers, funders and other organisations to monitor this activity.

Plum Analytics: altmetrics company whose best known product is **PlumX**. It was acquired by Elsevier in February 2017 and its metrics were immediately incorporated into Elsevier's products, including Mendeley and Scopus.



Impactstory

ImpactStory: open source, web-based tool that provides altmetrics to help researchers measure the impacts of their research outputs including journal articles, blog posts, datasets, and software.

What about authors?

Hirsh Index (*h*-index)

The *h*-index quantifies the prolificacy and impact of scientists' work, based on the number of their publications and the number of citations received.

The *h*-index calculators are easily available on the net and are accessible through:

- Web of Science (Clarivate Analytics – under subscription)
- Scopus (Elsevier – under subscription)
- Google Scholar (for free – only if the author has a profile)
- PoP (Publish or Perish - for free - based on Google Scholar data)



Curiosity: [Top Italian Scientists](#)



Library System support services

In the section “[About publishing](#)” of the Library System web portal, authors will find information on Open Access, on publishing, and on the management of data.

About publishing



Filed under: [digital repositories](#), [open access](#), [self archiving](#), [OAI](#), [license agreement](#), [publication](#), [open archives](#), [publication standards](#), [Impact Factor](#)



Research
repositories

Get your articles
viewed more
often



Open Access

Increase the
impact of your
research



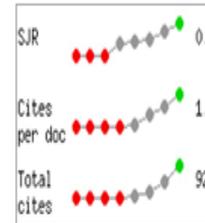
Research Data
Unipd

A safe place for
your research



Research data
management

Manage your
data in the best
possible way



Measure your
impact

Evaluate the
scientific impact
of your research



Publishing
support

Open Access
publishing? It's
easier with us!

Library System support services

Authors can submit specific requests using the Library System [Help Service](#), choosing the following address:

- 11 Supporto Open Access (Supporto Ricerca)



Library System support services



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Before and after publishing articles and data, improve your knowledge with:

Scholarly Communication and principles of Open Science

a Training Course For PhD Students,
composed by five modules.

It aims to introduce early-career researchers to scientific communication and to the principles of Open Science (Open Access, Open Data, Open Licences).





Presentation by OA Support Group University of Padova Library System



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