OPEN SCIENCE FOR ARCHAEOLOGY: AN UP-TO-DATE GUIDE (2022)

by Paolo Rosati

This paper was born by the Open Science author's recent research experiences, post-doc fellow for the 'PAThs Project', the 'Mirrolab project' in Sapienza of Rome and member of the Archeo-FOSS 2021 editorial board. He was one of the ArcheoFOSS 2020 Conference Proceedings authors.
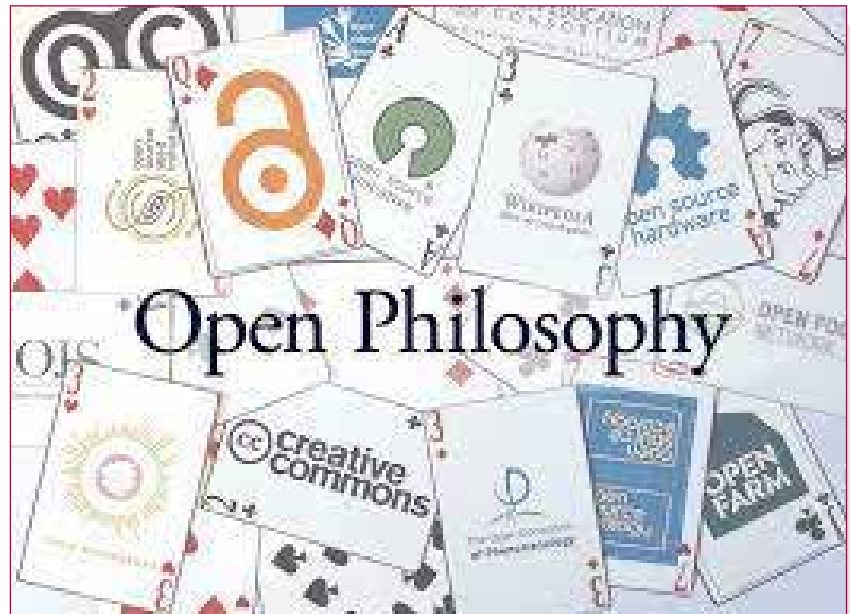

Fig.1 - The "Open Philosophy family" (Rosati).

Wikimedia Italia and ArcheoFOSS stipulated in 2021 an agreement to publish in 'Gold OA' the proceedings of the ArcheoFOSS 2019 and 2020 conferences.

The aim is to open all the articles (texts, citations, bibliographic resources, images) and to allow them to upload to the Wiki projects platforms, starting from Wikibooks.

Before the 2020 conference, ArcheoFOSS did not have a clear policy on our proceedings licenses. Nevertheless, in the name of the organisation, FOSS is intrinsically connected with the Free and Open Source philosophy and has not a clear Open Access policy was a regret.

In synthesis, having not an Open Access policy hampered the full spread of the scientifical results of the congresses.

In the past years, the first big trouble was that having no policies to publish our proceedings caused substantial anarchy. Continuing in the description of our statement until the past years, the first great problem has been the lack of publication politics of our proceedings, which caused a substantial anarchy.

The publication of an international congress article regarding computer science with a high standard of double blind peer review would take about 12 months, but in the past it took ArcheoFOSS a few years and sometimes the book has never been published.

This was a problem, considering the scientific purposes of a conference based on computer science issues. An article published in such conference may be outdated in the following two years. However, for seven times ArcheoFOSS proceedings have been published with an Open Access license, but for six times with All Rights Reserved one. (Bogdani - Sciacca 2021)

PHILOSOPHY HERE MATTERS

The organisation cannot name itself FOSS and publish under the "All rights reserved" copyright. It is not entirely reliable. The organisation's name contains the word FOSS (Free Open Source Software), but what the organisation wants to mean is FLOSS (Free Libre and Open Source Software). In the paper context, we must use the word FLOS (Free Libre and Open Source).

Differences between FOSS and FLOSS:

FOSS indicate reversibility in the license (i.e. today, my software code is open, pay attention, for free, and everybody can download it, but if the app turns out to be a great idea and becomes interesting for the big companies, I can close the code and sell it). FLOSS is not reversible. The difference is in the word "Libre" (the L letter of FLOSS), which is not translatable in English. It is a Spanish/French word synonym for "free", but

in English, the word free has an ambiguous meaning and can be translated into the Latin "gratis". It seems a slight difference, but this concept is the basis of the GNU philosophy, the difference between Unix and GNU.

We are closing that issue: if we remove the final "S", the word FLOS's meaning can be used for all innovative products other than software.

Speaking of Open Access, we often refer to Journal articles, book chapters, monographs, and conference proceedings.

WHAT IS OPEN ACCESS

"Open Access" for many communities worldwide is not a fairy concept. There are groups of researchers asking for Open Access in the dictatorships and the poorest part of the world, fighting for human rights to democratise Access to knowledge, accelerate discovery, and increase the investment return in research and education. SPARC* defines itself as: "A global advocacy organisation working to make research and education open and equitable for everyone." For that community, "Knowledge" is a fundamental human right."

For a definition of Open Access, we borrow the header of the SPARC* site because it allows us to underline the political implication of the movement. "Open Access is the free, immediate, online availability of research articles combined with the rights to use these articles fully in the digital environment." (https://sparcopen. org/open-access/)This definition is important because it underlines the role of the digital environment.

The Web is fundamental for the OA. Only through the Web, it is possible to organise and imagine how to open the knowledge.

Before the widespread of the Web, when all the knowledge was on the physical supports, opening the Access to the encyclopedias, books, articles, images, and contents was reasonable to be impossible. There are only some physical places where sharing knowledge was the role: the "Public Libraries" have the role of ensuring the knowledge but no more, if someone stole a book, it was taken away from the whole community. Physical media such as paper, CDs, and DVDs need a high cost to reproduce their knowledge.

Trying to go deep into the concept, Open Access works can be free for anyone to read, share, reuse, and build upon. Open Access contributions do not require:

- ‣ Any expensive subscription
- ‣ Affiliations with a major institution
- ‣ Any kind of Membership
- ‣ Non-disclosure agreements
- ‣ Moreover, remember the ambiguity of the term "free":
  We are saying: "'*Free' as in speech, not as in 'free' beer*." - Richard Stallman

Only an Open Access publication can open the text of books and papers, their citation, the bibliographical resources, and the images.

However, in our complex world, the concept of Open can be applied to many other creative contents.

'CREATIVE COMMONS LICENSES' WHAT THEY ARE

They underpinning the open philosophy, we can apply a license to a wide range of products from literary works to videos, photos, audio, open education, scientific research, code, 3D models and more.
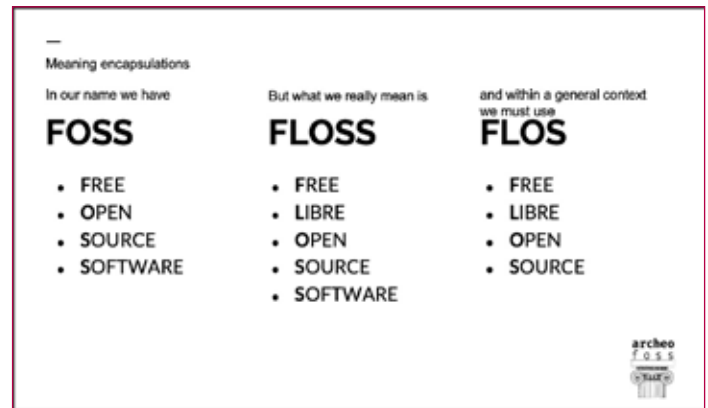

Fig. 2 - FOSS, FLOSS, FLOS differences and use.

The rigorous definition is on the website of CreativeCommons.org: "Creative Commons licenses give everyone from individual creators to large institutions a standardised way to grant the public permission to use their creative work under copyright law." (https://creativecommons.org/about/cclicenses/)

Something on the most important Licenses
Starting from above, the first example, Creative Commons Licenses 1:
- CC BY: This license allows reusers to distribute, remix, adapt, and build upon the material in any medium or format, so long as attribution is given to the creator. The license allows for commercial use.
CC BY includes the following elements:
BY – Credit must be given to the creator.

- CC BY-SA: This license allows reusers to distribute, remix, adapt, and build upon the material in any medium or format, so long as attribution is given to the creator. The license allows for commercial use. If you remix, adapt or build upon the material, you must license the modified material under identical terms.
CC BY-SA includes the following elements:
BY – Credit must be given to the creator.
SA – Adaptations must be shared under the same terms.

Creative Commons Licenses 2:
- CC BY-NC: This license allows reusers to distribute, remix, adapt, and build upon the material in any medium or format for non-commercial purposes only, and only so long as attribution is given to the creator.
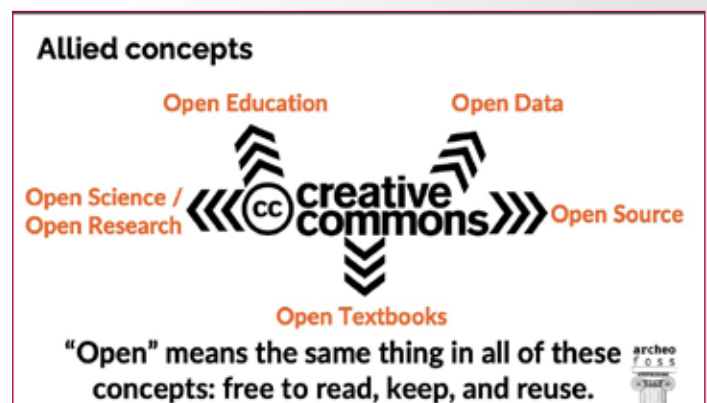

Fig. 3 - Open Science allied concepts.

It includes the following elements:
BY – Credit must be given to the creator.
NC – Only non-commercial uses of the work are permitted.
- CC BY-NC-SA: This license allows reusers to distribute, remix, adapt, and build upon the material in any medium or format for non-commercial purposes only, and only so long as attribution is given to the creator. If remix, adapt or build upon the material, must license the modified material under identical terms.
CC BY-NC-SA includes the following elements:
BY – Credit must be given to the creator.
NC – Only non-commercial uses of the work are permitted.
SA – Adaptations must be shared under the same terms.

Creative Commons Licenses 3:
- CC BY-ND: This license allows reusers to copy and distribute the material in any medium or format in unadapted form only, and only so long as attribution is given to the creator. The license allows for commercial use.
CC BY-ND includes the following elements:
BY – Credit must be given to the creator.
ND – No derivatives or adaptations of the work are permitted.
- CC BY-NC-ND: This license allows reusers to copy and distribute the material in any medium or format in unadapted form only, for non-commercial purposes only, and only so long as attribution is given to the creator.
CC BY-NC-ND includes the following elements:
BY – Credit must be given to the creator.
NC – Only non-commercial uses of the work are permitted.
ND – No derivatives or adaptations of the work are permitted.

The public domain dedication:
- CC0 (aka CC Zero) is a public dedication tool which allows creators to give up their copyright and put their works into the worldwide public domain. CC0 allows reusers to distribute, remix, adapt, and build upon the material in any medium or format, with no conditions.
How to choose a license for the work, dataset, or text? The six licenses and the public domain dedication tool give creators a range of options. The best way to decide which is appropriate is to think about why is to share the work and how others will use that work.

Licenses subclasses
Some of these licenses are divided into subclasses. For example, the CC BY-SA, which is one of the most used licenses in the world, have four subclasses:
CC BY-SA 1.0 Generic
CC BY-SA 2.0 Generic
CC BY-SA 3.0 Unported
CC BY-SA 4.0 International (our license)

The differences between them are tiny indeed, but they matter, and if someone wants to go deep in studying them, can find more information on the CreativeCommons.org website.

License CC BY-SA 4.0 International:
You are free to:
Share — copy and redistribute the material in any medium or format.
Adapt — remix, transform, and build upon the material for any purpose, even commercially.
The licensor cannot revoke these freedoms.
Under the following terms:
Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so reasonably, but not in any way that suggests the licensor endorses you or your use.
Share Alike — If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original.
No additional restrictions — You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

OPEN ACCESS ALLIED CONCEPTS
It is possible to apply a Creative Commons License to a broad kind of creative content. The spread of the CC licenses origins some other branches similar to the original Open Access but with different meanings:
Open Education - Refers to teaching materials & pedagogy
Open Textbook - A subset of Open Education
Open Data - Refers to datasets big & small
Open Source - Refers to software or code
Open Science or Research - Refers to the entire process of scholarship, including data, methods, publications, etc.
"Open" means the same thing in all of these concepts: free to read, keep, and reuse.
Open vs. Subscription differences:
As you can see, there are no structural metamorphoses. They are both:

‣ Peer reviewed
‣ Established scholars as editors
‣ Content can be available online
‣ Niche topics
‣ General field journals
‣ Scholarly societies
‣ For-profit publishers
‣ Non-profit publishers
‣ Supported by foundations, libraries, societies, and fees to authors

The difference is that the Open Access is in the subscription itself: 'Free for all to read and reuse', the subscription publication is costly to buy the full subscription, and it has no re-use rights.
Open journals can be free because other business models support them:

‣ Library subsidy / Subscribe-to-Open models
‣ Article Processing Charges (APCs) for authors
‣ Membership fees to societies, organisations, and companies (e.g. you have to be a member to have your article published)
‣ Grant or institutional funding (In our case, the Italian Ministry for Culture MIC)
‣ Sponsorships and advertising (In our case Wikimedia Italia)
Defining "Hybrid OA", a *hybrid open-access* journal is a

subscription journal in which some of the articles are open access.

It is often called "Hybrid OA" and is also referred to by some Open Access advocates as "double-dipping" as the publisher receives revenue from **both** the subscription and the Open Access fees. These journals also may not comply with OA mandates or grant requirements.

Some institutions and funders have Open Access requirements built into their policies: any work of scholarship created while employed or funded by the institution must be open Access.

The ERC (European Research Council) I am working for is one of that.

Some require you to publish in OA Journals (notably the 'cO-Alition S' of funders in the EU); others allow you to share copies in repositories after you publish; if you want to know if your organisation is listed, you can refer to http://roar-map.eprints.org .

COALITION S - THE PLAN S

It is a European program for making full and immediate Open Access a reality. The recent declaration: "With effect from 2021, all scholarly publications on the results from research funded by public or private grants provided by national, regional and international research councils and funding bodies, must be published in Open Access Journals, on Open Access Platforms, or made immediately available through Open Access Repositories without embargo." (https://www.coalition-s.org/about/)

The "Embargo" is a restriction, generally expressed in the year before the possible open Access creation.

Plan S has ten roles: at the 8th, we can read:

"The Funders do not support the 'hybrid' model of publishing. However, as a transitional pathway towards full Open Access within a clearly defined timeframe, and only as part of transformative arrangements, Funders may contribute to financially supporting such arrangements;" (https://www.coalition-s.org/addendum-to-the-coalition-s-guidance-on-the-implementation-of-plan-s/principles-and-implementation/)

LEADING OPEN ACCESS PLATFORMS AND WEBSITES

DOAJ and DOAB

Open Access generates services. There are many platforms where to search Journals and Articles in Open Access:

In the Directory of Open Access Journals (DOAJ), where it is possible to apply and send your work, services are free of charge, including being indexed. (https://doaj.org/)

The Directory of Open Access Book (DOAB) is a community-driven discovery service that indexes and provides access to scholarly, peer-reviewed open access books and helps users find trusted open-access book publishers. (https://www.doabooks.org/)

For both these services, all services and data are entirely freely available.

There are also two important platforms against the scientific paywall.

Unpaywall

The Unpaywall has several tools for Libraries, enterprises, and Research, and it is mainly a search engine for Open Access articles and journals. (https://unpaywall.org/)

More important and valuable for the community is "The Open Access Button", Give them a scholarly paper, and we will search thousands of sources with millions of articles to link you to free, legal, full-text articles instantly. (https://openaccessbutton.org/)

If access is not granted, a request will start. It is possible to request articles from authors and guide them on making the work available.

Another way to find an Open Access Copy for an Article is through Google Scholar. (https://scholar.google.com/) It is straightforward to access, search, download, or upload Open Access books, articles, and book sections.

Zenodo

An important platform to share for free research, materials, and content is Zenodo. Zenodo is derived from Zenodotus, the first librarian of the Ancient Library of Alexandria and the father of the first recorded use of metadata, a landmark in library history. To share and find free contents witH a DOI (https://zenodo.org/)

It is possible to upload content for free in Zenodo and share it with the broad Open-science community. If content (could be a book of abstract, research paperwork, a pdf presentation etc...) has not been published before, it is possible to request your own DOI.

A DOI, or *Digital Object Identifier*, is a string of numbers, letters, and symbols used to uniquely identify an article or document and provide it with a permanent web address (URL). A DOI will help the reader quickly locate a document from the quotation.

We can consider the Web the new Alexandria Library, but it will not burn. The DOI is a unique code that allows a paper to be archived in several parts of the world, built for a very long time (in a utopic view of an eternal time), searchable and downloadable for free. Forever almost until the free or illuminated government will occur in this world.

Wikibooks:

One of the most important web libraries is Wikibooks, a platform where everyone can share Open Access Books and Monographies from all over the world in several languages.

Sharing Books and Journals in Wikibooks have roles, and it is not simple, but it is advantageous to index on the Web the entire contents of the book, the authors, the titles, the texts, the images, the captions, the bibliographical resources.

On Wikibooks, it is possible to share and download books and monographs, but it is possible to upload only the compatible license contents: CC BY-SA 3.0 or more (4.0, CC0). (https://www.wikibooks.org)

Nowadays, most researchers publish their content on social networks related to academia, like Academia.edu or Researchgate.net. These platforms help to share, comment and spread research.
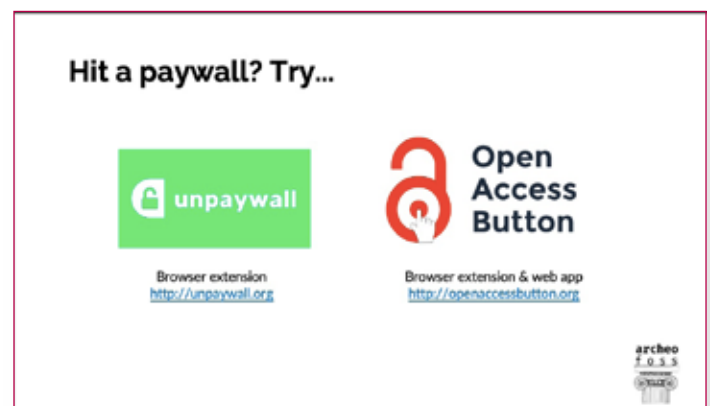

Fig. 5 - Pass the Paywall.

WHY PUBLISH IN OPEN ACCESS

Publishing Papers

Open Access makes research available to a broader audience:

- a more significant impact of work nowadays and in the future. It is possible to reach:
    - researchers without Access to academic libraries
    - researchers at institutions unable to afford subscriptions to specific journals
- More immediate access to research
- Reduced/no cost associated with the publication
- Authors usually retain copyright to their work
    - reuse figures, tables, and illustrations in future works
    - include the full text in a future volume
    post work on a website or other repository
- Synergistic effect in encouraging others to publish Open Access

Open Access can boost the academic Careers:

- OA increases indexing in a platform like "Scopus."
- It increases h-index
- A high h-index means stable credibility in the scientific world
- It is not possible to reach these results nowadays without these tools.

Furthermore, some criteria for choosing an OA venue:

- Open Access outlets encompass a wide variety of disciplines and subfields
- Publication types include both journals and book series
- Some "Standard" criteria for choosing a publication outlet come into play in choosing an OA outlet are:
    - fit between research and journal/series (book) focus
    - visibility (accessibility, prominence)
    - quality (previous articles, editorial staff)
    - reliability (timeline, process, frequency)
    Consult with others about various options (colleagues in your field, administrators)

Publishing Books

- Many book/monograph publishers are either exclusively Open Access or have an Open Access option
- The Open Access Directory keeps a list of publishers (i.e. http://oad.simmons.edu/oadwiki/Publishers_of_OA_books) and books (i.e. https://www.doabooks.org/)

- The level of Open Access varies, and publication fees (of varying amounts) are commonly assessed, but some publishers either do not charge fees (e.g. Language Science Press) and others (e.g. Ubiquity Press) pledge to waive or reduce them under certain circumstances.

We can conclude by stating that this is the meaning to publish in Open Access and widely share ArcheoFOSS 2019 – 2020 and 2021 books.

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Creative Commons Licenses:
https://creativecommons.org/about/cclicenses/ (accessed 15/05/2022)
Coalition S web site: https://www.coalition-s.org/ (accessed 15/05/2022)
ROAR MAP (Registry of Open Acces Repository MAndates and Policies) web site:
http://roarmap.eprints.org (accessed 15/05/2022)
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https://www.coalition-s.org/about/ (accessed 15/05/2022)
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https://www.coalition-s.org/faq/what-is-an-open-access-platform/ (accessed 15/05/2022)
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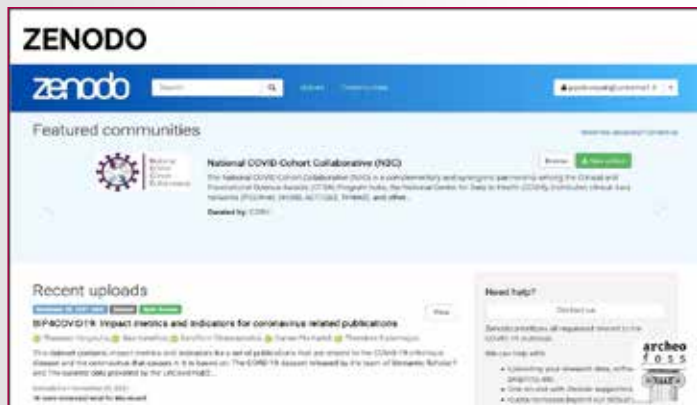
Fig 6 - Zenodo main page.

ABSTRACT
It is possible to ensure this talk into the "Open" philosophy tout-court and not on a specific issue. As it will read, only during the last year did ArcheoFOSS officially bring the "golden road" for its proceeding publication. The paper aims to get the public up to date as a brief guide to speed with Open Access applications and smartly understand the value of Open Access in the research world. The paper consists of four sessions: during the first, titled "The project," we will recognise the previous situation in ArcheoFOSS publication, and we will define why it was essential to decide to publish from 2020 on all the proceedings in an Open Access way. The second called "Open Access Basics", shows the fundamental rules to remember when discussing this theme. In the third session, we can find how to "Publish in Open Access", and the last one, a "Smart introduction in the Wiki-world", is a practical chapter.

PAROLE CHIAVE

OPEN SCIENCE; OPEN ACCESS; ARCHEOFOSS; DIGITAL HUMANITIES; WIKI

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THE SCIENCE OF WHERE

Blending the Science of Geography and Technology of GIS

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THE SCIENCE OF WHERE