



Open access publication models for Informatics Risks, Challenges and Opportunities

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Short Bio

Computer Science professor in Paris, now working at INRIA

- 30+ years of research (Theor. CS, Programming, Software Engineering, Erdos #: 3)
- 20+ years of Free and Open Source Software
- 10+ years building and directing structures for the common good



1999 *DemoLinux* – first live GNU/Linux distro

2007 *Free Software Thematic Group*

150 members 40 projects 200Me

2008 *Mancoosi project* www.mancoosi.org

2010 *IRILL* www.irill.org

2015 *Software Heritage* at INRIA

2018 *National Committee for Open Science*, France

2021 *EOSC Task Force on Infrastructures for Software*,
European Union

Insert : my main focus today is software



Software Heritage
THE GREAT LIBRARY OF SOURCE CODE

Collect, preserve and share *all* software source code

Preserving our heritage, enabling better software and better science for all

Reference catalog



find and reference all
software source code

Universal archive



preserve all software
source code

Research infrastructure



enable analysis of all
software source code

SCHOLARLY ECOSYSTEM

Aggregators

Publishers

Scholarly repositories

INDUSTRY

PUBLIC
ADMINISTRATION

CULTURAL
HERITAGE

Universal Software Archive



Software Heritage
THE GREAT LIBRARY OF SOURCE CODE



ACM SIGSOFT
@sigsoft

Why and how to archive and cite software artifacts, not just papers? Checkout the latest blog "Archiving, Referencing and Citing Software Artefacts Made Easy" from the ACM @sigsoft blogs & figure out how to archive & cite your own artifacts @SWHeritage



Second French Plan
for Open Science



Path Three :
Opening up and promoting source code produced
by research

7

Recognize and
support the
dissemination
under an open
source license of
software produced
by publicly funded
research
programmes

« The opening of software source code is a
major challenge for the **reproducibility** of
scientific results. »

8

Highlight the
production of
source code from
higher education,
research and
innovation

« Distribution of software products under
open source licence will be preferred. »

9

Define and promote
an open source
software policy

Accueil > Recherche > Science ouverte

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Sommaire

- The Coq proof assistant : lauréat de la catégorie Scientifique et technique
- Scikit-learn : lauréat de la catégorie Communauté
- Faust : lauréat de la catégorie Documentation
- Gammapy : prix du jury
- Jury

Remise des prix science ouverte du logiciel libre de la recherche

Le ministère de l'Enseignement supérieur, de la Recherche et de l'Innovation remet pour la première année les Prix science ouverte du logiciel libre de la recherche. Dix logiciels mis au point par des équipes françaises sont récompensés pour leur contribution à l'avancée de la connaissance scientifique.

See ECSS 2021 keynote

the OSEC 2022 session

and the IFIP 2022 GA keynote

Open Access (OA) Task Force

Session led by the Task Force on Open Access

- initiative of Informatics Europe in the frame of the Working Group on Open Science initiated in May 2022
- composed of academic researchers concerned about the impact of the ongoing transition to OA-based models



Alfonso Pierantonio – University of L'Aquila, Italy
Task Force chair, already coordinator of the Italian Grin OA initiative



Antonio Vallecillo – University of Malaga, Spain
Task Force chair, vicepresident of the Spanish SCIE



Stefano Bistarelli – University of Perugia, Italy
already a member of the Italian Grin OA initiative



Benoit Combemale – University of Rennes 1, France



Roberto Di Cosmo – INRIA France
Session chair, Director of Software Heritage, chair of the software chapter of the french national committee for Open Science



Laurent Romary – INRIA, France
Director of Scientific Culture and Information



Andrzej Wasowski - IT University of Copenhagen, Denmark

**TASK FORCE ON
OPEN ACCESS**

Why a task force on
open access?

Task force motivations

Some Open Access publication models induce profound changes impacting researchers and their institutions

Need to understand issues and opportunities, in general, and *for our discipline in particular*

Task force objectives

- Increase **awareness** of issues and opportunities
- Analyze **impact** on researchers and institutions, in particular of APC (article processing charges)
- Analyze the rapidly evolving **international context**

Support initiatives to increase competition, quality, and innovation (e.g. **community-led editorial initiatives**)

Relationships with publishers

Publishers play a crucial role: we aim to establish an open and transparent dialogue to

- **mitigate** the **difficulties** related to the OA golden route
- define a shared quality model for OA editorial initiatives, **protecting** the community **from predatory practices**

Background

Basic publishing needs

Infrastructure

- Time stamp (“I did it first”)
- Long term archival, unique identification, integrity
- **Broad and fast dissemination of results**

Quality (for research, and for careers)

- *Internal*: review, editorial committee, typesetting
- *External*: filtering (reduce title inflation and plagiarism)

Pre Internet Era

Infrastructure

Identification, timestamp, fast dissemination, integrity, archival: all satisfied by **distribution in libraries of printed copies** of books, journals, conference proceedings;

“Reader pays” is the standard, costs assumed by libraries

Side-effects

- + publisher *ensure quality* to get library subscriptions
- authors *transfer exclusive rights* to publishers

Internet disruption of the status quo

- Massive reduction of *dissemination cost and time*
- Access to publications *bypasses libraries*
- *Subscription economic model is endangered*
- ... leads to disruption of service to research ...
 - « Embargos » on online distribution → **delayed access**
 - Digital transition → consolidation → oligopolies → **raising subscription costs**
 - ... leads to the Open Access reaction ...

Open Access: pearls, perils and pitfalls

Open Access



*open and instant access without costs **for the reader** to research results and data*

Part of the broader **Open Science** movement

"Unhindered dissemination of results, methods and products from scientific research [drawing] on the opportunity provided by recent digital progress to develop open access to publications and – as much as possible – data, source code and research methods." (French National Plan for Open Science)

Overall objectives include:

- *"Increase scientific quality, pace of discovery and technological development, as well as societal trust in science" (Jean-Eric Paquet, EU DGRI)*
- *Giving back to the taxpayer the results funded on public money (White House Memorandum, 25/8/2022)*
- *Making the research process more transparent to the taxpayer and to assessment processes*

Important side effect: authors *retain the copyright* in their articles

Open Access is not « for free »

Besides work done pro-bono, costs are covered by either

- **Authors:** Article Processing Charge (APC)
hybrid and gold route
- **Community:** non-profit organizations, academic or governmental institutions
platinum/diamond route, mutualized models
- **Institutions:** overlay platforms, repositories
platinum/diamond, green route, mutualized models

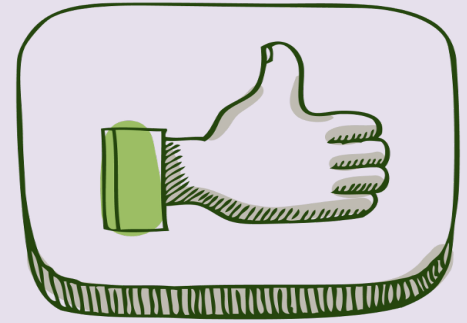
Open Access around the world

A wide range of initiatives and approaches

- **Europe:** Plan S, initiated by funding agencies, pushes for « transformative agreements », *focused on APC*
- **USA:** White House memorandum of August 2022 pushes for “zero embargo” open access to publications and data, *no explicit mention of APC*
- **Latin America:** publishing owned and controlled by academic consortia (e.g. Redalyc), *no APC*, mutualised infrastructures

Is “authors pay” (APC) a good idea?

Letting readers openly access publications and research products is a great idea!



However, shifting the costs from the readers to the authors does not look an equally great idea!



Infrastructure economic models

Accumulative (Charge “per use” fees, like APC)

- Economies of scale **accumulate**
- Incentive to maximize « quantity » over « quality »

Mutualised (Divide cost among stakeholders, *not just users*)

- Economies of scale **redistributed**
- Incentive to provide efficient service to stakeholders

APC dangerous for funders

INTERVIEW

Publications scientifiques : le modèle des APC est potentiellement "un vrai danger" (Sylvie Rousset, DDOR du CNRS)

Le modèle des APC prend de l'ampleur et s'il venait à s'imposer il représenterait "un vrai danger" tant au niveau financier que pour la qualité des articles publiés, analyse Sylvie Rousset, directrice de la DDOR du CNRS ⁽¹⁾, interrogée par AEF info en octobre 2022. Selon

Dépêche n° 680716

🕒 6 MIN DE LECTURE

Par CYRIL DUCHAMP

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APC

article processing charge, financement par l'auteur

**SCIENTIFIQUE, PRATIQUES
DES SCIENTIFIQUES
ET COÛTS ASSOCIÉS**

DDOR

DIRECTION DES DONNÉES OUVERTES DE LA RECHERCHE

APC dangerous for researchers

Explosive combination of two factors:

- numerical indicators (h-index, impact factor) used for funding and career evaluation (but see DORA, COARA, and the DFG CV)
- APCs create a space for predatory journals that allow to « purchase » publications

APC dangerous for researchers

Introduction of a disruptive **financial bias**

- Publisher incentive to *increase* # accepted papers
- *Barrier to publication* for underfunded authors

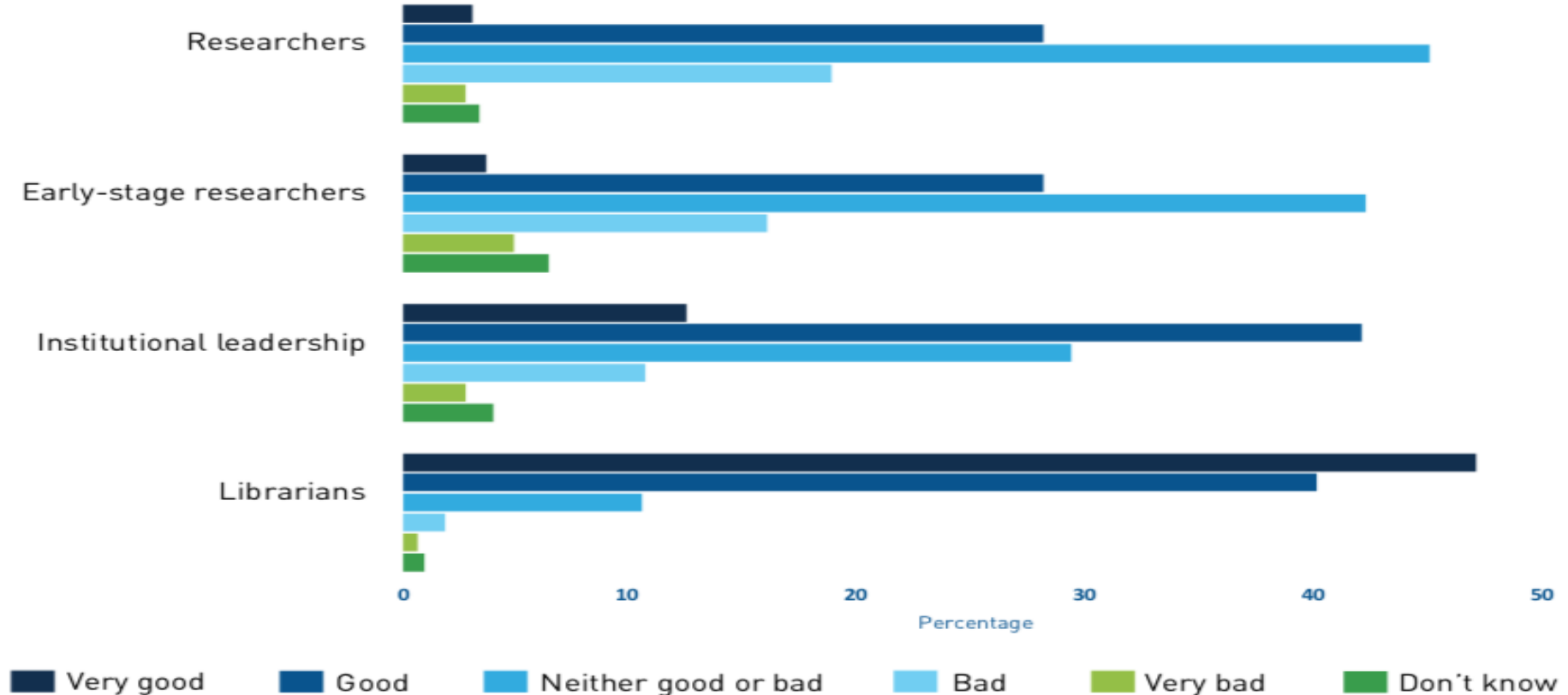
Strong risk of inducing unethical practices

- Publisher practices that erode quality (MDPI debate in Spain)
- Coauthors invited because they can afford APCs, or their institution has an agreement

See the discussion on conference quality

Awareness about OA policies is not good

Figure 12. Awareness of scientific publishers' open access policies among different university populations



What can we do?

Supporting community-driven initiatives that adopt diamond Open Access: many such journals despite limited or no financial resources are of high quality

- Give them visibility and recognition
- Technical platform and support for editors, conforming to the standards (not re-inventing the wheel)

What we can do?

Defining and agreeing a quality model taking into account intrinsic aspects of the editorial process

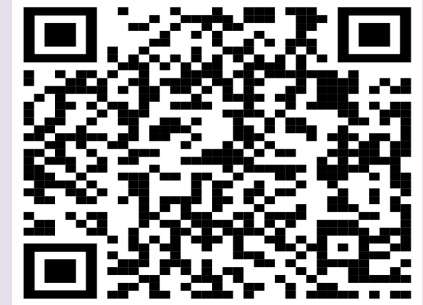
- Reviewers must be granted a *reasonable amount of time* to review a paper
 - there are journals asking one week to return a review
- Editors must be assigned a *manageable number* of manuscripts to supervise
 - there are journals assigning up to 120 manuscripts per year to members of the editorial board

Existing Initiatives

Italian GRIN has defined a shared position representing the Italian CS Community

- Panel on OA

A. Pierantonio, R. Di Cosmo, S. Bistarelli



(in Italian)

Cooperation between GRIN and the Spanish SCIE has been established to identify shared issues, and define common objectives and actions

Call for action

This *is not* a subject for publishers and funders alone!

- get involved in the task force
- connect with national initiatives
- help raise awareness

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Thanks