Introduction to Open Access and the transition to Open Science

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Open Access
Do you have access and who pays?

- Do you need to articles literature?
- Do you have access to the articles you need?
- Do you pay for the articles you access?
- Who pays for the articles you access?
A problem

The period between 1986 - 2003 subscription prices increased more than 260%

Source: https://goo.gl/9yjULV
Another problem

Overall, for 2013 in Europe budgets have decreased. In the USA the numbers stayed the same. In Asia the budgets increased.

Let’s face it!

Harvard University says it can't afford journal publishers’ prices

University wants scientists to make their research open access and resign from publications that keep articles behind paywalls

Ian Sample, science correspondent
The Guardian, Tuesday 24 April 2012 17.45 BST
Jump to comments (97)

Source: https://www.theguardian.com/science/2012/apr/24/harvard-university-journal-publishers-prices
Open Access

“Open-access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions. What makes it possible is the internet and the consent of the author or copyright holder”

(Suber, 2007)

Source: https://legacy.earlham.edu/~peters/fos/overview.htm
Open Access Journals offer peer-reviewed research. 30% charge and Article Processing Charge (APC), 70% do not.

Hybrid Journals - subscription based journals that offer an open route. Always charge APCs

* Who covers APCs? 59% paid by the funder, 24% by institution, 12% by author

Source: http://whyopenresearch.org/costs
Open Access Repositories

- Do NOT perform peer-review

- Pre-prints, post-prints, final version

- Standardised: OAI-PMH compatible

- 7/8 of 40% UK’s OA literature, world’s 20%

Source: http://pasteur4oa.eu/sites/pasteur4oa/files/resource/Costs%20of%20OA%20final_0.pdf
Creative Commons licenses
### Journal: Western Journal of Communication

| ISSN: 1057-0314, ESSN: 1745-1027 |

### RoMEO: This is a RoMEO green journal

### Paid OA: A paid open access option is available for this journal.

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### General Conditions:
- Some individual journals may have policies prohibiting pre-print archiving
- On author’s personal website or departmental website immediately
- On institutional repository, subject-based repository or academic social network (Mendeley, ResearchGate or Academia.edu) after a 18 months embargo
- Publisher’s version/PDF cannot be used
- On a non-profit server
- Published source must be acknowledged
- Must link to publisher version
- Set statements to accompany deposits (see policy)
- The publisher will deposit in on behalf of authors to a designated institutional repository including PubMed Central, where a deposit agreement exists with the repository.
What to know more on Open Access?

By Peter Suber

Free on the internet with CC-BY-NC license
bit.ly/oa-book
Research Data
What constitutes research data?

Research data refers to information, in particular facts or numbers, collected to be examined and considered as a basis for reasoning, discussion or calculation.

In a research context, examples of data include:
- Statistics
- Experiments
- Measurements
- Interview recordings
- Survey results

Open Access to Research Data

Refers to the right to access and reuse digital research data under the terms and conditions set out in the Grant Agreement.

What have Open Access to both Publications and Data?

- Build on previous research results
- Encourage collaboration and avoid duplication and effort
- Speed up innovation
- Involve citizens and society

FAIR Data
Open Science transition
Research Lifecycle: as simple as it gets

- Idea
- Methodology
- Data Collection
- Analysis
- Publish
Research Lifecycle: focus on the steps

- **Idea**
  - Experiments, Interviews, Observations, etc.

- **Methodology**
  - Numbers, Code, Text, Images, sound records, etc.

- **Data Collection**
  - Statistics, processes, analysis, documentation, etc.

- **Analysis**
  - Journal article, Dissertation, Book, Source Code, etc.

- **Publish**
  - Dissertation, Book, Source Code, etc.
What is Open Science?

The movement to make scientific research, data and dissemination accessible to all levels of an inquiring society.

[FOSTER, Open Science Definition https://www.fosteropenscience.eu/taxonomy/term/7]

Scope:

• **Transparency** in experimental methodology, observation, and collection of data
• **Public** availability and reusability of *scientific data*
• **Public** accessibility and transparency of *scientific communication*
• Using web-based tools to facilitate scientific *collaboration*

[The OpenScience Project, What exactly is open science http://www.openscience.org/blog/?p=269]
Open Science taxonomy
Topics: adoption and gaps

- 37% - Open Access
  - 34% - Open Access Routes
  - 28% - Open Access Use and Reuse
    - 23% - Open Access Initiatives
    - 8% - Open Big Data
    - 8% - Open Data Definition
    - 23% - Open Data Journals
    - 18% - Open Data Standards
    - 38% - Open Data Use and Reuse
    - 5% - Open Government Data
    - 13% - Definition of Open Reproducible Research
    - 2% - Irreproducibility Studies
    - 9% - Open Lab/Notebooks
    - 42% - Open Science Workflows
    - 35% - Open Source in Open Science
  - 16% - Open Access Definition
  - 2% - Reproducibility Guidelines
  - 0% - Reproducibility Testing
- 31% - Open Data
  - 78% - Open Metrics and Impact
  - 2% - Reproducibility Guidelines
  - 0% - Reproducibility Testing
  - 7% - Open Data Tools
  - 2% - Open Science Evaluation
  - 1% - Open Science Guidelines
  - 11% - Organisational mandates
  - 13% - Subject policies
  - 2% - Open Science Projects
  - 69% - Open Repositories
  - 22% - Open Services
  - 9% - Open Workflow Tools
  - 61% - Open Access pol
  - 60% - Open Data Polci
  - 42% - Open Science Policies
  - 5% - Open Governmental po
  - 24% - Institutional policies
  - 60% - Funders policies
  - 16% - Semantometrics
  - 5% - Bibliometrics
  - 42% - Altmetrics

Research Lifecycle: focus on the steps

Open Access
Open Science
Evaluation
Open Metrics
Open Peer Review

Open Reproducible Research: Guidelines, testing, studies

Open Science Tools: Notebooks, Workflow

Open Science
Evaluation
Open Metrics
Open Peer Review

Open Data: Big Data, Standards, Data Journals

Idea

Publish

Journals article, Dissertation, Book, Source Code, etc.

Statistics, processes, analysis, documentation etc.

Methodology

Analysis

Data Collection

Experiments, Interviews, Observations, etc.

Numbers, Code, Text, Images, sound records, etc.

FOSTER
General benefits

- Increases research efficiency
- Promotes scholarly rigour and enhances research quality
- Enhances visibility and engagement
- Enables the creation of new research questions
- Enhances collaboration and community building

Source: Open To All? Case studies of openness in Research
http://www.rin.ac.uk/system/files/attachments/NESTA-RIN_Open_Science_V01_0.pdf
Benefits for early career researchers

• Become pioneers
• Have gained valuable experience
• Distinguish from the crowd
• Plan successful research proposals
• Receive higher citations
• Know how to comply with funders’ policies
• Comply with funders’ policies
• Demonstrate research and societal impact

Note: see also benefits of open access for early career researchers [http://oro.open.ac.uk/44720/](http://oro.open.ac.uk/44720/)
Benefits for research consumers

Aggregating the world’s open access research papers

We offer seamless access to millions of open access research papers, enrich the collected data for text-mining and provide unique services to the research community.

Source: https://core.ac.uk/
Benefits for Text and Data Miners

Open content enables the collection of a large corpus and promotes the use of TDM.

• Unlocks hidden information and develops new knowledge
• Explores new horizons
• Improves research and evidence base
• Improves research process quality
Open Science is now a requirement

Research results:
“each beneficiary must ensure open access to all peer-reviewed scientific publications” (page 4)

Research data:
“A new feature of Horizon 2020 is the Open Research Data Pilot (ORD Pilot), designed to improve and maximise access to and reuse of research data generated by projects… The Pilot on Open Research Data will be monitored throughout Horizon 2020 with a view to further developing Commission policy on open research.” (page 7)

Report URL:
Author disambiguation

ORCID

Connecting Research and Researchers

Source: https://orcid.org/
Is it a wrap rage?
Toolkit courses

What is Open Science?
This introductory module will help you to understand what open science is and why it is something you should care about.

Best Practice
This module introduces policies and other environmental factors that influence good practice in open research.

Open Peer Review (OPR)
This module will introduce you to OPR and let you know how you can get started with it.

Data Protection and Ethics
This module helps you to get to grips with responsible data sharing.

Licensing
This module helps you to find the best license for your open research outputs.

Open Data
In this module, you'll focus on which data you can share and how you can go about doing this most effectively.

OSS and Workflows
This module introduces Open Source Software (OSS) and workflows as an emerging but critical component of Open Science.

Open Innovation
This module will show you how Responsible Research and Innovation is accelerated through Open Science.

Open Access Publishing
This module will help you become skilled in Open Access publication in the wider context of Open Science.

Preprints
This module introduces the practice of sharing preprints and helps you to see how it can support your research.
Thank you!