Open Science around the world

DOI: 10.4000/books.oep.1646
Publisher: OpenEdition Press
Place of publication: Marseille
Year of publication: 2016
Published on OpenEdition Books: 29 avril 2016
Serie: Laboratoire d'idées
Electronic ISBN: 9782821868700

http://books.openedition.org

Electronic reference

This text was automatically generated on 16 septembre 2019.
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1. The principle of making scientific data “open” has been declared several times by European bodies as well as by international forums.

2. Many countries, and in particular those where scientific research is seen as helping to drive the economy, have adopted legislation in favour of Open Science and/or TDM.

3. The march towards Open Science seems to have an historic inevitability.

The European Union clearly in favour of Open Science

4. European Commission Recommendation (2012). In a Communication issued on 17 July 2012 (C(2012)4890) on access to and preservation of scientific information, the European Commission recommends that states:

   • “define clear policies for the dissemination of and open access to scientific publications arising from publicly funded research” and ensure that there is “open access to publications arising from publicly funded research as soon as possible, preferably immediately and in any case no later than six months after the date of publication, and twelve months for social sciences and humanities”; 
   • “define clear policies for the dissemination of and open access to research data arising from publicly funded research” and ensure that “research data that result from publicly funded research become publicly accessible, usable and re-usable through digital e-infrastructures”.

5. In addition, stressing the fundamental importance of published works in the way researchers are assessed, the Recommendation suggests revising the system for academic advancement:

   • by rewarding “researchers who participate in a culture of sharing the results of their research, in particular by ensuring open access to their publications”; 
   • by “developing, encouraging and using new, alternative models of career assessment”.

6. Horizon 2020. In the framework of the Horizon 2020 programme (an EU financial instrument for the development of an Innovation Union, which provides funding for research and innovation for the period 2014–2020), the European Commission has made free access to scientific publications a general principle.
The Guidelines on Open Access to Scientific Publications and Research Data were drafted in the framework of this programme and first published on 16 December 2013. They provide that from 2014 onwards all scientific publications arising from projects financed or co-financed in the framework of the Horizon 2020 programme will need to be made available in open access:

- either immediately by the publisher, which will publish them online (an approach known as “Gold Open Access”); the costs of publication incurred will be reimbursed by the European Commission;
- or by the researchers, 6 months at the latest after publication (12 months for the human and social sciences), via open access archives (an approach known as “Green Open Access”).

Publications and scientific data from publicly funded research will be available to a wider public more quickly, which will enable researchers and businesses to exploit them more easily.


- suggests “that the Commission examine and propose solutions for automated analytical techniques for text and data (‘text and data mining’)” for all purposes, provided that permission to read the work has been obtained (Point 48 of the final report);
- “calls for an exception for research and education purposes, which should cover not only educational establishments but also accredited educational or research activities”, including informal education (Point 51 of the final report).

Revision of copyright. The European Commission also announced on 9 December 2015 its “first steps to broaden access to online content” and outlined “its vision to modernise EU copyright rules”. In this context, “[t]he Commission intends to work on key EU exceptions to copyright” and, in particular, “will revise EU rules to make it easier for researchers to use ‘text and data mining’ technologies to analyse large sets of data”.

Examples from abroad: Creating a legal framework for Open Science

There have been many legal and other initiatives around the world in favour of opening up access to scientific data and text- and data-mining operations on scientific data.

United States. The US was one of the first countries to introduce legal provisions (Consolidated Appropriations Act 2008) on making research work funded by the National Institutes of Health (NIH) publicly available. This Act provides that all articles published in journals as the result of work funded by the NIH must be deposited in the NIH’s own online open archive, the National Library of Medicine’s PubMed Central. Contracts with publishers must allow for this explicitly. There is even a list of publishers who deposit articles systematically, thus requiring no action by the researcher. This Act specifies that articles must be so deposited at the latest 12 months after the actual date of publication in a journal.
In February 2013, the Fair Access to Science and Technology Research Act (FASTR) was submitted to Congress.

In May 2013, the Networking and Information Technology Development Program added a supplementary item to the Federal Budget for 2014. This supplementary item presents several research and development programmes in the field of technological development and in particular the sharing of knowledge in the public sector.

There have been initiatives, such as that taken by the University of Berkeley, which have set up a fund dedicated to financing articles for free access.

American judges also explicitly recognised that TDM operations can be covered by the “fair use” exception, in the case of Authors Guild v. Google (14 November 2013), in the framework of the implementation of a vast programme to digitise books and build up a universally accessible digital library.

Finally, the very recent Google Books decision of 16 October 2015 has broadened the scope of TDM for American researchers. In 2004 Google had launched a vast project to digitise books; in 2005, a group of authors and publishers challenged the search engine for breach of copyright. The US Court of Appeal recognised Google’s right to benefit from the “fair use” exception, considering that the service offered by Google to users was likely to provide a benefit to society in terms of access to knowledge, and arguing that the exclusive rights of the authors should be set aside. This Decision therefore grants Google, its competitors and also public institutions the right to digitise data and provide data-mining services. With this ruling, the United States gives its researchers a significant advantage by enabling them to digitise very large legally accessible datasets, to pool these corpora and to develop search and algorithmic data-processing systems.

**United Kingdom.** The United Kingdom is a leader in the development of open access. The Finch Group, an independent working group set up by the Department for Business Innovation and Skills, published a report in June 2012 on how the results of research could be made more accessible.

In September 2013, the British Parliament published a report on open access and seemed to adopt a dual solution for “Green” and “Gold” access to scientific work.

Lastly, researchers whose work is funded in whole or in part by the British non-governmental Wellcome Trust funding agency, which has clearly declared a position in favour of free access, must deposit an electronic copy of any article accepted for publication in a peer-reviewed journal in PubMed Central and in PubMed Central UK. Articles must be deposited as quickly as possible, and no later than six months after the date of publication.

In 2014, the United Kingdom also introduced an exception for data exploration (the right to make a copy exclusively for the purpose of TDM operations for non-commercial research without requiring agreement from or financial compensation for the copyright holders), on the basis of “fair dealing”.

**US–UK.** Moreover, the United States and the United Kingdom have together launched an initiative entitled UK-US Global Innovation Initiative, which aims to facilitate academic collaboration between the two countries as well as with emerging countries over the next five years.

**Germany.** Germany has created a platform for filing scientific contributions. The federal agency subsidises the purchase of journals through grouped orders, imposing
the condition that publishers accept that articles be free to access after a period of 12 months from the date of publication. To date, acquisition remains limited to certain niche subscription packages, which cost less than the main “big deal” subscription packages.

In addition, a bill was proposed in February 2013 and adopted in November 2013 amending the German Copyright Act (Entwurf eines Gesetzes zur Nutzung verwaister Werke und zu weiteren Änderungen des Urheberrechtsgesetzes und des Urheberrechtswahrnehmungsgesetzes). This text modifies copyright law in the field of science publishing by introducing “a right of secondary exploitation” (Zweitverwertungsrecht).

The adopted text has been translated as follows:

- “The author of a scientific article, arising from research funded at least 50% by public sources and published in a journal appearing at least twice a year, has the right, even if they have transferred an exclusive exploitation right to the publisher, to make the article publicly accessible in the accepted version of the manuscript, after a period of 12 months following its first publication, to the exclusion of any commercial purpose. The source of the first publication must be indicated. Any waiver agreement to the detriment of the author is null and void.”

This amendment provides a legal framework for a right of secondary exploitation of scientific texts arising from teaching or research that is at least 50% publicly funded, even if an exclusive exploitation right has been transferred to a publisher. It lays down the practical conditions for exercising this right of secondary exploitation in such a way as to take into account both the interests of the publishers (12-month embargo period, publication in scientific periodicals, availability for non-commercial purposes) and those of the authors (inalienable rights of secondary exploitation, strengthening the position of the author by a second publication and distribution of results).

International bodies: The tendency is in favour of Open Science

Finally, positions in favour of open access to scientific data have been adopted in international forums such as UNESCO, the G8 and the OECD.

UNESCO. In the framework of the World Conference on Science of 1 July 1999 organised by UNESCO, entitled “Science for the Twenty-First Century: A New Commitment”, two documents were endorsed:

- “The Declaration on Science and the Use of Scientific Knowledge”: this text asserts the need to share data and scientific knowledge and to promote and facilitate cooperation, “essential for undertaking scientific work and for translating the results of scientific research into tangible benefits for society”. The text states that “[p]arliaments and governments should be invited to provide a legal, institutional and economic basis for enhancing scientific and technological capacity in the public and private sectors and facilitate their interaction”;

- “Science Agenda – Framework for Action”: this document defines the guiding principles “for dealing with the problems, challenges and opportunities confronting scientific research”. “Sharing scientific information and knowledge” is one of these principles. The document calls on the different participants in research to collaborate at the international level and to facilitate “the publication and wider dissemination of the results of scientific research ...
through training, the exchange of information and the development of bibliographic services and information systems better serving the needs of scientific communities around the world”. The text also suggests that research institutions should encourage the use of new information technologies, “through the development of electronic publishing and the establishment of virtual research and teaching environments or digital libraries”. Lastly, the text exhorts governments to ensure that “relevant infrastructure and other costs are adequately covered in research budgets” and that appropriate legal frameworks are set up.

G8 London 2013. In a joint declaration on 12 June 2013, the G8 Science Ministers stated that international scientific collaboration is a new global challenge requiring the modification and improvement of research infrastructure in order to make published, peer-reviewed scientific data globally accessible. The G8 Ministers propose a framework for:

- a global research infrastructure;
- open scientific research data;
- expanding access to scientific research results.

OECD report. The OECD published a report entitled Enquiries into Intellectual Property's Economic Impact in August 2015. Chapter 7, “Legal Aspects of Open Access to Publicly Funded Research”, provides an overview of different national legal regimes on access to, and the distribution and use of, the results of publicly funded research in the framework of open access.

The report also draws attention to two other questions:

- the problem of open access in the context of partnerships between the public and private sectors;
- the regimes governing text and data mining.

These positions in favour of open access taken by bodies outside France reflect the natural evolution of scientific publishing towards the free and broad provision of scientific data. France has also repeatedly affirmed its commitment to open access.

Open Science is an international movement marked by commitments from and strong positions taken by European, supranational and other foreign institutions. The French research community must declare its participation in this movement, or risk being discriminated against and left marginalised and uncompetitive.

NOTES


4. Copyright, Designs and Patents Act 1988, Article 29: “Fair dealing with a literary, dramatic, musical or artistic work for the purposes of research or private study does not infringe any copyright in the work or, in the case of a published edition, in the typographical arrangement.”

5. Entwurf eines Gesetzes zur Nutzung verwaister Werke und zu weiteren Änderungen des Urheberrechtsgesetzes und des Urheberrechtswahrnehmungsgesetzes.


7. UNESCO, Declaration on Science and the Use of Scientific Knowledge, Point 38.

8. Ibid., Point 37.


10. Ibid., Point 19.

11. Ibid., Point 20.

12. Ibid., Point 21.