

**Notes written by Marie Farge for Geneviève Fioraso,
french minister of research and higher education,
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Open Access to Scientific Publications

1. Historical background

The '*Berlin Declaration on free access to knowledge in exact sciences, life sciences, social sciences and humanities*' stipulates that '*Internet has fundamentally transformed the concrete and economic framework of the diffusion of scientific knowledge and cultural heritage [...] In the interest of our institutions, the new paradigm of Open Access must be encouraged for the benefit of science and society. [...] Our institutions must find appropriate solutions in order to let the financial and legal frameworks evolve in such a way that access and optimal use of the new facilities be guaranteed*'. This declaration was signed on 22 October 2003 by the Presidents of the DFG (Deutsche Forschungsgemeinschaft), of the Wissenschaftsrat, of CNRS, of the Max Planck Gesellschaft, of the Fraunhofer Gesellschaft, of INSERM, of the Leibniz Gesellschaft, of the Helmholtz Gesellschaft and of Academia Europaea, among others.

2. Principles

Knowledge is not a merchandise of the same nature as a material object. Indeed, when a researcher gives an idea to a colleague, he or she does not lose it. Quite to the contrary he or she wins a person with whom he or she can exchange at a higher level, and make his or her idea evolve, in clarifying it, in modifying it if necessary and in finding applications he or she did not think of. This type of bilateral exchange lies at the heart of peer review the purpose of which is fundamentally to verify, to correct and to improve the content of articles before they are widely accessible. It would indeed be too damageable to the community that wrong ideas circulate in the open.

To evaluate articles by colleagues is an integral and an essential part of the work done by a researcher, at the same level as giving presentations in seminars or writing articles. This is why researchers are not requesting to receive an extra payment when they act as referees for articles or work for editorial boards. It should be noted here that these activities should be better recognized and appreciated. When done with the appropriate level of seriousness, they are time consuming and require a sustained attention, together with a highly specialized expertise.

Public research is financed by everybody's taxes. Results obtained in this context should belong to the community, and articles published with such a support should be freely accessible as soon as they appear. This is not presently the case as publishing houses impose to researchers that they give freely the copyright they own *a priori*, and, most of the time, if they refuse, their article does not get published. Such a transfer of copyright makes publishing houses own the research

articles. This is the basis on which they sell articles back to libraries. In this process, the texts, the figures and the tables presenting data become the property of publishing houses. Since a few years their objective is to connect articles to databases linked to them. The day such a move will be fully successful, giving the copyright will give new rights to the publishing houses concerning the data themselves. This opens the way to transforming data into merchandises, something that is not yet the case. Data, as ideas, have to stay outside the market as collaborations between researchers are based on free and multilateral exchanges of data. Publishing houses are trying to interfere with this process to draw a profit from this common wealth at the expense of researchers and taxpayers.

3. Definitions

Publications in open access (OA) represent articles that are openly and freely accessible in an electronic form via Internet.

Originally, librarians classified open access publications into two categories:

- 'Gold OA' for articles published in journals that are evaluated by an editorial board before publication;
- 'Green OA' for articles deposited in archives as preprints before their submission to a journal.

Commercial publishing houses, which for years have opposed the idea of having open access to publications, finally agreed to a new model involving it but are working hard at making the new paradigm still work in their favor. This led to a semantic 'hold up' that led to a new usage of the words we just defined:

- 'Gold OA' corresponds to articles for which the author must pay the publishing house in order that his or her article be freely accessible on internet after having been accepted by the editorial board; this means that, in such a terminology, publications are being financed by the author without having him or her take advantage of the income obtained by the publishing house;
- 'Green OA' allows publishing houses to receive payment for the access to the online version of the article for an embargo period, from 6 months to 2 years; later, access becomes free.

4. Present situation

Publishing houses make investors and politicians believe that such a distortion is legitimated by the fact that they are taking care of the peer-review, which suggests that referees are paid by them to do this job. This is almost never the case. Publishing houses use this argument as the basic justification for the skyrocketing prices and abusive contracts they present to libraries which buy access to scientific journals.

Researchers are fighting to develop a third path, that would be much less costly than the one of the paying author ('Gold OA') or that of the paying reader ('Green OA'). It is called 'Diamond OA' and is characterized by the fact that neither the author nor the reader have to pay, and the journal does not belong to the publishing house but to the editorial board. This is a group of researchers whose members, replaced in due time, are in charge of the evaluation of articles without being paid (as it is presently the case). The dissemination of the articles is done through unit services whose role is to professionally make articles accessible for free. This means taking care of the indexation, so that articles are properly identified by search engines, and of making

them accessible on line. The financing of the service units is:

- either taken care of by public research infrastructures, on the model of computer centers or informatics networks, such as national network RENATER in France,
- or by offering various kinds of supplementary services, such as editing, converting files into various formats that can be stored and accessed through different media (pads, cell phones), services that would be paid for their value (see, e.g., the economic model underpinning 'Freemium').

5. Proposals

Several such service units offering electronic platforms based on free software (Open Source) already exist. They host journals that are Open Access. In France, the CLEO (Centre pour L'Édition Électronique Ouverte, Marseille) brings together more than 350 human and social sciences journals financed on the Freemium model (cleo.cnrs.fr, www.openedition.org). In Brazil the State of Sao Paulo finances the electronic platform SCIELO that gives access to more than 500 scientific journals coming from many different scientific domains (scielo.org). In Germany, the Max Planck Gesellschaft (MPG) offers similar services, in particular for editing books thanks to the electronic platform 'Edition Open Access' (www.edition-open-access.de) and for the online access to rare collections through the platform ECHO (European Cultural Heritage Online, echo.mpiwg-berlin.mpg.de). It would be extremely useful that a French-German program be started bringing together, as an example, CNRS and MPG/DFG with the aim of putting in place such tools for the service of researchers to accompany them in their indispensable endeavor to disseminate their articles electronically. This third path, that is called 'Diamond OA', would stress that there are other ways of operating than 'Gold OA' and 'Green OA', as claimed by publishing houses. France and Germany should get together to develop the 'Diamond OA' standard. This would enable a necessary challenge to 'Gold OA' and 'Green OA', that is on its way of being adopted as the standard by the UK and strongly promoted to become also the one for the European Commission Horizon 2020 framework, due to the very active lobbying of the publishers controlling the market.

It is important to stress that, if open access journals can become the reference, libraries will neither have to pay for subscriptions nor to manage restrictive access due to the commercial character of publications, as it is the case now. Private research institutes, linked to industries that have their own research laboratories, would be the first to take advantage of free access articles as, most of the time, their size is not big enough to justify buying access to a large number of scientific journals in view of the prices claimed by publishing houses. Therefore generalizing open access publication would also benefit directly industry. Moreover, as authors would keep their copyright, they would be able to reuse illustrations they produced for some articles when they are relevant in another piece of work, for instance to compare results or to illustrate textbooks written for students.

It would also be desirable that lawyers, specialized in intellectual property, would advise scientists and research institutions about their rights. This could allow the members of the editorial board of a high impact factor journal (e.g., some of those bought by Elsevier, such as *Applied and Computational Harmonic Analysis*) to recover the journal title and its past issues to pursue its publication as 'Diamond OA'. Such a solution would avoid creating of a similar journal with a different title that would require many years before reaching the same impact factor.

6. The French 'Comptes-Rendus de l'Académie des Sciences de Paris' could be used as a prototype of 'Diamond OA' publication

It would be an excellent advertisement for the Académie des Sciences de Paris if its 'Comptes-Rendus' (CRAS) were published using the 'Diamond OA' model. It would be the first Academy to do it and this would give a new dimension to the CRAS. With no publication fee and free on line access immediately after the editorial board has accepted the article, researchers who stopped publishing there would look for it again. Presently, the CRAS are published by Elsevier but many members of the Academy are highly unhappy about that. As the Academy owns the title, it should be possible to put an end to the contract with Elsevier, and adopt a new electronic publication scheme for the CRAS.

7. Persons with expertise in electronic publishing

Marin Dacos et Pierre Mounier, CLEO, France,
Jürgen Renn, Urs Schoepflin and Simone Rieger, Edition Open Access and ECHO,
Max Planck Institut, Berlin, Germany,
Frank Sander, Max Planck Digital Library, München, Germany,
Serge Bauin, Direction de l'Information Scientifique et Technique, CNRS,
Laurent Romary, INRIA, France.

References

- Statement by le Comité d'Éthique du CNRS on «*Relations between Researchers and Publishing Houses*», 27 June 2011. The text can be downloaded from

http://wavelets.ens.fr/BOYCOTT_ELSEVIER/RECOMMENDATION.

- Statement «*The cost of knowledge*» signed by 34 mathematicians, 9 February 2012. The text can be downloaded from http://wavelets.ens.fr/BOYCOTT_ELSEVIER/DECLARATIONS or from

<http://thecostofknowledge.com>.

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