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ALLEA Statement on Enhancement of Open Access to Scientific Publications in Europe*

ALLEA Permanent Working Group on Intellectual Property Rights

Open Access to scientific publications is one among several other policies that will accelerate the move towards Open Science

In its April 2012 declaration entitled "Open Science for the 21st century", ALLEA stressed the need to promote (i) access to scientific publications as soon and as freely as possible (hereafter "Open Access" or "OA"), (ii) the development of open platforms allowing access to research data that are discoverable and re-usable (hereafter "Open Data"), (iii) support for interoperable e-infrastructures to manage the scale of future data flows (hereafter "Open e-Infrastructure"), (iv) the culture of open science based on online collaborations and high standards of quality and integrity (hereafter "Open Scientific Culture").

OA is a crucial element in reaching an Open Science model that will flourish rapidly. But the transition to Open Science requires more than just a fine-tuned policy on OA to scientific publications. While Open Data and Open Infrastructure mainly require the support of, and funding by, public authorities, OA to scientific publications requires a redesign of how scientific researchers, editors of learned journals, research funding bodies, libraries and archiving institutions interact with the publishing industry. In contrast to policies geared towards Open Data, Open e-Infrastructure or Open Scientific Culture, an OA policy can conflict with the copyright-based claims made by the publishers who, in general, are by assignment the owners of copyright on journal articles [1]. There is a need to respond to some demands of journal publishers [2], since their views on the publication process and on the legacy of the past cannot simply be disregarded. Ignoring them may help to explain why the implementation of the OA model has been somewhat delayed. ALLEA urges public authorities and funding institutions to adopt concrete steps towards an OA model [3].

*This statement was prepared on October 2013 by the ALLEA Permanent Working Group on Intellectual Property Rights. ALLEA, the federation of All European Academies, works to contribute to improving the framework conditions under which science and scholarship can excel. The working group was chaired by Prof. Joseph Straus (Union of the German Academies of Sciences and Humanities) and Prof. Alain Strowel (Saint-Louis University, Brussels) is the lead author of the statement. It can be accessed at http://www.allea.org/Content/ALLEA/Statement_ALLEA_Open_Access_2013-11.pdf. Recently, the Institute for Catalan Studies, the Academy of sciences and humanities of the territories of Catalan culture, joined ALLEA.

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The traditional system for the publication and dissemination of scientific journals has shown some limits

The revenues of the scientific, technical and medical (hereafter the "scientific") publishers amounted to €24.9 billion for 2010, with a growth of 4.3% compared to 2009, not with standing the difficult economic situation [4]. The scientific publishing sector is now quite concentrated with big players such as Elsevier (2200 journals, including *Cell* and *The Lancet*), Springer (around 2000 journals), Wiley-Blackwell (1500) and the Nature Publishing Group [5]. Scientific publishing still appears to be a profitable business.

At the same time, the cost of journals for libraries has risen dramatically. According to the libraries, the payments for journals quadrupled between 1986 and 2011, with an average annual increase of 3.5% above inflation. "This increase cannot only be explained by the increased number of scientific articles published" (see COM(2012) 410 final, p. 4).

This leads to the conclusion that public bodies which subsidise research have also to pay for permitting other researchers to access published research results.

But scientific publishers also include smaller players, for instance many University presses and learned societies, whose economic model might substantially differ. Not all academic publishers operate solely for commercial gain and the implementation of OA should be rolled out in such a way as to preserve the best of existing publishing practices. It is useful to note that many not-for-profit organisations such as academies, learned societies and professional associations raise a substantial part of their income from their publishing activities and this is then used to cross-subsidise other parts of the research system such as early career fellowships, mobility grants, etc.

Any OA policy has to take into account the varying situations of publishers. In particular, large publishers may enhance revenue by offering electronic (and/or paper) journals in packages, with the result that libraries may be obliged to subscribe to the whole bundle, although they are only interested in some parts of it. In contrast, small publishers may well not have the stock to engage in such a practice; and so may be free from any objection of this kind.

Some members of the scientific community have quite properly voiced their concern about the rising cost of accessing knowledge. Others have even called for the boycott certain publishers. The objections are particularly acute in the field of natural and medical sciences, probably less for journals in the humanities and social sciences, such as economics, politics, history and law reviews.

A new compact between the different parties involved in the financing of research, the production of scientific articles, their assessment through peer-review, their dissemination and their preservation appears necessary. The tensions with commercial publishers and some entrenched practices in journal publishing probably slow down the indispensable move towards an OA model.

Open Access relies on fundamental legal principles and is rightly supported by authorities, in particular the European Commission

i) Fundamental legal principles

OA is supported by the right "to share in scientific advancement and its benefits" that is enshrined in Article 27(1) 01 the 1948 Universal Declaration of Human Rights, a principle that has become a binding norm as Article 15 of the International Covenant on Economic, Social and Cultural Rights (1966). At the same time, Article 27(2) recognises "the right to the protection the moral and material interests resulting from any scientific, (...) production of which he is the author". In Europe, the freedom of scientific research is recognized by Article 13 of the Charter of Fundamental Rights, while "intellectual property" is equally protected under Article 17(2) of the Charter.

ii) Towards OA in Europe

The Berlin Declaration on OA of 2003 was a landmark in the drive towards better access to scientific materials. Since then, several national and international bodies have pleaded in favour of OA.

For many years, the European Commission has supported the move to OA. In its "Horizon 2020" which follows the previous Framework Programs, the Commission envisages that all research results should be made freely accessible online.

In a July 2012 Communication entitled "Towards better access to scientific information: Boosting the benefits public investments in research" (COM(2012) 401 final), the Commission has identified some barriers hindering the transition to OA. The lack of coordination between universities, research institutions and libraries, the absence of a transparent path for moving out of the standard publishing model, the lack of information and infrastructure that will allow researchers to comply easily with OA via self-archiving, the fear of contractual disagreements with their existing publisher and the absence of mechanisms for enforcing OA policies, all help to explain why the transition to OA is slow.

In its July 2012 Recommendation on access to and preservation of scientific information (C(2012) 4890 final), the Commission distinguished several issues that require action: on top of recommending "open access to scientific publications", the Commission advocates the "open access to research data" (e.g. searchable and linked datasets), the "preservation and re-use of scientific information" (e.g. system of electronic deposit), the development of "e-infrastructures" (the electronic systems for underpinning the dissemination of scientific information), the multi-stakeholder dialogue at different levels and the coordination between Member States.

iii) Towards OA in the U.S.

On February 22, 2013, President Obama's Executive Office issued a memorandum on "Increasing Access to the Results of Federally Funded Scientific Research". Under the Name "Public Access to Scientific Publications", this document stresses that the results of unclassified research that are published in peer-reviewed publications directly arising from Federal funding should be stored for preservation in the long term. Also those publications should be made "publicly accessible to search, retrieve, and analyse in ways that maximize the impact and accountability of the Federal research investment". In developing this Public Access policy, the U.S. agencies are asked to "maximiz(e) the potential to create new business opportunities" and to "prevent the unauthorized mass redistribution of scholarly publications".

iv) Positive impact of OA

Similarly, ALLEA believes that, on top of the obvious gains in terms of improved access, the development of OA could create new business opportunities and reduce the level of unauthorised dissemination of publications. Publishers might play a new and important role in an OA model that would reduce the financial burden for libraries, research organisations, universities and, ultimately, the funding institutions. At the same time, the move towards OA does not mean that copyright has norole to play in the open environment: rather than ensuring revenues directly commensurate to the number of copies distributed, copyright, and in particular its principles on attribution of authorship and integrity of works, should govern the Open Scientific Culture that goes along with OpenScience.

However, it would be naïve to think that OA will automatically reduce the financial burden for the funding institutions. It might even grow initially when the OA infrastructures are being established.

ALLEA supports the European and U.S. policy objectives for OA relating to scientific publications, and urges that steps towards implementation be set in train

ALLEA fully supports the European Commission's recommendations of July 2012. In particular, ALLEA wants to stress the need to:

In general:

- "Define clear policies for the dissemination of and OA to scientific publications resulting from publicly funded research"; beyond general policies, concrete objectives and indicators should be used, based on implementation plans and awareness programs;
- Put in place much needed financial planning for the move to OA;

For the funding institutions:

- Ensure that they define clear policies for OA to the publications resulting from the funded projects;
- Include in the career evaluation of researchers not only traditional publications in (peer-reviewed) journals, but also publications in open mode;

For the timing of OA implementation and the embargo periods:

- Require OA to be implemented as soon as possible. Some flexibility is needed; in certain areas of research, shorter embargos make sense;

For the public institutions involved in the negotiation with publishers:

- Improve transparency about the terms and conditions negotiated between publishers and public institutions which foster research;
- Promote partnerships between public institutions (in particular libraries) at national and European level;

For the researchers:

- Give guidance to researchers on how to comply with OA policies and make them more aware of what the standard publishing contracts allow them to do(for example authors tend to underestimate what they can do with pre-publication versions, e.g. self-archiving, use in course packs, etc.);
- Foster the awareness among researchers of the copyright licences needed for OA to be quickly implemented and "encourage researchers to retain their copyright while granting licences to publishers";
- Support the academic careers of researchers who ac-

tively share the results of their research;

For entrepreneurs who directly need access to scientific knowledge:

- Allow unaffiliated persons and SMEs to access scientific publications under reasonable conditions.

ALLEA also supports the adoption by European funding agencies of objectives similar to those outlined in the February 2013 memorandum of the Obama administration:

- "Ensure that the public can read, download, and analyse in digital form final peer-reviewed manuscripts or final published documents";
- "Ensure full public access to the metadata of publications without charge upon first publication in a data format that ensures interoperability with current and future search technology";
- "Ensure that attribution to authors, journals, and original publishers is maintained";
- "Ensure that publications and metadata are stored in an archive that i) provides for long-term preservation and access to the content without charge (and) ii) uses standards, widely available and, to the extent possible, non-proprietary archival formats for texts and associated content".

Now that there is a broad consensus with regard to the policy orientations in Europe and in the U.S., all measures supporting OA should be implemented within a strict time frame.

ALLEA in particular supports the Green OA model, but invites funding institutions and public authorities to help the scientific community to put in place self-archiving solutions

In its July 2012 Communication, the Commission retains the usual distinction between "Gold" OA and "Green" OA: while Gold OA shifts the payment publication costs from readers (vi a subscriptions) to researchers and their institution, Green OA is synonymous with self-archiving [6].

i) Gold OA

Gold OA is favoured by scientific publishers and sometimes supported by public authorities. In the UK for instance, the government considers that the results of all publicly funded research should preferably be published in the Gold mode. However, the government did not indicate how it would be financed [7]. In the Commission's FP7 and under Horizon 2020, Gold OA is eligible for funding as part of research grants.

The Gold OA might present some advantages, but ALLEA stresses that the price for a publication under the Gold OA must remain reasonable. It appears that the price to be paid for a Gold publication is usually between €1500 and €5000 [8]. According to some experts, a fee between €500 and €1000 would appear reasonable [9]. The publishers should remain reasonable in setting the price for the Gold model. This price should cover the costs resulting from publishing and be as transparent as possible.

Public authorities should ensure that the price asked by publishers remains commensurate with the overall funding of the project. For large scientific projects, it is easier to allocate a reasonable amount for Gold publication; for research projects supported by smaller grants, such as in the humanities and social sciences, the payment of the same fee might not appear adequate. Thus the Gold model could be favoured in certain fields and for large projects.

Some disciplines (e.g. astrophysics) have a long-standing, researcher driven commitment to use of OA tools to drive scholarly communication, while others have yet to embark in a meaningful way upon an OA pathway. The implementation of a Gold model must allow for different pace and level of engagement across the disciplines.

Funding institutions should be encouraged to outline clearly how they will support and fund meaningful OA. A key element of this should be a commitment to resource OA as a specific item within research grants made by public research funders. The implementation of a retrospective requirement for OA should be avoided.

A worrying feature of any author-pays model is that it could inhibit publication by independent or under-funded researchers, for instance coming from less wealthy countries. This is another reason for not favouring a Gold model across the board.

ALLEA is opposed to a research assessment system that would only take Gold publications into account: the adoption of such an assessment system would very probably lead to an increase of the price to be paid for Gold publications, as researchers and institutions will be locked in the Gold OA model.

ii) Green OA

In the "Green" model, the published and peer-reviewed article "is archived by the researcher in an online repository before, after or alongside its publication" (COM(2012) 410 final,

p. 5). Publishers can recoup their investment by selling subscriptions and charging pay-per-download/view fees during the embargo period and after.

ALLEA tends to favour the Green model for humanities and social sciences. But the Green model could also apply to small research projects in other disciplines.

This model supports the long-standing scholarly principle of "freedom to publish" by ensuring that researchers retain ultimate authority as to where and how they publish their scholarly outputs.

A short embargo should apply. The embargo could vary depending on the discipline. In last moving research fields, the embargo could be for six months; some fields like physics and maths are relatively slow moving, and a longer embargo thus appears adequate.

Efforts should also be made to ensure that a draft version can be archived before the publication (but after peer review clears the way) and that, more importantly, the final version is archived alongside the publication in the journal.

To maintain the high quality of scientific literature is of utmost importance. There are indications of an increasing number of cases of misconduct in research, and therefore high quality peer review is more important than ever. In a model where the researcher pays for publication, it may be tempting for publishers to accept contributions of questionable scientific quality. Therefore, it appears necessary to define standards to be applied by the publishers for high quality peer review.

iii) In General

Although ALLEA supports an OA policy, both the Gold and the Green models may create problems. It is essential to address those problems. ALLEA encourages the European Commission to assess OA policies so as to enable policymakers and the scientific and scholarly community to understand better the costs, savings and benefits arising from OA.

Various licence models could be adopted for the Gold and Green OA models. ALLEA believes that most researchers would favour a model of open licence that requires the author to be named (attribution), but prohibits commercial reuse (model of the Creative Commons - BY - NC). Further consultation with the research communities is needed before a model is agreed upon for this element of OA practice. The best solution may be to leave some choice as to the type of open licence to adopt.

ALLEA also considers that OA, which allows short-term access to publications, should be complemented by a system ensuring the long-term preservation of publications (and research data). This could be done by an effective system of deposit, but also through the preservation of the hardware and software needed to read the publications (and data) in the future.

It is also essential that the universities and research institutions put in place a repository system. The European Commission should fund the development of those institutional repositories. It should also define the standards for online repositories (this also relates to the need to invest in e-Infrastructure; see above on the factors that promote Open Science). A ranking of repositories might be a way to indicate quality standards. More should be done to assess the quality of OA repositories. It is probably not useful to have OA repositories containing pre-prints, working papers and post-prints all together in the same spot. The lack of quality standards for repositories is a disincentive for scientists to publish under an OA model.

ALLEA hopes that moving to OA will help scientific institutions to save money, but it is important to realize that an OA model might impose new burdens on researchers and their employers. New tasks for the researchers should in any case be kept to a minimum.

As stressed by five leading UK learned societies: "Implementing OA policies will require a substantial shift in community altitudes and behaviour in some disciplines, and all stakeholders need to increase their efforts to communicate more effectively with researchers" [10]. This is also an important element to be taken into account by the European authorities before embarking on a possibly far-reaching reform of the practices of scientific publication. The policy and guidelines to be adopted should in any case take into account the important differences which exist between the interests of scientists and publishers in the area of natural sciences, on one side, and in the area of humanities and social science, on the other.

Notes

1. Within the bread issue of open access to scientific information, it is thus important to distinguish the issue of open access to peer- reviewed research articles (referred to as Open Access or OA) and the issue of access to scientific research data (referred to as Open Data).
2. In its July 2012 Recommendation (C(2012) 4890 final), the Commission mentions that "(15) Given the transitional state of the publishing sector, stakeholders need to come together to accompany the transition process and look for sustainable solutions for the scientific publishing process".
3. For example, in September 2012, the UK announced a £ 10 million investment to help universities with the transition to open access to publicly-funded research findings and to kick-start the process of developing poli-

cies and setting up funds to meet the costs of article processing charges (see: http://www.stm -assoc.org/industry-news/uk-government-invests-10-million-gbp-to-help-unversities-move-to-open-access/).

4. See: http://www.stm-assec.org/wp-content/uploads/STMStatOct2011.jpg.
5. Le Monde, March 2, 2013, p. 4 Supplement.
6. According to the Commission's Communication (p. 5), "currently some 20 % of all scientific articles are available in open access form,60 % of which follow the "Green' model".
7. More clearly, the Wellcome Trust has said the Gold OA should be paid out of the research grant which would be adjusted accordingly.
8. Le Monde, March 2, 2013, p. 5 Supplement.
9. B. Rentier, President of the University of Liège, quoted in Le Monde, March 2, 2013, p.5 Supplement.
10. Open Access in the UK and what it means for scientific research. A joint statement from The Academy of Medical Sciences, the Institute of Physics, the Royal Society, the Royal Society of Chemistry, and the Society of Biology, February 2013, p. 2. Accessed at: https://royalsociety.org/uploadedFiles/Royal_Society_Content/z_events/2013/scientific-discussion/oa-workshop/2013-Open-Access-Joint-Statement.pdf.