

***Encontros Bibli* - What is the relationship between Open Archives and the movement for Open Access to Knowledge? Or, in other words, in what measure does the Open Access Movement depend on the information and communication technologies?**

Harnad: The Open Access (OA) Movement is a movement to make all scholarly and scientific research published in peer-reviewed journals (c. 24,000 journals, c. 2.5 million articles per year) freely accessible online to all potential users worldwide, in order to maximise research access, usage, applications and impact, and thereby research productivity and progress.

What made OA possible was, first, the digital online medium: First the birth of the Internet, then the Web, and then the OAI interoperability protocol. (The “Open Archives Initiative” metadata harvesting protocol allows all compliant archives to be harvested and their contents treated and searched as if they were all in one global archive. It is important not to confuse “Open Archives” – meaning interoperable, OAI-compliant archives, with “Open Access” Archives: An archive can be OAI-compliant without being OA, and vice versa.)

It is also important to understand that OA is not – and cannot be – about access to “all knowledge” or even to all scholarly and scientific knowledge. What makes journal articles special is that they are, and always have been, given away for free by their authors (free to publishers, free to requesters of reprint), because they were not written for fees or royalty income. They were written to maximise their usage, uptake, applications and impact. That is how researchers contribute to knowledge, and their research impact is also a determinant of their research funding, their salaries and their careers.

This is not true of, for example, scholarly/scientific books, which are sometimes written for royalties, and which might not even find a publisher, nor a way to cover publishing expenses, if the author insisted on making them OA.

OA is also not the same as Open Source or Free Software. Nor is it the same as Creative Commons Licensing for audio, video or other digital materials. OA applies first and foremost to the exception-free journal-article literature, all of which consists of author-give-aways, written solely for impact, not revenues.

After the OAI interoperability protocol, the most recent relevant technology for OA is the free (open source) software written to create OAI-compliant archives (now also called repositories: Institutional Repositories (IRs) and Central Repositories (CRs)). The first such free OAI-compliant OA IR-creating software, widely used all over the world, is Eprints. Associated with Eprints there are also directories of IRs worldwide, and directories of institutional OA policies. An OA IR citation-based search engine, Citebase, has also been created. It navigates via citations the way Google navigates via links. It has also helped open the new field of OA scientometrics: navigating and evaluating the OA research database via old and new metrics of research impact, such as downloads, citations, co-citations, hubs/authorities, chronometrics, etc.

***Encontros Bibli* - What are the perspectives of this Open Access Movement? Do you think this movement could help to solve the problem of social inequalities in the world?**

Harnad: OA can and will solve the problem of inequalities in access to scientific and scholarly research findings. This will help to remedy some social equalities in the world.

There are two roads to OA:

- (1) The Golden Road to OA – OA journal publishing -- is for subscription-based journals either to make their contents freely accessible online, or to convert from recovering costs by charging subscription access-tolls to user-institutions to other means of recovering costs, such as author-institution publishing charges. The Golden Road to OA, however, is slow and uncertain, and also represents potential hardships for author-institutions that cannot afford OA publishing charges. OA publishing will become much cheaper once all journals convert to OA, but they will only convert – and prices will only be driven down – if 100% OA is first reached by the other road to OA:
- (2) The Green Road to OA is for authors to self-archive their journal articles in their institution's OA IR.

Self-archiving is within the reach of all researchers worldwide. For those who don't yet have IRs to deposit in, there are CRs available. However, only about 15% of researchers self-archive spontaneously today. Hence the solution is that their institutions and their research funders need to extend their existing "publish or perish" mandates to also mandate that all articles must be self-archived immediately upon acceptance for publication.

Self-archiving mandates are now growing worldwide, though they still have not reached critical mass. Once they do, 100% OA will be soon reached.

But remember OA has a specific target, and that is its strength. It is not a vague, general wish for free access to all "knowledge": It is focussed on author give-away writings, written for impact rather than income. (But the benefits of OA will surely help to spread the author give-away mentality to other kinds of content too.)

***Encontros Bibli* - In which ways could the scholarly communication system change as consequence of new information and communication technologies and the movement for Open Access to Knowledge?**

Harnad: The main change resulting from OA will be greater and faster research productivity and progress. Access to research will no longer be limited to those whose institutions can afford to subscribe to the journal in which it appeared. The uptake and usage of research will accelerate and widen, and the public, who are paying to fund research and research institutions, will have more research progress and productivity as a benefit. The developing world will especially benefit, as they have a great deal of research talent available, but lack the resources to access current research, so as to be well-informed and able to use and build upon it. Students worldwide will benefit too, from unrestricted access to all research. The navigation, evaluation and analysis of research developments and direction will also be greatly enriched by OA and the tools

and services to which it will give rise. And of course the benefits of the OA movement will spread to other forms of digital output too, as they become more evident to all.

***Encontros Bibli* - In your point of view, the scientists have attended the movement of Open Access to Knowledge? Which is their role in this movement?**

Harnad: I don't quite understand the question. Do you mean scientists are awaiting OA, or scientists created OA?

OA is for peer-reviewed findings in all research fields, not just the scientific ones. But OA is particularly urgent in scientific fields, and its benefits – in terms of increased and accelerated research productivity and progress, measurable by such metrics as publication, download and citation counts – are most salient and palpable.

Computer scientists (who created the Internet and the Web) and physicists (who already had a culture of freely distributing their preprints) were among the first populations to take advantage of the possibility of OA self-archiving, but OA is beneficial to all scholarly and scientific fields, and self-archiving is being practised in all fields. It remains true, however, that the spontaneous self-archiving rate (15%) is far too low (even in science, where it is higher in some fields). Hence what is urgently today is the worldwide adoption by universities, research institutions, and research funders, of official self-archiving mandates. It costs nothing but a few minutes of keystrokes, and the benefit is Open Access for all.

It will be a matter of some historical interest why it was necessary to wait for the adoption of OA self-archiving mandates by researchers' institutions and funders in order to ensure that researchers provided OA to their articles: Why did only about 15% of them do it spontaneously, of their own accord, considering that the benefits (in terms of the usage and impact of their research) as well as the rewards are largely theirs?

There are no doubt multiple reasons for this, including groundless worries about copyright (see the self-archiving FAQ). But the principal reason is a general academic inertia that is surprisingly impenetrable to reason (and action). Possibly it is related to why we had to have "publish or perish" mandates, or otherwise many researchers would not bother to publish their findings at all, but would just put them in a desk drawer and move on to their next piece of curiosity-driven research.

I do not pretend to understand the full answer to this. I must leave it to historians to analyze and explain -- after we have reached the optimal and inevitable outcome: 100% OA.

Here are some relevant URLs and writings:

[Self-Archiving Proposal \(1994\)](#)

[BOAI Self-Archiving FAQ](#)

[ROAR \(Registry of Open Access Repositories\)](#)

[ROARMAP \(Registry of Open Access Repository Material Archiving Policies\)](#)

[ROMEIO Journal/Publisher Self-Archiving Policy Directory](#)

[Bibliography of Findings on the Open Access Impact Advantage](#)

[EPrints \(free Open Source software to create OA IRs\)](#)

Harnad, S. (2006) [Opening Access by Overcoming Zeno's Paralysis, in Jacobs, N., Eds. Open Access: Key Strategic, Technical and Economic Aspects](#), chapter 8. Chandos.

Shadbolt, N., Brody, T., Carr, L. and Harnad, S. (2006) [The Open Research Web: A Preview of the Optimal and the Inevitable](#), in Jacobs, N., Eds. *Open Access: Key Strategic, Technical and Economic Aspects*, chapter 21. Chandos.

Harnad, S. (2007) [Open Access Scientometrics and the UK Research Assessment Exercise](#). 11th Annual Meeting of the International Society for Scientometrics and Informetrics. Madrid, Spain, 25 June 2007