

Striving for Open Access

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by Wendy Warr



The seminar on Open Access to Scientific and Technical Information, held in Paris in January 2003, dealt with an issue that could eventually impact all IUPAC members. This timely seminar—organized by INSERM, CNRS-INIST, and ICSTI, and supported by ICSU and CODATA—explored the economic, political, and legal realities of the Open Access (OA) movement.*

What is Open Access, and why should it matter to IUPAC's Committee on Printed and Electronic Publications (CPEP)? According to David Prosser of the Scholarly Publishing and Academic Resources Coalition of Europe (an organization that aims to reduce the costs of access to learned publications), OA is a call for free, unrestricted access, on the public Internet, to the literature that scholars produce. It aims to accelerate research, enrich education, allow sharing of learning between richer and poorer nations, and enhance the return on taxpayer investment in research. These goals would be achieved by using existing funds to pay for dissemination rather than access.

In technological terms OA is described by Jack Franklin, in a background paper written for the conference, as an attempt to establish "common standards whereby articles stored on compliant servers can form a global library, allowing searching, data retrieval, cross-linking, and stable, long-term archiving." Until now, learned societies and commercial publishers have cornered the market for such facilities: publishing in refereed journals that have "high impact" is currently the key to recognition, tenure, and promotion for scientists. Since it would be prohibitively expensive to give all researchers in all countries access to all the information in up to 20 000 learned journals and countless databases, OA has been described as a technology for "giving the science back to the scientists" or allowing academia to take back control of scholarly communication.

Stevan Harnad, of Southampton University in the United Kingdom, was an early and exceedingly enthusiastic pioneer in this field. He claims that OA is not a

struggle against publishers or an attempt to replace them, but it is a parallel movement. It does not aim to solve the budgeting problems of libraries and give access to all in the Third World, although it might, as a side effect, do so. Instead, its main goal is to persuade scientists to mount their papers on institutional servers, giving access to all, so that the results may form the basis of further work and research may progress faster. Higher citation counts on the server would indicate the importance of articles and contribute to the prestige and upkeep of the institution.

Southampton University provides open archiving software called EPrints to help create open access to the peer-reviewed research output of all scholarly and scientific research institutions. Eprints is slowly gaining visibility, although institutional servers as recommended by Harnad have not proved as popular as discipline-based preprint servers such as the well known ArXiv for physics and related sciences. A Chemistry Preprint Server was launched more recently.

Preprints are not peer reviewed but OA peer-reviewed journals are also beginning to appear. For example, all the original research articles in the journals published by BioMed Central are immediately and permanently available online without charge or any other barriers to access. Public Library of Science has recently announced that it will launch two OA journals.

The concept of OA is of particular importance to scientists in the developing nations. A so-called North-South knowledge gap is caused by the high cost of published refereed literature and a South-North gap by the high costs of local journal production and prejudices at mainstream northern journals. As a result, researchers are unable to get research published and cannot form partnerships with researchers abroad. This is most serious in disciplines where a global picture is required, such as AIDS, infectious diseases, and environmental protection.

In response to a World Health Organization (WHO) poll, scientists in 130 such countries expressed three needs. First they want access to journals such as *Nature* and *The Lancet*. Second, they want to be recognized by publishing in the top international journals; they need international recognition in order to get funding. Third, they need help with duplicate publishing: they need to publish in both local and international journals. The first need had the highest priority so WHO tackled it first in the Health InterNetwork Access to Research Initiative, said Barbara Aronson of the WHO.

Those who do not see journals, do not publish in them. They are not peer reviewers. They do not go to

*INSERM is the French Institute of Health and Medical Research, CNRS is the Centre National de la Recherche Scientifique, INIST is the Institut de l'Information Scientifique et Technique, ICSTI is the International Council for Scientific and Technical Information, ICSU is the International Council for Science, and CODATA is the Committee on Data for Science and Technology.

meetings. Any price is too high for these scientists. They work with a sense of isolation. The poorest 75 countries have a GNP of less than USD 1000 per capita per year. A further 47 have GNP of USD 1000—3000. At the other end of the scale (represented by the audience in Paris), 20 countries have a GNP per capita of greater than USD 25 000. The lower the GNP, the higher the level of disease. In the 75 poorest countries, 56% of medical institutions have no subscriptions to journals and 21% have only 2 print subscriptions. In the next 47 countries, 34% of medical institutions have no print subscriptions and 34% have only 2 subscriptions.

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So, WHO has worked with leading Internet publishers to provide access for the Third World through the HINARI project. Some 2100 journals are offered online access through a user-friendly interface. HINARI has offered free access in 69 of the poorest countries since January 2002. In January 2003, low-price access (USD 1000 per institution per year) was offered to a further 43 countries. As of January 2003, 438 institutions in 56 countries have taken up the free service and 247 institutions in 32 countries have low-price access.

Another initiative aimed at the developing world is that of the International Association for the Promotion of Cooperation with Scientists from the New Independent States of the Former Soviet Union. The organization's International Network for the Availability of Scientific Publications and the Program for the Enhancement of Research Information provide funding to facilitate online access to full-text journal databases, offer electronic document delivery services, and train scientists in information and communication technologies.

Kay Raseroka of Botswana, president-elect of the International Federation of Library Associations and Institutions led a panel discussion on how to ensure that developing nations can participate in OA initiatives. The panelists emphasized visibility, raising awareness, and training as part of the solution. It was pointed out that the Open Society Institute is negotiating national licenses and arranging training in some countries. According to the panelists, infrastructure, capacity, and bandwidth need to be developed; per-

manent local structures must be put in place; and durability and sustainability are important.

Sally Morris of the Association of Learned and Professional Society Publishers discussed the economics of publishing. As she pointed out, the many processes involved in publishing are expensive. Unfortunately, electronic publishing does not reduce costs as much as some people think, she said.

Pieter Bolman of Elsevier questioned whether the OA approach was any better than the current model. According to Bolman, the proposed "author pays" business model means that library funds have to be rechanneled to authors. Authors do not like page charges and libraries may resent further budget cuts. As Bolman sees it, the OA model favors rich authors and there is no proof of its sustainability.

Intellectual property issues were also discussed. Thomas Dreier of New York University concluded that information policy is largely influenced by the economic concerns of global players and copyright should not be held responsible for unsolved issues of information policy. Paul Uhler of the National Academy of Sciences spoke of moving from intellectual property to "intellectual commons." Although researchers do want recognition, their motivation is mainly rooted in intellectual curiosity. Peer production (as in Project Gutenberg and NASA's Clickworks) is not dependent on monetary reward, but on intellectual commons, he said.

A political issue is that major research budgets do not take account of the costs of the dissemination of results or the building of databases. Indeed, researchers themselves often do not understand the costs and complexities of disseminating the results of their research as evidenced by some of the project proposals that CPEP examines. Many of the issues surrounding OA and its economic models are still controversial and unresolved. Even learned societies, and committees such as CPEP, have to face the fact that society programs are to some (large) degree dependent on publishing income. There is, as they say, no such thing as a free lunch. 

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