Scholarly Open Access Journals and Libraries

By Jan Hagerlid

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The role of academic libraries is changing in response to the profound transition of the scholarly communication system from a subscription-based to an Open Access model. The development of Open Access is briefly described and the concept defined. The options for the future of journals in the social sciences and humanities, focussing on the Nordic context, is discussed. Research councils and library funding bodies should support the transition of these journals to on-line and Open Access publishing. Libraries will in this process move from the role of a gate-keeper for research material owned by others to providing web access to content produced within their parent institutions.

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Libraries and scholarly journals have always been deeply interconnected and constitute essential parts of what might be described as a system for scientific or scholarly communication. The role of the research library has been to offer to its constituency a collection of journals adapted to its needs. The number of journals has been rising steadily over centuries, and new tools have been developed to facilitate article search within this growing journal literature; indices, bibliographic databases, citation databases etc.

The prices of journals have also been rising and started to escalate far above the general inflation rate around 1970. This was

connected to the general expansion of science in the post-war years and the entry of commercial publishers of scientific journals on a grand scale (European Commission 2006, pp. 22–23). Until World War II the publishing system was basically taken care of by academics themselves, by universities, academies and scholarly societies.

The advent of the Internet and the World Wide Web fundamentally changed the rules of the game for the scientific publishing system, but the involved players were slow to realise the new opportunities. Some far-sighted researchers started on-line journals available on the Internet already around 1990. *Psycholoquy*, founded by Stevan Harnad in 1989, and *Surfaces*, founded by Jean-Claude Guedon in 1991, can be noted (Suber 2006b). However, their initiatives were relatively isolated and did not at the time get any great number of followers.

The large commercial publishers started to make their journals available on-line in 1996 and 1997. They offered libraries package deals, at first combining print and electronic collections and later also offering electronic journals only. It was rational for libraries to form consortia to negotiate with publishers about access to e-journals. Publishers wanted to safeguard their level of income plus increases, still far above the general inflation rate. They also wanted to cut administrative costs by keeping down the number of parties to negotiate with and find workable solutions for controlling access on the Internet.

Libraries could through consortial agreements provide access to substantially larger numbers of journals in electronic form than had been the case with print journals. They could also save space and administrative costs by cutting out print journals altogether. In some respects both parties did gain something, but libraries were still stuck with high and rising costs for journals. Also, most research libraries had problems with not being able to give the same kind of access to these licensed e-journal collections to users outside of their own parent institutions. It took some hard negotiations even to make publishers accept libraries giving inter-library loan in paper form to other publicly funded libraries from these licensed e-journal collections.

In this process, the role of the research library has become that of a gate-keeper for the journal databases owned by the main publishers. Libraries, or rather their parent institutions, paid for access to e-journals but did not own them as was the case with the print journals. Guarantees for permanent access to the licensed e-journals has therefore been one of the most prominent demands of library consortia. Libraries have become proficient in negotiating license deals, but this was not obvious to their users who often regard the publisher and not the library as the service provider. However, libraries have lately started to add value to their licensed e-journal collections by creating meta-search portals where a user can search simultaneously through a number of publisher databases.

A movement for Open Access to scientific literature was at the same time gaining momentum. It was led by committed researchers who wanted to use the full potential of the Web for scientific communication. In an open letter to scientific publishers in 2001, leading biomedical researchers argued that the whole body of scientific and scholarly publications belonged to the scientific community and that it could and should be available to all potential users, globally and instantly. "We support the establishment of an on-line public library that would provide the full contents of the published record of research and scholarly discourse in medicine and the life sciences in a freely accessible, fully searchable, interlinked form. Establishment of this public library would vastly increase the accessibility and utility of the scientific literature, enhance scientific productivity, and catalyze integration of the disparate communities of knowledge and ideas in biomedical sciences". The letter ended with an open threat to publishers: "To encourage the publishers of our journals to support this endeavor, we pledge that, beginning in September 2001, we will publish in, edit or review for, and personally subscribe to only those scholarly and scientific journals that have agreed to grant unrestricted free distribution rights to any and all original research reports that they have published, through PubMed Central and similar on-line public resources, within 6 months of their initial publication date." (Public Lib-

rary of Science 2006).

Libraries and library organizations had for a long time voiced a strong critique of the pricing policies of the commercial publishers. The major American research libraries, led by the Association for Research Libraries, formed the Scholarly Publishing and Academic Resources Coalition (SPARC) in 1997 as "a constructive response to market dysfunctions in the scholarly communication system" (SPARC 2006). The organization has worked with advocacy, education and support for new alternatives; reasonably priced, quality journals led by scientists. It later moved to an outright support for the Open Access model.

The concept of Open Access received its more official definition at a meeting arranged by the Open Society Institute in December 2001. Here the Budapest Open Access Initiative was formulated (BOAI 2006) and thereafter signed by a great number of researchers, librarians, publishers and others interested in the future of scientific communication. Several other declarations in the same spirit have been made since. The politically most influential, at least in Europe, has perhaps been the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2006), the outcome of a meeting convened by the Max Planck Society in October 2003. It was initially signed by a number of important organizations in research and academia, primarily from Germany and France, and now has 164 signatories from universities and research organizations worldwide.

Definitions of Open Access

A very brief definition of Open Access is provided by one of the leading experts in the field, Peter Suber (2006a): "Open-access (OA) literature is digital, on-line, free of charge, and free of most copyright and licensing restrictions."

In the Berlin Declaration it is stated that an Open Access contribution must satisfy two conditions:

"1. The author(s) and right holder(s) of such contributions grant(s) to all users a free, irrevocable, worldwide, right of access to, and a license to copy, use, distribute, transmit and dis-

play the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship (community standards will continue to provide the mechanism for enforcement of proper attribution and responsible use of the published work, as they do now), as well as the right to make small numbers of printed copies for their personal use."

It is important to note that Open Access requires the consent of the copyright-holder and safeguards the moral rights of the author. It is in no way parallel to downloading copyright protected music from the Net. But there may be differences in what kind of use authors allow, for instance in the case of commercial reuse, and this can be defined by authors by using a Creative Commons license. Possibly also an Open Access journal might want to restrict the number of printed copies being made of an article to avoid loss of additional income. This would not be in opposition to Open Access.

Open Access should ideally be immediate, but in some cases an embargo of up to six months has been accepted, as in the Public Library of Science Open Letter cited above. It obviously applies to full-text, not just to abstracts or summaries.

Open Access is perfectly compatible with peer review and other forms of quality assessment. Reliable and trusted procedures for evaluation of scientific quality are quite as essential, if not even more essential, for Open Access journals as for traditional subscription-based journals. There are experiments in developing new models for peer review, but that is a different issue.

Open Access has a clear focus on scientific and scholarly articles for a number of reasons. First, authors are usually not paid for publishing articles reporting original research (review articles might be different) but get their rewards from advancing knowledge and their careers. Thus Open Access will not mean a loss of revenue for the author, but instead a gain of visibility and impact. Second, in most fields you will find the most important and timely contributions to knowledge in the article literature. This being said, the Open Access concept does not exclude other

forms of literature or digital content.

The second of the two conditions that an Open Access contribution has to satisfy according to the Berlin declaration really concerns the practical accessibility in the short and long term:

"2. A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in an appropriate standard electronic format is deposited (and thus published) in at least one on-line repository using suitable technical standards (such as the Open Archive definitions) that is supported and maintained by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, unrestricted distribution, interoperability, and long-term archiving."

This point is of the greatest interest to research libraries that are in most cases entrusted with organising the on-line repositories of their parent organizations.

Open Access Archives and Journals

Open Access literature can be accessed either by OA archives or OA journals. The first OA archives were organised by discipline. The most well-known disciplinary archive is arXiv for physics, but there are a number of others in medicine, economics, cognitive science, computer science etc. The Open Archive Initiative in 1999 and the OAI Metadata Harvesting Protocol in 2001 (Open Archive Initiative 2006) made it possible to create services that harvested metadata from a practically indefinite number of globally dispersed OA archives. This opened the way for a rapid growth of OA archives based in institutions like universities, research institutes, academies etc. Today these institutional archives or repositories by far outnumber the disciplinary OA archives. There are in all about 700 Open Access Repositories according to a service that analyzes their development (Registry of Open Access Repositories 2006).

OA archives may be limited to e-prints of journal articles, which can be either preprints, postprints, or both. They may also typically contain theses and dissertations, reports and student

theses and in some cases learning objects and research data. Text is predominant but the number of files in other formats, like audio and video, is growing. OA archives do not conduct peer review of articles. This is done by the journal where they are published. But OA archives usually have some basic quality control, and in the case of theses an institutionally based quality control takes place.

Open Access journals can also be regarded as a kind of digital repositories. They are identical to subscription-based journals in that they conduct peer review or some form of editorial quality control and usually deliver their content in volumes and issues. They differ in that their content is openly accessible on the Web. As a consequence of this, they also typically let their authors retain their copyright.

There are of course costs connected to the publishing of an OA journal even if these may be somewhat smaller than the costs of publishing a subscription- (or license-) based journal, because there is no need for systems to control access. Costs may be covered by the host institution of the journal, either by direct or indirect subsidy. There may be income from print subscription and advertisements. The journal might charge an article processing fee, to be paid by the author or rather by his or her parent institution or research funding agency. The arguments about OA journals have focused on the pros and cons of the "author pays" business model, but this is actually a minority case (Suber 2006a). There is not one single business model for an OA journal, but rather a combination of different income streams. The common basic economic characteristic of OA journals is that they don't create any economic barriers to access. In this they are similar to many other services on the Web and it is a model of distribution that fits better with the potential of the Web. On the Web there are practically no extra costs incurred in delivering more than the first copy of a publication. Even if costs were equal in a subscription model and an Open Access model, the latter would perform better in the sense that distribution – and thus impact – has no bounds.

There are non-profit and for-profit OA journal publishers.

The majority certainly are non-profit: the most well-known one is Public Library of Science – PLoS – which very consciously aims at the highest quality end of the spectrum of biomedical journals. The most important for-profit OA journal publisher is BioMed Central – BMC – whose journals have a wider quality distribution, but in many cases report high impact factors (BMC 2006). BioMed Central charges author processing fees in the range of €535–1,380, and PloS began charging between $2,000 and 2,500 on 1 July 2006. Both of these publishers have programs for institutional membership where the individual authors pay no publication fees. They also have waivers for authors with limited budget frames, e.g. authors from developing countries.

The earliest OA journals appeared already before the WWW, but the number of such journals have grown at an escalating pace in the past few years. This development can be monitored by statistics from the Directory of Open Access Journals – DOAJ. This service was developed in 2003 by Lund University Libraries with funding from the Open Society Institute and some co-funding from BIBSAM at the National Library of Sweden. The aim was to give a single point of access to OA journals and thus make them more visible. To be included in DOAJ, a journal must exercise peer-review or editorial quality control. There are currently 2,288 free, full text, quality controlled scientific and scholarly journals in the directory. You can search and browse for these journals by title or browse by subject. For 653 journals you can also make a search at the article level. The service itself is freely available and libraries are encouraged to integrate it into their local services, which is also done on a global scale. There are journals in all major subject fields, with Health Sciences and Social Sciences having the largest number of journals. The disciplines with the highest relevance to *Fornvännen's* audience would be History and Archaeology. In History there are 89 journals and in Archaeology there are 12 (DOAJ 2006).

Open Access and Journals in the Humanities and Social Sciences

The future of Nordic journals in the humanities and the social sciences was the object of a very comprehensive enquiry performed by the Danish National Library Authority – Biblioteksstyrelsen – on behalf of the Nordic publication committee for journals in the humanities and social sciences – NOP-HS (Biblioteksstyrelsen 2003). A survey showed some characteristic traits of these journals:

- They generally have a limited circulation and limited budgets and are to a high degree dependent on voluntary work.
- About half of these journals are published in English and the rest in a native Nordic language. The latter group wanted to continue using their native language but possibly combine that with abstracts or translations in English.
- The majority had still not moved into electronic publishing. However, they expressed great interest in electronic publishing, including standards, tools and possible models for co-operation, while still keeping the option of print publishing.

The report also concludes that prospects are bleak for these journals to establishing electronic publishing on a commercial or break-even basis. They don't have enough capacity to establish rights management and authentication systems, nor an organization for marketing and sales. For libraries, which are very important customers, it is easier to handle package deals for e-journals than licenses for individual e-journals. Also, library acquisitions budgets are increasingly dominated by these major deals.

The report then suggests four models for electronic publishing, from using the simplest tools to using more advanced technology and more or less elaborate forms of co-operation. There

are two models for co-operation: one where you have a website that offers guidance and tools to journals, another where you create a service organization that can host the entire technical operation of electronic journals and also include an access point to all of their content. Open Access to the on-line content of participating journals is an implicit condition especially in the second case.

After the publication of the report, a conference was held and more detailed project proposals delivered to NOP-HS. Unfortunately, no decisions have yet been made (summer of 2006), although there is interest.

Lately some new potential funders of this kind of project have appeared. NordForsk, an independent institution operating under the Nordic Council of Ministers for Education and Research, has decided to support a new program – Nordbib – focused on e-publishing, especially in co-operation with the Nordic national libraries (Kvaerndrup 2006).

In Sweden, the National Library has started a new program concerned with academic e-publishing, called OpenAccess.se (Kungl. biblioteket 2006). The program has the strategic goal to promote maximum accessibility and visibility for works produced by researchers, teachers and students at Swedish universities and university colleges. This program also enlists the SUHF, the Swedish Research Council and the Royal Swedish Academy of Sciences in an active way as participants of the steering group. One of the strategic goals of the program is to support publishing in Open Access journals and support the migration of Swedish scientific journals to an Open Access model.

Discussion

There are a number of good reasons for social science and humanities journals to choose an Open Access model. Basically it is in the interest of any given scholarly community to achieve unhindered, seamless access to all the relevant literature of the field for all potential users. This should promote overview and transdisciplinary analysis, help to avoid duplication of research

and speed up knowledge development. Today access to scholarly literature is highly dependent on the economic status of a researcher's parent institution or home country. The Open Access model would give scholars from all institutions and countries equal access to current literature. Finally, Open Access could be of great significance in opening up science and scholarship to the general public and public authorities. The argument that that tax-payers should have easy access to the results of publicly funded research has a certain political appeal.

One could argue that an Open Access model, and specifically publication fees, creates a new problem of economic discrimination for authors from poor institutions and poor countries. The general long-term solution is to redistribute funds within the research system as a whole, from subscriptions/licenses to publication fees and institutional support for OA journals and OA archives. This is a complicated process that will take some time. To begin with, it is vital that funding bodies give supplementary funding to publication fees. Commendably, Open Access publishers have also established practices to waive publication fees for authors with limited funding, especially from poor countries.

Is, then, the Open Access model a realistic option for a small social science or humanities journal with a strained budget? Jan Velterop (2006, p. 11–14), who has long experience of both subscription-based and Open Access publishing, argues that keeping to the traditional subscription model is actually the riskiest option. Library budgets do not keep up with the price increases from scientific publishers, and cancellations are more likely to hit journals that are not included in package deals from big publishers. Authors will increasingly expect their articles to be openly available to achieve maximum impact, which can be effected either by self-archiving or publishing in an OA journal. Likewise, authors and readers prefer literature that is instantly available on-line with no barriers. There are growing societal expectations that the results of science and scholarly endeavours should be openly available. Velterop's conclusion is that journals are more endangered if they *don't* change.

There is professional, practical advice to be found for journ-

als that want to try the Open Access model. The Open Society Institute has enlisted professional consultants to develop guides to business planning both for launching new Open Access journals (Crow & Goldstein 2003) and for converting a subscription-based journal to Open Access (Crow & Goldstein 2004).

It is clear that a move to on-line and Open Access publishing for independent social science or humanities journals would substantially benefit from co-operation or public support for the implementation of digital publishing technology and perhaps also Web distribution. Research councils in Sweden and on the Nordic level today give financial support to individual printed journals. It would be more foresighted to invest instead in creating supportive structures helping journals make the transition to on-line publishing. In this manner, they would significantly reduce the costs for the involved journals and would be in a position to ask them to switch to an Open Access model. Presumably research councils would prefer the model for distribution that can reach the widest audience.

There are working examples of this kind of supportive structures, like the "Digital Peer Publishing – DiPP" initiative in North-Rhine-Westphalia (Horstmann, Reimer & Schirrwagen 2006).

How will the role of libraries change in this process? In Sweden, as in many other countries, academic libraries have during the past decade taken on a new role in organizing and providing the technical infrastructure for electronic publishing within their universities and university colleges. I have elsewhere described this development in detail (Hagerlid 2006). All university libraries and the libraries of the larger university colleges have created platforms for e-publishing. They publish theses, reports, exam papers and articles. Some also provide support for local scholarly or scientific journals. We still only see the beginning of this process, and it is likely that this new role for libraries will become substantially more important during the coming years. The future development is highly dependent on the attitude of Swedish academic leadership, which is in fact very supportive. Swedish universities and university col-

leges have a joint interest organization called the Swedish Association of Higher Education – SUHF. The SUHF commissioned a study in 2003, which pointed to the "need to establish economic prerequisites for creating professional publishing services within the universities and university colleges". SUHF signed the Berlin Declaration in 2004 and actively supports Open Access in Sweden.

While this new role for libraries is growing it seems that the role of gate-keeper to digital research material will diminish as an increasing proportion of the material becomes freely available on the Web and easily accessible via powerful and user-friendly search engines like Google. Libraries will probably to an even higher degree concentrate on providing web access to materials produced by their own parent institutions. This will increasingly include a broader range of material, including learning objects, research data and digitised older material.

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