

# How do we provide access to the content of scholarly research information?

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Access to published scholarly research information can be achieved in a number of ways, of which traditional subscription-based publishing is only one, and not necessarily the most preferable. Authors need visibility and impact for their work, while institutions need to be able to obtain at an affordable cost – usually through their libraries – access to all the research papers needed by staff and students. While much has been achieved by bulk deals and consortial negotiation with publishers, it is now felt that open access journals, subject repositories and institutional repositories show potential, and their further development and deployment should be encouraged. Institutions and publishers need to investigate the potential of models that allow a graceful and sustainable transition from old to new paradigms.



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## Introduction

'The Joint Information Systems Committee (JISC) supports further and higher education by providing strategic guidance, advice and opportunities to use Information and Communications Technology (ICT) to support teaching, learning, research and administration. The JISC is funded by all the UK post-16 and higher education funding councils.' (JISC, 2005a). In pursuance of this mission, the JISC has been active for a number of years in providing institutions of further and higher education in the UK with access to scholarly information resources at reasonable cost. For example, it has negotiated with publishers for special deals for various databases, datasets and electronic publications for UK educational institutions. Recently, it has initiated a number of investigations of various topics in the area of open access (OA) based on the premise that if all scholars can access all published scholarship without financial barriers, then visibility and impact of published work will improve and the quality of future research will be enhanced (Swan and Brown, 2005; Swan *et al.*, 2005; JISC, 2005b).

On 21–22 June 2005, the JISC funded an invitational International Colloquium about Scholarly Communications and Publishing in London (JISC,

2005c). The invited speakers and attendees were from a large range of countries and all could speak with authority about the scholarly publishing situation within their own countries. The colloquium was run by the JISC with assistance from staff of Rightscom Ltd. The chair of the colloquium, Dr Tom Graham, University Librarian of the University of Newcastle upon Tyne, UK, stated its objective at the outset: to investigate the question 'How do we provide access to the content of scholarly research information?'

The major speakers who gave keynote addresses to the colloquium were Professor Carol Tenopir of the University of Tennessee, USA; Hugh Look of Rightscom Ltd, London, UK; Professor Bo-Christer Björk of the Swedish School of Economics and Business Administration, Helsinki, Finland; Joel Kotkin of the New America Foundation, Washington, DC, USA; Abel Packer of SciELO, São Paulo, Brazil; Dr Norka Ruiz Bravo, of the National Institutes of Health, Bethesda, MD, USA; Professor Justin Champion of Royal Holloway College, University of London, UK and Dr Guylaine Beaudry of l'Université de Montréal, Canada. Details of their presentations are available on the JISC web site (JISC, 2005c), as is a summary of the proceedings provided by Rightscom staff. These items are

not repeated here. Rather, this paper distils the main themes of the conference and provides references to materials cited by the various speakers in support of their arguments. At the end of the colloquium, the final discussion arrived at a rough draft of a statement of principles, which the JISC and Rightscom staff subsequently refined. This statement – which was supported by many but not all of those present – appears at the end of this paper.

### Open access

The most lively topic of debate in the scholarly communications community at the present time is undoubtedly open access (OA). The concept that electronic dissemination of information makes possible a system where scholarly articles are available to everyone everywhere without charge and without obstacles is a radical and exciting one. Many individual scholars and librarians, and increasingly many institutions too (NIH, 2005; RCUK, 2005; Wellcome Trust, 2005a,b), are accepting that this approach would be more effective in facilitating research and scholarship than the traditional subscription-based ('toll access', TA) system, especially where subscriptions are high.

There has been considerable debate about the relative merits of the 'green' and 'gold' roads to open access (terminology of Harnad *et al.*, 2004a,b). The gold route is publication in open access journals – ones that make their electronic version available to all-comers to read, free of charge and free of hurdles such as passwords and registration. The costs of producing OA journals have to be covered somehow, and in the absence of subscriptions for accessing the articles, the most commonly suggested source of funds is a payment by the author's research funder or employer institution. This is often called the author-pays model, but this name gives the false impression that the author would be expected to pay personally. Some OA journals are paid for directly by a governmental or charitable foundation, or by their host university. Payment by sponsorship or advertising is another possibility, though some feel that this might compromise editorial impartiality. So far, few established journals have converted to an OA model, probably because of concerns about finding a viable OA business model, so OA journals suffer the disadvantage of being new and thus lack a reputation.

The green route is the depositing of electronic copies of published articles in open access repositories, which can then be searched collectively, provided that they all comply with the technical standards of the Open Archives Initiative (OAI, 2005), so that their metadata can be harvested using the OAI Protocol for Metadata Harvesting, OAI-PMH (OAI, 2005). The majority of scholarly publishers will permit this (SHERPA, 2005), and the practice is increasing. Doubts have, however, been expressed about the medium- to long-term stability of this approach. If a large proportion of papers are available free of charge from a worldwide system of OAI-compliant repositories, then sales of journals on subscription may drop to the point of putting publishers out of business. The counter-argument, from Harnad for example, is that this is conjecture, and that should any such effect begin to be noticed, publishers will have time to adjust their business models (and if necessary downsize) before any catastrophic decline in their revenues occurs. Indeed, Oxford University Press (OUP) seems to be doing just that (OUP, 2005; Richardson, 2005a,b).

### Growth in output of research information and of its usage

Research publication has grown in line with the increase of research activity over centuries (Price, 1986), and its growth has been documented thoroughly in recent decades, by Carol Tenopir and Donald King in particular (e.g. Tenopir *et al.*, 2004, 2005). Their work has also demonstrated with precision the growth in use of the literature. In particular, the growing dominance during the last ten years of electronic versions of publications over their print counterparts has increased the availability of literature without boundaries of space and time, which in turn has led to its greater usage by scholars, students and practitioners: 83% of readings of the scientific, technical and medical (STM) literature use the electronic version, though only 55% of readings of humanities and social science literature do so (Tenopir, 2005). Tenopir and King's work demonstrates major differences between disciplines, between countries, and between academics/researchers and practitioners in how they use the literature. University medical faculty are the heaviest users, reading almost three times as many papers per annum as engineers do,

but the medical scientists read them more quickly than others – taking only 20 minutes per paper. Clinicians, on the other hand, are more likely to read the print version – they have a personal copy of a journal in their pocket and read it during brief interludes in their busy clinical day. Tenopir and King's work has always emphasized the abiding significance of personal subscriptions, which today account for the bulk of reading of printed issues; however, Tenopir's recent work in Australia has shown that this may be a largely North American phenomenon. Personal subscriptions have been in steady decline in other countries for many years and they make little contribution to the financial health of publishers. Not surprisingly, younger workers, including PhD students, make greater use of library subscriptions to journals, usually accessed online nowadays.

The growth of both the literature and its use, over a great many years, underlies the perceived crisis in the scholarly journals system (Gorman, 2002). While it is clear that the cost of the scholarly communication system is only a small proportion of the total amount spent on carrying out the research reported in the literature, it has proved very difficult to persuade university administrations to increase library budgets in line with the growth in research activity. Library funds rise at best at a rate higher than general price inflation but below journal price inflation. One merit of the author-pays OA system – which as noted earlier is really an author's funder-pays system – is that the funding for publication would rise proportionally to the research activity rather than to general price inflation, which is usually lower. A further cause of the growth of the literature is the 'publish or perish' syndrome. As pressures have increased on academic and research workers in many countries to prove that their work is of good quality, they have typically been expected to publish both more and better papers. Publishers have accommodated this growth by increasing their output, but libraries have found it increasingly difficult to afford to purchase it (Houghton, 2005; Steele, 2005).

### **Research evaluation, peer review and measurement of impact**

In most countries, the quality of the work of publicly funded researchers and academics is monitored, and in the past the simple number of publications

produced by an author was used as a measure. This is, of course, a measure of quantity not quality. Ever since the establishment of the first Citation Indexes by the Institute of Scientific Information (ISI) (Garfield, 1965), the number of citations made to a paper by subsequent authors has been used as a measure of the worth of a paper. Furthermore, the ISI database, now known as the Web of Knowledge, has provided since 1975 a means of measuring the relative citedness of different journals (Garfield, 1975). This parameter (now referred to as the journal impact factor) is increasingly used in the measurement of the quality of work. It is assumed that an author who publishes in high-impact journals is, other things being equal, a high-quality researcher. One reason for the use of the journal's impact factor rather than the actual number of citations to a paper is delay – it takes time, after the publication of a paper, before other authors have read the paper, conducted research based upon their reading, and written and published a paper of their own citing the earlier paper. However, the use of the journal impact factor as a surrogate for number of citations to the specific paper has been criticized. There may be well-cited papers in lesser-known journals, and uncited papers in well-known journals. Electronic publication allows for new measures (Brody, 2005) that can be made far more quickly – the number of links made to a web site, for example, can build up very quickly, and in the electronic arena it is also possible to measure readings of papers (as opposed to citations to them).

The quality of research work by academics and other research workers is measured for a number of reasons. This measurement occurs when workers are seeking further financial support for their research, and when they are applying for jobs in the first place, for tenure or for promotion. Most commonly, the measurement is made on each individual separately, but in some cases – notably the Research Assessment Exercise (RAE) in the UK – research groups or academic departments are examined collectively (HEFCE, 2005). (The RAE is used to determine central government funding in support of the research infrastructure of different universities; individual research projects are funded through another mechanism.) Historically – and still in some places – simple number of publications is counted. In other cases, including recent RAEs, an effort is made to measure quality rather than quantity, and workers are asked to

nominate a limited number of the papers that they consider to be their best.

At this point, the question of how to judge the quality of individual papers has to be addressed. Ideally, a well-informed panel would actually read all of the submitted papers, but time does not usually allow this. So staff are expected to publish in high-impact journals. For the next RAE in 2008, it has recently been announced that publication in journals of high impact factor will be less important than previously (Lipsett and Fazackerley, 2005; RAE, 2005) but it remains to be seen how this edict will be treated in practice by the various RAE evaluation panels. There are undesirable effects of this, however, if the ISI database alone is used. First, ISI has always said that it covers only 'core' journals (Garfield, 1970), and in practice this means that journals in languages other than English and published in countries other than the USA are relatively under-represented. In turn this means that in smaller or less-developed countries, governmental and educational authorities may actively discourage local scholars from publishing in their native language and in journals published locally (Rowland, 2005). A means of measuring the impact of papers individually may be helpful here. Furthermore, there is beginning to be evidence that papers that are available on open access receive more hits, and more citations, than otherwise similar papers that are available only on toll access (Lawrence, 2001; Harnad and Brody, 2004; Kurtz *et al.*, 2005). This would be logical were it so, since a person will not usually cite a paper that they cannot read. The provision of an open access institutional repository in which the academics and research workers within that university are encouraged, or even required, to deposit all their published papers, would be expected to increase the visibility and thus the impact of work from that university. In the case of the UK, it is expected that at the next RAE, due in 2008, each university will be required to provide electronic access to all the papers that it is submitting for evaluation. This gives an additional argument for the prompt establishment of an institutional repository – it would provide a functionality required for the RAE without extra expense. Provision of photocopies of all the submitted works has been an expensive task for UK universities at earlier RAEs.

### **Repositories – institutional or subject-based – and their future role**

There has been some controversy over whether it is preferable to use institutional or subject-based repositories. The National Institutes of Health (NIH, 2005) sought to 'require' those researchers whose work is funded by NIH to deposit their articles in PubMed Central, NIH's subject repository for the biomedical sciences. Following political controversy the wording became 'request', and a possible delay after publication is permitted, of up to twelve months, before the material becomes freely available. This decision by NIH has had the unfortunate effect of leading some publishers who had previously been 'green' to now impose a twelve-month delay on release of papers published by them for mounting on repositories (OUP, 2005). Furthermore, the British research councils (RCUK, 2005) have taken a different path from NIH, recommending that papers reporting research that they have funded should be mounted on institutional repositories rather than subject-based ones. Some commentators, notably Harnad, strongly favour institutional repositories, but most OA advocates are content to see papers posted on an OA repository of any type provided that it is OAI-compliant. Papers from OA journals published by the large OA publisher BioMed Central are always mirrored on PubMed Central, but there is no objection to their being placed in institutional repositories as well. The JISC, the Wellcome Trust and other UK funders have supported the provision of a British equivalent to PubMed Central (Wellcome Trust, 2005c).

There is greater agreement that the key issue for repositories is acquiring adequate amounts of content for them. If only a few authors deposit their papers, users will see no point in accessing the repositories. Where many papers are deposited – as in the arXiv repository of physics (arXiv, 2005) – the repository rapidly becomes a major source of information for the relevant research community. There is also evidence (Swan and Brown, 2005) that if depositing of papers in a repository is required – either by the author's employing institution or the research funder – few authors will resist this instruction. It is thus desirable that institutions should make it very easy for authors to deposit their papers, perhaps by providing specific staff members to assist them.

**The market, the availability of funds to support scholarly communication and the true value of scholarly information**

For many years, since long before the advent of electronic journals, the circulations of long-established journals, even those of acknowledged high quality, have in general been falling. The reason for this is well known (Houghton, 2005). The major purchasers of scholarly journals at full price are academic and research libraries. The acquisition budgets of these libraries have over many years failed to keep up with journal price inflation. Even after shifting purchases away from monographs towards serials, libraries have been unable to continue to subscribe to all the journals that their users really need. Subscriptions have been cut in most years from most libraries. The rise in journal prices is in part understandable. Much of it is accounted for by simple increases in the number of papers published. These may be accommodated either in existing journals, which grow in size, or in newly founded journals. The latter are likely to be more specialized and thus to have low circulations. As a large proportion of the cost of producing a journal is 'first-copy cost', unrelated to the number of copies sold, a low-circulation title will, all other things being equal, be more expensive in terms of price per page than a high-circulation one.

The for-profit or not-for-profit nature of the publisher is also a factor, but perhaps a less important one than is often thought (Singleton, 2005). It is well documented (LISU, 2004) that the price per page of journals published by for-profit publishers is higher than that of journals published by not-for-profits, but this is likely to be due to the newer and more specialized nature of the for-profit publishers' titles, rather than to simple excess profit-taking. Not-for-profit organizations have to be not-for-loss, too, and many are required to produce major 'surpluses' to support their parent organization. For example, the large university presses such as OUP and CUP are able to do this, but the smaller ones struggle to break even (Hardy and Oppenheim, 2004).

Nonetheless, there was a widespread hope a decade ago that electronic publication would ease the price pressure on libraries – a logical assumption, given that publishers would save on printing expenses. However, tooling up for electronic publication required publishers to make substantial capital investments which have been repeated as

hardware and software have obsolesced (Morris, 2005). Furthermore, few established journals have in fact become electronic-only, so printing, warehousing and distribution costs have not disappeared. Publishers still struggle to find appropriate business models for electronic publication. Initially the model was a simple add-on to the print subscription, with a few variations: sometimes print-only was offered at the current price, electronic-only at a lower price (say, 10% off), and print plus electronic at a higher price (say, 10% added). Other publishers offered no option, but simply sold the print plus electronic bundle at an increased price. Many smaller publishers still operate in this mode. Larger publishers with hundreds of journals, however, offered 'big deals', which typically offered a library electronic access to all of a publisher's titles at the price that had previously been paid by that library for those print journals taken, plus a premium (of, say, 10%), plus built-in price escalation (of, say, 5% per annum) over the term of the multi-year deal, and with minimal rights to cancel any print titles during the term of the agreement. This offered good value to libraries whose previous journal collections had been relatively small, but did lead to some overall increase in spend from all libraries with the publisher involved (Bevan *et al.*, 2005). Libraries countered by banding together into consortia to negotiate prices on more equal terms with large publishers. Recently the inflexibility of the big deals has led librarians to question their value (Gibbs, 2005) and library consortia have been negotiating with publishers to try to achieve a greater variety of deals, or more flexible ones.

The availability of big deals from the largest publishers, mostly for-profit ones, has also led to an unfortunate effect on smaller, mostly not-for-profit publishers. More and more of the libraries' budgets have been pre-empted by multi-year big deals, so in the event of any financial stringency, cuts have to be made in subscriptions to journals from smaller publishers. These may be journals of high value to users, who will question why many titles of little interest (which happen to be included in big deals) are available while journals of greater importance to them are cut. And a small publisher cannot offer a big deal. One answer to this has been for smaller publishers to band together, under the auspices of intermediaries such as HighWire Press, Project MUSE, Ingenta or the ALPSP Learned Journal Collection (HighWire Press, 2005; Project Muse,

2005; IngentaConnect, 2005; ALJC, 2005), to offer collective deals to libraries.

In the end, however, the key question remains the amount of funding available to the purchaser – the library – compared with the revenue that the publisher believes is needed to keep its business afloat. To create quality-controlled information products and distribute them to interested readers entails costs, and for publishing to be a sustainable economic activity in its own right – even if not-for-profit – it must have at least sufficient assured income to cover those costs. If the libraries are provided with more funds they could buy more of the literature, but over a long period of time there has seemed to be no recognition on the part of funding authorities that if more research is funded, more papers will result. The ‘market’ in scholarly publications is imperfect. Libraries pay, but they are not the ‘market’ that the publishers serve. The publishers primarily serve the authors, since success in the scholarly publishing business depends on attracting the best authors. The authors, however, in the traditional subscription model, do not pay. It is true, up to a point, that the authors and the readers are the same people – though Tenopir and King’s work emphasizes the importance of practitioners as readers – but they have different mindsets when functioning as readers and as authors or editors. And it is the author role that is dominant, as all scholarly publishers know.

It is unclear what the true ‘value’ of scholarly information is. In fields where inventions have monetary value, patents are taken out, but in many areas of academic scholarship the knowledge gained through research has no direct monetary value. However, the value added to the author’s work by the efforts of publishers falls into two categories – the peer review process which authenticates the substantive content of the paper, and features such as copy-editing, design, the application of metadata, and so on, which make a paper more professional in appearance and function. Peer review is undertaken by members of the scholarly community, usually without payment, but it is usually organized and administered by paid publishing staff, often nowadays with the help of specialized software (Ware, 2005). It may be that the publishers provide other forms of value added, such as interactive discussion of published papers, enriched metadata and CrossRef links. But these perhaps need to be regarded as items that are ‘nice to have’ rather than essential (Rowland,

2000). Metadata, of course, is essential for retrieval of information, but the necessary linking between documents that metadata provides can today be facilitated by various systems such as OAI and Google Scholar.

Although the total sum of money required for the creation, quality control and distribution of scholarly articles is possibly fairly fixed, if the ‘market’ were altered so that authors (or their surrogates, funding bodies) paid for the system rather than readers (or their surrogates, libraries), the market might work more effectively. The journals that authors most wish to publish in could charge the highest ‘prices’ (publication charges), and the ones that are less popular with authors would have to charge less, and thus either have to economize or go out of business. Free markets are supposed to reward the efficient, but the present subscription-based model provides little incentive for the publishers who own the titles most popular with authors to produce efficiently, control their costs and compete on price. Hence it may be felt that a system in which the costs of electronic publication and preservation are covered by payments made by, or more likely on behalf of, the author will lead to a more effective market control of costs than the present system (Cox, 2005; Singleton, 2005).

The arguments for OA publishing and OA repositories are not, however, exclusively financial. Many advocates of OA would prefer it to TA even if the overall costs to the scholarly community were identical, on the grounds of greater visibility and impact for authors’ work, in addition to the high principled argument that all members of the human race ought to have access to its accumulated store of knowledge (Harnad *et al.*, 2004b).

### **Different perspectives in developed and less-developed countries**

The situation regarding scholarly communication is not the same everywhere. The majority of high-prestige international journals are published in either North America or Western Europe, and in the English language. Many leading journals from countries where English is not the majority mother tongue have switched to publication either in English exclusively, or bilingually. Work published in other parts of the world, especially if its subject-matter is rather specific to the area of the globe where it is published, tends not to be visible

(Rowland, 2005). Authors who wish their research careers to prosper therefore feel impelled to publish in the 'leading international journals', and indeed research assessment procedures tend to reinforce this tendency, as noted earlier. It is also important that researchers based away from the two main developed areas of the world, North America and Western Europe, should be able to obtain access as readers to these leading international journals, and in the era of print this was often not the case; examples where entire countries in financial difficulty could subscribe to no journals at all were reported. Various international initiatives (HINARI, 2005; AGORA, 2005; INASP, 2005; and eIFL, 2005, among them) have been created to help scholars in less-developed nations to obtain access to the world's scholarly literature at little or no cost, but these are generally only available to the poorest nations. This leaves a gap in the middle for those nations which are too prosperous to qualify for these initiatives but not sufficiently wealthy to afford the full prices charged by publishers. Some of these initiatives, notably INASP, have in addition assisted the development and training of editors of locally-based journals in developing countries.

It might appear self-evident that OA would assist less-developed countries, and indeed developed but remote countries, in solving their scholarly communication problems. Materials published in developed countries, if OA, would be available free of charge to anyone, though less-developed countries might still need assistance with the costs of computer terminals and network connections. And materials published in remote countries, if OA, can be seen by anyone anywhere, improving their visibility and thus enhancing their chance of having major impact. It may therefore seem surprising that some commentators in developing and remote countries have not been fully supportive of OA. The argument, so far as locally published materials are concerned, is that local not-for-profit publishers, which may well be the national learned societies for individual subjects, cannot see a viable business model for OA publication that will guarantee their stability and medium- to long-term survival in the way that TA does, despite the small circulations of their journals. OA in Latin America, for example (SciELO, 2005), currently requires financial support from governments, and the intention is substantially to replace this with author payments in the near future – which raises the question: in less-developed nations

where will authors obtain the funds from? On the other hand, salary costs are lower in less-developed countries, and it may be that the sums required for publishing there may be much smaller than in developed countries.

All of these questions emphasize strongly the need for the development of new alternative business models for scholarly publishing.

### **New models and the transition from old to new models**

A recent JISC-sponsored project evaluated a number of models for scholarly publishing (Look *et al.*, 2005), though it should be noted that these investigations did not include the possible effect of OA repositories upon publishers' viability. Of seven models offered to stakeholders, three found favour: national licence; pay-per-view (PPV) converting to subscription; core + peripheral. Two OA models were included but these were not favoured: OA – author pays; OA – hybrid. 'National licence' implied that negotiations with publishers were conducted on behalf of all UK users, to obtain time-limited access to all of a publisher's content; individual libraries could negotiate for more (such as perpetual access). In 'core + peripheral', the library decided in advance what its core collection from any given publisher was, and paid for those titles on an annual subscription basis, while buying other titles from that publisher on a PPV basis. 'PPV converting to subscription' meant that libraries would initially pay for each article used by their clients, but once the annual total number of hits on any particular journal had reached a certain level, no more would be charged; the effect of this model would be similar to core + peripheral, except that the core journals would not need to be chosen in advance but would emerge during the year. The importance of predictability of revenue flows for both libraries and publishers was emphasized, and libraries wanted to avoid models that would lead to their having any financial incentive toward limiting use of resources by their clients. The two OA models were rejected because they are unproven and people are unsure whether they are viable for long-term stability. The OA hybrid model is one where the author decides whether or not to pay for OA; if (s)he pays, the paper is provided on OA right away; if (s)he doesn't, it remains TA for six or twelve months

before becoming freely available. Logically, the library subscriptions to journals run in this way would gradually decline as more authors paid the publication charge. Both Springer (2005) and Oxford University Press (OUP, 2005) have adopted this type of model; in OUP's case, they have amended their 'green' consent to placing papers in OA repositories to match the delay period of the publication (author-paid articles can be mounted at once; author non-paid ones can be mounted only after the delay). This is the only case that I am aware of where a publisher has already addressed issues at the interface between OA publishing and OA repositories.

Another type of OA hybrid is the 'institutional membership' concept pioneered by BioMed Central (2005). Here the concept is that the higher educational institution pays a lump sum annually to the publisher, and in return authors at that institution can publish in that publisher's journals without paying the individual publication charge each time. This concept has the disadvantage, perhaps, of blurring the distinction between OA and TA publication – especially if the library is expected to pay the institutional membership fee, it may seem indistinguishable from a 'big deal'. However, the effect on visibility and impact is not the same. This model also has the effect of transferring resources from research-intensive universities to ones that are not, which is probably why it has been opposed by librarians from both Yale and Cornell Universities (Okerson, 2001; Davis and Stern, 2005). Either of these two hybrid models, however, has the merit of at least suggesting a transition mechanism. It is the lack of an obvious way of getting from here to there that has slowed down adoption of OA and led to respondents saying that OA is 'unproven'.

Björk (2005) at the colloquium made a proposal for a transitional model in which a consortium-negotiated big deal could gradually convert into a consortial institutional membership as the proportion of OA papers within a publisher's portfolio rose. This model might be particularly appropriate for smaller countries, such as Finland where Björk comes from, since it would assist all of a country's scholars to gain enhanced international visibility.

Transition towards widespread adoption of OA repositories also needs to be considered, as at present OA repositories (the 'green' route) seem the more likely way for the scholarly community to gain widespread open access to papers. There is, as

noted, concern that availability of papers on OA repositories will eventually cause a loss of subscriptions to journals, although this has not occurred with physics journals despite arXiv's (2005) existence for over a decade. If it does occur, any decline is likely to be gradual rather than catastrophic, in essence a continuation and perhaps steepening of a decline that has been occurring for many years already. There is a risk that some publishers who have until now been 'RoMEO green' (SHERPA, 2005) – that is to say, have permitted archiving on OA repositories – will withdraw that permission, a retrograde step.

One could envisage a blend of some of the transitional models currently being tried. A publisher who currently offers a 'big deal' may switch to a more varied offering of smaller deals, 'core + peripheral' or 'PPV converting to subscription'. At the same time, they might offer optional OA publication to those authors whose funders are willing and able to pay for this, and perhaps also free of charge to authors from less-developed countries. Those papers that are initially OA can also be mounted on OA repositories without delay. Those papers not paid for can be mounted on OA repositories only after a delay. As noted earlier, if many authors adopted the OA option, the subscription prices to libraries would begin to fall. Large customer libraries who pay a substantial amount in subscriptions or big-deal licences to a particular publisher might decide to switch to institutional membership instead. This would lead to papers from all the authors in their institution being entirely available immediately on OA, and they could, of course, also mount them immediately on their own OA repository as well. Each publisher would need to make careful decisions on both the nature and the timing of its tariff changes, and universities would need to keep under careful review just what type of deal is in their overall best interests. Since the advent of electronic publishing on a substantial scale ten years ago, it has often been noticed that libraries have saved on lower-paid staff for recording arrival of journals, shelving, etc., but have needed more professional-level staff for evaluation of new electronic information products and complex negotiations with publishers. This situation seems likely to continue and become more pronounced.

Small publishers would, as noted, have more difficulty in adopting complex and sophisticated business models, but organizations such as

HighWire and ALPSP could assist them, and current work being supported by the JISC will also provide advice. In developing countries, help from HINARI, AGORA, INASP and eIFL could be gradually switched from assisting these countries to acquire Western journals to supporting the publishing costs of local ones.

### **A statement of principles for which there was a substantial consensus of support**

It was agreed at the colloquium that the JISC, together with the Rightscom staff who had organised the colloquium, would attempt to draw out a statement of principles that could command consensus support from those present. This was done and the following statement was subsequently agreed:

- We believe that communication of results is an essential part of the research process and that research outputs should be disseminated widely and readily, giving access to all.
- Research results are wide in scope, and access to datasets, background documents and other information are as essential as access to the article.
- There are many effective routes to do this; traditional publishing models are only one route.
- Of the emerging models, open access journals and subject repositories and institutional repositories show potential, and further development and deployment should be encouraged.
- Institutions and publishers need to investigate the potential of models that allow a graceful and sustainable transition from old to new paradigms.
- It is essential to ensure sustainability of both long-term access and preservation of research outputs and related data.
- Any research communication model should continue to give researchers at least the reward and recognition they gain from the present model – or improve on it.
- Authors or authoring institutions should retain the rights to their intellectual property.
- Lack of competition between journals gives us much less ‘market power’ than we would expect from the amount we spend.
- We believe that there are benefits from developing stronger international consortia and in

sharing information, knowledge and expertise about how we manage our relations with publishers.

- We should be free to exchange information about negotiations, prices and terms and conditions between libraries and consortia.
- We would like to be open and transparent in our dealings with publishers, and do not wish to be restricted by non-disclosure clauses (JISC, 2005b).

### **References**

- AGORA, 2005. *Welcome to AGORA – Access to Global Online Research in Agriculture*. Available at: <http://www.aginternetwork.org/en/> (Accessed 10 August 2005).
- ALJC, 2005. *ALPSP and SWETS announce exciting additions to the ALJC for 2006*. Available at: <http://www.alp.org/news/aljc-press.htm> (Accessed 10 August 2005).
- arXiv.org E-Print Archive, 2005. Available at: <http://uk.arxiv.org> (Accessed 9 August 2005).
- Bevan, S., Dalton, P. and Conyers, A., 2005. How usage statistics can inform national negotiations and strategies. *Serials*, 18(2), 116–123. Available at: <http://serials.uksg.org/openurl.asp?genre=article&issn=0953-0460&volume=18&issue=2&epage=116> (Accessed 10 August 2005).
- BioMed Central, 2005. *BioMed Central Membership*. Available at: <http://www.biomedcentral.com/info/about/membership> (Accessed 10 August 2005).
- Björk, B.-C., 2005. Open Access – Some Reflections from a Northern Perspective. Paper given at *JISC International Colloquium about Scholarly Communications and Publishing – London, 21–22 June 2005*. Available at: [http://www.jisc.ac.uk/index.cfm?name=event\\_international\\_0605#Top](http://www.jisc.ac.uk/index.cfm?name=event_international_0605#Top) (Accessed 3 August 2005).
- Brody, T., 2005. Citation Analysis in the Open Access World. *Interactive Media International*, in press. Available at: [http://eprints.ecs.soton.ac.uk/10000/01/tim\\_oa.pdf](http://eprints.ecs.soton.ac.uk/10000/01/tim_oa.pdf) (Accessed 10 August 2005).
- Cox, J., 2005. Evolution or Revolution in Scholarly Publishing: Challenges to the Publisher. Chapter 4 in *International Year Book of Library and Information management 2004–2005: Scholarly Publishing in an*

- Electronic Era* (Gorman, G. and Rowland, F., eds) London: Facet Publishing, pp. 55–74.
- Davis, P.M. and Stern, D. *Comparing Institutional Membership to Per-Article Payment in an Open Access Model*. Available at: <http://people.cornell.edu/pages/pmd8/> (Accessed 10 August 2005).
- eIFL, 2005. eIFL.net – Electronic Information for Libraries. Available at: <http://www.eifl.net/> (Accessed 10 August 2005).
- Garfield, E., 1965. Can Citation Indexing be Automated? In *Statistical Association Methods for Mechanized Documentation* (Stevens, M.E., Giuliano, V.E., and Heilprin, L.B., eds). Washington, DC: National Bureau of Standards, miscellaneous publication no. 269, pp. 189–192.
- Garfield, E., 1970. Citation Indexes for Studying Science. *Nature*, 227, 669–671.
- Garfield, E., 1975. Journal Citation Reports: A Bibliometric Analysis of References Processed for the 1974 Science Citation Index. In *Science Citation Index 1975 Annual*, vol. 5. Philadelphia, PA: Institute for Scientific Information.
- Gibbs, N., 2005. Walking away from the big deal: consequences and achievements. *Serials*, 18(2), 89–93. Available at: <http://serials.uksg.org/openurl.asp?genre=article&issn=0953&volume=18&issue=2&page=89> (Accessed 10 August 2005).
- Gorman, M., 2002. The Economic Crisis in Libraries: Causes and Effects. Chapter 13 in *Scholarly Publishing: Books, Journals, Publishers and Libraries in the Twentieth Century* (Abel, R.E. and Newlin, L.W., eds) New York, NY: Wiley, 257–271.
- Hardy, R. and Oppenheim, C., 2004. Research on University Presses: An Overview of UK University Presses. *Publishing Research Quarterly*, 20(2), 18–31.
- Harnad, S. and Brody, T., 2004. Comparing the Impact of Open Access (OA) vs. Non-OA Articles in the Same Journals. *D-Lib Magazine*, 10(6). Available at: <http://www.dlib.org/dlib/june04/harnad/06harnad.html> (Accessed 9 August 2005).
- Harnad, S., Brody, T., Vallières, F., Carr, L., Hitchcock, S., Gingras, Y., Oppenheim, C., Stamerjohanns, H. and Hilf, E.R. (2004a) The Green and Gold Roads to Open Access, *Nature Web Focus*. Available at: <http://www.nature.com/nature/focus/accessdebate/21.com> (Accessed 3 August 2005).
- Harnad, S., Brody, T., Vallières, F., Carr, L., Hitchcock, S., Gingras, Y., Oppenheim, C., Stamerjohanns, H. and Hilf, E.R. (2004b). The Access/Impact problem and Green and Gold Roads to Open Access. *Serials Review*, 30(4), 310–314.
- Higher Education Funding Council for England, 2005. RAE 2008 research Assessment Exercise. Available at: <http://www.rae.ac.uk/> (Accessed 10 August 2005).
- HighWire Press, 2005. *HighWire Press*. Available at: <http://highwire.stanford.edu/> (Accessed 10 August 2005).
- HINARI, 2005. *HIN: Health Internetwork*. Available at: <http://www.healthinternetwork.org/> (Accessed 10 August 2005).
- Houghton, J., 2005. Economics of Publishing and the Future of Scholarly Communication. Chapter 9 in *International Year Book of Library and Information management 2004–2005: Scholarly Publishing in an Electronic Era* (Gorman, G. and Rowland, F., eds) London: Facet Publishing, pp. 165–188.
- INASP, 2005. *International Network for the Availability of Scientific Publications*. Available at: <http://www.inasp.info/> (Accessed 10 August 2005).
- IngentaConnect, 2005. *Welcome to IngentaConnect*. Available at: <http://www.ingentaconnect.com/?jsessionid=45r9j497h54tg.victoria> (Accessed 10 August 2005).
- JISC, 2005a. JISC – *The Joint Information Systems Committee*. Available at: <http://www.jisc.ac.uk/> (Accessed 3 August 2005).
- JISC, 2005b. *Open Access*. Available at: [http://www.jisc.ac.uk/index.cfm?name=pub\\_openaccess](http://www.jisc.ac.uk/index.cfm?name=pub_openaccess) (Accessed 10 August 2005).
- JISC, 2005c. *JISC International Colloquium about Scholarly Communications and Publishing – London 2005*. Available at: [http://www.jisc.ac.uk/index.cfm?name=event\\_international\\_0605#Top](http://www.jisc.ac.uk/index.cfm?name=event_international_0605#Top) (Accessed 3 August 2005).
- Kurtz, M.J., Eichhorn, G., Accomazzi, A., Grant, C.S., Demleitner, M. and Murray, S.S., 2005. The Effect of Use and Access on Citations. *Information Processing and Management*, 41(6), 1395–1402. Preprint available at: <http://cfa-www.harvard.edu/~kurtz/kurtz-effect.pdf> (Accessed 9 August 2005).
- Lawrence, S., 2001. Free Online Availability Substantially Increases a Paper's Impact. *Nature*, 411(6837), 521. Available at: <http://www.nature.com/nature/debates/e-access/Articles/lawrence.html> (Accessed 9 August 2005).
- LISU (Library and Information Statistics Unit), 2004. *Scholarly Journal Prices: Selected Trends and*

- Comparisons. Available at: <http://www.lboro.ac.uk/departments/dis/lisu/pages/publications/oup.html> (Accessed 10 August 2005).
- Lipsett, A. and Fazackerley, A., 2005. RAE Shifts Focus from Prestige Journals. *Times Higher Education Supplement*, 1,701, 1A, 22 July.
- Look, H., Sparks, S. and Henderson, H., 2005. Business models for e-journals: reconciling library and publisher requirements? *Serials*, 18(2), 157–161. Available at: <http://serials.uksg.org/openurl.asp?genre=article&issn=0953-0460&volume=18&issue=2&spage=157> (Accessed 10 August 2005).
- Morris, S., 2005. The True Costs of Scholarly Journal Publishing. *Learned Publishing*, 18(2), 115–126. Available at: <http://titania.ingentaconnect.com/vl=10200637/cl=60/nw=1/rpsv/cgi-bin/linker?ini=alpsp&reqidx=/cw/alpsp/09531513/v18n2/s6/p115> (Accessed 10 August 2005).
- NIH, 2005. Policy on Enhancing Public Access to Archived Publications Resulting from NIH-Funded Research. Available at: <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-05-022.html> (Accessed 3 August 2005).
- OAI, 2005. *Open Archives Initiative*. Available at: <http://www.openarchives.org/> (Accessed 3 August 2005).
- Okerson, A., 2001. What Price Free? *Nature Debates*. Available at: <http://www.nature.com/nature/debates/e-access/Articles/okerson.html> (Accessed 10 August 2005).
- OUP, 2005. Oxford Journals Launches Oxford Open – A New Open Access Initiative. Available at: <http://www.oxfordjournals.org/jnls/press/2005/05/04/index.html> (Accessed 3 August 2005).
- Price, D.J. de S., 1986. *Little Science, Big Science ... and Beyond*. New York: Columbia University Press.
- Project MUSE, 2005. *Project MUSE: Scholarly Journals Online*. Available at: <http://muse.jhu.edu/> (Accessed 10 August 2005).
- RAE, 2005. *Consultation on Assessment Panels' Draft Criteria and Working Methods*. Available at: <http://www.rae.ac.uk/pubs/2005/04> (Accessed 5 September 2005).
- RCUK, 2005. *Access to Research Outputs*. Available at: <http://www.rcuk.ac.uk/access/index.asp> (Accessed 3 August 2005).
- Richardson, M., 2005a. Open access: evidence-based policy or policy-based evidence? The university press perspective. *Serials*, 18(1), 35–37. Available at: <http://serials.uksg.org/openurl.asp?genre=article&issn=0953-0460&volume=18&issue=1&spage=35> (Accessed 10 August 2005).
- Richardson, M., 2005b. Open access and institutional repositories: an evidence-based approach. *Serials*, 18(2), 98–103. Available at: <http://serials.uksg.org/openurl.asp?genre=article&issn=0953-0460&volume=18&issue=2&spage=98> (Accessed 10 August 2005).
- Rowland, F., 2000. 'Who Will Buy My Bells and Whistles?: The True Needs of Users of Electronic Journals', *Serials*, 13(2), 73–77. Available at: <http://serials.uksg.org/openurl.asp?genre=article&issn=0953-0460&volume=13&issue=2&spage=73> (Accessed 10 August 2005).
- Rowland, F., 2005. Scholarly Journal Publishing in New Zealand. *Learned Publishing*, in press.
- SciELO, 2005. *Scientific Electronic Library Online*. Available at: <http://scielo.br/> (Accessed 10 August 2005).
- SHERPA, 2005. *Publisher Copyright Policies and Self-Archiving*. Available at: <http://www.sherpa.ac.uk/romeo.php?all=yes> (Accessed 3 August 2005).
- Singleton, A., 2005. Open Access and Learned Societies. *Learned Publishing*, 18(3), 223–226. Available at: <http://hermia.ingentaconnect.com/vl=1570863/cl=11/nw=1/rpsv/cgi-bin/linker?ini=alpsp&reqidx=/cw/alpsp/09531513/v18n3/s9/p223> (Accessed 10 August 2005).
- Springer, 2005. *Springer Open Choice*. Available at: <http://www.springeronline.com/sgw/cda/frontpage/0,11855,1-40359-0-0-0,00.html> (Accessed 10 August 2005).
- Steele, C., 2005. The Library's Perspective on Scholarly Publishing in the 21st Century Chapter 3 in *International Year Book of Library and Information management 2004–2005: Scholarly Publishing in an Electronic Era* (Gorman, G. and Rowland, F., eds) London: Facet Publishing, pp. 35–54.
- Swan, A., Needham, P., Proberts, S.G., Muir, A., Oppenheim, C., O'Brien, E.A., Hardy, R., Rowland, F. and Brown, S., 2005. Developing a Model for e-Prints and Open Access Journal Content in UK Further and Higher Education. *Learned Publishing*, 18(1), 25–40.
- Swan, A. and Brown, S., 2005. *Open Access Self-Archiving: An Author Study*. Technical Report to the Joint Information Systems Committee.

Available at:

<http://eprints.ecs.soton.ac.uk/10999> (Accessed 9 August 2005).

Tenopir, C., 2005. The Role of Publishing in the Research Process. Paper given at *JISC International Colloquium about Scholarly Communications and Publishing – London 21–22 June, 2005*. Available at: [http://www.jisc.ac.uk/index.cfm?name=event\\_international\\_0605#Top](http://www.jisc.ac.uk/index.cfm?name=event_international_0605#Top) (Accessed 3 August 2005).

Tenopir, C., King, D.W. and Bush, A., 2004. Medical Faculty's Use of Print and Electronic Journals: Changes Over Time and Comparison with Other Scientists. *Journal of the Medical Library Association*, 92(2), 233–241.

Tenopir, C., King, D.W., Boyce, P., Grayson, M., and Paulson, K.-L., 2005. Relying on Electronic Journals: Reading Patterns of Astronomers. *Journal of the American Society for Information Science and Technology*, 56(8), 786–802.

Ware, M., 2005. *Online Submission and Peer Review Systems*. Worthing, UK: Association of Learned and Professional Society Publishers.

Wellcome Trust, 2005a. *Wellcome Trust Position Statement in Support of Open Access Publishing*. Available at: [http://wellcome.ac.uk/doc\\_WTD002766.html](http://wellcome.ac.uk/doc_WTD002766.html) (Accessed 3 August 2005).

Wellcome Trust, 2005b. *Wellcome Trust Announces Open Access Plans*. Available at: [http://wellcome.ac.uk/doc\\_WTX025191.html](http://wellcome.ac.uk/doc_WTX025191.html) (Accessed 3 August 2005).

Wellcome Trust, 2005c. *Science Funders Invite Applications to Run UK PubMed Central*. Available at: [http://www.wellcome.ac.uk/doc\\_WTX025122.html](http://www.wellcome.ac.uk/doc_WTX025122.html) (Accessed 9 August 2005).

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