Why Concept on-line: or, the history and rationale of the Open Access Movement

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This article appears in the first issue of *Concept* to be published on-line as an open access publication through Open Journal Systems (OJS). The concept of Open Access (OA) publishing has existed for decades (Suber, 2009), but has only become genuinely feasible for the majority with the advent of the Web and the digital publishing explosion that followed. Since then, librarians, academics and publishers have debated and experimented with new models of providing scholarly writing in a way which does not rely on the traditional published journal. For academics, under pressure to publish their research in high status, refereed but inaccessible and expensive journals, Open Access provides a way of reaching a wider audience and accelerating the publishing process instead of, or as well as, using the commercial publishing houses. The 'self-archiving' approach was pioneered by arXiv (Jackson, 2002), which was established in 1991 and now contains more than 0.5 million articles (known as 'e-prints') in physics and related subjects. This has been followed by the successful medical sciences services, PubMed Central and BioMed Central. Individual institutions began to self-archive their own articles from 2000, when E-Prints, the first software to support the 'institutional repository' (IR) approach was launched. The potential of the Institutional Repository grew once the Open Archives Initiative standard was formalised (JISC 2008), enabling such repositories to share and access each others' data easily.

In some ways, this is "so self-evidently right and good that it's hard to imagine how anyone could disagree with you" (Goldacre, 2007). The Web allows anyone to become a publisher, and provides ways to make information available globally to anyone with an Internet connection. However, as so often the case, the devil is in the detail. There are serious and challenging questions about copyright, the refereeing process, the costs and, indeed, the benefits to academics and other writers of doing it at all. As a result the movement, whilst developing much momentum, has not simply replaced established models, and has remained a contentious topic (Research Information, 2007).

McCulloch (2006) defines Open Access as aiming "to reassert control over publicly funded research in order to achieve best value and to make research output transparent and freely accessible". In this sense, it represents a sensible aspiration for libraries

seeking to control journal subscription costs, for universities wishing to maximise the visibility of their research, and for journal contributors, who can expose their own writing more widely and easily access material relevant to their current work.

Open Access has been taken forward in a number of different ways, and there continues to be much discussion about the relative efficacy of these approaches. In economic terms, Open Access is defined as 'green' or 'gold' (Harnad et al, 2004 a) where the green route involved deposit into an accessible database (normally referred to as a repository) to be made available for free, and the gold route involves retaining the journal publishing approach, but rather than asking the reader or library to pay for the journal, the author pays to publish (for research outputs, the cost of doing so may be included in the funding made available for the research). These routes are not mutually exclusive, and both have experienced some degree of success. The green route has progressed in two ways: through institutional repositories managed locally by universities and similar organisations, or through national and international subject-specific repositories (e.g. arXiv and PubMed Central). The gold route has, unsurprisingly, been more difficult to take forward, but where funding has been available, gold OA journals have been established. Particularly successful has been the Public Library of Science (PLoS), founded in 2000 and now responsible for seven online peer-reviewed scientific and medical journals (Brown et al, 2003).

There are strong economic arguments for pushing the Open Access model. Journal subscriptions become more and more expensive year on year, and it can be difficult to justify a publically funded university giving away its intellectual capital only for its library to be required to buy it back. A recent study of alternative publishing models (JISC, 2009) found that for the UK, significant savings would be possible if an open access model replaced the traditional journal publishing approach. The report identified that traditional publishing generated annual university library acquisition costs of about £200 million. Open Access publishing ('gold') the same journal article output was calculated at about £150 million per year, and the 'green' model was estimated to cost only £20 million per year. However, the publishing sector has been quick to criticise some of the perceived assumptions in the report upon which these savings calculations were based (Joint Statement, 2009).

Nevertheless, it is true that the foundations of OA are in the difficulties university research libraries have with affording journal subscriptions, and they continue to expect that an OA approach should

have at least some impact on this particularly costly element of running a modern academic library service. Harnad et al (2004 b) usefully distinguish between the affordability problem and the access/impact problem, both of which can be addressed by the OA model so that it is not simply about helping libraries absorb budget cuts, but also about extending the reach and accessibility of university activity.

Over the last 5 years or so, technology has evolved to support effective OA services through the use of global standards and the development of mature open source software applications. Search engines are capable of discovering the records, ensuring greater exposure and more choices for access. Tools like the Mendeley reference management application are becoming popular for managing and sharing publications and the development of new systems offer the potential to facilitate collaborative research, with open access to the resulting publications being an obvious and logical end point (Palmer, 2009). Open Journal Systems (OJS), which brings you this journal title, is part of this package of academic tools, and the University of Edinburgh is piloting the system partly to explore the possible relationships with the IR, so that scholarly outputs could be dynamically combined into journals as well as being generated as result lists from a database, thereby maximising accessibility.

Nevertheless, takeup of the Open Access concept, translating into actual deposit by researchers into repositories, has not been as rapid or as widespread as was hoped, or even expected. This has been partly because of confusion about the message, partly because authors have legitimate, but sometimes misguided, concerns about issues such as copyright and the need to publish in the 'right' journals, and partly because the OA community has not been effective in demonstrating the benefits to the writer and the organisation. Stevan Harnad, an important evangelist for the movement says this about OA:

"OA self-archiving is not self-publishing; nor is it about online publishing without quality control (peer review); nor is it intended for writings for which the author wishes to be paid, such as books or magazine/newspaper articles. OA self-archiving is for peer-reviewed research, written solely for research impact rather than royalty revenue." (Harnad, ePrints.org)

This message is not always simple to convey, and the traditional publishers remain interested, naturally enough, on preserving their business models, so the academic writer can feel caught in the middle of a battle for supremacy in the research publishing world which ultimately

leads to confusion and a sense that at least the status quo is easy and comprehensible. The OA community is now trying to articulate more clearly the benefits of OA so that the debate moves beyond whether it is simply a good or bad thing, to address the value it might provide both to the individual writer and to his/her parent institution (JISC, 2009).

OA is a global movement, with a greater or lesser takeup by academic institutions worldwide. The movement gained significant momentum with the publication in 2003 of the Berlin Declaration on Open Access (Harnad, 2005) and the Bethesda Statement on Open Access Publishing (Suber, 2003). Since that time, 267 institutions and membership organisations have signed up to the Berlin Declaration, and national movements and initiatives have been mobilised, such as openaccess.nl in the Netherlands, open-access.net in Germany and IRIScotland in Scotland. A number of national approaches seek to bring together multiple Institutional Repositories to make for a more joined up experience, and as a showcase of national research. In New Zealand the National Library offers the Kiwi Research Information Service, and the Welsh Repository Network was launched this year.

Scotland is very much at the head of this curve. In 2004, the Scottish Consortium of University and Research Libraries (SCURL) created the Open Access Team for Scotland (OATS), a committee with the remit to push the national OA agenda, which resulted in the Scottish Declaration on Open Access (OATS, 2004), launched at an event at the Royal Society of Edinburgh, and strongly supported (Curtis, 2005). The committee obtained Joint Information Systems Committee (JISC) funding to establish an IR network for Scotland, which resulted in the IRIScotland project (Hunter et al, 2008), which in turn led to a second injection of JISC funding in April 2009, and aims to take Scotland into new areas such as digital preservation of open access collections. The University of Edinburgh has led both of these projects, with partners including the National Library of Scotland and the University of Glasgow.

The University of Edinburgh has been active both at these national/international levels, and locally to establish OA as a viable concept in the institution. Participation in funded projects such as SHERPA (Markland and Brophy, 2005), with its focus on setting up IRs and exploring the issues, provided the resources which helped to establish what is now the Edinburgh Research Archive (ERA). ERA articles are presently being downloaded at a rate of around 2000 per day with every individual article, on average, being downloaded over 200 times. On the back of these developments, Edinburgh has

created a new staffed service which will support and develop research publications management at the university. The Research Publications Service (RPS) provides support to anyone interested in depositing their research, and will be fully launched in January 2010 when the University of Edinburgh Research Publications Policy (Cannell, 2009) comes into effect. It is important to note that this policy does not require Open Access, as this is not always possible or desirable, but it will make it easier to engage academics in the benefits of doing so, and to understand any concerns they have. The service is being actively marketed through print and web materials and, recently, via physical stalls as part of Open Access Week. Edinburgh is one of a growing number of institutions to adopt university-wide policies of this kind, with the Registry of Open Access Repository Material Archiving Policies recording 49 institution-wide mandates worldwide.

Where do we go from here? As more and more academics and universities see the benefits of Open Access, deposits should increase and the extent of publically funded research that is available to all will be significant. Technological developments will make it easier to link repositories together and expose their contents in a variety of ways so that discovery is more effective. Digital Libraries will begin to support not just simple storage and delivery, but also long-term archiving and sophisticated publishing options. OJS and similar tools will offer opportunities to repackage content in increasingly useful ways for researchers and other university based workers, as well as practitioners in the community who might use this published material as well as, in this journal, contribute to it.

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