

Removing barriers to research

An introduction to open access for librarians

by Peter Suber

The serials pricing crisis is now in its fourth decade. We're long past the point of damage control and into the era of damage. Prices limit access, and intolerable prices limit access intolerably. Every research institution in the world suffers from intolerable access limitations, no matter how wealthy.

One might expect relief from digital technologies that allow the distribution of perfect copies at virtually no cost. But so far these technologies have merely caused panic among traditional publishers, who have reacted by laying a second crisis for libraries and researchers on top of the first.

The new crisis is still in its first decade and doesn't yet have a name. Let me call it the *permission crisis*. It's the result of raising legal and technological barriers to limit how libraries may use the journals for which they have so dearly paid. The legal barriers arise from copyright law and licensing agreements (statutes and contracts). The technological barriers arise from digital rights management (DRM): software to block access by unauthorized users, sometimes with the help of special hardware. The permission crisis is a complex quadruple-whammy arising from statutes, contracts, hardware, and software.

If the permission crisis were solved . . .

I bring up these two crises because I will argue that *open access* will solve them both. Since the

pricing crisis is already well-known, let me elaborate for a moment on the permission crisis. You know what you could do in a world in which the pricing crisis were solved. Here's what you could do in a world in which the permission crisis were solved:¹

- You would own, not merely license, your own copies of electronic journals.
- You would have the right to archive them forever without special permission or periodic payments.
- You would have the right to migrate older content, such as the back runs of journals, to new media and formats to keep them readable as technology changes.
- Access and usage would not be limited by password, IP address, usage hours, institutional affiliation, physical location, a cap on simultaneous users, or ability to pay.
- You would have the right to lend and copy digital articles on any terms you liked to any users you liked.
- Faculty and others could donate digital literature and software without violating their licenses, and you could accept them without limiting their usability.
- All use would be non-infringing use, and all use allowed by law would also be allowed by technology. There would be no need for fair-use judgment calls and their accompanying risk of liability. Faculty could reproduce

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full-text for students without the delays, costs, or uncertainties of seeking permission.

- You would not have to negotiate, either as individual institutions or consortia, for prices or licensing terms. You would not have to remember, consult, or even retain complex licensing agreements that differ from publisher to publisher and year to year.

- Users who object to cookies or registration would have the same access privileges as other users. Anonymous inquiry would be possible again for every user.

- You would never have to cancel a subscription due to a tight budget or unacceptable licensing terms. Researchers would not encounter gaps in the collection corresponding to journals with unacceptable prices or licensing terms.

The pricing and permission crises mean that libraries are paying much more to get much less. Together the two crises severely impede research. This is not just a problem for libraries and researchers. When research is impeded, so are all the benefits of research—from medicines and technologies to environmental health, economic prosperity, and public safety.

How open access works

Thesis 1. Both the pricing and permission crises can be solved with one stroke by open access. Open-access literature is defined by two essential properties. First, it is free of charge to everyone. Second, the copyright holder has consented in advance to unrestricted reading, downloading, copying, sharing, storing, printing, searching, linking, and crawling.² The first property solves the pricing crisis. The second property solves the permission crisis.

Both properties depend on the will of the copyright holder. Authors customarily transfer their copyright to publishers who create pricing and permission barriers precisely to prevent open access. The key to open access is not to abolish or violate copyright, but to keep copyright in the hands of those who consent to open access. It requires either that authors retain copyright or that they transfer it to open-access publishers.

If open access reduces pricing and permission barriers to zero, then it clearly solves both crises. Moreover, it does so efficiently, completely, and lawfully. Other remedies to the same problems are either legally dubious, such as circumventing digital rights management, or arduous and incomplete, such as copyright reform or antitrust action against publishing conglomerates.

Thesis 2. Open access is definitely attainable for scientific and scholarly journal literature, the body of literature primarily affected by the pricing and permission crises. It has already been attained for a growing portion of this literature.

Two facts make open access attainable for this special body of literature. First, authors of scientific and scholarly journal articles do not demand payment for their work. They willingly publish in journals that pay no royalties, and they have done so for three centuries. Second, the Internet allows distribution of perfect copies at virtually no cost to a worldwide audience. We can seize rather than fear the opportunities it creates.

The attainability of open access depends on the key distinction between literature that authors consent to distribute without payment and literature on which authors hope to make money. All authors, artists, and creators have a right to make money from their work, and we do not criticize anyone for trying. But when authors choose to give their work away, then readers should get the full benefit of their generosity. Opening access to readers would also repay authors by giving them the enlarged audience and impact for which they sacrificed revenue. Intermediaries wishing to erect price and permission barriers between authors and readers serve neither, harm both, and enrich only themselves. Authors and readers should bypass them.

The Internet makes this possible for the first time in history. This is true partly because of the nature of the Internet and partly because of the nature of journal literature. Scholars write the articles, edit the journals, and provide the peer review. We can create the archives and launch the journals that finally give life to open access. Bypassing the price and permission barriers that obstruct research is entirely in our hands. If we had to persuade publishers to give up their revenue streams, or legislatures to reform copyright law, then we'd be no further along than we were in the age of print. But with the Internet now at hand, open access depends only on the initiative of scholars.

In short, there is a serious problem, known best to librarians, and a beautiful solution within the reach of scholars.

We do not say that scholarly journal literature is free to produce, merely that it can and should be available to users free of charge. The willingness of scholars to write journal articles to advance inquiry and their careers, and not for direct payment, and the revolutionary potential of the Internet, both lower the cost significantly. But

they do not eliminate it. There are two primary vehicles of open-access literature, and each has its costs.

1) Open-access *archives* or *repositories* do not perform peer review, but simply make their contents freely available to the world. They may contain unrefereed preprints, refereed postprints, or both. Archives may belong to institutions, such as universities and laboratories, or disciplines, such as physics and economics. When archives comply with the metadata harvesting protocol of the Open Archives Initiative (OAI)³, then they are interoperable and users can find their contents without knowing which archives exist, where they are located, or what they contain. There is now open-source software for building and maintaining OAI-compliant archives⁴ and worldwide momentum for using it.⁵ The costs of an archive are negligible: some server space and a fraction of the time of a technician.⁶

2) Open-access *journals* perform peer review and then make the approved contents freely available to the world. Their expenses consist of peer review, manuscript preparation, and server space. Of these, peer review is the most significant expense. But peer review is essentially editorial judgment and paper shuffling (or digital file shuffling). In most journals and most fields, the editors and referees exercising editorial judgment donate their services, just like the authors. The cost of peer review, then, is limited to the costs of distributing the files to reviewers, tracking progress, nagging dawdlers, facilitating communication, and collecting data. But the cost of these chores is going down, and their efficiency is going up, thanks to increasingly sophisticated software.⁷

These are the vehicles of open access. Before returning the problem of covering costs, note that authors may deposit a preprint in an open-access archive while they still hold the copyright, even if they later transfer copyright to a traditional journal. Open-access journals always allow authors retain copyright. So in both cases, open-access archives and journals provide open access because the copyright holder authorizes it, not through a vigilante action that violates the copyright holder's will.

We do not call for open access to research articles because they are useful (as if everything useful should be free) or because their costs are low (as if everything inexpensive should be free). We call for open access to research articles because they have the relevant peculiarity that their authors write for impact, not for money, want the widest possible dissemination for their work, and consent to open access. Here is a body of work that is *very useful* and *very inexpensive*. It's not free to produce, but a very small subsidy will make possible a very large public good.

Covering costs

Who will pay this subsidy? Open-access archives can easily be supported by the institutions hosting them. The cost is trivial, and there is a direct benefit to any institution that hosts an archive for the research output of its faculty. Open-access journals have more substantial costs, but can cover them by charging the author's sponsor (employer or funder) rather than the reader's sponsor (library). The result is that the full cost of dissemination is covered so that worldwide access can be free of charge. Open-access methods of funding journals are novel but already in use and proving themselves.

BioMed Central⁸ is just one publisher proving that this business model can work for authors, readers, and their institutions.⁹

The benefit of open access to libraries is solving the pricing and permission crises. The benefit to scholars, beyond the benefit to libraries, is giving readers barrier-free access to the literature they need, and giving authors larger audiences and greater impact. Because the benefits on both sides are immense, librarians and scholars should work together to bring open access, step by step, to every institution and discipline.

There's a lot that librarians can do¹⁰ and a lot that scholars can do¹¹ to help this cause. If I'm right that librarians have the best understanding of the problem, and that scholars control the solution, then collaboration is highly desirable. Journal publishers have shrewdly seen an opportunity to make money, even in the age of the Internet, and have seized it. However, their business strategy limits access to knowledge and slows research. In response, let's be as shrewd as the publishers. The Internet has given scholars and librarians an unprecedented opportunity to save money and advance their interests at the same time. We should simply seize it. What are waiting for?

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Read the expanded article

An expanded version of this article, which expounds some points in more detail, is available at: <http://www.ala.org/acrl.suber0203.html>.

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Academic and Research Library Campaign Launching at the National Conference, Charlotte April 10-13

Communicate the value of academic and research libraries and librarians in the 21st century

WHY?

- Promote awareness of the unique role of academic and research libraries and their contributions to society
- Increase visibility and support for academic and research libraries and librarians
- Help librarians better market their services on site and online
- Position academic and research librarianship as a desirable career opportunity

HOW CAN YOU GET INVOLVED?

- Attend the Strategic Marketing for Academic and Research Libraries: Train the Trainer Preconference
Thursday, April 10
To register, visit the ACRL Website at www.acrl.org/charlotte
- Attend the conference and pick up a new @ your library™ toolkit filled with creative strategies, resources and customizable materials to help you share great marketing ideas with your colleagues and promote your library back home.

Research @ your library™

6. What are the most cost-effective methods for assessment of learning outcomes?

C. Transferability

Transferability of successful models of information literacy programs—whether between courses at the same institution or between institutions—is important for furthering collaboration and developing models of best practices. Current research concentrates on assessing the instruction designed for specific research projects, and focuses on student attitudes, opinions, and satisfaction with a library instruction experience and library research experience. The literature is lacking in longitu-

dinal studies on the impact of library instruction, and the transferability of secondary school library instruction learning outcomes to higher education and on into adult life.

1. How are the skills and knowledge developed through library instruction transferable to other research assignments, adult life situations, and the workplace?

2. How can librarians maximize the transferability of skills from one class to another, or one campus to another?

3. What is the correlation between library instruction and research skill improvement during four years of undergraduate education? ■

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Notes

1. This list only applies to the literature for which the permission crisis is solved. In my terms, it only applies to open-access literature, not to all literature. The items in the list overlap somewhat, not only with one another, but with items bearing on the solution to the pricing crisis.

2. The only constraint that authors might want to enforce is that no one should distribute mangled or misattributed copies. This is a reason for authors to retain copyright. Authors who don't care to enforce these constraints, or who live in moral-rights countries where they are enforceable even without copyright, could put their works into the public domain.

3. Open Archives Initiative, <http://www.openarchives.org/>.

4. There are two packages of open-source software for OAI-compliant archives: Eprints (Southampton University), <http://software.eprints.org/>, and Dspace (MIT), <http://web.mit.edu/dspace/>.

5. Peter Suber, “Momentum for Eprint Archiving,” *Free Online Scholarship Newsletter*, August 8, 2002, second story, <http://makeashorterlink.com/?X11423092>.

6. For more details, see the Self-Archiving FAQ, <http://www.eprints.org/self-faq/>.

7. The Scholarly Publishing and Academic Resources Coalition (SPARC) maintains the most comprehensive list of journal-management software, <http://www.arl.org/sparc/core/index>.

<http://www.plkp.ubc.ca/ojs/>. Some of this software is expensive and some of it is free and open-source. An example of the latter is the Public Knowledge Project's Open Journal Systems, <http://www.plkp.ubc.ca/ojs/>.

8. BioMed Central, <http://www.biomedcentral.com/>.

9. For more on the funding model for open-access journals, see Budapest Open Access Initiative FAQ, <http://www.earlham.edu/~peters/fof/boaifaq.htm>. Peter Suber, “Where Does the Free Online Scholarship Movement Stand Today?” *Cortex*, 38, 2 (April 2002): 261–64. <http://www.earlham.edu/~peters/writing/cortex.htm>. Peter Suber, “Open Access to the Scientific Journal Literature,” *Journal of Biology*, 1, 1 (June 2002) page 3f. <http://www.earlham.edu/~peters/writing/jbiol.htm>.

10. What librarians can do to facilitate open access in general, <http://www.soros.org/openaccess/help.shtml#libraries>. What librarians can do to facilitate eprint archiving in particular, <http://www.eprints.org/self-faq/#libraries-do>. Answering some library-specific questions and objections about open-access, <http://makeashorterlink.com/?G27212392>. Reprinted in Walt Crawford's *Cites and Insights*, November, 2002, pages 12–14, <http://home.att.net/~wcc.techx/civ2i14.pdf>.

11. What scholars can do to facilitate open access in general, <http://www.soros.org/openaccess/help.shtml#scholars>. What scholars can do to facilitate eprint archiving in particular, <http://www.eprints.org/self-faq/#researcher/authors-do>. ■