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The Opening of Science and Scholarship

Essay by Peter Suber, June 4, 2008

Who controls access to peer-reviewed research in the age of the internet? How are the relevant norms and interests evolving?

Some key variables are unchanged from the age of print. Scholarly journals usually don't pay their authors, referees, or editors. Journals still typically ask for full transfer of copyright and authors still typically give it. Researchers want to publish in high-prestige journals and their universities reward them for doing so. Journal subscription prices continue to rise faster than inflation.

But the internet has forced changes to other key variables. Most journals now have online editions, with access limited to paying customers, and there is a clear trend among them to drop the print editions. As the first-sale doctrine becomes increasingly irrelevant for digital content, it becomes increasingly irrelevant for cutting-edge research. Libraries no longer own, but merely license, the digital editions of the journals to which they subscribe, and the licenses often limit digital interlibrary loan and fair use. Above all, it is now possible to make perfect copies of a digital file and distribute them to a worldwide audience at zero marginal cost.

Open access (OA) literature is digital, online, free of charge, and free of unnecessary copyright and licensing restrictions. OA is now possible: physically, legally, and economically.
There are two large ways to provide OA to peer-reviewed literature. First, the peer-reviewed journals themselves could adopt a new business model allowing them to stop charging for access to their articles, much as broadcast TV networks don't charge for access to their broadcasts. Today there are more than 3,400 peer-reviewed OA journals, about 12% of the worldwide total of peer-reviewed journals. Second, non-OA journals could allow their authors to deposit their peer-reviewed manuscript in an OA repository, for example, hosted by a university. Today about two-thirds of non-OA journals grant this permission in advance and many others are willing to do so on request.

Authors benefit from OA at least as much as readers. Studies in more than a dozen disciplines show that OA articles are cited 50-250% more often than non-OA articles published in the same issues of the same journals. However, most authors are unaware of these studies and generally unaware of the benefits of OA.

While OA is demonstrably superior for impact, conventional publication is superior for prestige, at least during the current transition period. But there needn't be a trade-off. We can combine OA and prestige in the same ways in which we combine OA and peer review: a growing number of high-prestige peer-reviewed journals are already OA, and most of the rest already allow their authors to deposit their peer-reviewed manuscript in an OA repository. However, most scholars are unaware that there needn't be a trade-off. Most scholars are not familiar with the options for providing OA to their own work.

The legal basis for OA to copyrighted literature is the consent of the copyright holder. OA journals usually allow authors to retain copyright, while non-OA journals usually ask authors to transfer copyright. Increasingly, scholars, universities, and funding agencies resist routine copyright transfers and try to hold on to the rights needed to authorize OA. But they are still the

minority. Most authors are unaware that publishers don't need full copyright, unaware that giving publishers full copyright also gives them the OA decision, unaware that many publishers are willing to modify their standard contract on request, unaware that there's no harm in asking, and unwilling to take any step that might jeopardize their chance at a new publication.

Authors control the rate of OA growth, for three reasons. They decide whether to submit their work to OA journals, they decide whether to deposit their work in OA repositories, and they decide whether to transfer rights to a publisher.

Two large trends are determining the future of access to research. First, scholarly authors are gradually coming to understand the benefits and opportunities of OA. Second, a titanic struggle is taking place among institutions in a position to influence author decisions: universities, funding agencies, and publishers.

More and more universities directly encourage authors to deposit their peer-reviewed journal articles in the university's OA repository. Today, more than 30 universities encourage this kind of OA, and more than a dozen positively require it (including Harvard, as of February 2008). Nevertheless, university promotion and tenure criteria tend to create incentives for faculty to publish in well-established journals, most of which are non-OA, and to sign any contract that publishers put in front of them.

More and more funding agencies directly encourage grantees to deposit articles arising from funded research in OA repositories. Today, more than 30 funding agencies encourage this kind of OA, and public funding agencies in 10 countries positively require it (including the US National Institutes of Health, the world's largest, as of January 2008). Nevertheless, when awarding grants in the first place they tend to use the same conservative criteria as university promotion and tenure committees.

The only opponents of OA are publishers, and publishers are not monolithic. Some publishers already provide OA, some are experimenting with it, and some are carefully watching the experiments of others. Some have converted, some are opposed, and some are merely unpersuaded. Most non-OA publishers fear that OA will undermine subscriptions. Some are actively investigating non-subscription business models compatible with OA, and some are actively lobbying to thwart OA. The publishing lobby to delay or dilute government OA policies is well-funded and aggressive.

In the age of print, publishers could control access to research they did not conduct, write up, sponsor, fund, or purchase. One reason is that publishers controlled the most effective channel of distribution; but that has changed. Another reason is that the other stakeholders had not aroused themselves to pursue their own interests; but that is changing.

Universities and funding agencies are upstream from publishers. When they want to guarantee OA for their research output, and require their faculty or grantees to retain the rights needed to authorize OA (even if they transfer all other rights to a publisher), they can do so and publishers must accommodate them.

The short-term outlook is turbulent. But long-term, there are good reasons to think that OA will become the default for new peer-reviewed research literature. Support for OA is growing among scholars, universities, libraries, learned societies, funding agencies, and governments. Even non-OA publishers are increasingly willing to experiment with it. We can implement OA today, without reforming or violating copyright law. OA publishing costs less than conventional publishing and even these costs don't require new money; long-term, they can be covered by redirecting money now spent on non-OA journals. The economics of prestige temporarily favors older journals, and therefore non-OA journals, but high-quality OA journals are inexorably acquiring prestige to match their quality, and new OA journals launch every week. While non-OA

publishers can still influence author decisions, they are powerless to stop the rise of lawful OA from those who are determined to seize rather than spurn the opportunities created by the internet.

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