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Opening Access in a Networked Science

Essay by Melanie Dulong de Rosnay, June 13, 2008 in response to The Opening of Science and Scholarship

Some researchers can't use their own scholarship anymore because, in order to be published, they assigned all their rights without being aware of the implications of the exclusive terms of their initial agreements with their publishers. They can't publish their own articles on their webpages; they aren't sure whether they can send a copy of the post print to their colleagues or reuse it for a book or in class. Furthermore, their library might not be able to afford the subscription to the journal that published their article.

Science is being built incrementally. Scholars quote previous works and aim at disseminating new knowledge broadly into society. How can society take advantage of the opportunities offered by digital publishing and distributing to share scientific results more quickly and thus facilitate the discovery of new knowledge? What steps can further open science and scholarship? Should we simply ensure access to knowledge without paying a fee, or should we do even more to improve that access, such as enhancing legal and technical capabilities for finding, extracting, annotating and compiling information in order to make better use of it?

On April 29, 2008, Peter Suber and Stevan Harnad issued a joint statement defining two forms of Open Access (OA). They introduce a logical distinction between what they call "Weak OA" or "price-barrier-free" scholarship available free of charge, and "Strong OA" or "permission-barrier-free" scholarship whose authors grant to the public more permission than would otherwise be granted by default copyright law. They propose other value-neutral terms as alternatives to "weak/strong"; suggestions include "use/re-use", "read/read-write" and "basic/full". Jean-Claude Guédon suggests "read/re-use" and invites a discussion about the computational potential of documents digitized by Google and their searchability. The Budapest Open Access Initiative definition means by OA "free availability (…) without financial, legal, or technical barriers." So, three categories – rather than – two are indeed foundational for OA material and constitute a typology to define the different forms of OA: economic OA, legal OA and technical OA.

Economic OA
Research available only for a fee can't be read by researchers from less favored institutions and countries where libraries can't afford the subscription to a particular journal or online database. The public won't read these articles either. Economic OA grants basic access rights by making articles and data available for private reading.

Economic barriers to access can be waived though different options. Publishers can issue OA journals which do not charge their readers, and develop alternative publication models: this is the golden road to OA. Authors can also self-archive their articles in pre-print or post-print versions in an institutional repository; many non-OA journals allow authors to do so: this is Green OA. Several policies are available for those authors who want to but can't. Authors may add a contractual opt-out clause to their publishing agreement to retain some of their rights. Finally, universities and research funders may mandate the archiving of articles in OA repositories.

Legal OA
Legal OA is an additional condition, allowing redistribution, and goes beyond the removal of financial barriers to accessing and reading. Removing permission barriers grants the public

rights to use material beyond simple access. Like economic OA, legal OA, or “Permission-barrier-free” scholarship” relies on contractual agreements. Authors must indicate that they are publishing their output free of legal restrictions. Otherwise, third parties will not be aware that they may have additional permissions beyond the right of reading. Without an explicit declaration that additional rights are granted to the public, the right to copy, distribute and make derivatives may be impeded by transaction costs associated with permission requests. Libraries, professors, and other curators and aggregators may wonder if they can reproduce, translate, and redistribute material on websites or in coursepacks without an expensive rights clearance process. Adding a clear license to a journal, repository,or conference website will allow creative and confident usages. The Creative Commons Attribution license complies with the Budapest Open Access Initiative definition and makes legal OA a reality.

However, other Creative Commons licensing options reserving commercial rights and derivative rights do not comply with this definition and can’t lead to legal OA. For instance, one may redistribute legal OA articles only for non-commercial purposes; one may not translate them or distribute derivative works without additional authorization.

Also, Thinh Nguyen at Science Commons demonstrated that even the contractual requirement of attribution is a legal barrier to downstream use of non-copyrightable works, such as scientific data. He suggests the distribution of data under simple and understandable terms as close as possible to the public domain, free of copyright, contractual, database and other controls.

Technical OA
Just as price and rights clearance, technology can create barriers to access, redistribution and reuse of articles and data. But technical choices can also help remove them. Technical OA should ensure that materials can be actually and effectively reused, mined, processed, aggregated, integrated, and searched by both humans and machines. Technical barriers can include the following: protection measures that prevent copying, compulsory registration before download, and design features that add hidden costs to search and processing. For example, it can be difficult to download a dataset, or to parse a website with any software, often because of the publication format (html pages can be more convenient to browse that .pdf files; html and wiki formats allow comments; two-column articles are difficult to read quickly on most screens but are the norm for scientific articles). Poor indexing or lack of metadata also prevent some modes of use.

The opening of this triple architecture of market, law and technology to allow broader and better access, including redistribution and reuse, is made possible by social changes and a shift in power and control as further discussed by Jean-Claude Guédon. Authors are the original rights holders and don’t need to transfer all of their rights to publishers, who are exploring alternative business models to ensure sustainability. More and more journals and book editors, as well as data curators are becoming aware of OA’s social benefit and potential impact on innovation and aim at sharing their results. If they wish to do so, they should make sure that not only economic, but also legal and technical restrictions have been effectively waived, so that researchers and the public can not only access, but also redistribute and reuse materials in any way, including ways that initial creators had not considered.

Melanie Dulong de Rosnay is a fellow at the Berkman Center for Internet & Society at Harvard Law School, where she leads research in copyright law and information science. She is designing a distance learning course on copyright for librarians in partnership with eIFL. She is also working on open access science and open data policy with Science Commons, and coordinating publications for Communia, the European thematic network on the digital public domain.

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