The Scholarly Communication Problem
Why Open Access is Necessary
– A Transatlantic Perspective –

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Anyone who has been engaged in research for more than a decade has noticed a radical shift in accessing scholarly literature. While more than a decade ago the first and only stop was the physical university library, scholars must now rely on both paper publications and electronic sources. A recent survey of U.S. research practices asked what starting point faculty used for research and found that in 2009 more than 75% began with a search engine, with the remainder beginning either with the on-line library catalog or the physical library itself. The numbers differ only slightly with regard to discipline: natural scientists began their searches 90% of time with a search engine, social scientists 80%, and humanists 70%. Moreover, surveys taken in 2003 and 2006 demonstrate that reliance on the physical library and its catalog is declining in proportion to the growing reliance on search engines. Who would wager that the trend will reverse? What faculty member (who wants to have his or her scholarship read) wants to be invisible to search engines?

While it is clear that the future of research publication in all fields will be electronic, it is less clear how we will get there. Much scholarly dissemination is already shifting to electronic means as journals publish both in paper and electronic editions, but most of those electronic versions are locked behind password-protected firewalls, available only to students and faculty who are privileged to access them while they hold affiliation with a research university. One might say that this has always been the case: only library-card holders could borrow books in a research library, though of course anyone could access journals and books while physically located there. But the situation with electronic access is different: publishers rent to libraries yearly access to journals, the back-issues of which do not become the property of the library and there is no guarantee that the journal will be kept available in perpetuity. In fact, as the yearly rental rates continue to skyrocket—my institution, the University of Kansas pays more than $4 million per year—the inevitability of periodical cancellations increases, further limiting access to scholarship. This is not just a matter of growing expense with the growth of knowledge produced. Rather, the proportion of library expenditures on books : periodicals has fully reversed over the last three decades from 80% : 20% in 1986 to 20% : 80% in 2010. While the consumer price index rose 64% in this period, scholarly journal rates rose 227%.

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The injustice, if not outright perversity, of the situation becomes clear when the full economic chain of events is considered: universities get their funding from student tuition and public sources of revenue (research grants, state subvention gathered through taxes); these funds pay for faculty salaries, laboratories, and research materials; faculty provide their research, editorial and refereeing expertise (overwhelmingly for free) to scholarly journals, which in turn publish the work and *rent* it back to the university, making a tidy profit in the process. Electronic publishing technologies have subverted the older model, whereby libraries purchased journals (and their contents) once and for all and created a new situation in which rental allows publishers potentially to profit

from their content indefinitely. In effect, universities, and the public that supports them, are charged twice (and more) for research: once to produce the research and again to access it. And what if Mary B. Taxpayer, sitting at Starbucks with a cappuccino and a laptop, would like to read the latest research on sub-tropical ecosystems or non-Euclidean geometry? After all, she has paid her taxes and therefore paid for the research. If she doesn't have university affiliation, the solution is simple: most journals will take credit cards on-line and for a few tens of dollars will offer a peek at one of their articles. Mary now pays again to access the research she had already financed in the first place.

Over ten years ago researcher Stevan Harnad summed up the dilemma when he wrote that scholars seek to access "the eyes and minds of all potentially interested fellow-researchers." Rather than broaden access to scholarship, technology has caused access costs and, oddly enough, profits to skyrocket. It has been estimated that commercial publishers on average have a profit margin ranging between 10-25% annually and non-profits averaging 10% . Between 1995 and 2001 Elsevier's profits averaged 37% per year. A partial cause of this growing shift can be traced to the disruption in the delicate balance between the academic "gift economy" and the market economy leading to the commoditization of the fruits of research and scholarship funded by the public and meant to benefit the public good.

An estimated 73% of scholarly journals are published by commercial publishers, 20% not-for-profit, the remainder by other hybrids. Interestingly the amount of content that those publishers produce is skewed with the wealthy commercial publishers producing (and thus having access control over) the largest number of journals. For example, four publishers (Elsevier, Springer, Taylor & Francis and Wiley-Blackwell) own approximately 25% of the scholarly journal publishing market. If one adds the commercial publisher Sage to the list, Raym Crow, a researcher in scholarly communications estimated

that between them these commercial publishers published 50% of all non-profit journals. Commercial publishers also contract with non-profit organizations to publish originally low-cost, low-profit margin society journals. Crow, also says his data indicate "that ~27.5% of all commercially published journals were society-sponsored; and that ~30% of nonprofit-sponsored titles were published by commercial publishers."

There is however a shift back toward not-for-profit publishing, in the spirit of the academic "gift economy" by way of initiatives that offer the non-profit scholarly organizations other mechanisms for publishing. An organization called SPARC Europe (Scholarly Publishing and Academic Resources Coalition, Europe), http://www.sparceurope.org/) for example, advises non-profit publishers, whether publishers with new projects or established journals that would like ideas on shifting their content to an online environment or changing their access model to an "open" one. In the US as well as elsewhere universities have begun to help fund low-cost non-profit publishing endeavors (see KU's https://journals.ku.edu/index.php as an example). They are choosing to experiment with new publishing models moving from toll-based or subscription models where the reader pays, to an "open access" model where the reader does not pay (all content is open and free to the public). These innovations do not subvert the peer reviewed journal publishing industry but simply provide public, free access to readers, world-wide, of the literature. To keep the journal self-supporting other sources of income are found besides subscriptions. Funding might come from within the universities, funding agencies or through author-pays models—without profit being the motive or outcome of the endeavor.

Providing full public access to the results of scholarship can occur in numerous ways and the transition is occurring through a variety of experiments including the creation

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of "open access" journals and in other instances, through collective and individual action, where individual authors working collaboratively decide to make a copy of their published articles available in complementary online archives that are open to the public. Such individual and collective actions on the part of authors points to a growing recognition that they have a role as stewards of the public's access to their scholarship and that this is an essential part of the scholarly endeavor.

A whirlwind of activity in Kansas

The University of Kansas (KU) was among the first universities in the United States to recognize the absurdity of restricting access to scholarly communication, both among scholars and to the public. Scientific knowledge created at universities, after all, is a public good. In response to the dilemma then-Provost of KU David Shulenburger in 1998 envisioned a national repository for on-line publication of all research. While that lofty goal was not realized, Provost Shulenburger and the KU Libraries in 2005 launched a local digital repository using the DSpace software package, KU ScholarWorks (https://kuscholarworks.ku.edu), dedicated to the secure on-line deposition and preservation in perpetuity of research publications by KU faculty to be made available free-of-charge to anyone with Internet access. In 2007 the Open Journal System (OJS) was added to the KU instruments for on-line dissemination, in this case supporting the direct electronic publication of scholarly journals for Open Access, including software to facilitate the refereeing, publication, archiving and indexing functions. In the ensuing years a faculty-initiated policy was developed supporting the movement to make all research papers produced by KU faculty available to the public through the digital repository. In doing so, in 2009 KU became the first U.S. public university to establish a campus-wide Open Access policy, joining a small number of private universities (Yale, Harvard, Stanford) with such policies, a process spearheaded

by a small group of faculty and librarians within the faculty governance system and later completed by the work of a larger task force of faculty, administrators, and librarians.

What is a researcher to do?

Having a policy is one thing, implementing it is another. Faculty researchers are a heterogeneous species. Natural scientists in several disciplines have already begun discipline-specific and broader repositories, in many cases driven by grant requirements for open-access dissemination. For these scholars the KU Open Access Policy and the KU ScholarWorks digital repository are redundant. Social scientists and humanists, the latter especially, are sometimes "book-huggers" for whom on-line dissemination is frequently an alien if not outright threatening proposition, although this group, according to the Ithaka report cited above, is in the minority and apparently declining. There are many reasons why practices differ, but one might mention that the window of relevant material for humanists is far greater than for natural scientists, the former being concerned with centuries of material and the latter concerned primarily with recent research published, say, within the last five years. Humanists often engage not only the content of a text, but also its context and the object itself (particular editions, paper and binding, palimpsests, marginalia, contemporaneous authors, etc.). Although more reasons can be adduced, some degree of comfort for the humanists lies in the fact that print sources and physical libraries are not going away any time soon.

Perhaps uniting all disciplines are structural concerns with the shift from paper to open, on-line dissemination. Among the central issues is a general ignorance among researchers of all stripes about the nature of copyright. It would be a safe bet to wager that most researchers think it obligatory to assign copyright to their publisher. In fact, authors own their writing and can and should retain their copyrights, granting only

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those rights, or, better, a license to publish their work to the journal in question. Publishers do not need all the copyrights associated with a work to publish it. Copyrights are a bundle of rights that can be shared between author and publisher, for example. Analogically, faculty researchers, whose wages are paid by universities, are morally, if not legally, obligated to license their works for publication in open-access repositories such as KU ScholarWorks. Yet most blithely assign away their copyright to publishers, largely because this is the way things have always been done and, moreover, publication contracts do not make for interesting reading. Signing them is the final step before publication, and in the world of publish-or-perish, the survival instinct prevails. The issue is particularly acute among non-tenured faculty, who justifiably fear pushing back against their publisher's policy, lest their paper be rejected, potentially weakening their chance for tenure. Until the paradigm shifts in favor of university and faculty researchers' rights to reasonable and affordable means of effective scholarly communication, the answer lies in educating faculty on their rights. An important tool for today's researcher is the Sherpa/Romeo website (http://www.sherpa.ac.uk/romeo), which archives known publisher copyright policies. Most major journal publications policies are archived at the site and the researcher can shop for the journal that meets both his or her needs for dissemination as well as copyright retention. Tenured faculty can use their somewhat stronger position to request modification of their publication contracts in order to retain copyright, allowing them to license the refereed, edited, final paginated PDF version to their institutional digital repository.

Publication cultures across the pond

So far we have discussed the Open Access movement in terms specific to the United States and Western Europe, where the relationship between private publishers and public universities has a long tradition. Open Access has been able to move with alacrity in smaller states where this relationship is not an

entrenched part of the culture; on the contrary, both research and publication entities have been in the domain of the government. In such cases the entire scholarly community of a state can move to Open Access quickly because there is no conflict of interest: publicly funded research is assumed to be a public good and, as such, is made freely available so long as the infrastructure is available. In my own experience, the Croatian scholarly community has developed an exemplary on-line repository along the lines of the national repository envisioned for the U.S. (and never realized), mentioned above with regard to the work of David Shulenburger. I refer to the Hrčak: Portal znanstvenih časopisa Republike Hrvatske (Hrcak: Portal of Scientific Journals of Croatia) (http://hrcak.srce.hr/), which as of today (1 July 2010) contains more than 200 scholarly journals and nearly 4,000 articles.

In one of Marc's areas of specialization, Slovene linguistics, he has worked in partnership with a co-editor, Marko Snoj, on bringing the journal *Slovenski jezik / Slovene Linguistic Studies*, launched in 1997, from a paper journal to a simultaneous paper and open-access publication commencing in 2009. (He had been archiving back issues on-line with a one-year delay since 2006.) The development was a natural evolution, since the profit motive was absent from the beginning and, consequently, both of the publishers, the Scientific Research Centre of the Slovenian Academy of Sciences and Arts and the Hall Center for the Humanities agreed to our request for simultaneous on-line publication without fanfare. In this case he used the available infrastructure of KU ScholarWorks for deposit of the final edited and paginated PDF versions of the articles and developed a customized portal referring back to them (http://www2.ku.edu/~slavic/sj-sls). Nothing has changed in the mode of operation on the editorial side: from the beginning authors retained their copyright and were asked to grant a license to publish

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their papers. Crucially, the journal maintains high editorial standards through refereeing of articles by appropriate experts in the various sub-fields, the only caveat being that authors affirm that their works have not been previously published. The partially unintended, yet positive, consequence of on-line publication has been greater visibility not only in the Slavic field, but world-wide. Search engines such as Google Scholar register our articles, bringing them to the immediate attention of scholars who search on relevant keywords. The usage statistics in KU ScholarWorks also track the number of downloads and views for each article, sorted by country, so that one may see at a glance where the articles are being downloaded and, presumably, read. The journal's on-line reach is far greater than the handful of (mostly) European libraries subscribed to the paper edition. Because the journal is in a niche market, while there is no way of collecting the information systematically, there is ample anecdotal evidence that the journal's papers are cited both in the Slavistic community and well beyond it. One bit of recognition came in 2006 when the journal was recognized as the authoritative journal for its area in the prestigious Cambridge "green" linguistics series in Cubberley's volume devoted to Slavic linguistics.

Our experience is adduced here not for self-adulation (though we are, of course, proud of our achievements), but to indicate that the Open Access mode of dissemination creates a standard for timeliness and visibility in scholarly research against which other, slower and closed modes of dissemination must compete. Open Access will inevitably become the imperative and the gold standard in scholarly publishing. In the paradigm shift, publicly supported advancement of knowledge will be restored to its rightful place as a public good, to be used without impediment by all.

Endnotes

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