# The Academic Library in the Face of Cooperative and Commercial Paths to Open Access


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# The Academic Library in the Face of Cooperative and Commercial Paths to Open Access

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Abstract

This paper sets out the place of the academic library within the digital-era developments of open access to research and scholarship. It analyzes how this development, now that open access is becoming a scholarly norm and common goal for scholarly publishing, is taking two forms, both of which are about making the move, if not a flip, from the subscription model for the circulation of journals to that of open access. The paper sets out the terms and instances of the two paths to open access. The one is a commercialization of open access publishing dominated by the large corporate academic publishers that are pursuing open access on their own terms through the article processing charge (APC) and in relation to the acquisition and development of scholarly communication infrastructure. The other, older tradition, if still on a smaller scale, is one of cooperation and collaboration, growing out of the commons that the library has always represented, involving libraries, journals, and archives, as well as open source tool and platform development. There is some crossover between the two paths, between library consortia and corporate publishers, and this paper encourages librarians to consider how they might take advantage of the market for publishing services that the two paths are creating amid the move to universal open access as a scholarly norm.

## Introduction

In the *longue durée* of learned bookmaking, the libraries that were enjoyed by medieval nuns and monks, scholars and masters, and more recently by students and faculty have largely operated as a commons for the shared use of books within communities that sought to advance learning. Those

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communities may have been as narrowly conceived as an enclosed convent; they could be broadly realized, with Thomas Bodley insisting on public admittance to the University of Oxford Library that he rebuilt at the beginning of the seventeenth century; and still, three centuries later, Virginia Woolf found herself excluded from an unnamed Oxbridge library. However open or restricted, such commons were sustained by long-term acts of endowment and sponsorship, much as Bodley demonstrated. The libraries, in particular, have represented cooperative efforts of those determined to provide readers, students, and the learned with what were seen as the necessary levels of access and autonomy that could sustain the production of further learning, book by book, article by article (Willinsky 2017).

Coming out of that history, this paper explores how a relatively new set of digital-era initiatives among research libraries is drawing on the cooperative values and patterns embedded in the past to both achieve greater access to research and scholarship generally and, more specifically, escape the hyperinflated journal subscription economy of the late age of print. The digital version of the *knowledge commons* is not about "information wanting to be free" nor about acts of piracy that make it free (Frischmann, Madison, and Standburg 2014; Hess and Ostrom 2007). Rather, it is about the emergence of cooperative and commercial models of open access scholarly publishing. For while increased cooperation among libraries, funders, and journal publishers is one source of open access, a second source is leading to increased commercialization of scholarly work and infrastructure. The two paths do intersect at points—as commercial services, for example, enter into the cooperative arrangements of SCOAP3 (discussed below)—and both paths are contributing to a welcomed and ultimately productive increase in access to research, data, archives, instrumentation, and other scientific and scholarly processes and results. Still, the choices being made at this point between cooperative and commercial paths to open access are bound to have considerable consequences down the road.

While I seek to demonstrate, as well as contribute to, the coherence among a range of the current library-centric cooperative approaches to open access, I do not see a single best cooperative model of scholarly publishing. After all, the basic principle of cooperation is that all participants play an ongoing role in the model-building process. Nor do I imagine the cooperative approach somehow replacing the corporate publishing model. The big five corporate players have only increased their hold on this work, until it amounts to roughly half of the literature (Larivière, Haustein, and Mongeon 2015). Rather, I see the cooperative approach as offering an academic and financial check on corporate control of scholarly publishing. But then, in the interests of full disclosure, I should make clear that I have worked for the last two decades on the Public Knowledge

Project's building of open source software resources for cooperative forms of publishing in association with Simon Fraser University Library. This demonstrates my belief in cooperation as a scholarly value, I trust, rather than signaling a conflict of interest that clouds my judgement.

*The Open Access Tipping Point*

Without fanfare or celebration, the year 2014 saw a significant open access milestone passed as the proportion of research and scholarship to which there is free access passed the halfway point. In 2014, while only 14 percent of the literature is immediately open access in its published format, the proportion that can be freely read in a postembargo, final draft, and illicit "rogue" or "robin hood" state is in the area of 50 percent for the recent literature (Piwowar et al. 2018; Jamali and Nabavi 2015; Archambault et al. 2014). This growth in open access can be attributed, in part, to the emergence of well over ten thousand open access journals; researchers taking advantage of sites such as Academia.edu and Research Gate to share their work; and the access policies of the major public and private research funding agencies that require public access to the work they sponsor, if after an embargo period typically of twelve months (intended to protect journal subscriptions).

The major scholarly publishers are also starting to play a major role in the growth of open access, with the turning point for the largest of these publishers, Elsevier, coming seventeen years after *Forbes* magazine asked whether the company might be "the Internet's first victim" (Hayes 1995). On February 27, 2012, Elsevier publically withdrew its support from the Research Works Act, which was a piece of US legislation directed at preventing federal open access mandates. Elsevier said in its announcement that "we firmly believe that more cooperation and partnership between funders and publishers is the best way to expand free public access" ("Elsevier Withdraws" 2012). By 2014, the four leading journal publishers—Elsevier, Springer Nature, Taylor and Francis, Wiley Blackwell—each offered in 2014 over a one thousand "hybrid" titles, which publish open access articles in a subscription journal, with Elsevier and Springer Nature also publishing 392 and 491 open access journals, respectively (Auclair 2015, 16). Open access, which was treated at the turn of the twentieth century as harebrained utopianism, is growing into an "institutional imperative," to use Robert K. Merton's phrase for the ethos of collective ownership or "communism" that sets this form of human activity off from other forms intellectual property development (1973, 273).

It is surely time to find a legal, scalable, and equitable means of moving beyond the halfway measures intended to protect a subscription market that no longer serves the interests of libraries or researchers. Libraries appear to be ready to redirect what they spend on journal subscriptions—upwards of $10 billion annually on a global basis (Ware and Mabe 2015)—

to the support of open access publishing models. Schimmer, Geschuhn, and Vogler calculate that current subscription revenues are sufficient to underwrite an APC of EUR 3,800 for the whole of the literature, basing their calculations on an estimate of two million articles published annually (2015). But not just libraries. As early as 2003, Mark Rowse, then CEO of Ingenta, spoke of a "flipped" business model, in which a country's library subscription fees would enable its authors to have their articles made open access to the world (Hane 2003; Suber 2007). An early champion of the subscription flip, Peter Suber noted more than a decade ago that "flipping the business model is a simple act because, under our assumptions, it changes almost nothing" (2007). This "almost nothing," once realized, will still manage to change a good deal. By making open access the standard for scholarly publishing in the digital era, the flip restores the ownership of research to the academic community, which would no longer have to purchase or rent access to this work. It transforms publishers from the owners of the research to which libraries subscribe to service providers who publish research on behalf of the academic community, which is underwritten by the libraries.

The initial steps toward this critical flip are now being undertaken. With this paper, I want to contrast two approaches to the flip. The one, with a number of trials underway, is starting at the top, by seeking to flip the big subscription deals of the large corporate publishers. The other, which has yet to formally take on the flip, builds on the growing collaboration between research libraries and open access journals in a bottom-up approach. There is more than one way to finesse open access. The the top-down corporate flip could well meet the bottom-up cooperative flip in a dazzling acrobatic achievement that, after the applause dies down, leaves us with universal open access. My intent, however, is not an even-handed review of both approaches. Rather, coming out of my work with the cooperative side of scholarly publishing, I seek to propose and promote efforts to increase its strategic and systematic contribution to the flip. Thus, I begin with the corporate flip before turning to the cooperation of the commons.

## The Corporate Double Flip

The economic key to the corporate flip is the "article processing charge" (APC). The APC commercializes open access. It replaces the journal's subscription revenue with a service charge for publishing an article, paid by authors through their grants and institutions. The APC grew out of "page charges," which some science journals introduced mid-twentieth century to cover, for example, printing costs for color and to keep subscription fees down.[1] In 2000, the APC was first used to finance open access online publication by BioMed Central. When the company was acquired by Springer in 2008, it signaled the move of large corporate publishers into APC-financed

open access. While the Directory of Open Access Journals indicates that, in April 2018, only 37 percent of the 11,083 open access journals that it lists levy an APC, the large publishers have adopted it for their open access journals and hybrids (subscription journals in which an author can pay an APC to make their article open access). In 2013, Elsevier's average APC for its hybrid journals was $2,551 in biomedical research; $1,835 for the social sciences; and $1,452 for the humanities (Björk and Solomon 2014, 25). The business analyst Outsell estimates that $290 million was spent on APCs in 2014, a 15 percent growth rate over the previous year, while still representing only 4 percent of the journal market (Auclair 2015, 8).

Still, the APC is already raising some of the same issues over excessive pricing and profits, with little relation to value, that journal subscriptions had raised.[2] The shift to an APC open access model for the corporate sector is taking place amid an era of considerable profits. In the *Times Higher Education*, David Matthews has noted, with regard to publishers' profits in 2017, that "between these three companies [Elsevier, Taylor and Francis, Wiley], that's more than £1.25 billion a year siphoned off from the research system annually: not far off enough to fund another University of Oxford" (2018). Robert-Jan Smits, EU's special envoy on open access, asks us to "imagine if all the billions we are now putting into these expensive subscription journals could be put into research," while the League of European Research Universities has declared that "Christmas is over; research funding should go to research, not to publishers!" (J. Roberts 2018; "Christmas" 2016). The economic question is also being played out on a global scale, with the APC-funded megajournal raising questions about developing countries subsidizing top-tier journals (Ellers, Crowther, and Harvey 2017).

A second concern arose when the APC option began with publishers selling open access in hybrid journals while collecting full subscription fees (Cressy 2009). With publishers instituting policies against such double-dipping, libraries and publishers began to explore the reverse situation, in which an institution's subscriptions fees could offset APCs for its authors. As early as 2007, Springer entered into what proved a short-term trial of this subscription offset model with the University of California Libraries, the Max Planck Society, and others ("Springer Open Access Pilot Ends" 2010). In 2013, the Royal Society of Chemistry launched a "Gold for Gold" program based on granting subscribing libraries a number of APC vouchers. Libraries that subscribed to the Society's complete set of thirty-seven journals—marketed as RSC Gold—were granted a financially equivalent number of APC vouchers, then valued at $2,280 each (with the program ending in 2017; "Gold for Gold" 2018). The following year, 2014, the association of the Netherland's fourteen universities (VSNU) negotiated a subscription "big deal" of an untold amount for two thousand Springer journals in which articles by researchers at Dutch universities would be

made open access in a select number of journals. JISC, on behalf of the UK library community, arrived at similar agreements with 1,600 Springer journals in 2015 (Butler 2016).

In 2015, the Max Planck Digital Library established an OA2020 initiative, with its signatories having grown to over one hundred institutions interested in "offset agreements" as a "transitional model" to open access, while setting for themselves a goal of establishing "criteria for 'fair' publishing costs" ("Take Action" 2018.) That same year, VSNU struck a deal with Elsevier, after threatening to boycott the publisher, that includes, in its three-year term of undisclosed subscription payments for all of Elsevier titles, an open access provision for up to 30 percent (by 2018) of the articles led by authors at Dutch institutions in a select number of Elsevier titles (Butler 2016). Although no further details are available on the Elsevier-Netherland arrangement, given the nondisclosure agreements, one might imagine that if the Netherland's share of Elsevier's subscription revenue is roughly equal to the proportion of its authors' articles in the company's journals, then covering 30 percent of the Dutch authors' APCs suggests that Elsevier believes that offering complete open access to Dutch research will require the country to pay three times current subscription costs. In 2016, Jisc fell decidedly short in achieving its stated goals with Elsevier, which included offsetting credits for open access; contract transparency; short agreements; and, least likely (give the nondisclosure), price containment (Gowers 2016).

A 2016–17 survey of European academic institutions reveals that 11 percent of them are part of offset agreements, with 66 percent expressing an interest in such (*EUA Big Deals* 2018). However, as I write, Elsevier is continuing to negotiate with German research libraries beyond the date at which the country's subscription deal had lapsed, without suspending access to their journal content (Schiermeier 2018). The German institutions are seeking a "Publish and Read" model, in which, one member of their negotiating team, Bernhard Mittermaier, explains, "We strive to pay according to the number of publications and read at no additional costs" (Poynder 2018). At this time, as well, the French research libraries have allowed their Springer Nature subscription contracts to lapse, with the publisher, although expressing disappointment that an agreement has not been reached, again agreeing to continue permitting access to its journals ("Couperin Does Not Renew" 2018).

Even as German and French libraries seem to have reached an impasse with offset deals in 2018, the large corporate publishers have been engaged over the last decade in a second type of corporate flip. These companies are supplementing their considerable accumulation of journal content over the last four decades by building systems and acquiring businesses that enable them to control a greater extent of the scholarly communication process.

Table 1. Elsevier internally developed scholarly communication services

| Service | Function |
|---|---|
| Analytical Services | Institutional and national research performance indicators |
| Expert Lookup | Text-mining tool to identify collaborators and reviewers |
| Reaxys | Chemistry discovery tool literature, patents, and substances |
| ScienceDirect | Platform for Elsevier's 3,800 journals and 37,000 books |
| Scopus | Citational analysis database for broad span of literature |

To stay with the example of Elsevier, at the core of the company's online publishing strategy is their ScienceDirect publishing platform for journals and books, which was launched in 1994, followed a decade later by its creation of Scopus, "the largest abstract and citation database of peer-reviewed literature," according to its website. The company has developed additional services to further support the discovery and analysis of research (table 1). But then Elsevier has also been on an acquisition streak since at least 2012, picking up hi-tech companies that are providing a new generation of digital research tools and services to scholars and their institutions (table 2).

Elsevier is now in a position to offer universities services that not only support but also analyze the full range of scholarly activities at their institution, from the inception of the research to its delivery and beyond (fig. 1).[3] The company has also turned its publishing platform into a service for hire by scholarly societies, such as the African Federation for Emergency Medicine, which is then able to publish its *African Journal of Emergency Medicine* on the Elsevier platform. While I have focused on Elsevier up to this point, Springer Nature offers a similar open access journal publishing service through its Global Science Journals service ("Global Science Journals" 2018), while its owners also hold Digital Science, which manages a portfolio of fifteen scholarly communication services, among the best of which are Altmetric, Figshare, Overleaf, and Readcube.

This investment in publishing services has yet another element to it.

Table 2. Elsevier's recent acquisition of scholarly communication services

| Company | Acquired | Scholarly communication service |
|---|---|---|
| bepress | 2017 | Institutional repository and journal publishing platform for libraries |
| Hivebench | 2016 | Lab notebook services for planning, conducting and analyzing experiments |
| Mendeley | 2013 | Bibliographic, networking, careers, and funding management services |
| Plum | 2017 | Article-level metrics from social and news media as well as research sources |
| Pure | 2012 | Research and researcher aggregator for reports and assessment |
| SciVal | 2015 | Research performance of 8,500 research institutions and 220 nations |
| SSRN | 2016 | Preprint repository and ranking system with abstract-journal services |

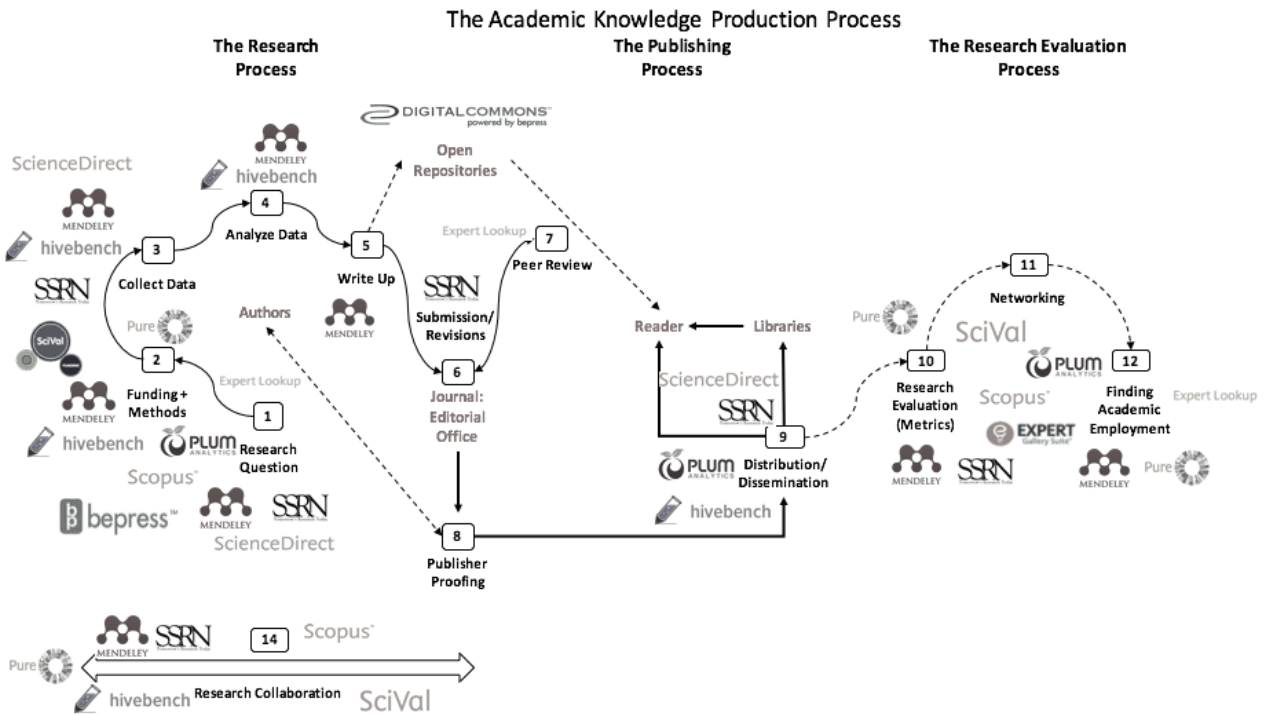


Figure 1. Distribution of Elsevier tools and resources across the research cycle, from research question to employment. Source: Posada and Chen, "Inequality in Knowledge Production" (2018).

The commercialization of publishing infrastructure is introducing business values into the assessment of scholarly work. Elsevier advertises, for example, how it is able to assess the "ROI [return on investment] of funded projects" through its bibliometric analytics ("Scopus Custom Data" 2018). Elsevier has yet to show the ways in which it is pursuing the"cooperation and partnership between funders and publishers" that it declared in 2012 to be "the best way to expand free public access," while what is clearly emerging is a competitive market for scholarly publishing and analytical services ("Elsevier Withdraws" 2012). Yet differences do exist within the corporate sector.

One of the smaller and more recent corporate publishers of open access journals, Hindawi, has taken a stand against efforts to commercialize publishing infrastructure through proprietary systems, or as Hindawi's president Paul Peters puts it: "I believe a model where commercial providers develop and maintain open scholarly communications infrastructure requires four basic principles of openness: Open Source, Open Data, Open Integrations, and Open Contracts" (Peters 2017). Further to its credit, Hindawi has collaborated with Wiley-Blackwell to flip nine journals from subscriptions to APC-based open access, moving them to open sources software systems. Still, taken as a whole, the large corporate publishers of scholarly journals are beginning to exercise a different order of control over scholarly communication in the digital era. In the face of the new scientific norm of open access, these companies are moving into publishing services. By a strange twist (if not a further flip), it is a market in which library-based cooperative models are prepared to compete with the commercial publishers, and to which I now turn.

## A Cooperative Script Flip

Strictly speaking, a scholarly publishing cooperative would involve libraries and/or publishers becoming members of a body that collectively owned, purchased services, or otherwise controlled the publishing process and its output (Crow 2006). In this paper, I am working with a looser sense of collaboration among libraries, journal editors, and software projects: instances of nonprofit cooperative approaches, which may interact at points with the corporate sector. To demonstrate the form and scale this cooperation is taking in current practice, I have assembled a partial list of seventeen scholarly communication projects located in universities, libraries, or as independent organizations, from across the disciplines (table 3). The majority involve the social sciences and humanities in forms of open access publishing that do not rely on the APC.[4] On the other hand, the three biomedical ventures, involving eLife, BioOne, and PLOS, employ an APC. Then there are the interdisciplinary publishing platforms SciELO and Redalyc, which host open access journals from across Latin America, as well as Spain, Portugal, and, in the case of SciELO, South Africa. OpenEdition

Table 3. Examples of nonprofit scholarly communication initiatives providing open access supported by member institutions (principally libraries) and granting agencies (March 2018)

| Organization | Origin | Field | Journals/Books | Presses | Member Institutions | Funding Agencies |
|---|---|---|---|---|---|---|
| arxiv.org | 1992 | Science, econ | 1.4 m papers | — | 222 | NSF, Simons |
| eLife | 2012 | Life sciences | 1 J | — | 1 | Wellcome, HHMI |
| BioOne | 1999 | Biology | 200 J (13 OA) | — | 150 | — |
| Erudit | 1998 | Hum, SocSci | 150+ J / 26 B | 2 | 3 | CFI, FRSC |
| HAU Network Ethnographic | 2011 | Anthropology | 1 J / 17 B | 2 | 37 | — |
| Knowledge Unlatched | 2013 | Humanities | 16 J / 752 B | 6 | 162 | JISC |
| Lever Press | 2015 | Humanities | — | 1 | 54 | — |
| Library Publishing Coalition | 2013 | Hum, SocSci | 625 J / 484 B | 53 | 74 | — |
| Open Access Network | 2012 | Hum, SocSci | — | 7 | 31 | — |
| Open Book Publishers | 2008 | Hum, SocSci | 117 B | 1 | 119 | JISC |
| Open Humanities Press | 2006 | Humanities | 21 J / 48 B | 1 | 6 | JISC |
| Open Library of the Humanities | 2015 | Humanities | 21 J | 1 | 196 | Mellon |
| OpenEdition | 2011 | Hum, SocSci | 480 J / 5,205 B | 78 | 154 | CNRS |
| PLOS | 2000 | Biomedical | 7 J | — | — | — |
| Redalyc.org | 2002 | All | 1,263 J | — | 1 | UAEM |
| SciELO | 1997 | All | 1,285 J / 950 B | 9 | 15 | FAPESP, CNPq |
| SCOAP[3] | 2014 | Physics | 11 J | — | 3,000 | CERN |

provides a similar arrangement for France by bringing together four social sciences and humanities publishing platforms.

While most of the journals involved are open access, two offer a mix of subscription and open access journals, namely BioOne, which was initiated through the collaboration of two library associations, an academic society, a university, and a press; and Erudit, representing a consortium of three universities in Quebec. In yet another approach, Knowledge Unlatched has been able in 2017 to raise sufficient funds from libraries to enable publishers to produce three hundred open access titles (chosen by librarians), for a total of 752 monographs to date.

Among these cooperative examples, the Open Library of the Humanities is a growing force in library-supported open access, with twenty-one journals currently sustained by 196 libraries (Edwards 2014). Another variation on this cooperative theme, the Open Humanities Press, combines a few partners with a good number of well-known scholars (as a way of confronting the prestige question faced by a new publisher), including Alain Baidou, Stephen Greenblatt, N. Katherine Hayles, Donna Haraway, Bruno Latour, J. Hillis Miller, and Gayatri Chakravorty Spivak. The Open Humanities Press is part, in turn, of a "radical open access" network made up of seven presses taking a similar approach of scholar-run publishing operations.

Just how far the research library is willing to go today with this cooperative approach to scholarly publishing is exemplified by two of the organizations, for which I offer more detail: the Library Publishing Coalition (LPC), in which journal and book publishing operations are virtually moving into the library, and by SCOAP$^3$, in which libraries are "subscribing" en masse to flip traditional publisher journal to open access. To start with the LPC, this US and Canadian federation of seventy-two research libraries has been working to support a range of campus-based publishing activities. The LPC gathers data on a wider range of 125 libraries that are collaborating with 625 open access journal editors and have working associations with seventy-four university presses. In addition, the libraries are roughly divided in their use of commercial publishing software (bepress) and open source publishing software (Open Journal Systems), both of which originated with faculty members, with the former now owned by Elsevier and the latter continuing to be developed through Simon Fraser University Library by the Public Knowledge Project. While the number of journals and books published is relatively small, if growing, LPC represents the viability and vitality of a cooperative approach to scholarly communication for the digital era.

SCOAP$^3$ (the Sponsoring Consortium for Open Access Publishing in Particle Physics) represents a cooperative among libraries and research institutes that utilizes elements of the APC route to open access (Romeu et al. 2014). It was launched in 2014, after CERN, the European Organiza-

tion for Nuclear Research, did considerable legwork, dating back to 2006, to build such a consortium (Brooks 2007). SCOAP[3] currently consists of over three thousand libraries, library consortia, universities, research institutes, and funding bodies, from forty-four countries, as well as three intergovernmental agencies, that collectively contribute to the purchasing of open access to particle physics articles.[5] It has flipped four high-energy physics journals to open access, while covering the APCs for seven additional journals, resulting in the publication of about six hundred open access articles a month. Through a tendering process with commercial (Elsevier), university (Oxford), and society (American Physical Society) publishers, and in a process marked by financial transparency, it will be paying the publishers what amounts to $1,175 an article for the 2017–19 period, which continues to be "the best value-for-money in the Open Access marketplace" in a market otherwise distinguished by "the disconnect between quality and price for hybrid journals" in physics (Romeu et al. 2014). Each participating country contributes to the common fund based on the level of its authors' publishing activity, which still enables physicists from outside the forty-four participating countries to be a part of the program (representing an additional forty-six countries). Above all, SCOAP[3] demonstrates two important elements: (1) the willingness of research libraries to cooperatively support open access, without a significant free-rider issue to date; and (2) the ability of this cooperative model to have a positive influence on matters of pricing and transparency with the commercial, society, and university press sectors.

Behind many of these cooperative publishing initiatives, and fully part of what makes them possible financially, are open source software tools and systems developed by a number of research libraries and independent organizations (table 4). Open source software represents its own form of widespread cooperation across the software industry, with commercial involvement from both old-school enterprises (IBM) and newer players (Tesla and Google). Open source software, it should be noted, may be free to download, but its distributed and locally installed nature places extra responsibilities of local webmasters to keep it upgraded and current.

Among publishing platforms, the Collaborative Knowledge Foundation, an independent entity, is creating versatile systems that publishers can customize for their editorial workflow, while, as noted above, the Public Knowledge Project (PKP) is responsible for Open Journals Systems and, as well, Open Monograph Press. In the area of journal content preservation, for example, LOCKSS (Lots of Copies Keep Stuff Safe), developed by Stanford University Libraries, is now being utilized to ensure persistence of titles for over five hundred publishers. Thousands of institutions use the institutional repository software DSpace, which originated with MIT Libraries, and is now one of the systems (along with Vivo, for managing an organization's scholarly record) managed through Duraspace, which

Table 4. Examples of organizations developing open source software tools for scholarly communication

| Organization | Origin | Open source software example and function |
|---|---|---|
| Center for History and New Media | 2001 | Zotero: Bibliographic and network management system |
| Center for Open Science | 2013 | Open Science Framework: Project management for complete research cycle |
| Collaborative Knowledge Foundation | 2014 | Editoria: Authoring, reviewing, and editing workflow for book production |
| CUNY Academic Commons | 2012 | Commons in a Box: Online community for members, groups, and projects |
| Dataverse Project | 2006 | Dataverse: For depositing, citing, analyzing, and archiving research data |
| Duraspace | 2009 | DSpace: Institutional repository software for theses, papers, and data |
| Hypothesis | 2011 | Hypothes.is: For annotating websites individually and socially |
| LOCKSS | 2000 | LOCKSS: Peer-to-peer institutional preservation of journal content |
| Public Knowledge Project | 1998 | Open Journal Systems: Scholarly journal management and publishing platform |
| Stenci.la | 2017 | Stencilia: Offering capacity to run data analysis in published research |
| Substance | 2010 | Texture: WYSIWYG editor for manuscripts with JATS XML markup |

includes such repository tools as Samvera and Islandora, for depositing such scholarly materials as theses, preprints, and research data.

The academic community's development of these open source platforms and tools is supported by a number of foundations (among them the Arnold, Johnson, MacArthur, Mellon, Moore, Shuttleworth, and Sloan). As well, government agencies—such as the Canadian Foundation of Innovation and the Social Sciences and Humanities Research Council, to name two—have played a significant part in funding our efforts, with JISC, European Commission, German Research Foundation (DFG), and many others playing a similar role for other projects. Governments and foundations are making a major public investment in a cooperatively developed infrastructure for open access from within the academic community. This level of support for academic, noncommercial models of open access is contributing to healthy market forces at work between proprietary and nonproprietary systems. Parallels might be drawn between the auto industry's coexistence with public transit, but a better approach might be to consider calls for the internet to be treated as a public utility, as an essential service subject to regulation to ensure community access at a fair price (Crawford 2013).

The impetus for pursuing the cooperative model is based on three factors: the growing sense of a public right to research and scholarship, its

public value, and, finally, open access as a scientific norm. This leaves the question of the cooperative publishing model's scalability, given the expansiveness of the leading commercial ventures in dominating scholarly publishing. On the library side, SCOAP[3] exemplifies the level of international cooperation that can be achieved, if at some expense, with three thousand institutions from forty countries supporting open access. And if SCOAP[3] supports the (very best) journals of a subdiscipline, the full breadth of academic work across the disciplines is to be found in the titles that are represented by the cooperative ventures represented in table 3 above.

The point is that libraries and funding agencies, as well as journal editors and publishers, have a choice on the road to open access between commercial and cooperative models, as well as proprietary and open source software systems, with room for some mixture of the two. As the traditional home of the knowledge commons, academic libraries continue to be natural allies of cooperative initiatives in open access. While librarians may have to be selective, given the number of projects underway, they can be strategic in providing institutional support for cooperative models that serve their campuses well, while contributing to universal open access. I would suggest the following means:

(a) Provide repository, preservation, and archiving services for campus content using open source systems.
(b) Install open source journal management and publishing platforms to create opportunities for faculty and students to manage and publish their own journals.
(c) Collectively support, along with other libraries, the move of existing journals from subscriptions to open access at what should be no more than subscription-equivalent costs initially, with the goal of rationalizing the publishing economy on cooperative principles of transparency and democratic governance.
(d) Contribute to the development of new and existing open source tools and services that facilitate scholarly communication on a global scale.
(e) And/or collaborate on developing new publishing models for the digital era, such as—to offer an example for which we have built a financial model (Willinsky and Rusk, 2017)—having commercial and noncommercial publishers automatically invoice funding agencies and libraries for the open access publication of research, with funding agencies covering costs for the research they sponsor and libraries covering the rest, as a more efficient and cross-disciplinary approach than the current APC regime.

Support for any or all of these cooperative approaches can not only coexist with the corporate sector's pursuit of open access, they have the added advantage of contributing to more of a competitive market for publishing

services, which can serve as a price check on those services, while bringing more of the library's expertise in scholarly communication to bear on this market.

As for how realistic this bifurcated global flip, moving journals from subscriptions to open access, might be, I think David Crotty, head of Journals Policy at Oxford University Press, fairly calls it "magical thinking" (2015). After all, it will take a great deal of planning, an unprecedented degree of coordination, and a number of practice runs within the academic community. But magic is like that; it takes planning, coordination, and practice. It is also a part of what Crotty ultimately advises: "Let's continue to experiment and find new ways of improving what we do," as a way of "driving real world progress rather than hoping for magical overnight solutions." And while Crotty may have been referring to the big publishers, with Oxford among them, my goal with this paper has been to set out the no-less-real world of progress through cooperation among libraries, journals, and funders, all of which are continuing to experiment with ways of improving scholarly publishing.

## Notes

1. The *Astronomical Journal* continues to refer to how its "page charges [$110/page] allow us to more fairly share charges between researchers and libraries" and provide "open access after two years," although it also references "a new article charges page" for "articles accepted after April 1, 2011," signaling a change in terminology ("Page Charges" 2018).
2. Jevin D. West, Carl Bergstrom, and Ted Bergstrom have found that APC prices do not correspond to journal citational value, similar to journal subscription prices (West, Bergstrom and Bergstrom 2014), and have established the interactive website Eigenfactor of Open Access Fees to help "authors comparison shop among alternative open access venues" by comparing journals' cost-effectiveness based on APC rates and Impact Factors (2014, 6). On the setting of APCs, Elsevier considers "journal impact factor; the journal's editorial and technical processes; competitive considerations; market conditions; other revenue streams associated with the journal" ("Pricing" 2016).
3. Elsevier is hardly alone in this end-to-end approach, as Bianca Kramer and Jeroen Bosman do a good job of illustrating (2017).
4. The aversion to APCs in the social sciences and humanities is based on its price, resemblance to a vanity press, and its attraction of opportunists. The six editors and thirty-one editorial board members of *Lingua* resigned in October 2015 in a dispute with its publisher, Elsevier, over an APC of $1,800 (Wexler 2015). My colleague Rachel Lotan in the Stanford University Graduate School of Education has written to me: "I would love to support open access, but the financial ties and the requirement for authors to pay to be published are suspect" (personal communication, November 10, 2015). On the opportunistic use of APCs among upstart journals, see Shen and Björk (2015).
5. Among notable absences from SCOAP[3] library membership is Stanford University Library, while the American Physical Review withdrew two of its journals out of a concern for financial stability (Van Noorden 2014).

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