

ITHI Working Paper Series

#19 The Revolt of the Libraries: A Call to Reflection and Action

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INTRODUCTION: THE REVOLT OF THE LIBRARIES

Academic journal publishing is at the cusp of a sea change as university libraries shift from knowledge receptacles to a pro-active role in organizing dissemination perhaps even taking the role of publisher. A confluence of forces is driving this change, including the classic expansion of journal titles, rise in subscription fees driven by commercial publishers focus on the relatively few universities able to pay, and academic financial strictures reducing library budgets. Consequently, an ever-narrowing range of universities can afford broad journal access. Although many journals are still printed, paper has been de facto superseded by Internet distribution, making journals accessible to hacking. These issues were discussed with a representative of the University of California Library, a key player in the global academic library universe, just after the breakdown in negotiations between the Library and the Elsevier firm, bringing these issues to a head. An appended precis of a 2016 MIT Library report, developed by a technological university's stakeholders, presciently considers potential solutions.

The University of California's recent rejection of an Elsevier contract proposal may prove to be an inflection point in knowledge dissemination as significant as the 1655 founding of the British Royal Society's Philosophical Transactions, based upon the concepts of scientific priority and peer review (de Solla Price, 1963). Will university libraries transition from a relatively passive role as repositories and storehouses of knowledge, to a more active role as curators and disseminators of academic research? Is academic journal publishing at the cusp of a sea change from subscription to open access, and from commercial publisher dominated to university library led publishing platforms? The Triple Helix Association's Henry Etzkowitz and Dimitri Corpakis discussed these issues in a recent skype conversation with Alison Scott from the University of California, Los Angeles (UCLA) Library staff, a member of the University of California's (UC) negotiating team with Elsevier.

The UC negotiating team, optimistic that a compromise would be reached, took a break for the winter period when the university's heating system is closed down in order to save money. When discussions resumed, they entered into the heart of the current publication system, turning to issues that were beyond money, even though rising subscription costs were an important concern. The UC negotiators made it clear that the University of California's intention was to gradually, yet inexorably, move from subscription-based journals to open access. A working definition that, "Open Access is founded on the principle that research, which is supported in large part by government subsidy, should be made available to the public in order to ensure it has the largest possible impact" seemingly innocuous and uncontroversial, challenges the status quo. Its implications have the potential to destabilize, even disrupt and supersede, the academic publishing industry (<https://scholcomm.ubc.ca/open-access/>). Although hardly on a par with oil and banking, journal subscription revenues, "in excess of ten billion dollars annually worldwide suggest that

there is more than enough money being spent on scholarly publishing to fund open access.” (<http://oa-cooperative.org/about.html>).

Academics have long been dissatisfied with the high costs of dissemination, yet rarely do these concerns go beyond grumbling. An earlier generation of Dutch scholars, required to publish their dissertations, protested that a similar sounding Elsevier firm charged high prices, perhaps being the cause of its bankruptcy. Contemporary publishers have been more resilient, adapting their business models to accommodate pressures for change.

While “open access” connotes a free public good, in practice, it has often merely served to move costs from readers to authors or their sponsors, even providing new profit-making opportunities for traditional publishers. Indeed, the UC negotiators soon learned that Elsevier could be willing to accept “open access,” but found that their understanding included a method for “triple dipping,” three points at which charges could be levied rather than a single subscription fee. Although the ten-million-dollar gap between UC and Elsevier negotiating positions over subscription fees was seemingly large; it could have been, and may still be, compromised. However, philosophical differences over production and distribution of academic knowledge, coupled with technological change allowing alternative, potentially less costly, modes of journal production, elevated the practical issue into a question of fundamental ethical principle; with its resolution shaping future relations among academia, industry and government.

ALTERNATIVE MODES OF ACADEMIC KNOWLEDGE DISTRIBUTION

Alternative models of academic article distribution have been constructed in recent decades. Some rely on existing modes of production, tweaking them slightly by, for example, eschewing payment; others modify traditional procedures in order to speed up the production process, while, still others attempt the creation of alternative platforms based on classic scientific vetting principles. While a range of concrete projects exist, none has as yet gained sufficient traction to affect the ownership and control of journal production. Indeed, the industry has become more concentrated in recent years as independent small publishers, like Beech tree and Industry and Higher Education in the innovation field, monetize their entrepreneurial efforts and secure the future of their publications through acquisition by larger firms.

Proliferation of the so-called predatory journal typically originated by academic entrepreneurs in developing countries to realize the low-cost opportunities for publication provided by the Internet have been decried for slacking vetting and review procedures.

Nevertheless, many firms, relying on the same methods of encouraging free academic labor as their older counterparts, put in place such processes, occasionally offering modest payments. Although questions have been raised regarding their stringency, there is often an attempt to follow the traditional academic peer review model, if only to attract submissions and legitimate the enterprise. One observer’s start-up may be another’s predator and with traditional publishers accused of price gouging, a more sophisticated analysis of the academic publishing industry is required, beyond quantitative ranking schemes.

Global pressures to publish and increasingly high rejections rates in top ranked journals induce expansion, along with academic innovation driving the creation of new fields and subfields requiring dissemination outlets. In any event, even in traditional journals, “peers” have long been reputed

to give an easier ride to close colleagues, easily discerned through the ‘eyes wide open’ nature of double blind reviewing, allowing authorship to be relatively easily discerned from contextual hints, among close co-competitors in “hot” fields, even when authorial references are removed. Nevertheless, for the broad mid-range of researchers, incrementally adding their brick to the edifice of scholarship, peer review admirably fulfills its function of calling attention to intellectual lacunae in citation, insufficiently developed argumentation, imprecise data depiction and the like, as well as praise for the converse, although the critical faculties are usually emphasized over the acclamatory ones in the peer review arena.

Richard Horning, (Reed, Smith; Palo Alto) International Triple Helix Institute’s (ITHI) attorney, also an advisor to a novel European publishing outfit told his clients, “Triple Helix is disrupting innovation studies; Frontiers is disrupting academic publication; you guys should get together.” In follow-up, two Triple Helix colleagues met at a Lausanne metro entrance in late May 2016 and travelled to the Lausanne Science Park, where finding the Logitech company prominently located, were guided to the Frontiers building where the author and Christiane Gebhardt, Triple Helix Journal Senior Editor, met with Kamila Markram, Frontiers co-founder and CEO and her colleagues. We learned that academics from the European Union Brain Research Program have developed an alternative journal publication model, based on editorial review to insure plausibility, largely dispensing with the laborious peer review process, in favor of speeding publication, returning journals from their archival function into the everyday practice of science.

A spinoff of the European Brain research project, Henry and Kamila Markram, two neuroscientists from the Swiss Federal Institute of Technology in Lausanne (EPFL), Switzerland, drew upon the projects AI capacities to develop a publishing platform founding Frontiers in 2007. In 2008, Kaltroco, the private holding company of the Koltjes family invested, and Frontiers adopted the so-called Gold Open Access business model. Frontier journals perform some of the function of collegial interchange, so-called telephone or email science, for those outside of the inner circles of hot fields. This venture backed spinoff publishes a range of predominantly “hard science” journals, extending out from the founders’ neuroscience research fields. The Lausanne-based firm combines an internet-based publication format with a classic social organization of publication based on recruiting a leading scientist in a field as Editor, bringing along a coterie of peers as sub editors. In 2013, the Holtzbrinck Publishing Group, owner of Springer-Nature, acquired part ownership in Frontiers, bringing the novel platform into the traditional publishing firm orbit, a similar fate to projects like Mendeley and others (cf MIT Library Report Precis, below).

Sharing a ride with a Stanford PhD student to a colloquium at UC Berkeley’s Center for Higher Education (CSHE), circa 2013, the author heard about the driver’s PhD project on a journal publication platform project, headquartered in Stanford’s School of Education, with an operational base at the University of British Columbia in Vancouver. Led by Stanford Professor John Willinsky, the Public Knowledge Project, has for twenty years produced the leading open-source scholarly publishing platform. This US Mellon and Macarthur Foundation supported initiative begun in 1989, is used by open-access journals and presses around the world, although the platform has primarily been taken up by journal startups in developing countries. Willinsky (2018) provides an intellectual underpinning for Open Access, an alternative academic publishing model in which research is theoretically made freely available but in practice has devolved into partial “gold” as well as “green,” fully freely available formats.

Another disruptive dissemination model, based upon the existing subscription journal model, makes journal contents freely available. Constructed by Alexandra Elbakyan a Kazakhstan graduate student, frustrated by her relative lack of access to articles in neuroscience, her original field. A prolific networker and talented software developer, Elbakyan collected articles from individuals with legitimate access to university library sites, supplemented by hacking through pay walls and security protections. The author heard about her project (Sci-Hub) providing free access to tens of millions of academic articles from ITMO University colleagues in St Petersburg, where Elbakyan began her project. Thinking it would be relevant to introduce the Sci-Hub journal model, along with the Frontiers publications model, to the upcoming 2016 Global Entrepreneurial University Metrics (GEUM) project Workshop, Alexander Bikkulov, ITMO Research Funding Director and GEUM Operations Director, offered to pass on the invitation. (Cf www.triplehelix.net/geum.html)

“Should knowledge be free?” was the title on the program for the speaker from Kazakhstan, skyped into the Palo Alto Garage Workshop site on the second day of the 2016 GEUM event. Sometimes called an academic Robin Hood, Elbakyan freely distributes her software over the Internet. Originally intended for users in developing countries, SciHub is apparently equally commonly used in developed countries, even by persons with legitimate access to the contents of comprehensive university libraries, due to its ease of use. Elbakyan, who traveled to the US and Europe during the concept generation phase of her project, no longer goes aboard. Since SciHub’s founding, she is concerned that she may be jailed for Internet “breaking and entering” after Elsevier and the American Chemical Society brought successful law suits against her that were not defended, resulting in large financial penalties.

In contrast to Napster where breaking of copyright protections cost music content providers income; academic journal content providers are neither typically offered, nor do they expect remuneration. Independent scholars, as well as employed academics, typically sign away their intellectual property rights without expecting recompense. Indeed, they often perform various tasks of journal production, including reviewing and editing without recompense. Traditionally publishers provided managing editors and secretarial assistance to journal editors, and even a salary supplement. Yet most of those prerequisites have disappeared with the displacement of editorial support tasks into elaborate software systems, whose operation is typically outsourced to providers in developing countries, like India, where good English skills are available at relatively low cost.

ENTREPRENEURIAL LIBRARIES IN AMERICAN ACADEMIC SCIENCE

The dematerialization of the cellulose journal by Internet bits and bytes diminishes the need for commercial publishing houses with their archaic printing presses and distribution facilities. Publishers’ last resource is ties to prestigious academics who serve as editors and editorial board members, and act as gatekeepers to academic fields through these positions. An academic elite reproduces itself, aided by a prestige system, reified and reinforced by impact factors and ranking orders, that it controls, keeping the existing journal ownership of the mean of academic production in place even though it is technologically superfluous. The hand mill may have given us feudalism, but in academia, the relations of production are stronger than the forces of production to date.

Academics, supported by their institutions, provide the human capital base for journals through the freely contributed labor of reviewers and editors, with these tasks part of the remit of fulltime faculty members and credited to advancement. Nevertheless, the core of the essential vetting process of the classic journal, allows the university library the opportunity to take the control of the academic means

of distribution into its own hands. Since the advent of the public Internet, transcending the communication tool and playground, for computer scientists and their friends during the ARPANET era, a variety of business models, in retail think Amazon, advertising (Madison Avenue); Facebook and Newspapers have been disrupted, yet the oligopolistic structure of academic journal publishing, in a few large firms, think Elsevier, Springer/Nature has remained largely intact. Despite the development of innovative publishing platforms, and the persistence of university presses, it is seemingly curious that Sears, Macy's and other physical retailers have felt the disruptive impact of the Internet more than knowledge-based formats like academic journals, that would appear to be more amenable to dematerialization, scoring a point, in the classic Marxist debate, for the relative primacy of the relations over the forces of production.

As early as 1945, Vannevar Bush, a developer of analog computing as an MIT faculty member and Director of the US Office of Scientific Research and Development (OSRD) during the Second World War, envisioned a system of universal knowledge storage and distribution based on microfilm technology, available at the time. He published his vision in the Atlantic Magazine, laying out its architecture and purpose. As *We May Think* was fairly widely read, inspiring others to design implementation, utilizing the rudiments of digital computing. The Arpanet, predecessor to the Internet, ordered by the World Wide Web and searched by Google, have provided an infrastructure for platforms and applications, familiar to all.

POLICY IMPLICATIONS FOR KNOWLEDGE DISSEMINATION

In our skype discussion, UCLA Librarian Alison Scott asked, "Who will be our Robespierre?" Presumably she meant who will take the lead in overthrowing the existing rigidified structure of academic knowledge dissemination with commercial publishers as intermediaries, a modality no longer required by technical requirements. Nevertheless, the existing system is perpetuated by an unholy alliance between leading academics who edit the leading journals in the Innovation field, think Research Policy/Elsevier, and thereby control the prestige structure and distribution of rewards including jobs, such as are available, and the firms who publish the journals, accruing excess profits, relying on free labor of academics as authors and reviewers.

In this case, the "Bastille" is unlikely to be stormed by a subservient professoriate, since virtually all of us are, more or less, compliant to a status system, formerly as informal as it was strict, but its distinctions of "h and impact factors", now reified and rigidified. Especially at rising schools, a journal evaluation scheme, such as the five level one proudly shown by its originator, the incoming Dean of Newcastle University Business School, with publications in the top two only credited for tenure and promotion, are explicitly introduced and monitored. So, a revolution, if there is to be one, will likely have to come from above. The obvious candidate for "Robespierre" is Janet Napolitano, the President of the University of California, whose large library budgets give it clout. A recent faculty meeting discussion highlighted the fact that Stanford's library subscription budget is relatively modest in comparison to the multi-campus University of California system. Stanford and other universities look to UC for leadership in this sphere. A former state governor and high level federal official, currently head of the global leading university system, Napolitano, has the standing and position to convene her peers and birth a new means of academic article production and dissemination.

The infrastructure for an alternative journal production and distribution system is immanent in the start-up, AI, foundation supported, and hacker initiatives discussed above. It remains for university

leadership to call upon faculty to withdraw their labor from the existing system and put it to work in a new one. (Indeed, UC officials have already called upon faculty to withdraw their reviewing services from Elsevier journals). University libraries may put their subscription resources to use in subsidizing so-called Author Processing Charges (APC's) that should fall to modest levels in Internet-based journals, with university libraries, acting as publishers. Triple Open Access, free to authors, readers and open to all innovation perspectives is the founding principle of Triple Helix, the Journal founded in 2014 with the support of TUSUR University, Tomsk, under Springer Open auspices, currently with Brill Sense from 2019, supported by the Triple Helix Association and the International Association of Science Parks (IASP).

Conclusion: A Call to Reflection and Action

In 1946, after decades of gestation, the New England Council, called together by the governors of the New England states in the 1920's, with equal representation from the institutional spheres of university, industry and government, founded the American Research and Development Corporation (ARD), the progenitor of the contemporary venture capital industry. MIT President Karl Compton led an "Institution Formation" effort to establish new firms and industries from academic research, systematizing a happenstance process that had taken place at MIT and Harvard from the late nineteenth century (Etzkowitz, 2002). A related stream of knowledge-based innovation was set in motion, in part, independently in northern California, with the 1892 founding of Stanford, and through transfer of innovation models from Boston and MIT. The organizational transfer process was assisted by a US government initiative to widespread the venture capital format, providing federal funds and guarantees through the Small Business Investment Company (SBIC) program of the Small Business Administration, created under the Small Business Investment Act of 1958.

Similarly, the Morrill Act of 1862 provided federal lands, left over from supporting the building of the Transcontinental Railroad, to spread nation-wide an innovative academic model, initiated in Connecticut in the 1830's at the instance of the state's scientific farmers to support agricultural research and education (Rossiter, 1975). MIT, founded with one third of the Massachusetts land grant, extended this academic model to industrial development, while the University of California's growth was furthered by this same Act. The convergence of these various initiatives, over the past two centuries, provides a base and an inspiration for a new wave of knowledge-based innovation, including the task at hand of inspiring entrepreneurial university libraries to take the system of journal production under their wing.

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