The Routledge Handbook of the Political Economy of Science

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Open Access Panacea

Publication details

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Published online on: 02 May 2017

How to cite :- Chris Muellerleile. 02 May 2017, Open Access Panacea from: The Routledge Handbook of the Political Economy of Science Routledge
Accessed on: 20 Aug 2023

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1 Introduction

Academic journal publishing is experiencing a revolution, much of it driven by a desire to “open” access to knowledge. For about a century up until 2000, the dominant model of publishing limited access to fee-paying subscribers of printed journals, the majority of which were university libraries. But, with the emergence of digital publishing and distribution tools, many now argue that this “closed” subscription model is out-dated, if not immoral. Advocates for open access argue that academic knowledge is a public good, and with digital technologies for-profit publishers no longer have legitimate claims to reap profits from a process to which they add little value. These advocates argue that, whatever the new funding model, readership should not be restricted to subscribers, but freely open to anyone with an internet connection. Yet, despite its drawbacks, the subscription model did more than limit access. It also checked the volume and quality of academic knowledge produced.

Among many researchers, librarians, and funding agencies over the last ten years, scepticism, if not the outright rejection of the subscription model has turned into vitriol towards for-profit publishers. But has the move to open access really hurt their business? Has it liberated researchers, universities, and the public from publishers’ power to enclose the results of academic research? I will argue that at least for the large publishers it has not. Take for instance, the regularity of 30 per cent profit margins for the big publishers, or consider a recent Wall Street analysis of Elsevier, the world’s largest academic publisher, subtitled “The Fading Threat of Open Access”. The report upgrades the company’s investment rating, citing strong expectations for ongoing profitability (Bernstein Research 2014).

In this chapter I will focus on two particular aspects of the “opening” of academic knowledge production: the transition from a political economy of scarcity to one of abundance, and the business strategies of large for-profit publishers, who are responding to the growing demand for data and information about “open” knowledge. The large for-profit publishers, particularly but not exclusively Elsevier, are the vanguard of an information-based economy that captures and constructs vast quantities of data about seemingly everything related to academic research and researchers. I will argue that these publishers’ products are becoming more, not less, necessary as a result of “openness”. As such, publishers increasingly profit by assisting data-driven higher education governance and knowledge-based economic development strategies.
Through this, publishers are transforming their historical role from that of making things public towards making academic research—wherever it may be “published”—useful and meaningful to “the knowledge economy”.

2 Background: from scarcity to abundance

The modern academic journal began in 1665 in France and England with *Le Journal des Scavans* and the *Philosophical Transactions of the Royal Society of London*. While the historical definition of a scholarly or scientific journal is contested, there were roughly 100 journals across the globe in 1700, 1,000 in 1800 and as many as 10,000 in 1900 (Tenopir and King 2009). A meta-analysis in 2010 estimated there were approximately 24,000 active and refereed journals across the globe (Larsen and Ins 2010). Until recently, journals were typically printed on paper and distributed to those who paid a subscription fee of one sort or another. The first systems designed to distribute scientific knowledge digitally emerged in the 1970s (see Gitelman 2014: 111–135), and formal open access (OA) journals first emerged in the 1990s. In recent years, OA journals have grown very quickly: from 20 in 1993 to 4,767 in 2009 (Laakso, et al. 2011). As this chapter is written in February of 2016, the Directory of Open Access Journals lists 11,336 OA journals, containing roughly 2.2 million articles.3

The open access “movement” was largely defined in the early 2000s by three manifestos: the Budapest Open Access Initiative, the Bethesda Statement on Open Access Publishing, and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities. Peter Suber, one of the main authors of the Budapest initiative, refers to the commonalities in these declarations as the “BBB definition” or “libre” definition of OA (Suber 2012: 7–8), which he explains by quoting the Budapest statement:

> By “open access” to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal or technical barriers other than those inseparable from gaining access to the internet itself.

In the mid-2000s, governments and research funding institutions in the US and UK began protesting high subscription fees, and advocating for OA with three main arguments that continue to shape the discourse today (for an overview see OECD 2007). The first is that properly functioning democratic societies are dependent upon the free circulation of knowledge (Stiglitz 1999), an argument that is particularly persuasive when public resources fund research. The second and related argument is that academic research and knowledge are important drivers of innovation (Stiglitz 1999, Howels et al. 2012) and the results ought to be easily accessible to fuel economic competitiveness and growth. The third was a reaction to the “serials crisis” or the inability of university libraries to afford access to all the journals deemed necessary, coupled with what were widely considered unjustified profits accumulated by publishers4 (Ciancanelli 2007). The familiar argument then and now is that once the first digital copy of an article is produced, the marginal cost of reproduction is almost zero (cf. Suber 2012: 21).

Furthermore, subscription based publishers are criticized for “double appropriating” the labor of academic researchers and academic institutions (Beverungen et al. 2012). First, they claim intellectual property (copy)rights over knowledge they have played almost no role in producing, and second, they sell this knowledge back to universities at inflated prices. Possibly the most resented tactic is the so called “big deal” where publishers package together large sets
of journals for a single price. At the same time, they raise the prices of the most prominent, or flagship journals so high that universities might as well pay a little more for the additional journals. As such, universities supplement the costs of new and/or low-circulation journals because the costs are hidden in the aggregate price.

The big deal packages contribute to the monopoly-like character of large, for-profit publishers (Ciancanelli 2007). Because universities cannot easily replace (especially high-profile) journals with alternatives, there is little competition (or “inelastic demand”), and publishers can significantly raise their prices without losing customers. Similarly, the big deals foreclose a competitive market for journals—a market that might otherwise establish a price for any given journal, which makes it more difficult for universities to make cost-benefit decisions.

Despite the recent consolidation of publishers into larger firms (see Lariviere et al. 2015), there are many smaller and independent publishers, particularly in the humanities, which operate subscription journals on very thin margins. This includes the emergence in recent years of all sorts of small-scale independent journals managed by groups of academics—what we might call a “peer-to-peer” publishing model. But many OA advocates flatly reject any subscription fee, some going as far as arguing that publishing behind a paywall is immoral.5

Regardless of the size of a publisher or journal, the economy of subscription-based publishing is based on scarcity. Through copyright, access to paper copies, and now digital paywalls, publishers control access to codified academic knowledge. However perverse it may seem to restrict access, in the subscription model the incentives for publishers and editors—even authors—are aligned. Everyone’s goal is to increase distribution by increasing subscriptions. Furthermore, it is in the publisher’s interest to “filter” (see Bhaskar 2013) academic work to ensure a quality product, just as it is in the editor’s interest to reproduce the “prestige” of the journal by only including the highest quality work (see Eve 2014).

However, as the digital reproduction and distribution of articles has become widespread, it has become more difficult for publishers to maintain scarcity of copyrighted materials. One example is the website and search engine “Sci-Hub” developed by a Russian neuroscientist and software developer. Upon request from a user, the website will almost instantly locate and digitally reproduce most academic papers for free. According to UK- and US-based publishers, this is illegal and they are working hard to shut the site down, but in the meantime Sci-Hub allows “black open access” (Bjork 2017) free access to huge numbers of articles normally protected behind paywalls.

On the other hand, the OA movement seeks a legal way around barriers to access by eliminating the subscription altogether and instead recouping the costs of digital publication from authors or other sources. Indeed, the OA model does remove all barriers to distribution, but it also changes the incentive structure of publishing from one based on scarcity to one based on abundance.

3 Emergent economy of openness

Yes costs matter. But high journal costs were a product of scholars needing a proxy for quality…OA has done nothing to help that problem. The problem of having a way in each field of sorting out the important research from the merely interesting (or indeed the mistaken) is one that remains to be sorted, OA or not OA.

Robin Osbome6

While in the US OA efforts are relatively dispersed, in the UK there has been a centralized, state-driven effort to encourage OA. One significant event was the 2012 UK government
sponsored “Finch Report” on “expanding access to published research findings” (Finch Group 2012), which built upon recommendations anticipated by the House of Commons in 2004. The UK government enacted the main recommendations and they are now being implemented by, among others, Research Councils UK and the Higher Education Funding Council for England, which mandated that any post-2014 Research Excellence Framework submissions must be published OA in some form.

The Finch Report and its subsequent formalization in policy encourage universities and publishers to move away from the subscription model towards an “article processing charge” (APC) system. In this system, authors or their funders pay the publishers an upfront fee and as soon as the article is published, digital copies are made freely available to the public on the publisher’s website. This is referred to as the “gold model”, and all of the major publishers have adopted some version for at least some of their journals. The most common strategy is to convert journals from subscription-only to a “hybrid” model where some articles are published gold OA, but access to the vast majority of the journal is kept behind a subscription paywall. While there is not room here to discuss it, hybrid journals present an entirely different set of problems surrounding “double dipping” or the “total cost of ownership” (see Lawson 2015), something the UK public body JISC has been attempting to quantify.7

The gold model has other problems beginning with the upfront cost to authors or their funding agencies. US$3,000 per article is not uncommon, and some have argued that this restricts academic freedom by limiting some publication outlets to those who can afford the APCs. But there are a number of other issues. Most importantly, after publication the publisher is no longer directly incentivized to promote their published materials. Instead the publisher is paid a flat fee by the author to publish the article, and henceforth has no opportunity to collect revenue. As Eve (2014: 59) explains, “In this inverted model, publishers are paid for the services they render and not in return for making sound judgments in a sales environment”. Furthermore, publishers are no longer directly incentivized to encourage production of a quality product. Instead, the more articles they publish the more they are paid. In other words, “the scale of success flips from quality to quantity. Any amplification effect becomes one based on volume [of articles published], and a linear relationship takes over” (Anderson, 2013). Presumably editors, and even publishers, are still interested in the quality of their journals—something Eve (2014) emphasizes—but the point is that the relationship between quality and profit is no longer straightforward. Instead of producing scarcity, in the gold model publishers are directly incentivized to produce abundance.

The Finch Report also supports the “green” OA model where universities construct institutional repositories for their researchers’ “pre-prints”—usually the final accepted version of a paper before it is typeset by the publisher. There are at least three problems with the “green” model. First, green versions of copyrighted papers are typically subject to embargo periods, usually between 12 and 24 months, prior to which they cannot be released to anyone. Second, because it does not include a peer review or editorial procedure, much of the legitimacy of a green version is dependent upon the existence of a final published version in a subscription journal, which means that subscription journals are still necessary to the process.9 Third, while this landscape is shifting quickly, most green repositories are diverse, disconnected, and expensive to establish and maintain. Consider that for every green paper, universities are now responsible for managing compliance with an array of copyright and embargo rules and regulations. Particularly in the social sciences and humanities, repositories are not typically organized by learned societies, or by disciplines, but by individual university librarians and technical staff. Being disconnected means they are difficult to search and cross-reference. Not surprisingly, the publishing industry recognizes the challenges universities face with regard to
Christopher Muellerleile

the green model, and they are selling repository management software as well as contributing to efforts to standardize OA search across institutions.9

Open access is entangled with all sorts of other confusions and contradictions. For instance, despite the oft-referenced suggestion that open access articles attract more attention, meta-studies of this phenomenon are inconclusive (see Suber 2012: 178, note 6). There is widespread belief that OA articles have a “citation advantage”, but these studies miss the most obvious explanation of self-selection—that the best research draws the most research funding needed to pay the expensive10 gold open access fees (Davis 2014). As such, there should be little surprise that the best-funded science attracts the most attention, and thus the most clicks, downloads, and citations.

OA is also lauded for its tendency to provide faster publication. As Randy Scheckman argues in relation to his open access journal, eLife, one of the key benefits of OA is speed of distribution of research to other scientists.11 But this should not be separated from the recent drastic increase in the number of published scientific findings that are retracted (Anderson 2014). In other words, while not exclusively a problem of openness, there is a legitimate question whether the impulse to speed up science also increases the sloppiness of science.

4 Overcrowded knowledge

For many proponents of openness, however, neither retraction nor revision is a problem. In fact, the possibility of a stable record of science is under increasing pressure by those advocating a transition to what Steven Harnad (2014) has called the “crowd sourcing” of peer review. Instead of the conventional peer review model based on filtering first and publishing second; this is a model of publishing first and filtering second. This is best exemplified by arguments to transition away from pre-publication peer review, which is seen as opaque, slow, and overly politicized, if not utterly corrupt (see Ferguson, et al. 2014, Fitzpatrick 2011, Eve 2014). Instead, academics are encouraged to “publish” their work when they see fit via the medium of their choice, and let peers and the wider public decide what is useful after the fact (Gauntlett 2012). Take for instance, the online journal F1000Research, which advertises that it is “open for science” and offers “immediate publication… without editorial bias”. In this model there is little consideration of a “version of record” as authors are “strongly encouraged” to “address the reviewers’ criticisms and publish revised versions”.12 The massive, interdisciplinary OA science journal PLoS One does not go this far, but it does ask peer reviewers to focus on whether a paper is “technically sound”, regardless of uniqueness, significance, or the potential to be impactful. While not explicit, Taylor & Francis’s new interdisciplinary OA journals under the brand “Cogent” seem to have a similar model.13

In the publish first-filter second model the best science or scholarship is assumed to float to the top, while the rest sinks into what Kirby (2012: 259) has called the “celestial jukebox”. Irrelevant papers, or those from “niche fields or areas that have yet to gain any prominence” should still be published, but discovered “if and only if the seeker desires” (Eve 2014: 145). This process of crowd sourcing the quality of academic knowledge may remove “editorial bias”, but it also relies on the objectivity of the World Wide Web to identify academic knowledge without bias, or to somehow filter knowledge without actually filtering it. It furthermore assumes that the “crowd” has equal access to the field of scholarly content, which serves as a tautological justification for expanding open access.

By design this model questions the importance of scientific expertise and academic autonomy, but if you extend the logic of the crowd as a filtering process there is an even deeper contradiction: any pre-publication filtering, editing, or curation presumably adulterates the
objectivity of the “review” process, or at least unjustifiably limits the size of the sample for what sounds a lot like a digitally-mediated popularity contest. Consider the similar movement toward “big data”, where the abundance of the data itself is assumed to improve its validity (Gitelman 2013). Of course, no one argues that post-publication-reviewed scholarship should be left completely unfiltered prior to publication, but at a very basic level this model suggests that the quality of research output should no longer be subject to the scrutiny of an academic community, but to that of the broader public (Nik-Khah, this volume).

Put differently, the “publish first” model seeks free access to much more than what would otherwise be behind a paywall. Rather than opening up that which was closed, it is more about breaking down any wall that restricts the retrieval of anything that any author decides to “publish” in any medium. One might even extend this logic to the author. Consider that the decision as a potential author to not publish something is limiting access to that knowledge, and as such ought to be discouraged.

We ought to ask whether the publish first–filter second model contradicts the very purpose of open access, which above all else is supposed to provide society and economy meaningful and useful research and scholarship. Without rigorous editing and peer review, or any discernible archive, is academic output really knowledge, or is it rather more like modestly filtered information? This is a particular problem for the humanities and the “softer” social sciences where well-referenced, thoughtfully argued, and clearly written text constitutes the value of the work (see Slaughter and Wulf 2014). Even those in favor of deepening and formalizing universities’ commitments to the “knowledge economy” ought to question the value of this kind of post-publication “reviewed” scholarship. An obvious neoliberal solution would be to establish a new sort of knowledge market to decide what is valuable and what is not. As we will see below, this may already be happening, but if a market is the filtering device does this really constitute openness?

This growing abundance of knowledge—or just information—makes qualitative assessment increasingly difficult, which is problematic given the increasing emphasis on assessment and accounting metrics for universities. So far the solution has been to establish easier-to-manage quantitative benchmarks, indicators, and rankings. There may be no better example than the UK’s Research Excellence Framework (REF), the very existence of which betrays the inability of the public and the state to assess the value of academic knowledge production without endless quantitative comparisons.

These conditions have led the sociologist Andrew Abbott to the sad conclusion that “the majority of scholarly publication in the social sciences and humanities today serves no purpose other than providing grist for evaluation” (Abbot 2015). Exaggeration or not, we ought to at least consider this “Simmelian dichotomy” (Featherstone 2000), where the massive increase in the amount of, and access to, information also means that it is much more difficult to discern meaning from that archive. It should be no surprise that all sorts of “altmetrics”, such as “mentions” on social media, are becoming popular measurements of the value and impact of research. The problem with what is increasingly becoming an ideology of OA (Golumbia 2016) is that it encourages (over)abundance without appreciating the challenges that come with it. Put another way, too much of the OA discourse is obsessed with accessing the archive without considering how researchers, the public, and “the economy” come to understand the archive as meaningful, significant, and useful.

I have argued so far that the movement to open up access to knowledge is both analytically and empirically entangled with three things. First are the growing opportunities and incentives within the academy to simply produce more knowledge. Second, the process of creating the commodity that is the subscription-bound journal article—the commodity that OA seeks to
abolish—is at the same time the process of filtration that creates meaningful knowledge. It is of course possible to create meaningful knowledge without commodifying it, but this is more difficult than many suspect, particularly when the underlying conditions of knowledge production in the academy are becoming more, not less privatized and marketized (Lave, et al. 2010). Third, the economy of scarcity in publishing—which OA seeks to reverse—is transitioning to an economy of abundance. In the next section of the paper I will analyze a few of the strategies that for-profit publishers are employing to construct this economy to their advantage, all within the context of an increasingly marketized higher education sector.

5 Publishers or data aggregators?

The OA movement must be considered in the context of a politics of economic development that is obsessed with the production of knowledge and knowledge producing bodies (Pfotenhauer, this volume; Jessop 2008). Higher education plays a crucial role in this “knowledge economy”. It is assumed to be a driving force of innovation, economic competitiveness, and the accumulation of wealth (Best and Rich, this volume. Moreover, higher education itself is quickly turning into an economic sector (McGettigan 2013). In the UK in particular, there is intense pressure from the state to turn higher education into a service sector motivated by and organized around competition, profit seeking, and national economic development (Jessop 2008, McGettigan 2013).

Furthermore, with the high costs of research, teaching, and administration—not to mention the pressures engendered by economic crisis—there is a desire to eliminate “waste” and force universities to operate more efficiently, or at least according to a clear financial calculus. But this requires economic value judgments and measurement of processes and people that have not previously been subject to processes of calculation and economizing (De Angelis and Harvie 2009). Obscured in these measurements is a translation of research and knowledge from something previously valued according to political, cultural, or disciplinary standards into something that is largely monetary in nature (see Birch, Johnson and Rampini, and Pagano and Rossi, this volume; Robertson and Muellerleile, 2017). At the same time, fueled by processes like OA, the research process is becoming more vast, disparate, and unwieldy, all of which make it more difficult to measure and quantify, something Woelert (2013) calls the “paradox of effective research governance”.

Academic publishers are aware of this paradox and are producing tools to make sense of this new world. These tools serve two broad functions, although they are often co-constitutive. First, publishers are developing technologies that categorize, codify, and measure research and researchers. And second, publishers are using these tools to enclose and sell meta-data about research. Through an evolution of internet media provision, what Mansell (1999) calls the “scarcity-abundance dialectic”, the largest academic publishers are losing control of content, but at the same time enclosing information about content and those who produce it. Not unlike Facebook, Google, or Amazon, they are becoming massive data aggregating conglomerates.

Over the past 10–15 years the publishing industry has sponsored the development of a global digital infrastructure composed of identification systems called digital object identifiers or DOIs. Many readers will be familiar with DOIs, which are attached to most published journal articles, but this is just the beginning. CrossRef is a DOI system for academic citations, linking articles to each other across publishing platforms. CrossMark is a DOI system that attaches identifiers to every version of an academic text, giving “scholars the information they need to verify that they are using the most recent and reliable versions of a document”. FundRef is a DOI system linking academic bodies and research outputs to funding agencies. And finally, ORCID is a DOI system attached to researchers’ bodies themselves, and universities
now routinely encourage their researchers to establish a unique identifier. ORCID has the capability to track an individual academic through their labor as an author, peer reviewer, or grant writer.

Not surprisingly these are all “free” services, and they are marketed by their associations and foundations as beneficial to research and researchers because they make knowledge production more standardized, networked, orderly, efficient, and attributable. But they are also designed to facilitate data collection, digital rankings, surveillance, and more importantly, to enforce copyright and intellectual property. It is only a matter of time before DOIs will, for instance, enable the automatic enforcement of embargo periods for “green” OA versions of articles, or the instantaneous ranking of a researcher against their peers based on grant applications, citations, various impact factors, or whatever the next fashionable “altmetric” might be.

Fueled by bibliometrics, ranking is nothing new. Thomson Reuters, which owns the ISI/ Web of Knowledge databases, works closely with publishers to identify, categorize, and track the “impact” of particular journals. Publishers of all sizes compete fiercely to convince ISI to include their journals in the database. Through 2014 ISI data drove the Times Higher Education (THE) Global University Rankings (see Robertson and Olds 2012), although THE has recently announced that it will now partner with Elsevier, using their products Scopus and SciVal (ISI competitors) to help them assemble the “largest and most comprehensive database of university data in the world” (THE 2014). Reflecting on this new partnership, Nick Fowler, a managing director at Elsevier, said, “We are thrilled to partner with THE…They support university and industry leaders in setting strategic priorities and making investment decisions, and they help governments shape national policy” (ibid.). This is consistent with Elsevier’s overall strategic direction. For instance, their “Research Intelligence” unit, which includes SciVal and Scopus, promises to “answer the most pressing challenges researchers and research managers face, with innovative solutions that improve an institution’s and individual’s ability to establish, execute and evaluate research strategy performance”.15

Elsevier makes for an interesting, if not paradigmatic example of the transformation of large academic publishers. Over the last 15 years, but particularly in the last five, the company has shifted its focus from managing subscription-based paper journals to managing digital data, of which journals are just one small piece of the puzzle. Of course, of all the large (it is the largest) for-profit publishers, Elsevier is also a locus of scorn by many academics. In 2012 a group began a boycott of Elsevier called “The cost of knowledge”. Protesting their restrictive “big deal” subscriptions and substantial profit margins, close to 15,000 academics have now agreed that they will not edit, review, or publish in Elsevier journals. Adding fuel to the fire, Elsevier has recently been aggressively demanding that scholars remove unauthorized copies of articles posted on Academia.edu and other websites (The Economist 2014).

It may seem like Elsevier is fixated on protecting its subscription journal model, but behind the scenes the company is transforming itself into a data aggregation platform. Following are a few examples of Elsevier’s new data-oriented businesses, much of which is constituted by acquisitions of smaller companies. In 2012 Elsevier acquired Atria, a Danish software company, whose main product was PURE, a sort of catch-all database or “dashboard” tool used by universities to keep track of and order information about academics, research, projects, grants, and most importantly the networks between them. Its goal, according to Elsevier, is to provide university administrators with a “complete picture of the research enterprise” so they may more efficiently “focus and manage resources in order to achieve their desired research outcomes” (Elsevier 2012). One of the key functions of PURE is to standardize information and data about publications, grants, student supervision and impact across disciplines to ease the next Research Excellence Framework assessment. PURE is just one of many Current Research
Information Systems (CRIS), which have quickly become a necessary component for the management of a research university.

Along the same lines, Elsevier is currently assisting eight of the largest UK research intensive universities in constructing a new system of meta-data metrics called “Snowball Metrics”. The stated goal of the Snowball project is to “achieve a shared understanding and buy-in of a set of high-level measures of academic research, across the spectrum of inputs, throughputs and outputs (such as grant applications and awards, research income, and bibliometric indicators), to enable benchmarking across institutions” (Snowball Metrics 2012). Elsevier is not charging any fees for its participation in this project, but it seems pretty obvious that it will benefit greatly from working with university administrators and technology staff to understand what meta-data universities need and the challenges involved in producing them.

In 2013 Elsevier bought the online research collaboration and reference manager tool and company, Mendeley, which among other things codifies academic social networks. More recently, in January of 2015, Elsevier purchased a London-based start-up called Newsflow, which uses algorithms to analyze content from 55,000 English-language news outlets with the goal of determining which researchers and research output are creating an impact (Clark 2015). These two acquisitions/products will be housed together in Elsevier’s London-based Big Data Analytics and ScienceDirect offices, where they will be used in tandem to help academics and universities measure the impact of their research across the sprawling global spaces of digital information.

A University of Glasgow Professor recently said of Elsevier, “I think Elsevier’s role as the bogie man of science publishing, while probably deserved, misses the point. They aren’t really publishers – they are a knowledge company” (Shaw 2013). This is reminiscent of Foucault’s suggestion that it isn’t any particular unit of knowledge that is powerful, but the assumptions and conditions through which that knowledge becomes legitimate that are run through with power (see Wyly 2015). The point is that while academic texts may increasingly be open and free, finding meaning or use in this ever less filtered world is more difficult and quite possibly more expensive. Elsevier recognizes that academics and universities, not to mention states and funding agencies, are in dire need of (meta)data that will help them understand what research is significant given this new environment of openness, and they are finding willing buyers especially among universities that are forced to constantly justify their existence.

6 Conclusion: the qualities of knowledge
The assumption built into most advocacy of open access is that scientific knowledge must be free for the public to read, if not free to put to use in any way they see fit. On the surface this seems reasonable. But in order to achieve this within the present technical-economic conjuncture, it will be necessary to break apart the existing structures that organize knowledge and make it impactful to the very people on behalf of whom open access campaigners claim to advocate.

Open Access advocates might argue that in a world of open and abundant knowledge and data, a simple Google search will solve the filtering problems by identifying the most popular, well-connected, or most trusted research. The problem is that the for-profit publishers are ahead of this game. They are working very hard to set the rules by which Google or Mendeley or Scopus will identify the “best” academic research on any given topic. Put another way, the information structures of the internet are not flat (Ransom et al., this volume). They are always already filtered, curated, and uneven—or put another way, enclosed. Furthermore, the algorithms that control these searches are increasingly hidden from human view, or are too complicated for
humans (e.g. academic researchers, academic administrators, the broader public) to understand without the aid of digital technology (Gitelman 2013).

We may have different opinions on what large for-profit publishers are up to in all of this. But in some ways they are doing what they have always done—what Bhaskar (2013) calls “filtering, framing, and amplifying” knowledge—and in the process making a profit. I am not attempting to justify or legitimate the subscription or for-profit model, but the important point is that open access is not removing publishers and their profits from the process. In fact, it may be contributing to an environment where they are more necessary than ever. Open access to knowledge may be better than an environment where much academic knowledge is closed, but focusing too closely on the openness may be distracting us from the ways that capital is sneaking in the back door and enclosing the very tools we need to make sense of this new world (Harrison et al., this volume).

Notes
1 Funding for this research was provided by the European Union as part of its FP7 Marie Curie Actions for the project Universities in the Knowledge Economy (UNIKE). Previous versions of this paper were presented at the UNIKE Conference at the University of Auckland in February of 2015, the Association of American Geographers Conference in Chicago in April of 2015, and at the Global Conference on Economic Geography at the University of Oxford in August 2015. I am grateful to John Morgan, Christian Rogler, Chris Newfield, Rebecca Lave, and Sam Randalls for helpful edits and suggestions on previous drafts. I am, however, solely responsible for any errors or omissions.
2 Elsevier had profit margins of 37 per cent, 37 per cent, and 38 per cent in 2014, 2013, and 2012 respectively. For Elsevier in 2014 this represents £762 million in profits on £2.05 billion in revenue. Informa/Taylor & Francis had profit margins of 29 per cent, 30 per cent, 30 per cent in the same years. In 2014 this represents £334 million in profits on £1.14 billion in revenue (author’s calculations based on publicly available annual corporate reports). See also Bernstein Research (2014).
3 See www.doaj.org.
4 Publishers, and groups representing them, will often respond to this accusation by admitting that prices have increased, but argue that the libraries attain access to a larger volume of content, thus driving down the cost per article (cf. Gantz 2012).
5 See Mike Taylor’s argument on immorality in the Guardian: www.theguardian.com/science/blog/2013/jan/17/open-access-publishing-science-paywall-immoral.
6 Osborn, a Cambridge professor of ancient history, is a strong critic of OA most notably in an essay he wrote as part of an extended debate published by the British Academy www.britac.ac.uk/openaccess/debatingopenaccess.cfm). The quote here is taken from an interview by Richard Poynder, Dec. 23, 2013, http://poynder.blogspot.co.uk/2013/12/robin-osborne-on-state-of-open-access.html.
8 There is no necessary reason why the green version must be followed by the “version of record”—see below on the publish first‒filter second model. Nevertheless, at least in the UK (or in the US in the University of California policy), the green model is almost always framed as a way to access papers that are otherwise behind publisher paywalls.
9 See for instance Elsevier’s recent partnership with the University of Florida www.insidehighered.com/news/2016/05/25/university-florida-elsevier-explore-interoperability-publishing-space; or the broader CHORUS infrastructure in the US, which is sponsored by for-profit publishers http://scholarlykitchen.sspnet.org/2015/11/30/chorus-gets-boost-but-implementation-tricky/.
10 See here for a recent study of the costs of OA article processing charges paid by German universities: https://github.com/njahn82/unibiAPC.
11 See http://elifesciences.org/about.
13 See http://cogentoa.tandfonline.com/.
One topic I did not address here is the question of whether academic knowledge should be free. In an environment of increasing “precarity” of academic labor, we ought to ask whether academics have a right to be compensated for their work. This is a complex issue, and I will not attempt to parse it here—but see Chapter 2 of Eve (2014) and Golumbia (2016).

References

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