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'The most audacious and specific plan for knowledge, freedom and a better world': Developing radical pathways to free, open journals

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Abstract

Developments in digital technology have the potential to transform academic journal publishing. Academic research can now be disseminated directly to academic networks and the wider public, in theory bypassing the need for traditional journal publishing structures, conventional journal publishers and their associated commercial practices and cost structures. Cost is a particularly pressing issue for Higher Education (HE) globally. In the last few decades the strategies adopted by journal publishers have led to increasingly steep and unsustainable costs for our academic libraries, the centralisation of publishing power in the hands of a few conglomerates, and the corporatisation of metricised data that overwhelmingly profits corporate capital and that has largely been developed through the donated labour of academics, librarians and academic institutions. In this article we explore briefly the history of scholarly communications shifts, and the implications of digital publication for law libraries and law journals. We argue for a change of ownership in the means of production and analyse some of the obstacles to achieving this. We show how radical Open Access (OA) alternatives can work, based upon a case study of two existing OA journals, and we conclude with measures by which radical OA journals can be increased within the cultures of legal research.

Keywords: Open access, legal publishing, research, public access, knowledge, instant access, open journals

> What scandalized the serious scholar Erasmus (as it fascinated Dürer) was the fact that, not much more than half a century after the first appearance of the printed book, demand had turned it into a product beyond the control of the scholars and specialists. The book had taken over as the transmitter of European written culture, before scholars and educators had had time to come to terms with its power and influence.
> (Jardine 1997, 228)

Introduction

As historians of scholarly communications pointed out, developments in digital publishing technologies have transformed scholarly journal publishing.[2] The massive changes that have been wrought in journal publication in recent decades have proved them correct. From the seventeenth century to the 1990s the economic and communications models of knowledge dissemination were very broadly similar in functional outline while increasing exponentially in speed and quantity of publication, particularly with the technological revolutions in printing technologies during the nineteenth century (Meadows 1974). All changed in the 1990s. With the onset of the digital revolution, academic research could be disseminated directly to academic networks and the wider public, in theory bypassing the need for traditional journal publishing structures, conventional journal publishers and their associated commercial practices, publishing cycles, cultures and cost structures.[3] It was an example of the power of the internet as a new publishing platform, noted much earlier by visionaries such as Ted Nelson.[4]

But the power of converged publishing corporations increased as publishers asserted control over the market, while universities, libraries and scholars lacked co-ordination in opposing these changes (Larivière et al 2015). Bergstrom et al (2014) identify the pivot point just at the onset of the digital revolution:

> In the early 1990s, before online editions became widely available, institutional journal subscriptions were sold journal-by-journal at the same subscription price to all academic libraries. Because of high demand for some journals, large research universities often bought multiple subscriptions and maintained separate collections in specialty-based libraries.
>
> In the late 1990s, as online editions of journals became widely available, business models changed drastically. With online editions, there are no printing or mailing costs, and the marginal cost to the publisher of permitting another user is essentially zero. Moreover, the internet enabled commercial publishers to develop new pricing methods that allowed them to exercise their market power much more effectively than in the print-only environment.

In the last few decades the strategies adopted by journal publishers have led to increasingly steep and unsustainable costs for our academic libraries, the centralisation of publishing power in the hands of a few conglomerates, and the corporatisation of metricised data that overwhelmingly profits corporate capital and that has largely been developed through the donated labour of academics and academic institutions.[5] The result has been the creation of commercial silos of knowledge that are highly profitable for information and data corporations.[6]

Only recently have there been substantial protests and mutinies against this regime. The entire board of the Elsevier-owned *Lingua*, for example, resigned and set up another and much more OA journal, *Glossa* (Rooryyck 2017). The editors had protested Elsevier's policies on pricing and requested that it convert the journal to an open-access publication that would be free online under a collective of editors: Elsevier refused.[7] The resignation of the *Lingua* Board is by no means the only example.[8] Indeed the issue of costs has only sharpened the arguments that have evolved since the early debates around Open Access (OA) to research, almost half a century ago. Those debates established incontrovertibly the social utility of OA, not just for scholarly and scientific communities but for society generally (Englebart 1975, Harnad 1990, Schatz 1987, Willinsky 2005, Hajjem et al 2006, Benkler 2007, Harnard 2016). The focus of current debates has shifted to the development of models of OA that are most open and that work best to encourage and protect both quality and openness of research. Meanwhile under increasing pressure, the commercial players in the publishing world have developed rapidly their economic models for market dominance, entrenched their positions as capitalist retailers of academic work, and are being only reluctantly drawn into the OA debates. Their own online costs have substantially reduced while their charges to institutional libraries have substantially increased.[9]

The recent Finch Report's Green and Gold systems have been developed in a way that maintains the traditional publishers' relationship with academic research and, in the case of Gold access, develops a system reliant on payment of fees. And where fees are not charged, often it is the case that authors are charged for publication (the system of Article Processing Charge or APCs). The debate on OA has been developing rapidly in science-based disciplines with, for example, *Nature* dedicating in March 2013 an entire issue to the topic. The journal *PLOS 1* is a typical response to OA in scientific disciplines but it still largely requires an APC (though authors may claim exemption from the charge). These and other such compromises bring complexities, constraints and barriers to the publication of information that true open access online publications with no fee payment to readers or libraries and no fees or charges for authors, avoids.

We make three arguments in this article, after defining what we mean by OA. First, that digital significantly alters the media and economics of scholarship production. Second, and as a result, the ownership of the means of production needs to change. Third, we advocate the radical form of OA – entirely free, entirely open journals with no reader charges or author charges; and we give two brief case studies of such journals and how they are edited and produced. Finally we conclude with some guidelines on how such radical OA may be more generally achieved than it has been to date in legal scholarship. While there have been strong debates and creative initiatives within the STEM communities, the engagement with OA within legal scholarship has been less developed; and there is a need to evaluate how our discipline could develop to create and sustain truly OA systems.

Open access: definitions and varieties

Such is the variety of OA, and the number of definitions of the term, that we require to define what we mean by it. The general Access to Knowledge movement exists to implement the rights under Article 27 of the Universal Declaration of Human Rights, that balances the right freely to participate, enjoy and share knowledge, and the right to 'moral and materials interests' of any production; and focusing of course on the right to access (Krikorian & Kapczynski, 2010). For our purposes here we take the definition to be that set out in the Budapest Open Access Initiative (BOAI) in 2002, composed during a meeting of the Open Society Initiative

(https://www.opensocietyfoundations.org/), and which starts with a ringing declaration of the necessity for OA:

> An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds. Removing access barriers to this literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge.[10]

OA is defined precisely as follows:

> 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. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.

The document then goes on to define OA practically as consisting of two initiatives, though it also encouraged experimentation with alternative ways to 'make the transition from the present methods of [for-profit] dissemination to open access' (BOAI 2002):

> **I.** Self-Archiving: First, scholars need the tools and assistance to deposit their refereed journal articles in open electronic archives, a practice commonly called, self-archiving**.** When these archives conform to standards created by the Open Archives Initiative, then search engines and other tools can treat the separate archives as one. Users then need not know which archives exist or where they are located in order to find and make use of their contents.
>
> **II.** Open-access Journals: Second, scholars need the means to launch a new generation of journals committed to open access, and to help existing journals that elect to make the transition to open access. Because journal articles should be disseminated as widely as possible, these new journals will no longer invoke copyright to restrict access to and use of the material they publish. Instead they will use copyright and other tools to ensure permanent open access to all the articles they publish. Because price is a barrier to access, these new journals will not charge subscription or access fees, and will turn to other methods for covering their expenses.[11]

It is remarkable that 16 years later, the issues of self-archiving and OA journals are still at the forefront as alternatives to commercial knowledge portals, the power of which has only increased. We know the benefits of increased citation, which has been well documented.[12] As Jean-Claude Guédon, one of the original drafters of the declaration, pointed out in a valuable and bleak update of the situation of OA internationally, we should not need the Ebola and Zika epidemics to make us realise, yet again, the problems caused when we allow research to be locked away in publishers' archives.[13]

In the UK the disappointingly weak stance taken by the Finch Report (2012) to the problems of access, and accepted by RCUK as the basis of the access strategy for REF21, has resulted in less, not more, open access.[14] This state of affairs has been achieved at even greater, and unsustainable, cost to public finances.[15] The Report's interpretation of Green (access to the 'author's accepted manuscript' after peer-review, not the journal-formatted version, and openly available often only after an embargoed period) and Gold access (with Gold entailing the payment to publishers of an 'article processing charge' in order to ensure access) effectively means that the public pays three times for research. In the first instance, academics are employed to produce research within the infrastructure of HE (to which publishers contribute nothing). Second, HE institutions pay publishers who charge institutional libraries for access to academics' work in journals; and third, public finances and HE institutions now pay publishers again for Gold Article Processing Charges (APCs) in order to make the articles OA. It is hard to think of another sector where triple-layered costs would be tolerated for any length of time in this way, and particularly where the party benefitting the most contributes the least to the enterprise.

There are many implications of the failure to challenge the commercial grasp of corporate publishers on information access. Of concern to publishers is the issue of identity, for instance: who accesses the published archives, how may it be best controlled, how data can be extracted about users, how 'piracy' of published content may be eliminated.[16] The last is a particular concern, and is one reason why Elsevier, for instance, purchased Mendeley and SSRN, in part at least to monitor the exchange of documents that took place on these platforms and gain access to that data.[17] Projects such as RA21 seek ways to develop federated solutions; but as with the Finch Report, these exist only within the corporate publishing framework, and do not consider the Platinum or Diamond solution.[18]

Corporate publishers also seek to increase control of information by increasing the metricisation of our research fields. Elsevier, for example, uses the profits from the vast datasets granted to them at considerable and ongoing cost by the academic community to construct research intelligence tools that will enable research managers to monitor the output and quality of academic research, and to ensure that the metricisation of our work increases substantially, and league tables of research can be ever more narrowly calibrated.[19]

How digital alters research production

As the epigraph from Lisa Jardine's history of consumer goods in the Renaissance reveals, the products of knowledge in all their forms cannot be separated from the means of their production. How they were produced affected the reception and interpretation of the knowledge objects themselves. Some early scholars realized this. Erasmus was noted for working closely with publishers in seeing his works literally through the press, and maintained friendships with Humanist scholar/publishers such as Johannes Froben in Basle. Maharg (2007, chapter 5), drawing upon the extensive scholarship of the history of manuscript and printed communications, argues that the highly sophisticated form of textual conservation and transmission known as glossed literature, which of course had a profound influence upon the medieval reception of Roman and Canon law, also bears striking similarities to communicative forms embodied by the digital web and social software.

The same is true, though with different effects, of the moveable type revolution post-Gutenberg. The texts published in the first half century after Gutenberg's bible, known by scholars as *incunabula* – 'cradle' literature – are characterized by experimentation, imitation and emulation. That there

was experimentation with texts, as well as the technical apparatus of printing down to the recipes for ink and paper production can hardly be doubted; and the high number of bankruptcies is evidence of the cost for early book publishers of getting the market wrong.

As Margaret Smith and others have pointed out, printed books did not just imitate manuscripts: they *emulated* them, and principally for economic reasons (Smith 1994, 25). Thus, at a time when printing could only be carried out with black ink, the rubrication of a page (i.e. the drawing of letters and artwork in red ink) was not possible in the printshop workflow: it had to be added to pages later by scribes. Why did early books continue with rubrication when it was clearly not in their economic interests to do so? The reason can be found in the printers' knowledge of medieval authorial and textual conventions. These were not merely decorative conventions. Smith lists the uses of rubrication: it was employed in functions such as 'headings, text- chapter- and subdivision beginnings, *lemmata* and references to authorities' (Smith 1994, 37). Smith argued that printers were aware that if such conventions were not to be found on the page, absence of them would confuse or irritate readers. Printers were thus not so much imitating rubrication as emulating the existing conventions by which meaning was created and ordered within a text, and which had been established at least several centuries earlier with the rise of scholarship gathered around many complex legal and theological texts such as Justinian's *Digest* and Gratian's *Decretals*, as well as texts in medical science and literature. In time of course printed books developed their own systems of visual and informational conventions, but it required at least the half-century of the *incunabula* and beyond to develop those.[20] Even within the period of *incunabula*, and allowing for experimentation, publishing house bankruptcies and the development of conventions away from scholarly manuscripts to scholarly books, the number of books produced in Europe in this early period is still astonishing. Elizabeth Eisenstein (1980), for example, has estimated that in this period around 20 million books were printed.[21]

As we can see from this example, the materiality of communications matters profoundly to the bodies of knowledge transmitted within that mode of communications. We can see similar radical transformations of the material forms of knowledge production and dissemination nearer our own times. As Maharg has pointed out, Langdell's innovation in casebook teaching in the 1870s at Harvard would have been impossible had it not been for the earlier nineteenth century technological revolutions in printing and in paper production.[22] In the digital revolution of our own times, and the extent to which scholars are adapting writing habits and publishers are adapting platforms, workflow and profits, we thus have only the latest version of materiality affecting research, education, the profession and the administration of justice. Within universities the digital revolution profoundly alters the context within which scholarly texts are written, designed, disseminated, marketed, sold and re-used; and alters the way in which they are accessed, not just at point of publication, but in the future. Digital thus transforms the present and the future of scholarly production. Indeed, the core lexis used of printed books, that has developed since the fifteenth century, both general (e.g. 'printed', 'published' and 'library'), and specific (e.g. 'offset printing', 'quarto', 'recto', or 'signature'), no longer necessarily applies to scholarly texts produced in the digital age.[23]

The transforming features of the digital on scholarly activities have been summarized by Jones (2013). According to him, digital affects replicability, mutability, connectivity, instantaneity, portability and identity. There is of course much that can be added to this, but these qualities alone demonstrate how deep digital practices change our concept of scholarly work. To unpack these qualities somewhat, we could say that:

1. *Digital* is represented in the world by specific devices, networks and assemblages. In the academic world it influences educational and research affordances, modes of text and

information search capabilities as well as specific skills, competences, practices and environments.

2. Digital alters our *social* environment, through distributed communities, socio-material understandings, new or altered means of production and modes of use.
3. Digital and changed social practices together alter *scholarship and literacies* – for example artefacts and practices, formal and informal contexts of research, visual artefacts and digital curation, and multimodal ways of reading and interacting with texts online
4. Finally, digital + social + scholarship can lead to further open access to scholarly literature. On the dark side, it may also lead to greater corporatization of scholarly production, and the increased metricisation of our working lives.

There are of course numerous examples of Open in both digital scholarly resources and in digital learning resources. Examples of the first could include infrastructural resources such as DataCite (https://www.datacite.org); and collections of scholarly resources such as DASH (Digital Access to Scholarship at Harvard, https://dash.harvard.edu).[24] Examples of the second could include for-free MOOCs, MIT's Opencourseware Initiative (https://ocw.mit.edu/index.htm), the UK Open University's FutureLearn Initiative (https://www.futurelearn.com/partners/the-open-university), and a host of Open Education Resources (OERs) providers from very small initiatives such as SimShare (http://simshare.org.uk), to much larger entities such as OER Commons (https://www.oercommons.org/), Wikiversity (https://www.wikiversity.org/) and the Commonwealth of Learning (https://www.col.org/).[25]

These and many other such initiatives take advantage of the radical communicational power of the digital domain to make knowledge and information free and open. In the field of scholarly journal publication, however, the opposite has happened. In the terms of Margaret Smith quoted above, publishers might appear from the perspective of material culture simply to have emulated in the digital field what they have always done, including economic practices that have existed since at least the nineteenth century. But over the course of the first half century or so of the internet age – let us call it the *incunabula* of the digital domain in the way that the period 1450-1500 was the cradle age of printed literature – they have successfully created a corporatized oligarchic model of digital production that hugely increased paywalls around information and knowledge. Were he alive today Erasmus would probably have been scandalized, again, at how little we have learned from the last revolution in scholarly media; and how we have allowed 'power and influence', in Jardine's terms, to slip out of the hands of scholars and into the hands of the market.

Obstacles to ownership of the means of production: journal rankings and article metrics

Despite its flaws, the Finch Report recognizes one indisputable point – research that is funded by the public ought to be accessible to the public. The Stern Report (Stern 2016) agrees with this principle, and so do almost all scholarly reports on the subject of open access. Nevertheless, how much of this has actually translated into practice is debatable. Part of the reason for this is the Finch Report itself – the Green and Gold open access policy envisaged in the report has done little to remedy the existing commercialisation of research that benefits journal publishers rather than the researchers or their institutions.

Whilst initiatives since the start of the twenty first century such as the BOAI resulted in some uptake of open access publishing, there is still a long way to go for OA to achieve what it is really meant to do. OA journals are making some progress in terms of growth: Piwowar *et al* (2018) estimate that 28% of the scholarly literature is open access and that the proportion of articles published as open access is growing, driven by the growth in Green and Gold OA. There is also evidence of more OA journals receiving new, or increasing, impact factors which, whilst does not truly reflect on quality per se as we will argue later in the article, shows a growing presence of OA journals generally. The overall number of OA journals that receive 'impact factor' is however still dismally low. As an example, a total of 202 Springer OA journals made it to the Thomson Reuters Journal Citation Reports (JCR) 2015, with 13 of them receiving their first impact factor.[26] However, Springer has 566 OA journals, which means nearly two thirds of Springer's OA journals did not appear in the list in the 2015 JCR.

In spite of the general acceptance in principle that OA publishing needs to be promoted, institutional level culture is hardly conducive for true diamond/platinum OA journals that stand for free and open dissemination of research to flourish. In the UK, the pressures of the Research Excellence Framework exercise mean that research managers in universities expect the highest possible quality output from researchers for the purpose of REF submission. Research managers are keen to see staff publish in high ranking journals, setting an expectation among researchers to publish in journals with high impact factor.[27] There is a sense of (false) security attached to publications in high impact journals that the article will also be naturally of high quality merely because it is published in a higher-ranking journal.[28] 'Publications in high quality journals' is often an essential criterion for academic recruitment as well as promotions, regardless of discipline. This leaves researchers little choice but to be conscious of where they publish.

Journal rankings, however, are based on a rather unscientific model which is linked to commercial considerations. Simply put, impact factor is calculated and then promoted by publishers. The impact factor of a journal is a measure of the average number of citations to articles published in a three year period, i.e., the average number of citations that articles published by a journal in the previous two years have received in the current year. The Journal Citation Rankings are arrived at by calculating it annually for the journals indexed in Thomson Reuters. As the metrics pertain to the journal rather than the individual article, it is a flawed assumption that every article published in a journal will correspond to the journal's overall impact factor.[29]

There has been recognition of impact factor's disproportionate impact on science of late: in an Editorial published simultaneously in the journals *Antimicrobial Agents and Chemotherapy*, *Applied and Environmental Microbiology*, *Clinical Microbiology Reviews*, *Infection and Immunity*, *Journal of Clinical Microbiology*, *mBio*, *mSphere,* and *mSystems*, theAmerican Society for Microbiology (ASM) announced that it will remove the impact factor from its journals, website and other marketing and advertising.[30] The editorial went on to say:

> ..the journal IF is a journal-level metric, not an article-level metric, and its use to determine the impact of a single article is statistically flawed since citation distribution is skewed for all journals, with a very small number of articles driving the vast majority of citations. Furthermore, impact does not equal importance or advancement to the field, and the pursuit of a high IF, whether at the article or journal level, may misdirect research efforts away from more important priorities. The causes for the unhealthy obsession with IF are complex. High-IF journals limit the number of their publications to create an artificial scarcity and generate the perception that exclusivity is a marker of quality. The relentless pursuit of high-IF publications has been detrimental for science. This behaviour is an example of the

> economic phenomenon known as the "tragedy of the commons" in which individuals engage in a behaviour that benefits them individually at the expense of communal interests.

The tragedy of the commons is deepened when one considers it in the context of rise of the commercial web, which has all but taken over the original concept of internet freedoms. Recall the epigraph, describing the situation with the print revolution in the early fifteenth century. The same has happened to academic research and its journal publication. Commercial publishing houses have a clear advantage over most OA journals when it comes to the generation of impact factor. They have more resources, both financial and personnel, to ensure that the journals are indexed in relevant databases. Many OA journals that are not linked to commercial publishers at present lack metrical specificity and cannot realistically compete with commercial journals in this regard. The digital information corporations develop further tools for research analysis and measurement, thus locking academics into the platforms ever deeper.

The tragedy can be rewritten. We do not need to behave like this; but we do, because our careers are increasingly bound, in REF and similar research assessment systems, to the hierarchies of journal and metric. While law has traditionally been relatively unaffected by journal rankings compared to the STEM disciplines, the pressures induced by REF considerations now mean that research managers are increasingly keen for law academics to publish in top ranking 'mainstream' journals. Law Schools tend to rely on both formal (for example Washington & Lee's Law Journal Rankings) and informal 'ranking' systems compiled within law schools that seek to identify journals that correspond to '3* or above' quality publications (in REF terms). It has been noted already that journal citation metrics do not provide an accurate reflection of the quality of an article, but this is particularly problematic for a discipline such as law, where the relevance and significance of research tends to be a lot more territorial in nature. Law being largely a jurisdiction-focused subject area, it is highly unlikely that, for example, UK law journals will be ranked in the USA as high as their US counterparts as the ranking is ultimately arrived at using citation metrics. The citation-based methodology of ranking makes even less sense for law compared to other disciplines such as Science or Business that are 'jurisdiction-neutral' in terms of relevance and significance of articles published.[31]

The alternative to journal ranking is often held to be metrical measures. These are commonly divided into two categories: bibliometrics and altmetrics. Bibliometrics comprise systems of citation-counting, the advantage of which may appear to be its value-neutral ranking. The reality has proven to be different. See for instance Rafols et al (2012), who demonstrated how Journal Impact Factor (JIF) can work to suppress interdisciplinary collaboration in research.[32] On the issue of gender and research, the work of Maliniak et al (2003) demonstrated that women are systematically cited less often than men and, within the discipline of Political Science at least, 'articles authored by women are systematically less central than articles authored by men, all else equal' (Maliniak 2003, 889).

By contrast to bibliometrics, altmetrics involve 'the creation and study of new metrics based on the Social Web for analysing and informing scholarship' (altmetrics.org). They take account of usage (downloads, views), the expert opinion of peer-reviewers, and above all the storage, links, bookmarks and conversations that accrete around research publications. The advantage of using altmetrics is clarified in a manifesto for the use of altmetrics in judging research quality:

> Unlike the JIF, altmetrics reflect the impact of the article itself, not its venue. Unlike citation metrics, altmetrics will track impact outside the academy, impact of influential but uncited work, and impact from sources that aren't peer-reviewed. Some have suggested altmetrics would be too easy to game; we argue the opposite.[33]

We agree with this statement. If, for example, a legal journal is hosted within an academic body or institution, altmetrics can provide helpful data on the use to which research is put, and stimulate scholarly conversation around the research object. The net result of all this is that the impact generated by an article can be more accurately assessed using a combination of peer-review, altmetrics and the journals' own article tracking, thus bypassing the need for a commercially-motivated journal level metrics. In Law, journal ranking and bibliometrics are probably not as accurate as a combination of altmetrics and peer-review. Rob van Gestel put it well:

> ranking of law schools and law reviews runs the risk of driving us away from quality based on substance towards proceduralisation and quality assessment based on proxies favoured by managers of law schools, funding bodies and government agencies, instead of by the forum of legal scholars. (van Gestel 2014)

The social value of OA in legal research

As noted earlier, there has been some progress over the last twenty years or so in the uptake of OA publishing generally.[34] The Finch Report, and the consequent requirement within British universities that journal articles should comply with OA policies has meant that traditional publishers have found ways to adapt to Green or Gold OA policies, but at the same time not deviating from their expensive payment models. If anything, publishing in journals has become more expensive due to the fees publishers charge for open access in addition to subscription costs. It is a failure of the spirit of the Finch Report that institutions now incur more expenses to meet OA policies. It is ironic that the point of OA is to make research more accessible to the public who have already paid for the underpinning research, and the system now imposes an added burden on taxpayers' money.

While the Finch Report recognizes that the public, who are ultimately the funders of research in publicly-funded universities, should have access to the research generated from those institutions, current OA policies have only resulted in more financial burden for universities. They have to pay the open access fee to the publishers under the Gold OA model, in addition to already steep subscription costs.[35] Article Processing Charges charged by a number of OA journals remain high – a study by Solomon and Bjork (2012) indicates that the price range varied between $8-$3900 USD per article with the lowest prices charged by journals in developing countries, and the high impact factor major international journals charging the highest fees. The average APC in a hybrid journal is almost twice that for a true (entirely digital) OA journal.[36] Research remains inaccessible for the public during the embargo period, which many publishers require as part of their 'open access' policy. Payment for individual articles remain expensive, with journals charging around £30 for 'short term' access (typically 24 hours) for the article to around £250 for 30 days access for the whole issue.[37] Creating such paywalls not only renders research directly inaccessible to the public, but it also makes it more expensive to the institutions themselves, again burdening the public who pay for the research in the first place.

This has a further consequence – universities fail to become inclusive and remain the prerogative of the privileged few who have access to the institution. In doing so, universities fail to meet their own stated mission, which often refers to 'contribution to society' or similar terms. For example, the University of Cambridge stated Mission reads as follows: "The mission of the University of Cambridge is to contribute to society through the pursuit of education, learning, and research at the highest international levels of excellence". The University of Edinburgh's Mission contains the following: "As a great civic university, Edinburgh especially values its intellectual and economic

relationship with the Scottish community that forms its base and provides the foundation from which it will continue to look to the widest international horizons, enriching both itself and Scotland". It is remarkable that despite such noble objectives, research is just not available to the wider society to which our universities aim to contribute, unless one has the means to overcome the financial hurdles placed by the system to access the body of knowledge and research hidden behind paywalls. Betterment of communities can be achieved by making knowledge available to them directly, rather than confining it to a privileged community of scholars. As Benkler (2007) and many other theorists of internet culture and economics have observed, this is a profoundly democratic issue.

It is not just the wider community that is denied access – students within the institution also sometimes do not get access to the research generated by their own tutors when rising costs prevent librarians from purchasing books because of the high costs of journal subscriptions. This is in spite of the REF open access policy which requires researchers to deposit a copy of an accepted manuscript to the institutional repository: the requirement only applies to journal articles and not books (including research monographs). Publishers tend to make many textbooks and monographs available online, but again these are protected behind paywalls. If the institutional budget does not allow librarians to purchase an online copy, practically it leaves little choice for students but to purchase a print copy. This clearly has implications for students, at a time when the cost of almost every other aspect of Higher Education is rising.[38]

Finally, online paywalls restrict research impact, not just in society generally, but in the context of the REF and in terms of internationalization. Research impact forms part of the REF assessment in the UK, defined as 'and effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia' (HEFCE, http://www.hefce.ac.uk/rsrch/REFimpact/). Making research publicly available through open access has clear societal impact. Open access articles have a citation advantage, receiving 18% more citations than average (Piwowar *et al*, 2017). Other estimates for the open citation advantage varies from +36% for Biology to +600% for Agricultural Sciences.[39] Whilst the impact of an article does not necessarily translate to 'impact' in the REF sense, it evidences the wider reach and discoverability of outputs, and thereby creates more potential for engagement in the scientific community and beyond. The same could be in a general sense of legal research, which has huge potential to influence law reforms and policy, but this can be achieved more effectively in many sub-areas of law if the literature is made more visible in society. As Tennant et al (2016) note,[40]

> If an article has fewer restrictions for journalists, citizens, businesses, and policy-makers, it seems logical that this would enable the research to be publicly re-used. Furthermore, those parties may be more likely to promote articles which are publicly accessible into different communication channels. In other words, increased access removes barriers to widespread societal engagement, whereas a relative lack of article access discourages engagement.

A further important area where the current model disappoints is regarding internationalization of research, particularly in developing regions of the world. Universities have 'internationalisation' high on their agenda – whilst this is a broad term encompassing student recruitment, teaching, enterprise activities and engagement, internationalization of research is also a strategic priority for institutions. In the absence of a meaningful and true open access policy, research will remain inaccessible in developing countries due to the prohibitive subscription costs. Whilst there has been some progress on this front, it remains piecemeal and inadequate. The benefits of worldwide dissemination and sharing of research on a global scale accelerates the pace of discovery and innovation. McKiernan (2017) cites the example of the Human Genome Project, one of the first major projects to commit to

open scholarship and rapid data sharing through their Bermuda Principles, which had the effect of accelerating the sequencing of billions of base pairs leading to new gene discoveries. Open scholarship and research leads to more collaborative activities between researchers globally, bringing an otherwise dispersed pool of talent together and will serve to enhance the profiles of institutions. As long as paywalls remain, posing obstacles to access research generated in well-funded Western universities, those in poorer countries will continue to be excluded resulting in hindering the pace of accelerating research and global scholarly discourses that shape and influence law and development.

While we argue for change approaching revolution – a disciplinary version of *Lingua's* rebellion – it would be entirely unrealistic to expect commercial publishers to initiate policies that promote OA publishing to the detriment of their own business models. It simply will not happen. What does need to happen is a fundamental cultural change within our own academic institutions, seeded by researchers and groups who are concerned about these issues. As we have seen, open access matters not just for the REF, but for the wider public good. It is integral to what universities stand for. If universities and the research undertaken there are funded by the public then the public undoubtedly has the right to access it without further financial obligations.[41]

There are many steps institutions can undertake to achieve this objective. Universities spend a significant amount of money in licenses to access commercial publications. Some of these funds could be redirected to support open access projects both within and outside the institution, for example, through collaborative work of researchers. Professional bodies too have a role to play in assisting the development of sustainable OA platforms, in association with organisations such as the OU, JISC and others. And finally Research Councils' policies and the design of the REF itself need to turn much more significantly towards OA in the future.[42]

Radical OA journals in Law: two brief case-studies

In this section we shall give two brief case studies of change to OA, which exemplify how the more radical version of OA can work in legal scholarship, and how this work can be better supported.[43]

The *European Journal of Law and Technology* was originally founded as the *Journal of Information, Law and Technology* (JILT). JILT was a project of the UK Higher Education Electronic Libraries Programme (eLib), namely the Electronic Law Journals (ELJ). ELJ in turn was a collaborative project undertaken by the two centres that comprised the Computers in Teaching Initiative, namely the Law Technology Centre at Warwick University, and the Centre for Law Computers and Technology, at Strathclyde University. The journal was from the start an entirely open journal, possibly the second-oldest open access law journal in Europe. It flourished under the aegis of the two centres and BILETA. In 2010, under new editorial direction and using the open platform of the Public Knowledge Project (PKP) it became the *European Journal of Law and Technology*.[44] It has an International Advisory Board and is co-edited by two Editors and a Technical Editor. The journal is also supported by a team of Associate Editors and a Book Review Editor. Day-to-day technical issues are mostly dealt with in-house. The publication has an ISSN and is available free of charge in a completely open access format. The journal does not charge authors any article processing charges. Copyright within the articles published remains with the authors and is not assigned to the journal.[45]

The journal is still linked to BILETA in a number of ways. The BILETA conference covers the theme of technology law (broadly defined) and the use of technology in legal education. The conference has

long been supported by the European Journal of Law and Technology (which, in turn, receives funding support from BILETA) which dedicates a special issue of the journal each year for the conference. The success of BILETA conferences and the publications that lead to it has nurtured a strong community of specialist lawyers many of whom found their academic careers taking off on the strength of the publication opportunity afforded by the conference and the journal special issues. It has encouraged collaborative work among the IT law fraternity, both nationally and internationally, which has led to further research activity and outputs by building a community of researchers working within IT law and legal education. None of this would have been possible but for the vision and efforts of the founders of BILETA and the journal.

The EJLT offers a classic example of how true OA journals can be run by researchers with minimal funding support within academic institutions, without the help of commercial third party publishers. Queen's University Belfast has hosted the journal since 2010 free of charge and the editors volunteer their time without any financial remuneration. The funding support offered by BILETA is used to pay a modest fee to the technical editor who assists with the formatting of articles into HTML and PDF versions.

There are certainly areas that the journal could improve on with further funding support – for example, the look and feel of the journal (it currently uses a basic OJS theme) can be improved.The article delivery format also could be broadened to include audio format such as MP3. This will render the journal more accessible to those with special needs, which the editors are aware of and plan to implement in the near future subject to funding.

A further area where the journal is at a disadvantage over commercial publishers is in relation to copy editing. Whilst most commercial publishers employ dedicated copy-editors, the EJLT relies on the editors themselves for this task. This is a particularly time-consuming element of the editorial process, especially due to the international diversity of our authors not all of whom are native English speakers. The journal, in the spirit of its mission to disseminate high quality research, assists with language-level proofing wherever possible, although the expectation is that authors are ultimately responsible for ensuring that the submissions are of a suitable standard for publication in terms of English language. It would be possible to obtain the services of a copy editor with further funding support, something which universities are in a good position to help with both financially as well as in terms of personnel.

There are some 'hidden costs' in the current working model of the EJLT. The journal receives a steady stream of submissions from all around the world. The time devoted by the editors could range typically from 2-4 hours a week (and more in busier periods nearer to publication), is unaccounted for in terms of 'research time'. Most of the editorial work is carried out in the editors' own time, typically at weekends. Whilst universities generally encourage research-active colleagues to engage in editorial work for journals, it is also the case that there is often no recognition for such activities in their formal workload. Institutional level recognition in formal workloads for editorial activities will encourage more researchers to undertake such duties who otherwise struggle to find the time amidst other academic and administrative commitments typical in the Higher Education sector.[46]

In spite of the limited resources available, the EJLT has made a significant contribution to the dissemination of research and scholarship in the areas of technology law and legal education by publishing high-quality articles for over twenty years. Universities should prioritize supporting similar initiatives, which can be achieved at a fraction of the cost currently spent on supporting external, commercial publishers. Redirecting some of the costs incurred in expensive subscriptions

and open access fees can be better utilized in offering support for researchers to set up their own open access journals within their institutions. In that way, universities will serve not just as producers of knowledge but also its disseminators. It is a solution that is more ethical and more collaborative, and will restore to the public the research for which the public purse has paid.

Many of the points that can be made of the EJLT's current practice can be made also of the *European Journal of Current Legal Issues* (EJoCLI) http://ejocli.org/. This is the oldest fully OA law journal in Europe, first published in 1995 under the title the *Web Journal of Current Legal Issues* and based at Newcastle University in the UK. Editorial control then passed to Queen's University of Belfast and now is held at Lancaster University. The journal publishes 3 to 4 issues a year, usually with one special edition, edited by a guest editor. The publication also has an ISSN and is available free of charge in a completely open access format.

Despite the potential for such a journal to be deemed somehow not of a similar standard to "traditional" paper law journals, the EJoCLI continues to attract high-level articles across the breadth of legal scholarship and has been widely cited. Many of the published articles have been submitted as part of REF returns and the journal attracts those with a strong commitment to free and open academic publishing. From an editorial perspective, it is liberating to be in a position to disseminate such important work without the need for any other input than from the academic and stakeholder communities producing, reviewing and, ultimately, engaging with the research.

The journal's ethos rests upon the key aim of enabling instant, free access to excellent research without the need for a publisher to act as a gatekeeper or intermediary. The journal benefits from an academic editorial team holding reasonable web editing skills so can carry out the relevant processing and publication in-house, without attracting any costs. This editing is carried out using the Open Journal System, a free of charge editing platform that, to date, has supported journal development by being an intuitive, easily manageable piece of software. The journal's editor carries out these tasks alone, without assistance and this works well until potentially difficult issues arise with, for example, the email system. In the future, an approach will be developed that harnesses the skills of the relevant academics, many of whom have a strong commitment to OA publishing. However, in general the open access, technology-focused aspects of the journal are not ones in which there is a need for further support; it is the management of reviews and revisions that is the weightiest task, in which the journal mirrors that of more traditional publications. For an OA journal, though, the peer-review process is an essential guarantee of quality and standards in each article or production. It is all the more significant to OA journals because they exist beyond the commercial system. Similarly, the Editorial Board is an essential feature for an OA journal, for this network association ensures to readers and potential authors and editors the quality of the publication as a whole. However given the cost in terms of time and effort to editors, we would advocate experimentation with new models of editorial teams, and new models of peer review.[47]

While an OA journal has the advantage of a relatively quick publishing turnaround from submission, the process is still heavily dependent on the ability of reviewers to respond within a reasonable time. Again, this is an issue common to all peer-reviewed publications, but is more of an issue for editors in a purely online journal, where authors often expect quicker turnaround of reviews. Furthermore, despite the lack of any real paper-based limits in relation to word count, the approach taken is to deem anything more than 12-14,000 words as overly long. One of the assumptions of publishing in this way is that much longer pieces, often large sections of PhDs or Masters theses, will be acceptable but the editorial approach is to seek to publish cohesive, focused pieces, usually with a word length of under 14,000 words. Our approach is governed by the same sense of genre propriety that compelled early printers to splice rubrication of text into their workflows, as noted earlier.[48] In

our case, the constraints of paper-based publishing could potentially be completely rejected, but in both journals the format of the legal research article persists.[49] As far as journal length is concerned, there is no real limit to the number of articles each issue can contain, and each journal's editors make decisions based on quality as well as other factors. Sustainability is crucial for a completely paper-free publication and care is taken to back up the journal on an on-going basis.

Both case studies show that an entirely OA approach to legal journal publishing can succeed. They are remarkably cost-effective approaches to running a diamond open access journal. By comparison with most corporate journals, the interface is sparse; and this could be considerably improved. If professional bodies and other HE organisations were to co-operate on the issue it would be feasible to set up a structure such as UCL's Ubiquity Press, but one that would guarantee truly OA access, with no charges of any sort, and with much more sophisticated interfaces.[50] When JILT was first custom-designed and implemented, the cost was considerable. Now, with interfaces such as OJS, the cost is much reduced.

The financial implications for universities to host their own open access journals that serve to disseminate their research is minimal compared to the license fees paid towards open access fees and subscription costs. Whilst online repositories that hold editor-accepted manuscripts under the Green OA policy meet the objective of knowledge sharing to a certain extent, the limitations placed on these by publishers (for instance the citation rules, and the general perception that the manuscript versions are not quite the same 'standard' as the published version) renders it a piecemeal solution. To be sure, universities will still need to have access to historical work already published by corporate publishers. But as more OA journals set up, more rebellions happen, more governments take control of public assets for the good of the public and not private shareholders, then universities could, instead, divert some institutional funds to establish and promote open access journals that really make their research open and accessible to all without barriers.[51]

Conclusion

As relatively recent research from Germany has shown, the determinants of OA publishing are complex, and 'one-size-fits-all' is unlikely to deliver a framework that will encourage OA (Eger et al 2015; see also Bakker et al, 2017). In the UK, Finch is a disappointment and has left HE libraries entangled in ever-steepening debt to corporations whose primary motivation is their own profit. Academics have ignored the Platinum / Diamond solution, and have gone so far as to leave the 'version of record' of articles in the hands of commercial publishers, leaving only a pre-print in the institutional repositories. The issue here is that we sign away copyright to the publishers in a new model of economic and data asymmetry that would have been inconceivable to earlier scholarly periods. Publishers, who do scarcely any of the real work in producing research, benefit the most from it financially. The result of this parasitical business model is described well by Peter McPherson, President of the Association of Public and Land-Grant Universities, from a US perspective:

> As publishers have merged and become more powerful, universities are often paying more for publishers' markups. The federal government makes massive investments in researchers, staff and facilities to advance knowledge; publishers do not. Universities similarly make big investments in research. University faculty generally are the authors, editors and reviewers of the articles coming out of that research. To get their articles published, faculty usually must transfer significant copyrights to the publishers. Then the publishers sell back to the

> universities the very content they as a group produced, and at steadily higher subscription prices. The system is fundamentally broken. (McPherson 2015)

We agree. Fundamentally knowledge is a public good, and should be a commons, not a subtractive resource (where one user reduces the pool for everyone) as it is presently treated by corporate publishers. This has wider implications for the good of society. Benkler puts it well when he describes commons as 'a particular institutional form of structuring the rights to access, use and control resources' (Benkler 2006, 60). Guédon presents the case against corporate publishers equally well in his analysis of their case:

> [Elsevier] provide an analysis entirely constructed around an economic, rather than a communication, imperative. Designing an optimal communication of scientific information is thoroughly subordinated to 'the business of a business'. Communication may have been once the 'essence of science', but it is now back-pedalled to the point of fitting an exclusively profit-seeking motive. (Guédon 2015, 33)

As we observed at the start of our article, communications and the materiality of research has been important to research content. We saw that digital profoundly alters research production; and through the article we have seen that it can work for the common good of research if we take seriously the capacity of OA to release knowledge and its positive effects in society. Guédon again:

> In observing the evolution of Open Access itself, the powerful effects of digital culture and of networks should also be at its centre. In no case should economic interests be allowed to interfere with the full potential of a free communicating system designed and destined to help humanity – the whole of humanity – grow knowledge. (Guédon 2015, 38)

We believe that scholarly literature needs to return to the visions of the founders of the internet. In our Introduction we quoted Ted Nelson, whose Project Xanadu, first outlined to the world in 1965, was a vision of global access to all knowledge that is still not realised, over half a century later. In the world of scholarly serials (itself a small subset of total global knowledge) we are as far away as ever from Nelson's vision being realized. We need to return to a contemporary equivalent of that early vision of a 'most audacious and specific plan for knowledge, freedom and a better world yet to come out of computerdom'.[52] To achieve this end, we would advocate the following. The list is not comprehensive.[53] Nevertheless it provides a useful perspective from OA editorial points of view, which is not often represented in the research literature of OA legal journals:

1. Recognition that Open Access is a social as well as an intellectual movement, and that for OA to realise its full potential the conversation around culture change has to include regulators, government bodies with responsibility for research, and professional bodies, as well as academic and research institutions.
2. Further research into how our discipline might manage the transition to OA publishing. We need to consider not just economic perspectives, but factors such as innovation diffusion theory, social factors and disciplinary drivers (Weckowska et al 2017), as well as the use of technologies such as blockchain to ensure the quality and research record within processes such as peer-review (Pluto Network, 2018)
3. Funding for current lobbies by recognised OA legal communities such as global Legal Information Institutes, and journals such as JOAL, to press for greater recognition of radical OA routes to legal knowledge, its production and dissemination.[54]
4. The creation of co-ordinated action: for example, hubs of related radical OA journals, within law schools, centres, networks.

5. Institution- and law school-level policies that actively encourage researchers to publish in diamond/platinum OA journals.
6. Funding support from a range of funders for initiatives that further this cause, including setting up OA journals within institutional frameworks.
7. Encouragement by Research Councils and the REF for legal researchers to undertake more and active editorial responsibilities; and for this to be recognised as integral to submission and to impact.
8. Active editorial responsibilities to be timetabled into formal workload models in law schools, and recognised in both REF and TEF as intellectual, labour-intensive activities.

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[2] See for instance Suber (2018), Horowitz (2017) second edition. Peter Suber's timeline of the OA movement at http://legacy.earlham.edu/~peters/fos/timeline.htm is an invaluable resource, and demonstrates the global reach of the movement. University of California Irvine Libraries has a useful selective timeline at https://guides.lib.uci.edu/c.php?g=334324&p=2249888.

[3] See for instance Suber (2016)

[4] Ray McAleese, in an early edited collection of essays on hypertext, quoted Nelson thus:

> I have in front of me, as I write, an *autographed* copy of [Nelson's 1965] *Literary Machines*. Ted Nelson's cover to his own book claims '… this book describes the legendary and daring Project Xanadu, a step on the road toward an instantaneous electronic literature; the most audacious and

> specific plan for knowledge, freedom and a better world yet to come out of computerdom; the original (and perhaps the ultimate) hypertext system – do not confuse it with any other computer book'. (McAleese, 1999, vi)

[5] The literature on this is substantial and various. For evidence of unsustainability see McPherson 2015. For evidence of Elsevier's profits 1991-2013, see Larivière et al 2015, 'Discussion and Conclusion'. For the latest account of the largest journal publisher, Elsevier, see Matthews 2018, who notes a 2017 profit margin, of 36.8%, unchanged from2016, equating to a dividend pay-out of £762M to shareholders. For an account of the full labyrinthine complexity of Elsevier's dealings with universities on journal subscriptions (including the use of confidentiality clauses), see Tim Gowers' blog at https://gowers.wordpress.com/2014/04/24/elsevier-journals-some-facts/. Gowers notes Elsevier's practices such as 'double-dipping' i.e. charging for journal subscriptions in bundles, and then charging again under APCs or Article Processing Charges. See Scott Morrison, 'Secret Blogging Seminar', at https://sbseminar.wordpress.com/2014/05/21/elsevier-in-australia/ on the similar situation in Australian universities. Other critical initiatives include The Cost of Knowledge (thecostofknowledge.com). George Monbiot (The Guardian) cites a Deutsche Bank report on Elsevier that applies to corporate publishers generally:

> We believe the publisher adds relatively little value to the publishing process … if the process really were as complex, costly and value-added as the publishers protest that it is, 40% margins wouldn't be available.
> (Deutsche Bank AG 2005, 36)

In addition Elsevier has made it a strategy to buy up platforms where articles were distributed openly – e.g. Mendeley, SSRN and recently (August 2017) bepress. As Roger Schonfeld observes, Elsevier is moving 'beyond content licencing to preprints, analytics, workflow and decision-support' (Schonfeld 2017). We have used Elsevier as a metonymy for corporate journal publishers as a whole. Each is different in their approaches and corporate strategies of course, but all pose similar problems for scholarly communities and for the dissemination of knowledge in society.

[6] By contrast, prominent funding bodies such as the Wellcome Trust have positioned themselves strongly in support of unrestricted access to research outputs and this has translated to open access (OA) playing a key role in the UK's Research Excellence Framework.

[7] For an overview of 'editorial mutinies', see Straumsheim (2015); and for inside comment on the resignations, see Samson (2015). Since then whole national communities eg in the Netherlands have mutinied, contradicting those such as Esposito who described the issues as a 'tempest in a teapot' (Straumsheim 2015). At present, the academic community in Germany is resisting Elsevier's pricing monopolies.

[8] For the ongoing story of Elsevier's attempt to publish *Lingua*, see Bakovic 2015; 2017.

[9] Matthews (2018) is only the latest in a series of articles in the *Times Higher Educational Supplement* on the subject of rising costs faced by our libraries. As is noted many times in the literature, sheer volume brings huge cost savings for publishers. It is expensive to design and maintain a single website, much cheaper to do that for 100 or 1,000 websites.

[10] BOAI (2002), first paragraph (http://www.budapestopenaccessinitiative.org/read).

[11] BOAI (2002). The Open Archives Initiative 'develops and promotes interoperability standards that aim to facilitate the efficient dissemination of content'. Note that OA journals are sometimes called the 'Diamond' solution by some, and the 'Platinum' solution by others. We term it here 'radical OA'.

[12] See for example Donovan et al (2015), Harnad et al (2004), Hajjem et al (2006), Gargouri et al (2010).

[13] Guédon (2015, 3). See also the Wellcome Foundation 'Statement on data sharing in public health emergencies'. Of the major corporate journal publishers, only Springer Nature signed up to the Statement (Wellcome No date)

[14] See Harnad (2012) for comment on the Finch Report. For an update on the costs of Finch, and speaking from the discipline of Law, see a recent Editorial in *feminists@law* which stated that we have arrived at a situation in which we are paying more but still do not have open access to academic research. According to the authors, the compelling argument made by the Finch Report was that 'results of research that has been publicly funded should be freely accessible in the public domain. This has not been delivered' (Hunter and Alessandrini 2017, 8). Hunter and Alessandrini argue instead for their original solution, namely what they term 'Platinum' journal access (sometimes referred to as 'Diamond' access), and defined as those journals that give 'immediate open access to readers but do not charge APCs to authors, relying instead on low-cost web platforms, 'free' academic labour and/or alternative revenue sources' (Hunter and Alessandrini 2017, 1-2).
[15] For a tracked example of costs, see 'Article Processing Charges and open access January to July 2017' (Murtagh 2017), where in a sobering infographic the author states that during this period Imperial College approved 625 APCs, paying a total of £1,077,957.45 in order to make 625 articles open access – spending that had increased by 20% from the same period in the previous year. It is true that block grants are made available by RCUK to assist research-intensive universities recover some of the costs of APCs. But this only applies to academics in receipt of RCUK grants, and not all institutions receive such block grants; and the future of the block grant is in doubt after 2018 (see http://www.rcuk.ac.uk/documents/documents/2015-16-blockgrantallocation-pdf). Murtagh also points out that in the same period Imperial 'also freely made 1,843 articles open access!'.

[16] See Bohannon (2016) for the scale of free exchange on Sci-Hub, and the various reasons why users prefer to exchange than to access the same papers through their libraries.

[17] Last year Elsevier launched a successful legal action against Sci-Hub – see Schiermeier (2017).

[18] See for example the debates on the RA21 project, which aims to optimize 'protocols across key stakeholder groups, with a goal of facilitating a seamless user experience for consumers of scientific communication' (https://ra21.org/index.php/what-is-ra21/). Co-chaired as it is by the Association of Scientific, Technical and Medical Publishers, it is hardly surprising that this work is sited firmly within the domain of commercial access to knowledge, and does not challenge the for-profit basis of access to knowledge. See Roger Schonfeld's comments on the blog post at https://scholarlykitchen.sspnet.org/2018/02/07/myth-busting-five-commonly-held-misconceptions-ra21/ , and his own perceptive blog post at https://scholarlykitchen.sspnet.org/2018/01/22/identity-everything/

[19] See Elsevier (No date). Examples of the tools include the SciVal suite, the PURE system and other analytical services.

[20] See for instance the evolution of the *incipit* or the first few words at the start of a manuscript into a printed title-page (which was almost unknown in manuscripts) – Smith, 1994, 35-6.

[21] This is disputed in the scholarly literature. Febvre and Martin (2010, third edition) agree with Eisenstein's estimate, but the figure is disputed by Johns (2000).

[22] He lists the inventions of 'cylinder presses to replace Gutenberg's flatbed press, of rotary presses that print both sides of a page in one operation, the use of pulped wood in place of pulped rag, the invention of folding and stitching machines. All these increased exponentially the volume and standardization (though not necessarily the quality or longevity) of printed productions, and all took place before 1870.' (Maharg 2016, 120, n.18)

[23] This is true of many industries affected by digital transformation. Indeed in most cases, the fundamental nature of the industry undergoes change. Uber appears to be in the taxi business but does not own taxis; Airbnb deals with rented property but is neither agent not property-owner; Amazon sells everything, but has no shop-fronts. In all these examples a corporation has built a digital infrastructure that is parasitic upon earlier custom and practices; and the innovative corporation can build powerful monopoly in the market place precisely because regulation of its activities is much less restrictive than the mesh of regulation surrounding earlier industries such as taxi-driving (and taxi-manufacture), hotels and motels, or bricks and mortar retail. To be sure, regulation still applies to the digital disruptors in all three industries, but in each case the volume is

less to date, and regulators have struggled to keep pace with the speed at which digital innovators spawn new versions of disruption.

[24] And of course these could be supplemented by the many for-profit 'next generation' research tools such as Revel and Casetext. See Lee et al (2015).

[25] The Open Access Directory gives a timeline of the OA movement, starting with pre-2000 activities to the present.

[26] See, https://www.springer.com/gp/about-springer/media/press-releases/corporate/springer-journals-increase-impact-factors-in-2014/679030

[27] See for example Walker et al (2010)

[28] See for example Sangster (2015). As he puts it in his abstract, 'Tarring everyone with the same brush because of the journal in which they publish is inequitable. We would not allow it in other walks of life. It is time the discrimination ended.'

[29] Callaway E (2016). Journal rankings and JIF of course benefit publishers and enables them to market not only individual journal titles but 'bundles' of subscriptions to institutions, and their monopolistic positions on journal titles gives them power to insist on modes of marketing and point of sale price.

[30] Casadevall A et al (2016).

[31] For this and other reasons the UK Society of Legal Scholars in at least two consultation documents has opposed the use of bibliometric rating in the Research Excellence Framework exercise (REF2021), preferring a model of peer-review. In the Consultation on the second Research Excellence Framework it was stated: 'Quantitative measures are generally not appropriate for Law for reasons of jurisdictional specificity and the insularity of US student edited journals, which dominate the key citation indexes. In addition, arrangements for collecting quantitative data relating to citation of monographs and contributions to edited volumes, both of which are significant forms of high quality output for legal scholars, are, as yet, undeveloped.'
(Available at http://www.legalscholars.ac.uk/wp-content/uploads/2017/05/SLS-Response-to-REF-framework.pdf
See also the SLS's Response to the Stern Review, available at https://www.legalscholars.ac.uk/position-papers-consultation-responses/

[32] To an extent this can be mitigated by measuring contextual citation impact, through weighting total article citations against the total number of citations in a subject field (called SNIP or 'source normalized impact per paper); but again, this assumes a highly developed research citation system, which law, unlike most STEM disciplines, does not have. Much more useful to the research community is the development of 'Dimensions Badges', which are 'interactive visualizations that showcase the citation data for individual publications' (Liu, 2018). Close analysis, however, does reveal interesting variables. In a valuable study of particular types of legal scholarship on SSRN, Siems discovered that 'a short title, a top-20 university affiliation, US authorship, and writing about topics of corporate law and international law have a positive effect on downloads and/or abstract views' (Siems 2016, 170).

The power of altmetrics was recognised by the Stern Review of REF2014, which recommended a combination of bibliometrics, peer-review and altmetrics to be used in the judgment of quality; but which sidestepped the critical detail, and the wider social and democratic deficits of relying upon corporate publication systems.

[33] The manifesto is hosted on the home page of altmetrics.org. For analysis of the impact of bibliometrics and altmetrics on impact, see Holmes (2014). The debate on the utility of altmetrics is by no means over. The Altmetric Blog has a posting that reveals how altmetrics are linked to 3* and 4* impact scores in REF2014 impact case studies – see Konkiel (2017).

[34] See Schimmer R et al (2015). According to the authors, articles in OA have a market share of 13% (which does not include the hybrid model of OA).

[35] A Wellcome Trust study shows that the payment of both subscription costs and open access fees mean an extra 1-1-.5% cost from research funding. See, Van Noorden R, 'UK research funders suggest liberated open-access policy', *Nature news blog* 14 March 2012 (http://blogs.nature.com/news/2012/03/uk-research-funders-suggest-liberated-open-access-policy.html)

[36] Solomon and Bjork (2012).'Hybrid journals' offer open access for individual journal articles, alongside a traditional subscription model. The average APC levied by a hybrid journal is $2727, compared to $1418 in a true OA journal.

[37] Charges for 24 hour access for an individual article in the Information and Communications Technology Law journal (Taylor & Francis) is £30 and the fee for purchasing the whole issue is £267 (see, for e.g. https://www.tandfonline.com/doi/full/10.1080/13600834.2017.1393929). The International Journal of Law and Information Technology, an OUP journal, charges £35 for a single issue at personal rates (institutional rate is obviously higher at £111) – see, https://academic.oup.com/ijlit/subscribe/SingleIssue

[38] The financial aspect aside, online versions also have the advantage of quick updating by authors in addition to the other benefits of value-added services available in the online environment.OUP's Online Resource Centre, for example, offer supplementary content to textbooks including updates, question banks, suggested answers and exam guidance.

[39] Tennant et al (2016). Note that greater visibility does not require increased citation. This is not an argument for greater bibliometric precision in Law, but a simple recognition that OA leads to more access to research.

[40] *Ibid.* Note that the F1000Research platform that hosts this article provides a good example of a highly sophisticated portal for peer review. It is of course a proprietary, commercial solution that charges APCs (see https//f1000research.com/for-authors/article-processing-charges); but it is an example of the sort of research environment that could be developed for OA.

[41] The Research Councils UK (RCUK) OA block grant allocations for 2016/17 were worth a total of £14 million and distributed across 79 institutions. The block grant is provided to support the RCUK open access policy, which in other words is paid as open access fees to publishers in order to make publicly funded research accessible to the public. For the full list of allocations for 2016/17, see http://www.rcuk.ac.uk/documents/documents/2016-17rcukopenaccessblockgrantawards-pdf/. ElSabry (2017) has constructed a useful typology of the interfaces required between scholarly and scientific bodies, and social organisations that would benefit from free access to their data.

[42] In this respect the Stern Report's treatment of OA (Stern (2016), with OA mentioned only twice in the entire report) was a disappointment. Future reviews and policy documents in the field of REFs should be much more exploratory, experimental and future-oriented in their OA policies.

[43] Disclaimer – the article's authors are editors of the journals. We do not cite the journals as anything other than examples of entirely open legal journals.

[44] See Maharg and Nair(2016)

[45] For the EJLT copyright policy, see http://ejlt.org/about/submissions#copyrightNotice. Universities largely leave the assignation of copyright to authors and do not claim for the institution, an issue dealt with in RCUK guidelines based upon the recommendations of the Stern Report.

[46] The counter argument to this is that research universities allocate 'research active staff' a notional overall time for research which encompasses all research activities – and journal editorships could be seen as part of this. The reality is that with the limited time available researchers will need to prioritise their own published

outputs, research grant applications and conferences, which leave them little time for undertaking other duties.

[47] For an experiment in new models of peer review, see Maharg & Duncan (2007), where they outline forms of peer review based upon transparent community comment.

[48] This is a powerful driver for online research activity. The huge success of Sci-Hub (https://scihub.org/) as a hub for online scientific research is based largely on its intuitive interface designed for scientific communities.

[49] It may be that in the online journal article the genre itself will undergo significant change, in the way that digital platforms have introduced the concept of 'long form journalism' to online newspapers. We believe that this will take longer to evolve, however, since it requires a fundamental reconsideration of many other factors, including those affecting submissions to the UK's Research Excellence Framework, and its equivalents in other jurisdictions.

[50] Most universities in the UK have in-house IT departments, and hosting an open access journal can be easily done without much financial implications, either using open platforms such as PKP or within the institution's own infrastructure. There are also other cost effective and open source third party hosting services available within the EU that provides alternative options. The coming into effect of the General Data Protection Regulation would potentially have implications of where there the journal is hosted and is a relevant consideration in choosing the hosting platform.

[51] For a good discussion on how universities can support the development of institutional repositories as a platform to publish original content in emerging open access journals, see Bankier J-G, Perciali I (2013). Also see Giesecke (2011)

[52] *Supra,* note 2.

[53] For more detailed analyses, see the advocacy of Peter Suber, listed at Poynder (2017).

[54] JOAL – Journal of Open Access to Law, https://ojs.law.cornell.edu/index.php/joal/index.