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Title: **The scholarly publishing landscape**

Abstract

The last 50 years have seen, perhaps more than at any time since the invention of the printing press, massive changes in research and publication practices. There has been an explosion of journals, papers, and researchers with the globalisation of research and the insistent demands of publishing metrics on scholars across the planet. The period has also witnessed the increasing specialisation of journals; the concentration of publishing into fewer corporate hands; the growth of multiple, even mega-authorship; an increasing strain on the review system with a decline in the reviewer pool, the move to online publishing; the diversification of publishing genres; and the dominance of English as the international language of scholarship. The quantification of research outputs as a basis for funding and career advancement means there is now greater pressure and more explicit incentives among academics to publish. This fiercely competitive context has created an environment in which plagiarism, salami slicing of studies and paper retractions have all increased. It has also generated a new breed of publisher, established on the basis of the 'writer pays' Gold Open Access model, which threatens research standards and publishing ethics by guaranteeing publication following cursory 'peer review'. This chapter discusses this changing landscape.

1. Introduction

The last 50 years have seen, perhaps more than at any time since the invention of the printing press, massive changes in scholarly publishing. There has been an explosion of journals, papers, and researchers with the globalization of research and the insistent demands of publishing metrics on scholars across the planet. The period has also witnessed the increasing specialization of journals; the concentration of publishing into fewer corporate

hands; the growth of multiple, even mega-authorship; an increasing strain on the review system with a decline in the reviewer pool, the move to online publishing; the diversification of publishing genres; and the dominance of English as the international language of scholarship. This increasingly crowded and competitive academic marketplace has created an environment in which plagiarism, salami slicing of studies, and paper retractions have all increased. It has also generated a new breed of publisher, established on the basis of the 'writer pays' Gold Open Access model, which threatens research standards and publishing ethics by guaranteeing publication following cursory 'peer review'. This chapter discusses this new landscape.

2. The massification of academic publishing

Once the preserve of gentleman scholars with private means and a desire for self-improvement, academic publication is now an enormous industry that dominates the professional lives of academics across the globe. It is thought that there are as many as nine million scholars working in 17,000 universities seeking to publish in English-language journals each year (Bjork et al, 2009) with some 10,000 publishers generating revenues of US$25 billion annually (Johnson, Watkinson & Mabe, 2018). The number of papers produced is also staggering, with over 3 million new peer-reviewed articles each year (Johnson, et al, 2018). When the US$ 3 billion scientific book market is added to this, and the growing volumes of poor-quality research published in predatory (or fake) journals, we can see that academic publishing is a significant academic and financial force.

This is a time of unprecedented growth in academic publishing. There are now more journals, more scholarly papers, more publishers, more co-authorship and, crucially, more academics, many writing in a language which is not their native tongue (Hyland, 2015). Both the number of articles and the number of journals has grown steadily for the past 350 years, with the greatest increases in recent times. Bornmann and Mutz (2014), for instance, have identified three phases in the development of scientific communication, with growth rates tripling in each phase: from less than 1% per year up to the middle of the 18th century, to 2 to 3% up to the 1930s and 8 to 9% to 2012. The Global scientific output is now doubling every nine years. In 2018 there were about 33,100 active scholarly peer-reviewed English-language journals plus 9,400 non-English-language journals (Johnson, et al, 2018). One of the largest journal publishers, Elsevier, reported over two million articles submitted and one billion consumed in 2019 (Page, 2020).

One key factor in this expansion has been the migration to online publication and the retrospective digitization of earlier hard-copy content, greatly increasing access to the scientific literature while reducing cost per unit. The main driving force, however, is the number of publishing academics worldwide. The latest UNESCO statistics report 7.8 million full-time equivalent researchers in 2013, an increase of 21% since 2007, or around 4-5% per year (UNESCO, 2017). The World Bank puts the total at 8.9 million, with most of the increase among emerging economies as countries recruit scholars to expand their higher education system to gain a foothold in the global 'knowledge economy'. But while publications in non-English-language journals count as part of a country's output, these have dramatically lower numbers of citations.

The fact that English is the language of the overwhelming majority of journals listed in prestigious bibliographic databases means that most publishing authors are now writing in a second language. This is a development viewed with alarm by some journal editors concerned with standards of written English. Visibility, of course, is all-important, and statistics show that academics all over the world are increasingly less likely to publish in their own languages and to find their English language publications cited more often. While many academics recognize that a lingua franca assists the exchange of ideas more effectively than a polyglot system, there is serious concern about the dominance of English on two main fronts: First, that it is accelerating the decline of alternative languages of scholarship, leading to domain loss for many languages, and second that it excludes many EAL (English as an Additional Language) writers from publishing, so depriving the world of knowledge developed outside the Anglophone centers of research. This is, then, a politically charged and complex area.

The biggest driving force in the growth of academic publishing, however, has been the quantification of research outputs as a basis for funding and career advancement. The globalization and commercialization of the academy mean that researchers have found themselves in a culture which measures 'productivity' in terms of the number of papers they produce and the citations they receive on those papers. The promotion and career opportunities of scholars across the globe are increasingly tied to an ability to gain acceptance for work in high profile journals. There are also financial rewards with many universities in China and Iran offering substantial sums to encourage academics to publish in international journals indexed in the *Web of Knowledge* SCI databases, with inducements of up to

$165,000 for a paper in *Science* or *Nature*, a sum 20 times that of a newly hired professor (Na & Hyland, 2016; Wei et al, 2017).

These pressures clearly impact academic life in important ways, reducing, for example, the time that can be devoted to editing journals, reviewing papers, mentoring students and teaching. This intensive measurement regime also means that scholars must spend their time scrambling to publish whatever they can manage, rather than in developing significant research agendas, sometimes leading them to sacrifice detailed, longitudinal and novel studies for shallowness, repetition and trending topics. This has also led to a process known as 'salami slicing' or fragmenting single coherent bodies of research into as many publications as possible. This sidesteps strict editorial policies against duplicate publication by breaking a single research paper into their "least publishable units".

Another strategy, growing in the sciences, is the use of 'publishing pacts' where researchers work as a team and add each other's names to papers which they may not even have read, let alone written. Interestingly, the number of authors per paper doubled from 1.8 to 3.7 between 1954 and 1998 (Mabe & Amin, 2002), and the Economist (2016) found the average number of authors per paper in Scopus grew from 3.2 in 1996 to 4.4 in 2015. There are numerous reasons for this, from increased specialization, technology, and social media links, but with all authors of a paper getting equal 'credit', pressures on academics to increase their outputs is certainly one of them. In addition to such 'guest authoring', the career rewards now associated with publishing have increased a variety of dubious practices such as plagiarism and a black market of 'paper selling' which offers authorship of papers written by ghost authors and accepted by SCI journals (Hvistendahl, 2013). Retractions of papers by journals are also increasing (retractionwatch.com), although remain relatively rare, with only about four in every 10,000 papers affected.

3. Publishing practices: journals, books and blogs

The appraisal culture and massive increase in the number of journals have encouraged a shift away from book publishing, a relentless drive towards ever-greater specialization, the strengthening of journal status hierarchies and the imperative to reach new audiences.

The market for books in STEM subjects (Science, Technology, Engineering and Medicine) has shrunk dramatically in recent years, with income from growing but much smaller e-book

sales yet to replace it. There has also been a decline in citations to books (RIN 2009). While books are important in the humanities and social sciences, with up to 75% of citations to monographs in some fields (Zuccala & van Leeuwen, 2011), there has also been a decline in the popularity of books in the soft knowledge fields (RIN 2009). So, in 1980 a scholarly publisher could expect to sell 2,000 copies of a history book but this had declined to 200 by 2005 (Dalton, 2008). Today a book is doing well if it sells 200 copies in its first year.

The rapid pace of modern scholarship, as well as the desire to focus on very specific topics, means that shorter treatments become increasingly important. Classicists now have over 100 journals to choose from, for example, and historians well over 1,000 (SJR http://www.scimagojr.com/journalsearch.php). The culture of evaluation makes authoring monographs less attractive as not only are there considerable difficulties in measuring their 'quality', but institutional auditors typically value 3 or 4 articles more than a book. In addition, the fact that articles are online makes them both more available and more visible, especially as publishers now aggressively promote them through email 'alerts' to readers. Many publishers, in fact, have moved to 'article-based publishing', putting papers online as they are ready without waiting for an issue to be compiled. Navigation to articles is increasingly driven by search rather than browsing, so, having found relevant content through a search engine, specialist database, or their library's online catalog, researchers spend very little time on publisher web sites, dipping in to collect what they need for later reference.

Although journals are being undermined by article-based publishing, the popularity of their content remains undiminished. *The Review of Higher Education*, one of the field's most prestigious publications, for example, temporarily suspended submissions in 2018 due to a two-year backlog of articles awaiting publication. Journals not only remain the main vehicle for disseminating and archiving knowledge, but their position has been strengthened by the rise of evaluation systems which assign a value to an article by the quality of the journal in which it is published. There is, of course, a hierarchy of journals. 90% of cited research is published in just 10% of journals while 50% of all citations from the 11,877 journals in the 2019 *Journal Citations Report* came from only 400 journals (Clarivate, 2020). The disparity between top-ranked and other journals, moreover, may be growing as the ease of online access has led to a narrowing of scholarship in which researchers tend to cite the same small pool of more recent studies.

With increasing submissions, the journals market is becoming ever more specialized and fragmented, with almost every disciplinary niche congested with titles. Specialism generates new journals so, for instance, there are now 61,300 dentistry journals listed in Pubmed and over 700 in language and linguistics on SJR. The journal brand is the badge of quality which researchers rely on when deciding what is worth reading from the mass of published material. Journal hierarchies have become the means of judging the integrity of individual research in a literature which has grown too large to judge in other ways. This hierarchy is influenced by a range of factors including the journal's timeliness of publication, peer review practices and the reputation of its contributors, but most importantly is its impact factor.

There are several indices of journal impact, such as the Immediacy Index, Eigenfactor, or H-Index; the most influential among evaluators, however, is the Journal Impact Factor (JIF). This measure reflects the yearly average number of citations to recent articles published in that journal but is controversial when extended to evaluate papers in a journal or to assess an individual researcher. This is because a few highly cited papers can dramatically increase the impact of average or less significant papers. Even disregarding editorial efforts to game the system, while highly prestigious journals publish many outstanding papers, they do not publish *only* outstanding papers, and neither do they have a monopoly of outstanding research. Academics, and evaluators, recognize this, yet continue to use the measure as an indicator of research 'quality', strengthening the journal hierarchy in each field and increasing the competitive pressure on academics.

It is also important to mention new publishing venues beyond books and journals. The institutional imperative to reach new audiences and sponsors has encouraged scholars to engage new audiences in new genres. Funding bodies, governments and cash-conscious universities are increasingly insistent on involvement with the private sector and in applied work. More scholarly publishing therefore takes the form of consultancy documents, patents and reports. The mantra of 'knowledge exchange' also means taking research to wider publics, so that lay audiences can access the products of their tax dollars. The most significant means of facilitating this wider dissemination is the academic blog, an increasingly important genre to disseminate information, express academic views and publicize research. By breaking down boundaries between public and private communication, they offer a space for scholars and interested publics to discuss and evaluate research through a more informal and accessible style of communication (Zou & Hyland, 2020).

4. Peer-review practices: challenges and innovations

The deluge in submissions to ever more journals poses serious challenges to a core principle of academic publication: its system of quality control. Peer review underpins how academia sees itself as a fair, consistent and impartial enterprise. For readers overwhelmed by the volume of literature, it acts as a filter, for writers it provides an indication of how other researchers understand their contribution. It is the guidance of useful feedback which is usually responsible for bringing 'Revise and Resubmit' papers to publication. Most centrally, however, peer review helps screen submissions for publication. Unreviewed research on personal websites is regarded with skepticism by the academic community and a recent study shows that the more revisions a paper undergoes, the greater its citation impact (Rigby, Cox, & Julian, 2018). Moreover, scholars seem committed to it. 84% think that without peer review there would be no control in scientific communication and virtually all believe that their own papers were enhanced by peer-review (Publishing Research Consortium, 2016).

But while often seen as the cornerstone of academic credibility and fundamental to the development and integration of new research (Hyland, 2015), the massive scale of publishing is putting a huge strain on the creaking peer review system. The journal *Nature* receives over 10,000 manuscripts a year, for instance, and Elsevier's online submission system processes 120,000 new manuscripts per month. This surge in submissions demands more reviewers. So, just one publisher, Elsevier, made use of 700,000 peer reviewers in 2015 alone to conduct 1.8 million reviews (Reller, 2016). However, with the population of researchers growing, the *proportion* of reviewers is shrinking significantly. Reviewing is now a marginalized part of an academic's role, with increasing work demands allowing little time for it. The burden, moreover, falls particularly heavily on senior academics and US researchers (Warne, 2016), while Chinese authors, among the most prolific of submitters, submitting twice as much as they review (Warne, 2016).

While anonymity might help prevent personal bias, blind reviewing can make reviewers less accountable so although most reviews are collegial and supportive, some are caustic, rude and unhelpful (Hyland & Jiang, 2020). Actual bias in peer review, however, is hard to prove and difficult to completely avoid as reviewers have pet theories and approaches. More serious, perhaps, is that reviewer agreement is little better than chance (Rothwell & Martyn, 2000) and it is just not feasible to get the six reviews for every paper needed for statistical

reliability (Fletcher & Fletcher, 2003). Peer review is also poor at spotting fabricated data or plagiarism. With the deluge of papers, growing reviewer workloads, and increasing journal specialization all journals encounter increasing difficulty in identifying willing readers with the time and expertise to review and questionable work can slip through.

Various solutions have been suggested to address these problems. Some publishers, for example, reward reviewers with free online access to the journal or certificates for their work while *Nature* and PLOS put reviewers' names on published papers to acknowledge their contribution. Additional training has also been initiated by several medical journals and recommended by the UK House of Commons Science and Technology Committee (2011). Certainly, junior scholars would like institutional recognition for reviewing (Warne, 2016), but studies suggest that training packages have little impact on the quality of reviews (e.g. Callaham & Tercier, 2007).

More dramatically, some journals have moved to an open peer-review system, where both authors and reviewers know the identity of each other. This might increase transparency and encourage reviewers to be constructive, but it comes with the potential to create animosity between authors and reviewers. *The British Medical Journal* (*BMJ*) adopted this system some 20 years ago, and all PLOS journals now offer authors the option to publish their accepted manuscript alongside the editor's decision letter, reviewer comments and authors' responses. *Nature* and *PLOS Medicine*, however, have had problems with open peer review because of higher refusal rates, increased delays and non-engagement of authors and reviewers (Lee, Sugimoto, Zhang, & Cronin, 2013). More radical is the idea of post-publication peer review where papers are published immediately after a light check by an editor, opening comments to the judgment of a broader audience. This deters authors from submitting low-quality manuscripts and allows reviewers to claim credit for their contribution (da Silva & Dobranszki, 2015), although engaging outsiders runs the risk of operating as social media 'likes' with only hot topics taken up positively and dissenting opinions voted down.

5. Business practices: Writer pays, mega journals and predatory publishing

Scholarly publishing is very big business. Profit margins of 35% at the top end of the market are common, so that Elsevier, for example, saw operating profit up 3% to £982m in 2019, (Page, 2020). These kinds of profits have seen publishers acquiring top-drawer journals from non-profit societies over the past 30 years and consolidating their positions into fewer hands.

Just three for-profit companies (Reed Elsevier, Springer and John Wiley) now account for 42% of all the articles published. Savage cuts to library budgets have barely dented publishers' profits with the average price of an academic journal rising by 6% a year, faster than inflation and beyond library budgets. For libraries, a key complaint against the large publishers is not only the high prices but the practice of bundling subscriptions to lesser journals with valuable ones, forcing libraries to spend money on journals they don't want in order to get those they do want. These notorious 'Big Deals' lock libraries into long term arrangements for more journals.

These huge profits are, of course, the result of the fact that the content of journals is provided free by unpaid authors, peer-reviewers and editors and boosted by a reduction in publishing costs such as proofreading, typesetting, copy editing, printing, and worldwide distribution by online publishing. Journal publishing operates in a skewed market where, because every journal has a monopoly over the information of its field, journals compete more for authors than subscribers. Without normal market mechanisms, publishers have few constraints on the prices they charge. This artificial inflation is shown most clearly in the trend of large publishers to increase prices more than small publishers, when in traditional markets high volume and high sales enables cost savings and lower prices. This unsustainable economic model has created a backlash from both scholars and libraries. The 'Cost of Knowledge' boycott by academics against the business practices of Elsevier, for example, meant that over 5000 academics worldwide refused to publish or perform peer review services for its journals. While the movement now seems to have run its course (Heyman et al, 2016), there is still considerable discontent about high subscription prices for individual journals and Big Deal bundles. As a result, many large university libraries in the US and UK, as well as the British Library, have canceled their Big Deal agreements with the major publishers (Anderson, 2017).

The pricing crisis and desire for reform has helped fuel the Open Access movement, which makes published scholarly content (articles, monographs, conference proceedings, etc.) available online, free of charge to users, free of most copyright restrictions, and free of access barriers such as registration. OA has been the single biggest change in science publishing this century. Between 2000 and 2010 the number of OA journals grew at 18% a year and the number of articles by 30% a year (Laakso et al, 2011) as publishers 'backfilled' archived material on OA. More than 50% of the scientific papers published over the last decade can

now be downloaded for free on the Internet (European Commission, 2015). The *Directory of Open Access Journals* lists nearly 5 million OA peer reviewed papers and 14,430 journals (April 2020) while Scopus claims to have over 10 million peer-reviewed articles freely available. 60% of conventional subscription journals are also now hybrid, offering an OA option to authors, and it is estimated that OA journals now make up about 26-29% of all articles published, with 5% more available via delayed access and another 12% via self-archived copies (Taylor, 2017).

OA has largely been driven by the idea that research funded by the public purse should be available to the public and that removal of access barriers allows the fruits of research to be exploited and knowledge to advance more quickly. In the UK all authors funded by Research Councils are required to publish their work in open access and the Research Excellence Framework, the system for assessing the quality of research in UK higher education, will only accept submissions that are available by OA. The Chinese Academy of Sciences now requires its members to deposit articles in OA archives one month after their publication and the US Office for Science and Technology Policy has directed federal agencies with R&D expenditure over $100m to make research results freely available 12 months after publication. The European Commission has also announced an OA policy for the European Union and recommended member states to adopt OA.

Essentially OA is actually three models of access: Gold, delayed and Green. Gold Open Access is where the paper is made freely available immediately after acceptance by the publisher to whom it has been submitted, with the production costs recovered from the author's research budget or institution. Delayed, like Gold is a subscription-based model but with an embargo on when the paper becomes available. Green Open Access is where authors self-archive their work, either as 'grey' non-reviewed literature or as a version of a paper accepted by a regular peer-reviewed journal. Papers are hosted on the author's personal webpage or university repository, but there are an increasing number of specialized open-access websites. The Registry of Open Access Repositories (ROAR), for example, lists over 4725 repositories in addition to academic databases such as *ResearchGate* and *Academia.com*.

Open access seems to reduce publication delays and has the potential to increase the reach and visibility of research, with some evidence that articles receive more downloads and citations than paywalled articles (eg Tang et al, 2017). But there are also problems. It is uncertain, for example, whether an author-pays model is sustainable for the humanities, where much longer articles and lower acceptance rates mean that it costs over three times as much to publish an article as it does in the sciences (Waltham, 2009). There is also concern that the model may freeze out authors in low-income countries and may jeopardize quality assurance by peer review (Taylor, 2017). Critically, OA does not provide a solution to scientific publishing's most serious funding problems. Several major universities ended their financial support of BioMed Central's Open Access Membership program in the late 2000s, for example, as 'Article Processing Charges' (APCs) soared. The aggregate cost to institutions rose by an average of 11% per annum between 2013 and 2017 (Pinfield & Johnson, 2018) and libraries have found themselves paying more than under the old subscription model.

Gold OA has also created two new breeds of publishers: the megajournal and predatory publishing. The "megajournal" sector, including platforms such as *PubMed Central* (PMC) for biomedical and life sciences and the *Public Library of Science* (PLoS) for the sciences more generally, have proved highly successful and represent a major innovation in scholarly journal publishing. The journals are characterized by a broad subject scope, encompassing either multiple disciplines or a single large discipline such as medicine or physics; a rapid "non-selective" peer review based on "soundness not significance"; and an Open Access business model based on quantity and competitive APCs (Wakeling et al, 2017).

There is evidence, however, that megajournals are in decline. *PLOS ONE* grew to become the world's largest journal, publishing more than 30,000 papers at its height in 2013, but its output fell by 44% by 2018. Another megajournal, *Scientific Reports*, saw its article count drop by 30% in 2018. With acceptance rates of over 50% and by publishing replication studies and negative results that might be rejected by traditional journals, megajournals could be expected to do better. It seems, however, that publishers have not yet persuaded the research community of their value and megajournals collectively published only 3% of the total number of papers globally in 2018 (Brainard, 2019). They remain relevant as an option

for European authors however, due to low publishing fees and funders who require that their papers be free to read on publication.

The other major publishing innovation to emerge from the Gold OA model is less benign: the massive increase in predatory, fraudulent and mediocre journals. This unsavory parallel trade, which charges high APCs to authors and waives quality control, has been possible because of the large sums of money now available through research grants and publication allowances, particularly in the hard sciences, and the desperation of academics to get their research published. Unlike legitimate journals, they bombard academics with spam emails, misrepresent their country of origin, often fabricate their editorial boards, accept almost all submissions and overstate the rigor of their peer-review processes, generally accepting anything submitted.

Shen and Bjork (2015) estimate that there were 8,000 such journals in 2014, generating $75 million in revenues, while Cabells' Blacklist currently lists 12,000 journals with over 1,000 more under consideration for inclusion. Cabells employs 60 weighted criteria to identify predatory behavior covering integrity, peer review, vagueness over fees, and indexing and metrics (Toutloff, 2019). Red flags include the absence of a named editor or a claim of international scope that is contradicted by a lack of geographical diversity in the editorial board. The biggest red flag, however, is a promise to publish within a short timeframe, such as a week, an impossibly short time for a comprehensive peer review. *Think Check Submit* (http://thinkchecksubmit.org/), a cross-industry website devoted to helping researchers identify trusted journals, claims that about 1,000 new journals are launched each year and most are 'predatory'.

These journals pose a serious threat to the integrity of scholarly communication by publishing work that is plagiarized, fabricated or based on unsound methods. They also risk contaminating genuine open access journals by association. The presence of these journals on legitimate databases and platforms such as Scopus and PubMed does not help matters. The publishing industry has responded by tightening its codes of conduct and by collaborating to form *Think!Check!Submit!* as a resource for scholars to verify the credentials of publications. The Directory of Open Access Journals also responded by cleaning its database over 900 suspect journals (Anderson 2014).

6. Conclusions and speculations

Scholarly publishing is currently in flux. The establishment of an institutional appraisal culture, by focusing on the number of papers published by individuals and universities, discourages the sharing of resources and ideas and replaces it with a highly competitive environment where each individual or research group is working for him or herself. The structure has created a system in which research is booming, with numbers of researchers, journals and papers continuing to multiply, journals becoming increasingly specialized, hierarchical and concentrated in fewer hands, and multiple authorship growing. On the other hand, traditional peer review is at risk due to the volume of submissions, publishing ethics are under pressure, libraries and scholars are despairing of a journal subscription model which seems exploitative, and publishers are in the midst of a transition to an uncertain alternative basis of funding.

It would, of course, be wonderful to end on a positive note; to be able to say that scholarly publishing is in the process of resolving these issues and moving towards a new age. In this imagined future, research is freely shared, technology supportive of a reward system based on quality, peer review is transparent and rewarded, and evaluation criteria are independent of journal brands. Unfortunately, this is not the case and what the future holds for publishing is anyone's guess.

Clearly any system needs to harmonise and coordinate four elements: quality control, certification and reputation, access and storage, and incentives for engagement. It is likely that the journal article will remain with us, in some form, for the foreseeable future. It has incredible staying power and after 350 years is actually making serious inroads into disciplines where the monograph has traditionally occupied the same space, although new models are likely to gain acceptance and familiarity. Publication will always need to be wrapped in some form of quality assurance and validity measures and we can expect networked technologies to increasingly offer innovative models in this regard. This could allow multiple formats - videos, code, visualizations, text, data – to be published and for communication and peer review to become a combined, community-governed process. In this scenario, the quality of engagement, or how individuals make use of the material, rather than the Impact Factor, becomes the gold standard of success. Finally, Gold Open Access has not been able to reform an unsustainable funding model. Scholarly collaboration networks may offer a viable alternative in empowering librarians and facilitating shared content, as do

initiatives such as the Global Sustainability Coalition for Open Science Services (SCOSS).

A recent report to the European Union (2019) sees strengths in the current system and proposes a vision for the future of scholarly communication with collaboration between all stakeholders. The report, moreover, places changes to the research evaluation system at the heart of reform, seeing 'scholarly societies and researcher communities as best positioned to affect change across all aspects of scholarly communication' (ibid p 6). Clearly, concerted efforts by publishers, institutions, academics, funders and editors will be needed to effect the reforms needed, but it is certain that scholarly publishing is going to see even more changes in the next decade.

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