Scholarly Communication, Scholarly Publishing and University Libraries. Plus ca change ?

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Abstract

The scholarly communication and research evaluation landscape is locked into historical paradigms which inadequately reflect the opportunities of the digital era. Why hasn't the Internet disrupted the practices and the economics of scholarly publishing? The article traces how university library budgets have become dominated by a small number of multinational publishers and attempts at scholarly communication change have only had limited impact, despite the opportunities for increased global distribution of research scholarship. Open access initiatives are assessed in relation to future scholarly communication change in which university libraries play an increasing role in campus scholarly ecosystems.

Scholarly communication has been defined (ACRL 2014) as 'the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use'.

Who owns scholarly knowledge in the twenty-first century? Is that future to be research driven or publisher driven and what role will universities and their libraries play in new scholarly communication frameworks?

Griffin (2014) has called into question the efficacy and fairness of current models of scholarly communication. University library budgets are currently dominated by Big Deal subscriptions, which are decidedly profitable for a small number of multinational publishers. Scholarly content has moved from an historical relatively open information commons to an expensive firewalled multinational publishing environment, which Drahos and Braithwaite (2002) have termed 'information feudalism'.

In any discussion of scholarly communication, one should briefly return to the beginning of scientific publishing on 6 March 1665, with the *Philosophical Transactions* of the Royal Society, the first peer-reviewed scientific journal. *Philosophical Transactions* was published under the editorship of Henry Oldenburg, who wrote in the first issue of the *Philosophical Transactions*, that potential contributors are: 'invited and encouraged to search, try, and find out new things, impart their knowledge to one another, and contribute what they can to the Grand design of improving Natural knowledge . . . all for the glory of God, the Honour and Advantage of these Kingdoms, and the Universal Good of Mankind' (Oldenburg 1665). Serving God has now perhaps become serving Mammon and the 'Universal Good of Mankind' has become the watchword of the Open Access (OA hereafter) movement.

The *Philosophical Transactions* were meant to provide a focus for registration and distribution of scientific articles rather than a means for making excessive profits, although sustainability was clearly an issue from the beginning. The *Transactions* was priced at three times the average quarto pamphlet as the buying public was not large for this sort of content (Moxham 2014). By 1800, external sales of the *Transactions*, which then totalled 300, did not recoup the printing cost and were thus subsidised by the Society.

Henry Oldenburg, the editor, moreover, was not paid a regular salary but rather relied on gratuities from the Royal Society. Oldenburg was no different to many current academic editors of scholarly journals who receive little, or no remuneration, for the long hours that they contribute to editing profitable publisher owned journals. Bernard (2014) in his account of editing the *English Historical Review*, reveals the staggering amount of personal time given by him to editing this admittedly prestigious journal, major issues in the peer review process and the time taken for articles to appear from original submission date.

Frosio (2014), in his comprehensive survey *Open Access Publishing*, notes that both the *Philosophical Transactions,* and its French near equivalent the *Journal des Scavans*, were 'characterised by the fact that scholarly associations of the state were supporting the system, construing publication as a public good rather than a commodity'.

At the UK Serials Group 2014 conference, Dr David De Roure, Director of the Interdisciplinary e-Research Centre at Oxford University, questioned (De Roure 2014) the future of scholarly communication and whether scholarly papers would remain viable in the future. An obsolete scholarly communication system impedes innovation and hence return on investment.

Worlock echoed this theme at the Cambridge Fiesole conference in April 2014, when he commented, 'goodbye journal, hello research support', suggesting that evidential data could be even more important than articles in the future, that peer review will be mostly post-publication and format will be less relevant than data in the networked world (Tenopir 2014).

The predictions of scholarly communication change have been numerous, however, in the last 30 years. Many commentators, including this author, have expressed bemusement, as to why the scholarly publishing environment has not been 'disrupted' with the advent of the Internet. Clarke (2013) comments, 'when Tim Berners-Lee created the Web in 1991, it was with the aim of better facilitating scientific communication and the dissemination of scientific research. Put another way, the Web was designed to disrupt scientific publishing. It was not designed to disrupt bookstores, telecommunications, matchmaking services, newspapers, pornography, stock trading, music distribution, or a great many other industries'.

Large publishing firms, particularly in the STEM disciplines in the United Kingdom and the Netherlands, have argued to their respective governments that changes to the current publishing model, would lead to the loss of publishing jobs in those countries and therefore their industries should be 'protected'. When considerably more jobs have been lost by global technological change, such as in the car, music and traditional bookselling sectors, it is not quite clear why publisher profits, some over 35% per annum, should be so ring-fenced. Disruptions are needed in the complex ecology of scholarly communication in order to rebuild a green and fairer scholarly publishing land.

Snapshot of scholarly serials and libraries 1933 - 1970

Early concerns about serial issues were expressed by the American Association of Research Libraries (ARL) in 1933. An ARL memo noted the resolution passed by the Medical Library Association, 'That no library subscribe to any periodicals which do not have a fixed annual subscription price for the entire annual output of volumes or parts. That such price be stated in advance, and also the number and parts to be issued per year. . . Unless definite word comes to that effect MLA recommends cancellation except for one library in each of 6 to 10 zones throughout America . . . Particularly galling was the 1951 increase of *Chemical Abstracts* from $20 to $60 for institutional subscriptions, while the individual subscription price remained at $15.' (Stam 1992).

This subscription difference between individuals and instituions was an early example of the divide and rule or 'Jekyll & Hyde' syndrome, as Guedon (2001) has termed it, in scholarly communication. This is where the individual

researcher, divorced from institutional responsibility, adopts one attitude as an author and another as a reader.

Thus, an academic as an author, when funded by an institution and/or the taxpayer, gives away his or her research to a publisher, usually renouncing personal copyright in the process and then subsequently freely peer-reviews it. The publisher then sells back the content to universities through their libraries in the subscription process.

If total costings were to be assessed in terms of the 'free' content donation to publishers, then the costs of facilities such as laboratories, libraries and other resources would need to be taken into consideration. Towse (2014) estimates that 'the overall subsidy of academic time (not to say value) is a large figure and one that our paymasters may not have a handle on.'

As a reader, however, the researcher wants immediate free access to global research at the desktop. Researchers are largely unaware of, or indifferent to, the costs of the scholarly communication process and are largely oblivious to the fact that most people outside of the university subscription firewalls are unable to access scholarly content.

The influence of the European publishers in serial publishing slowly grew in the 1950s, but their influence dramatically increased after the Western post-Sputnik boom in higher education and research funding, which not only saw the establishment of many new universities but also a proliferation of publishers and titles to meet the huge demand of library purchasing, particularly in North America.

If one could turn back time, the 1960s were a key point in the history of scholarly communication. It could be argued that universities, who were often responsible, through their presses at the turn of the twentieth century for distributing their own university research, missed an opportunity to enter into realistic partnerships with publishers, and also retain control of the intellectual content of their researchers output.

Snapshot of Australian university libraries and serial issues 1975-1995

Australian libraries suffered, until the advent of electronic delivery and cheaper air freight, from the tyranny of distance in terms of communication for most of the twentieth century. When this author arrived at the Australian National University in August 1976, surface mail, which was then the only economic way of sending the bulk of serials, was taking nearly three months to reach Australia from Europe. The high Australian dollar masked some of the serial

subscription costs in the 1960s and early 1970s, but most of the larger university libraries were deficient in stock, both collectively and retrospectively, compared to British and American libraries and needed to build up retrospective collections.

The first of a number of serial crises hit Australian libraries after the Haydon Labor budget of 1975 and dramatically increased with the devaluation of the Australian dollar through the 1980s and 1990s.The annual meeting of the Council of Australian University Librarians (CAUL hereafter) in August 1975, noted periodical inflation prices ranging from 15% to 45%, depending on disciplines.

By the 1979 August meeting, the University of Melbourne reported cancelling $85,000 worth of subscriptions because of high serial inflation. They were, however, maintaining a serial-book ratio of 50:50. Now largely due to continuing serial price rises, most university libraries have an 80:20 ratio, or worse, in terms of traditional print monograph purchase.

Serial cancellations and attempts at national or regional collection rationalisation were to become common agenda items for CAUL throughout the 1980s. Rereading the CAUL minutes of this time has been a rather dispiriting exercise. A memorandum, for example, by the Librarian of Murdoch University, V. Nadanasabapathy, on the crisis in library budgets and serials budgeting, registered 'extreme horror' and called for national action by the Australian Vice Chancellors' Committee, or the then Tertiary Education Commission, the latter long since removed as a buffer between universities and the federal government.

At the August 1982 CAUL meeting, it was felt that CAUL should develop a more active political voice. The story of Australian University Librarians trying to influence national bodies and governments on scholarly publishing issues and rationalisation would easily fill several separate articles, but the need for university libraries to engage in the political arena, both locally and nationally, is more essential than ever in 2014.

Steele (1992) noted in his Introduction to *Australian Tertiary Libraries: Issues for the 1990s* that 'no clear picture emerges of the Australian library future, but then given the higher education changes, the lack of direct library input to financial decision makers, and the rapidly technological developments, it would be remarkable if it did.'

Steele (1995) was a little more optimistic, because of Internet growth in universities, that change would occur, when delivering the UK Follett Lectures

'New Romances or Pulp Fiction? Do Libraries and Librarians have an Internet Future?':

> The ultimate question will be whether the academic community still need commercial publishers? . . . In an electronic publishing context the evolutionary transition will occur from the preprint or e-mail discussion point to the availability of data via the 'final' product of an electronically refereed article on a learned society server. Subjects as diverse as mathematics, astronomy and economics already have pre-print servers. The place of the current commercial publishers, particularly in the scientific arena, will dramatically change. Costs could be reduced dramatically if electronic article provision by the owner or learned societies became the norm.

Yet again, however, hopes were dashed and the status quo largely remained with electronic delivery replicating print models of format and cost.

Snapshot of American university libraries and scholarly communication issues 1979 - 2009

American institutions began to recognise that a wider approach to scholarly communication issues was required. The 1979 American Council of Learned Societies (ACLS) publication, *Scholarly Communication. The Report of the National Enquiry* was the result of a comprehensive three year research effort, which recommended that all universities should become more involved in, and supportive of the scholarly communication processes in their universities.

Lumiansky (1979) in his Foreword to the ACLS Report, saw the need to bring together

> the various constituencies involved in scholarly communication- the scholars themselves, the publishers of books and learned journals, the research librarians, the learned societies-all components of a single system and are thus fundamentally dependent upon each other . . . it follows that the numerous problems which the system faces can be effectively solved only if the individuals working within one part of the system are fully mindful of the other parts before decisions are taken.

But this Report, like others, such as that from the Mellon Foundation in 1992 (Cummings 1992), foundered in terms of scholarly communication change, largely because of the conservative attitudes within academia, a lack of political power by librarians and a collective inability by university leaders to impose change across universities.

Abel (1999) looking back on the ACLS Report after twenty years, also cited the similar reasons for the lack of action, such as 'the bureaucratic game is by nature a political one', the publish or perish syndrome, and that the strategic

'reposturing of the library to regain its active centrality to its numerous constituencies' had not occurred'.

In the 1980's, the still large budgets, by Australian standards, of American university libraries also tended to mask detailed discussion of scholarly communication issues in general, and serial prices in particular. This changed to some extent, however, in 1986-87, when serial prices jumped over 18%. The then Executive Director of ARL, Duane Webster, hoped that ARL actions would 'catalyse a global movement focused on scholarly communication' (Case 2009a).

ARL subsequently established a Committee on Collection Development which had the aims, 'to communicate the nature of the problem with external constituencies and to engage in advocacy programs; to orchestrate actions to introduce greater competition between commercial publishers and to form partnerships to examine scholarly publishing processes' (Case 2009b). The launch in 1998 of the Scholarly Publishing and Academic Resources Coalition (SPARC) has had a significant impact, particularly in lobbying and for scholarly communication change.

Case realistically concluded, in her review of ARL activities in North America from 1989 to 2009, that scholarly communication was 'an issue well beyond the scope of libraries to solve on their own' (Case 2009c). Case was correct in arguing that 'integrating library expertise and services into the workflow of the faculty will be critical to the future of scholarly communication' (Case 2009d) These words are even more cogent in terms of university library activity in 2014.

The Big Deal and university libraries

While there was growing frustration amongst some of the ARL membership by the mid-1990s, in terms of the inability to deal with the scholarly communication problems, some relief was found in the 1990s by the introduction of the so-called Big Deals. Purchasing most, or all of, a major publisher's serial output was initially seen in the 1990s as a way for libraries to maintain and even decrease subscription costs, while increasing access to content, particularly at the desktop. These were either funded by universities, particularly in North America, or by government support in the first instance, such as in the UK and Australia.

Librarians, by and large, welcomed the Big Deals in the 1990s and it is only recently that they have realised, that the power of a small number of multinational publishers has grown inexorably within library budgets and over the scholarly publishing landscape. So librarians, having been ready partners in

the setting of the Big Deals, now need to be more proactive in debates about the restructuring of scholarly communication frameworks,

Okerson a long time major player in the university library and consortia field, has made the following comment (Gillingham 2013):

> Unfortunately, the biggest deals have turned in many cases into fire-breathing dragons that seek out and consume as much as they can devour of library budgets. It's increasingly evident that this is a poor situation all around, for library budgets, for readers, increasingly marginalized disciplines, and even for competition. (My worry here is that the same Big Deals are now coming into place for the journal publisher's e-books, with potentially similar downsides) . . . Questions inevitably arise: is the individual journal title identity now being lost as it sinks into the Big Deal? Or, perhaps with the growing interest in altmetrics, will the article's visibility supplant that of the journal?

Big Deals have thus proven to be a Trojan horse. University libraries let in the multinational publishing horse, which emerged to dominate library budgets. Odzlyko (2013) has commented that major publishers have proved increasingly adept in the control of scholarly publishing in recent decades and 'In the process they are also marginalizing libraries, and obtaining a greater share of the resources going into scholarly communication.'

Crawford (2013) came to a similar conclusion 'if things continue along the same line as they have from 2000 to 2010, the damage done may become irreparable, as a growing number of academic libraries become little more than subsidised article transfer mechanisms'.

In the context of the 2012 Finch Report, *Accessibility, Sustainability, Excellence: how to expand access to research publications,* (Finch 2012*)* in the United Kingdom, librarians have become increasingly involved in the operation on campuses of article processing costs (APCs). It could be argued, here, however, that here libraries are acting in a more proactive manner in the management of scholarly publishing on campus.

The "Researcher Decision Tree", as Jacobs (2014), has called it, is becoming ever more complex on campus as relevant staff work through "OA journal mechanics". Jacobs' flowcharts cover a multiplicity of issues, financial, copyright, Research Council compliance, publisher policies, etc. Installing the new scholarly communication "plumbing" on campus requires flexible and interoperable infrastructures, in which librarians should be partners.

Australian scholarly communication initiatives 1993 - 2014

Williamson (1997) has noted the importance of the 1993 Conference, *Changes in Scholarly Communications Patterns: Australia and the Electronic Library*, held in Canberra. This brought together 'for the first time in an Australian context the various players in the scholarly communication chain and, in hindsight, the 1993 Conference can be seen as a significant milestone and a catalyst for significant joint action in the area of scholarly communication in the Australian context' (Williamson 1997).

The success of this conference, the proceedings of which were subsequently published (Mulvaney and Steele 1993), led to the Federal Government allocating $5 million from the National Priority Reserve Fund for funding Australian datasets for the period 1994-1996.

The Australian datasets program followed the UK concept, but not the overall delivery mechanism. It aimed to provide staff and students of Australian universities with improved access to a range of information. The CAUL oversight program also included developing mechanisms to improve the dissemination of information, particularly the works of Australian scholars. In subsequent years, the responsibility for the Big Deal datasets became the responsibility of individual universities to fund, although often acting collectively to gain consortia deals.

Another attempt to effect scholarly communication change came at the end of the 1990s, following university budget cuts and the continuing low exchange rate of the Australian dollar against northern hemisphere currencies. A group of Australian University Librarians, under the banner 'Research Libraries Fighting Fund' formed an alliance of agencies, Academies and librarians, the Coalition for Innovation in Scholarly Communication (CISC hereafter).

CISC recognised the need for high level academic involvement. The Coalition's Chair was Professor Malcolm Gillies, then ANU Deputy Vice Chancellor and also President of the Australian Academy of Humanities and the National Academies Forum. The Executive Officer was Virginia Walsh, former Executive Director of the Australian Library and Information Association (ALIA hereafter), who subsequently became the first Executive Director of the Group of Eight universities.

One key goal of CISC was to generate an appreciation of scholarly communication issues to the broadest body of stakeholders including university administrators, government policy makers and industry. To this end an important forum, *Australia's Information Future,* was held with the support of the government's Department of Education, Training and Youth Affairs in March 1999.

Gallagher (1999), then First Assistant Secretary of DEETYA, commented in the Preface, that 'it is in the national interest . . . That published research be widely available in a cost-effective way' and concluded there is some optimism for genuine and effective transformation of the research enterprise.'

CISC subsequently undertook a number of research studies, which were subsequently published, to underpin the development of a national approach to innovation in scholarly communication. Unfortunately, once more, while some earmarked funds flowed from the Federal Government, they were managed by the Australian Vice-Chancellors' Committee whose relevant subcommittee lacked the expertise of the CAUL and CISC personnel. Thus the opportunity for transformational change, however small, was lost. In addition, with changes in 2002 to key personnel within CISC, the scholarly communication initiative there lost momentum.

This historical snapshots reinforces the need for continuity and sustainability in personnel and structures in order to facilitate long-term change within political frameworks. Publishers, either acting individually or collectively, have a great deal more money to expend on direct advocacy and hospitality with academics and policy bureaucrats. University librarians have to tackle day-to-day exigencies, particularly budgetary, in their own institutions before they can contemplate collective national action. Individual universities also tend to be competitive, rather than collaborative, as the recent divisions within Australian universities have revealed with reference to the deregulation of the student market.

The high Australian dollar also, in the first decade of the twenty first century, meant there was less hardship in maintaining the publisher Big Deals and the topic of scholarly communication, as driven by serial costs issues, tended to drop off the agenda of administrators and librarians in Australia.

By the end of the noughties, CAUL was increasingly cognisant of the OA global developments, which led, in part, to the formation of CAUL's Research Advisory Committee (CRAC), with a brief that included encouraging open scholarship and repository services. CAUL has also been an active and effective player in briefings with government, especially the Research Councils to counter the arguments constantly put by the major publishers against Green OA and embargo periods.

A major Australian OA initiative came in 2012 with the establishment of the Australian Open Access Support Group (AOASG). Currently supported by ten universities through their libraries, one of AOASG's aims is to increase

awareness of the importance of OA and target advocacy to Australian research institutions, funders and the wider community (AOASG 2013). In May 2014, AOASG became a signatory to the Confederation of Open Access Repositories (COAR). The relatively small bureaucratic size of AOASG allows it to move a little faster than some of its national counterparts in terms of policy action.

Snapshot of British scholarly publishing 2002 - 2014

Prosser (2014), the Executive Director of Research Libraries UK (RLUK), has recently reflected, like many others, that the serial subscription market fails to act as a rational market. Prosser looks back, in a sort of anger, that the introduction of digital networking failed to introduce market change.

Change was certainly expected after the publication of the 2004 Report of the UK House of Commons Science and Technology Committee, *Scientific Publications Free For All*. Significant lobbying, however, by the publishers, not least to the then UK Minister of Science, ensured that this report, like a number of its predecessors, and indeed successors, failed to generate major scholarly communication change.

OA advocates understand that there are real costs to publishing, and these need to be recognised. The crucial issue for debate is to establish what are reasonable publisher profit levels and who should own the intellectual output of universities and research organisations. Houghton's numerous research studies have provided cost figures for the various processes of scholarly communication, including repositories (Houghton 2009). While Houghton's figures have been criticised by some of the major international publishers, the same publishers have never produced transparent costs for their publications to back up their criticisms.

As Houghton has recently stated:

> much of the policy debate on OA has focused on the costs. But that focus is limiting. After all, the goal is not to have the cheapest system of scholarly communication: the goal is to have the most cost-effective system. So, the focus should be on both the costs and the benefits, to enable a comparison of alternative models for scholarly communication that takes account not only of their costs, but also their benefits and what they are worth (Houghton 2014).

RLUK also, not unsurprisingly, wants to see transparency and fairness in the cost of publishing, arguing 'in order to work with publishers on establishing the true costs of open access, we need mutual transparency about costs, revenue and of news and pricing' (RLUK 2014). It is potentially reassuring to note that the various follow up actions to the 2012 Finch Report in the UK include

governmental monitoring of financial returns to publishers and the impact of article processing charges in relation to overall serial subscriptions.

The most recent developments in the campaign against the multinational publisher dominance of library budgets has come with Cambridge mathematician Timothy Gowers' 'Cost of Knowledge' campaign. While substantial numbers of the academic scientific community have signed petitions against the costs of publications, few have individually carried through, unlike Gowers, in practical terms, by resigning from editorial boards or by putting pressure on universities or libraries to change policies.

Smith (2014) has commented in this context:

> What we have not seen so far is any kind of concerted effort to break through this cycle. One reason for this has been fear of antitrust laws. Libraries almost certainly cannot organize boycotts of the worst offenders amongst academic publishers, although individual libraries are free to cancel packages and to explain their motivations publicly. In this regard it is interesting, however, to see that many of the faculty we serve are not so constrained. The multiple boycotts of Elsevier by authors and reviewers, the law professors who have announced their intention to boycott Aspen casebooks, and the faculties that have supported library decisions to cancel "big deals" all indicate that faculty authors are as fed up as librarians, and more willing, perhaps, to act aggressively.

Gowers in 2014 sought details of individual university subscriptions to the major STEM publishers through Freedom of Information requests. Gowers subsequently found that 19 UK Russell Group libraries are paying £17 million per annum to Elsevier alone, figures which sent ripples through many universities and policy makers. Only belatedly did Oxford University reveal that it is spending nearly £1 million a year on its Elsevier Big Deal. These are areas in which librarians should urge public release of their individual publisher subscription figures within their universities. Whither Australian universities in the disclosure of publisher figures?

There is no longer any need for access to information, which is now largely accessed at the individual article level, to be wrapped, not only in a serial format, but also multi-serial subscription deals. It is also illogical that universities continue to pay up to a year in advance in serial subscriptions, allowing publishers long-term use of the money before delivery of the content. This practice is again based on a print model of costings.

RLUK (2014) has also commented on subscription prices being based on historical models rather than evaluated *de novo*:

The lack of transparency means that it is not obvious why this variety exists or what factors the prices are based on. However, it is understood that a significant part of the pricing is based on each institution's level of spend on print journals from over a decade ago.

The UK Higher Education sector spent almost £210 million per year in 2013 on access to serials and databases. This is a large amount in terms of any debate of scholarly communication change. The Vice Chancellor of Cambridge University, Leszek Borysiewicz (2014) commented on the amount his university is paying to publisher Elsevier:

> Yes we spend money with Elsevier. Do I regret spending money with Elsevier? By and large yes I do because I think they're rich enough already. And I have a particular problem that many academics in reality already provide all of the information already and all they do is peer review it and charge you back for publishing it. But the way the current system is structured and the way careers progress by publication we spend more frankly because we actually have more of the highest quality staff who publish in the highest quality journals and that is a circular argument as that's why they're deemed to be the finest quality individuals concerned. So in a perfect world yes we'd spend less with publishers but I can't penalise individuals' careers by not spending that money with publishers at the moment.

And therein lies the rub and the core of the whole scholarly communication issue. There are two competing, and at the moment, irreconcilable forces operating in scholarly communication. On the one hand the recognised need for scholarly change and, on the other, the increasingly embedded publishing system, and the rewards enshrined enshrined in the dominant Thomson and Elsevier article metrics used for research assessment and University league tables.

The Digital Science study *Evidence for Excellence: Has the Signal Overtaken the Substance ? (*Adams and Gurney 2014a) emphasises academic preference in the various UK research assessment exercises towards high impact journals over other methods of assessment, including peer review. "The real substance of what academics thought was the best marker of research excellence was displaced for review purposes by outputs that gave the simplest signal of achievement". Adams and Gurney conclude, however, that in the future, we need "a methodology that convinces the academics that it is real research achievement that wins, not the version that falls out of simplistic indicators" *(*Adams and Gurney 2014b).

A similar plea comes from Cambridge academic, Sydney Brenner, Professor of Genetic Medicine and Nobel Laureate, who has called for funders and universities (Dzeng 2014) to: 'demonstrate collective leadership and

commitment by judging research quality not by publication counts but on individual merit'.

Some commentators believed that the 2012 Finch Report would lead to a downward price spiral, or at least a re-examination of serial prices. Instead, in the UK the process of what is called 'double dipping' has occurred. This is when university libraries pay annual subscriptions, but on top of these subscription payments , comes an article payment, from funders, universities, or even authors, to make articles instantly available, i.e. Gold OA. Thus the same article is paid for twice and the publisher doubly benefits.

While there is some evidence that some publishers are reducing their annual subscription charge by the amount of Gold articles within a journal, there are others major publishers who don't , `claiming that they need more data before they can reduce subscriptions. A number of universities, such as Calgary, which has an author APC fund, operating out of the university library budget, are now moving away from hybrid journals for that very reason.

Figures from the Wellcome Trust provide a dramatic insight into double dipping. Between October 2012 and September 2013, the Wellcome Trust allocated £3.8 million to release articles in journals with immediate OA. But of this sum, £3.17 million (82% of costs, 74% of papers) was paying for publications that universities had already paid for through their library subscriptions (Brook 2014).

Most of the payment for articles went to the six major STEM journal publishers. From the Wellcome funds, nearly £1 million went to Elsevier and just over £500,000 went to Wiley Blackwell, with an average cost of £2,443 to make an article OA. Brook (2014) comments, 'I'm unsure how any publisher can justify charging an academic an average cost of £2,443 to publish in a journal that is already being supported by library subscriptions from not just one university, but many universities around the world'.

If British university libraries pay £210 million per annum on scholarly material, Australian libraries pay $A203 million and the 125 ARL research libraries in North America spend more than $US1.4 billion dollars on materials, then the opportunity cost for transformative change is not inconsiderable. The crucial question is how to transform the subscription model into an article processing charge, but without the distortions seen to date in the implementations of the Finch Report.

Learned society publishing is another area where original publishing practice has become distorted by the attraction of monetary returns. Much learned

society serial revenue from publications is now largely utilised, not for more effective dissemination of their content, but rather to subsidise society activities, such as supporting conferences and bursaries.

In a recent study of learned society publishing (TBI Communications 2014), it was noted:

> By far the most significant challenge to societies relating to Open Access is seen as the ability to maintain revenues from existing publications. The challenges of the evolving and changing landscape is evidenced by nearly two-thirds of societies indicating that it is complex to understand and decide appropriate responses, with positive messages being lost in the confusion.

Another area in which dialogue with the academic community is essential

Where are librarians in the scholarly communication debate?

Librarians need to be more politically involved in this process, even if it's more advocacy than the direct exercise of political power. It could be argued that the librarians and academics on the UK Finch Committee were outmanoeuvred, perhaps outmuscled, by their publisher counterparts. Librarians often have limited authority within the power structures of their universities to make major changes in scholarly communication practice.

It is heartening that recently a number of libraries have established positions of Directors of Scholarly Communication. The latest, at the time of writing, has come from Cambridge University Library. The Library is advertising at a substantial salary level a Head of Scholarly Communication, who will:

> develop a vision and implement policies and strategies for supporting the evolution of new modes of scholarly communication in the digital environment. S/he will establish the Library as a key partner of Scholarly Communication activities across the University and act as the Library's Scholarly Communication strategist and advocate (Cambridge University Library 2014).

It will be interesting to see who will fill these positions. Traditionally, there has not been much 'big-picture' scholarly communication expertise in the middle ranks of university libraries. Sugimoto (2014) and her colleagues have argued that librarians need to move beyond being 'the gatekeepers of knowledge' in their survey of scholarly communication practices of ARL academic libraries.

The post Finch OA campus "plumbing" is bringing an increasing appreciation of scholarly communication complexities to libraries. This aspect is also been highlighted in analysis of the implementation of RCUK policy at Cambridge

University and the role of the librarian and scholar in the publishing value chain (Norman, 2014).

The role of libraries must change in any case, to include, as Carpenter (2011) and her colleagues have noted, activities, such as e-scholarship support, data management, copyright advice, scholarly publishing, institutional repositories, research metrics and peer review advice.These are areas of interest to the Ligue des Bibliothèques Européennes de Recherche's Scholarly Communication and Research Infrastructures Steering Committee . LIBER (2014) also notes that research infrastructures, which can support the development and evolution of new scholarly communication paradigms, will require new skill sets.

The University of Oxford (2014) *Digital Strategy* states access to universities, research, outputs and data will be open to all. The University of Toronto Library (2013) in its *Strategic Plan 2013 to 2018*, has pledged to engage with its scholars and the broader higher education community to support scholarly communication initiatives, including OA.

Librarians, researchers and repositories

The work of librarians with researchers and repositories is highly important. Clowbridge (2014) has argued the need for appropriate repository incentives, integration of services, and effective mediation on campuses.
But, as Kingsley (2013) has commented of repositories, 'If You Build It, Will They Come?' The academic community needs to be convinced that repositories are essential for their research enterprise and the more effective distribution and assessment of their research publications and data will ensue.

Pinfield (2014) and his colleagues have revealed that globally repositories are predominantly institutional, multidisciplinary and English-language-based. While undoubtedly English is the lingua franca of scientific publishing, there clearly needs also to be a recognition of non-English language repositories within the emerging alignment of repository networks globally.

Initiatives from the UK Higher Education Funding Council (HEFCE) will undoubtedly assist the repository situation in Britain, given the requirement to deposit articles in institutional repositories for the next UK Research Evaluation Framework (REF). This will be the first national policy to explicitly link public access with research evaluation, given that any research article or conference proceeding accepted after 1 April 2016 that does not comply with the HEFCE public access policy will be inadmissible in the next REF.

MacCallum (2014) has stated, 'This policy is a game changer. It will result in a substantial increase in the proportion of UK research that is free to read. The UK will take a strong lead compared to other countries in making research accessible'.

Even before those pronouncements, Sweeney (2014) looking back to the 2014 REF submissions, had noted that:

> the final peer-reviewed drafts of over 80% of published articles could have been archived under existing journal policies, had the authors undertaken to do so and this figure rises to 96% when looking at a sample of articles submitted to the 2014 research evaluation framework.

The fact that only 29 of the 40 Australian universities responded to the 2014 ARC/CAUL survey on OA policy is indicative that the repository function is not yet attractive enough in terms of priorities. Similarly only 11 of Australian universities have mandates for OA in a variety of forms (Barbour 2014).

The Queensland University of Technology repository has been an exception to the general rule of relatively slow institutional repository growth. QUT ePrints is the top ranked institutional repository in Australia and the ninth in the world. As of May 2014, it had 29,777 full-text publications in the repository (85% OA). For the past 12 months, the monthly download total has exceeded 250,000 while the cumulative total number of downloads is now more than 13.6 million; 98% from an external IP address (Callan 2014).

The success of the QUT repository owed much to the work of Professor Tom Cochrane, who as a Deputy Vice Chancellor of QUT for over a decade, was able to provide high level administrative and political support. The "freezing" between 2004 and 2010 of the ANU library repository, the first to be established in Australia, reveals the reverse of the QUT process, that is, when high level administrative support is withdrawn or diverted from repository advocacy and deposits.

In America, repository progress and scholarly communication change has been facilitated by executive support at the highest levels, such as at Harvard, or by budget exigencies, such as in 2013 in the University of California system. At Harvard the support of Professors Robert Darnton and Stuart Schieber enabled their academic jungle of OA to be navigated.

MIT's announcement in April 2014 that downloads from its OA Articles Collection had topped two million downloads and had had worldwide impact, is

another example where success tends to breed success in terms of academic support.

Australian university libraries have led the world with OA monographs

The opening words to be found on the *Enabling Open scholarship* website are those of Daniel Coit Gilman, the first president of Johns Hopkins University, who said of its university press, founded in 1878, that 'It is one of the noblest duties of a university to advance knowledge, and to diffuse it not merely among those who can attend the daily lectures—but far and wide'.

Givler, a former director of the American Association of University Presses, has observed that in the late nineteenth and early twentieth centuries, many American university presidents had an enlightened understanding of the limits of commercial publishing: 'To leave the publication of scholarly, highly specialized research to the workings of a commercial marketplace would be, in effect, to condemn it to languish unseen' (Givler 2002).

Universities should increasingly contemplate a move back to the nineteenth century models in taking responsibility for the intellectual content produced by their university. Not in the sense of owning it, but working with their research community, so that authors can better own and distribute their content.

For many authors, the academic monograph is the gold standard for research evaluation. Like serial articles, it is often not what you publish, but the fact that the publication exists. As most authors are not seeking, nor given royalties, and often have to find subsidies for traditional academic print monographs, it matters little to them that the average sale of a print monograph is between 150 and 300 copies. This surely ensures, that as a print monograph in world wide global access, it languishes unseen.

Eve (2012), now heavily involved in the Open Library of the Humanities has called for the development of 'research output teams' to facilitate publishing institutional libraries. In this context, Australian universities have been leading the world in full or hybrid OA models for academic monographs.

The new, or reconstituted, university presses at Sydney, Adelaide, Monash, ANU and the University of Technology, Sydney (CAUL Publishing 2014), are located in their university libraries and are part of the scholarly infrastructure of the university, rather than being a stand alone commercial entity. These five presses, published significantly more 'academic' books in 2012 and 2013 than the more established university presses in Australia at Melbourne, Queensland, Western Australia and New South Wales universities.

The ANU E Press was founded in 2003 and reached its 500th OA title in March 2014, when it was rebadged as the ANU Press, since digital is now the norm. In 2013, the ANU Press had 910,159 complete or partial downloads of its Press books with 66% of downloads coming from outside Australia and Oceania. Similarly, Adelaide University Press had just over 200,000 downloads in 2013

Like the MIT article repository, one of the main intentions of the ANU Press was to make its scholarship widely available on a global basis. It was not coincidental that the establishment of the ANU Press came with the backing of the Vice Chancellor and senior academics as meeting a perceived lack of opportunity for distributing ANU research.

The staffing of the ANU Press is relatively small with 4.5 FTE's, but then there are 22 editorial committees throughout the University involved in commissioning and peer review coordination. Scholarly publishing does call for a number of different disciplinary attributes. A point emphasised by Skinner and her colleagues (2014), indicating that scholarly publishing courses need to involve digital literacy and marketing programs, as well as traditional publishing skills.

Recognition by researchers of scholarly communication issues is essential

One of the inhibiting factors to scholarly communication change is the inability of much of the academic community to comprehend the new digital publishing environments and to confront the conservative 'publish or perish' frameworks, in which they are trapped by their university administrations, national research evaluation exercises and university league tables.

The 2012 Finch Report has brought scholarly communication issues, for better or for worse, to the forefront of discussion in British universities. If researchers, however, were confused by scholarly communication issues before, that has certainly increased as they grapple with the complexities of OA, article processing charges, changing publisher embargo periods and institutional subject repositories. Here is a vacuum which librarians should be filling in terms of scholarly communication literacy programs(Zhao 2014).

It is clear from a number of studies of academic behaviour, for example the JISC/ RLUK (Housewright 2013) survey of 3500 UK academics, conducted by Ithaka S+R, that there is a significant degree of confusion about scholarly communication practice and therefore the need for advocacy programs.

The CREATe workshop (2014) on OA publishing noted that reasons for lack of academic engagement with OA included ignorance, time pressures and issues relating to reaching agreements with publishers, apart from a fear of the publishing unknown. On the other hand, the establishment of the American-based 'Author's Alliance' in May 2014, a non-profit organisation, to help authors to share their work in a digital environment in order to serve the public good, indicates a more proactive role to enable scholarship to reach the widest possible audience.

The British Academy report *Open Access Journals in Humanities and Social Science* (Darley 2014) dramatically highlighted issues in the social sciences and humanities and particularly differences between academic disciplines. The British Academy has taken, in contrast to three of the Australian Academies, a major public interest in OA in recent years, partly because of the repercussions that they felt flowed for their sector from the 2012 Finch Report.

The 2014 Report by Phase 5 Research, documenting the publishing attitudes and behaviours of 540 Canadian science and engineering researchers, concluded that while most researchers (83%) agreed with the fundamental principle guiding the OA movement, and that 73% agreed that the scientific community benefits from OA, there were considerable reservations when it came to individual researchers actually implementing OA. (Phase 5 Research 2014)

More examples of the 'Jekyll and Hyde' syndrome emerge in the *Trust in Scholarly Communications* report from the University of Tennessee and CIBER Research Ltd (2014). This investigation, headed by long-term researchers Tenopir and Nicholas, surveyed how researchers evaluate and decide what scholarly communications to trust. A crucial phrase in the report is that 'the digital transition has not led to a digital transformation.' *Plus ca change.*

Overall, the conclusions do not surprise, reaffirming that scholars have different levels of trust and use and different criteria for publishing, reading and citing. While younger academics were more likely to be aware of social media, they were, not surprisingly, driven by traditional metrics in publishing choices.

Another conclusion was that relatively few researchers were involved in debates about transforming scholarly communication, thereby emphasising the need for advocacy and interaction with campus communities. The greatest concern for researchers in this study was an increased pressure to publish and the belief that libraries have become marginalised. In regard to this latter point, they probably fail to fully understand the role of libraries in the delivery of content to the desktop.

A recent survey of University of Birmingham researchers (Tickell and Russell 2013), also revealed the impact of publishing sticks rather than open access carrots. In relation to repository deposits, it was somewhat depressing to find in this survey that authors do not retain copies of their articles for self archiving, relying on the publisher copy for citing for research evaluative purposes. Anecdotal evidence reaffirms this to be often the case in Australia.

Tickell and Russell conclude there is a clear need here for university leadership. In this context, libraries and research offices need more than ever to work together in the future in a proactive manner to harness and improve the accessibility of the intellectual scholarship of their University. Carter (2013), then Chair of the Association of Research Managers and Administrators (UK), argues that 'Successful institutions will ensure that strategy and scholarly communications activities are mutually supportive to the benefit of both their researchers and the organization.'

The state of current Australian scholarly communication debate

As Australian governments strive for value for money and budget returns, one might have thought that the scholarly communication structures, and the amounts of funding involved in the scholarly publishing system, might perhaps have been examined in greater detail. How researchers create, disseminate, access and use research would seem to be a fundamental tenet in university life.

In contrast to the large amount of funding spent on Australian University library subscriptions, $203 million in 2013, let alone the costs of processing and associated costs, there has been relatively little funded analysis of user behaviour or scholarly publishing economics, apart from the work of Houghton. Most of Houghton's research has been funded in recent years by overseas governments and foundations. Houghton's (2013) commissioned OA research study for the Department of Industry, which contains valuable material, has so far remained unpublished.

Who is now responsible in Australia for coordinating and researching scholarly communication policy analysis? The studies and conferences funded in the 1990s and early years of the twenty-first century by DEETYA have long since disappeared under government reorganisations, so that policy is now split between the Department of Industry, the Department of Education and the Research Councils.

While the Australian Government in the past has made a significant commitment to an open government approach, aimed at providing better access to government-held information and also to the outputs of government-funded

research, a number of pronouncements and government consolidations by the Abbott Liberal government in 2014 may not necessarily bode well for OA initiatives in the near future.

Irrespective of political overview, there is a lack of joined up coordination. Perhaps the hope in Australia is to piggyback on Northern hemisphere scholarly communication and OA developments and apply them cautiously but progressively in Australia, as seems to be the case with the Research Councils.

The Australian Research Council and the National Health and Medical Research Council now have OA policies, but it took from 2005 to 2012/3 for both Councils to enact an OA policy for publications emanating from the grants. This is a reflection of both the nature of bureaucratic processes and the lobbying power of multinational publishers.

The CEO of the Australian Research Council, has stated (Byrne 2013) his wish for:

> further development of innovative and sustainable models of Open Access within Australia that will maximise the dissemination of publicly funded research. This approach is consistent with the ARC's broader aim, which is to maximise accessibility and the societal benefits arising from the research that it funds in order to boost Australia's innovation system.

The ARC's subsequent comments on research data and social impact, while necessarily cautious and limited, do reflect a strategic path on OA.

Over the last two decades, the National Scholarly Communications Forum has provided a major cross disciplinary platform for major debate on scholarly communication issues (NSCF 2014). With 23 NSCF forums held since 1994, there is certainly a sense of *Plus Ca Change* in many of the recurrent major issues discussed. The need for a cross disciplinary policy forum is however required more than ever, given the current governmental fragmentation. NSCF, however, is only a policy forum, rather than one in which direct action can be implemented.

The National Academies Forum, which was heavily involved in the 2009 NSCF *Excellence in Research for Australia (ERA) Initiative: Impacts on Scholarship, Research Funding and Publication*, has shown relatively little enthusiasm for scholarly communication issues since it became the Australian Council of Learned Academies (ACOLA). The major support for scholarly communication has traditionally come from the Australian Academy of the Humanities through the NSCF. The Australian Academy of Science, it could be argued has been

largely dominated by eminent scientists, usually wedded to traditional metrics of prestige.

When will be the tipping point for scholarly communication change?

Steele (2013) framed OA developments in Australia as 'An Odyssey of Sorts', reflecting a somewhat turbulent OA journey from the beginning of the twenty-first century to the present time. Scholarly communication, of which OA is a subset, has similarly had a stop-start journey in the last three decades.

The OA movement which is now being reflected globally, undoubtedly feeds into an a framework in which change is possible, but the reality for meaningful change will only come with a combination of top-down and bottom-up activities.

Top-down working will hopefully result from the May 2014 annual meeting of the Global Research Council (GRC) held in Beijing, China, attended by heads of public national research funding organisations. This meeting endorsed a 'state of play' report on OA, building on the GRC Action Plan towards Open Access to Publications published in 2013.This OA initiative will be taken forward by a working group, mandated to further the analysis of the consultation results, and articulate recommendations to progress. (Pan European Network 2014)

The crucial point will be translating the bureaucratic language and intent into reality on the ground. It was interesting that several of the major STEM publishers, who are not slow to lobby on OA issues, both globally and nationally, were also in Beijing at the same time as the GRC.

The 'bottom-up' approach needs to come from within universities and here libraries and research offices need to play a key combined role. Libraries need to move from being a passive recipient of scholarship to engaging in a more active role in hosting and supporting scholarly publishing on their campuses. The work of the British librarians within the post-Finch environment, ranging across a variety of scholarly communication activities, will hopefully provide global models, irrespective of differing national frameworks.

University libraries, like scholarly societies, publishers, and individual authors, are, however, only part of a complex and evolving ecosystem. The difficult challenge facing all stakeholders is how to change that ecosystem, currently almost entirely a publishing monoculture, although in theory in a digital era, it should be a field of many publishing cultures.

Poynder (2014) sees the British government's policies playing out after the Finch report as being crucial as to:

> whether the scholarly communication system is going to continue to be managed and controlled by publishers, or whether the research community has found it in itself to get into the driver's seat and begun moving full speed ahead to create a system in its own image. As the struggle plays out there will be an increasingly fierce debate over the role that institutional repositories should play in the OA publishing ecosystem . . . But it would be a great shame if this natural process of adaptation were to be unnecessarily delayed simply in order to protect the profits of a bunch of recalcitrant 20th Century publishers.

Will the publisher tail continue to wag the academic dog? It was revealing, and also disheartening, that Taylor & Francis, currently a Green OA publisher for many library and information journals, attempted to "censor" the Editorial Board of the journal, *Prometheus: Critical Studies in Innovation*, for an article entitled, 'Publisher, be Damned! From Price Gouging to the Open Road'. (Jump 2014) This article, while critical of scholarly publishing practice and the profits of major publishers, is far from being the most critical of multinational publisher policies.

It was interesting at the 1st Asian Open Access Scholarly Publishers Association (OASPA) conference in Bangkok, June 2-3, that many of the OA publishers present were essentially full Gold OA publishers. One can see how the academic community can be confused by the varieties of OA currently on offer. Advocacy and instruction by librarians is essential in this area, especially in the areas of copyright and licensing and article processing charges.

As has been evidenced, however, throughout this article, change is slow in the scholarly ecosystem, even as technology dramatically changes infrastructures in which the ecosystem operates. As the boundaries of scholarship are now "both expanding and blurring" (Lavoie 2014, the role of libraries in the digital networked environment is becoming more complex.

Research is a global enterprise, which is managed locally and therein lies another issue to be resolved. Ultimately, libraries, universities and governments have to decide whether to maintain, and indeed to protect established interests, or to increase access to global scholarship, to better serve the goals of local researchers, as well as the public good. As Shieber(2014) has noted, those that fund research, including universities, should take responsibility for its effective dissemination, which would also assist publishers and libraries to move from reader side fees to author side fees.

In that context, researchers need to be fully cognisant of issues in order to reassert themselves in the scholarly communication process, to ensure that the ecosystem returns to its original goal of distributing content for 'the universal good of mankind'.

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Bio

Colin Steele is Emeritus Fellow of the ANU. Previously, he was Director of Scholarly Information Strategies (2002-2003); University Librarian ANU (1980-2002); Deputy Librarian ANU (1976-1980); and Assistant Librarian, Bodleian Library, Oxford (1967-1976). He is the author/editor of seven books, as well as numerous articles and reviews.

He is the Convenor of the National Scholarly Communications Forum.
In 1998 he was awarded a Fellowship by both the British and Australian Library Associations, only the sixth double Fellowship in history. In 2001 he was elected an Honorary Fellow of the Australian Academy of Humanities and in 2002 received the Australian Centenary Medal for Scholarly Communication services.

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