The Open Access Interviews: John Willinsky

RICHARD POYNDER

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Born in Toronto, Ontario, John Willinsky taught school for 8 years before taking a doctorate in the study of education, and subsequently became a professor of education at the University of British Columbia (UBC). In 2008, he moved to Stanford where he is currently the Khosla Family Professor in the Graduate School of Education.

**** TO SKIP THE INTRODUCTON AND GO DIRECT TO THE INTERVIEW CLICK HERE ****

Willinsky's interest in what later became known as open access began in 1998, with his efforts to bring the evidence of research to bear on local journalism. He quickly realised, however, that his ambitions were significantly challenged by the fact that most scholarly journals required a subscription to read, and many had yet to move online.

So he shifted focus, and instead began trying to convince journals and conferences that they should go online, in the hope that this would enable greater public access to research. To help persuade editors and journals to make the move he founded the Public Knowledge Project (PKP), which subsequently evolved into a partnership with the Simon Fraser University Library (which is where the development team is based, led by SFU Associate University Librarian Brian Owen) and Stanford University.

PKP's first project was to develop an open source publishing platform called Open Journal Systems (OJS). This proved hugely successful, and by 2013 around 8,000 journals were actively using OJS as their online publishing platform.

PKP has gone on to develop a portfolio of other open source tools as well, including Open Monograph Press, Open Conference Systems and Open Harvester Systems.

Willinsky is greatly valued and respected by the open access movement, although he does not have the high public profile of OA advocates like Peter Suber, Stevan Harnad and Jean-Claude Guédon. This is partly because he was not present at key OA initiatives like the Budapest Open Access Initiative (BOAI), but mainly I suspect because he did not actively participate in the often-heated public discussions and debates that initially made the case for open access, and which brought the movement to the attention of the public.

While others were doing "the heavy intellectual lifting", says Willinsky, "I was essentially tinkering away in the garage over the software, and scrambling with Brian Owen to find funding for the master builders of OJS."

The Access Principle

This of course is far too modest, if only because it ignores the fact that in 2006 Willinsky published one of the key texts of the open access movement — *The Access Principle: The Case for Open Access to Research and Scholarship*.

The Access Principle, explains Willinsky was an attempt to establish open access as a worthy topic of scholarly treatment. "I wanted to assert that this was not simply a side line, like choosing the title of a journal, but really was part of what it meant to do research and scholarship, part of what it meant to claim to be producing knowledge for the benefit of the world."

Key to Willinsky's thinking here is a conviction that open access is above all an issue of social justice. Researchers, he asserts in *The Access Principle*, have a moral responsibility to extend the circulation of their work "as far as possible and ideally to all who are interested in it and all who might profit by it." This is important, he explains, because not doing so means "needlessly denying someone what potentially might help them and help them help others, as in providing physicians, those working in public health, or teachers the research that might assist them in their work."

And as he explains below, he has come to belief that there are also strong epistemological and legal arguments for making research as accessible as possible.

Given the serious intent of *The Access Principle* it is no short, rhetorical call to action in the manner of Harnad's "Subversive Proposal". Rather it is a measured and thoughtful attempt to provide the movement with a sound intellectual framework for its advocacy, and to set open access within the wider context of issues like copyright, economics, politics, and development.

Some evidently concluded that Willinsky's work was overly intellectual. Reviewing *The Access Principle* in 2006, for instance, MIT computer scientist Scott Aaronson complained that it is "an almost unreadably boring book." Aaronson's objection appeared to be that Willinsky had used too many subordinate clauses.

"I have to say that Scott's review has understandably stayed with me, and I have consciously tried to change my writing in light of his objection about clauses," comments Willinsky.

Despite Aaronson's reservations, *The Access Principle* picked up two awards. Ironically (some might say), both were from traditional subscription publishers. The first was the 2005 *Computers and Composition* Distinguished Book Award (the journal *Computers and Composition* is owned by Elsevier); the second was the 2006 Blackwell's Scholarship Award,

And Aaronson did applaud the fact that *The Access Principle* was the first attempt to establish an intellectual foundation for the movement. He added: "Now it's up to the rest of us to supply the anger."

Anger, of course, is something the OA movement has never been short of. Indeed one could argue that, along with its long-standing lack of a coherent and mutually agreed strategy for achieving open access, the OA movement's too frequent recourse to (often misplaced) anger is one of its primary weaknesses. Given this, Willinsky's more thorough and measured approach should certainly have been welcomed. That he has combined his intellectual labours with a willingness to roll up his sleeves and take on practical tasks at PKP has surely made his contribution to the movement doubly valuable.

In announcing that Willinsky was to receive the 2014 SPARC Innovator award, Executive Director of SPARC Heather Joseph described his qualities in this way: "John is a rare combination of visionary, and pragmatic. He understood the benefit of Open Access long before most people, and was also able to build infrastructure that has been absolutely crucial to the successful advancement of Open Access journal publishing."

Historical perspective

But however we might choose to describe Willinsky's contribution to the OA movement, it has to be acknowledged that his has always been both a fair-minded and a sensible voice.

For instance, in a movement frequently racked with doctrinal disputes — not just over how best to achieve open access, but how exactly it should be defined in the first place — Willinsky stands out for his ecumenicism. "I have done my best not to work the splits around openness, but to promote its common cause, albeit with occasional slips," he says.

His non-doctrinaire approach is all too evident in *The Access Principle*, where he concedes that open access may not always be the best option. "This may set me off somewhat to the margins of the open access movement," he wrote. "But I believe that access to the scholarly literature has never been an open-and-shut case."

And as he points out below, access can in any case never be perfect. "Access is always going to be partial, whether one thinks of it depending on the internet, language, comprehensibility, and on the list goes."

Consequently, he argues, in making the case for open access, "it makes more sense to focus readers' attention on ways of increasing access, rather than holding to a strict line on whether a journal article, a journal, or a publisher, for that matter, is open or closed."

And in arguing for his "big tent" approach Willinsky utilises a wisdom of the crowd argument. "[H]aving people come at this question of access from many different perspectives allows us to grasp the scale of the issue, and in this I am hoping that we can see and agree that access to knowledge is big."

Here he is in worthy company: in 1859 the British philosophy John Stuart Mill wrote: "[T]he only way in which a human being can make some approach to knowing the whole of a subject, is by hearing what can be said about it by persons of every variety of opinion, and studying all modes in which it can be looked at by every character of mind. No wise man ever acquired his wisdom in any mode but this."

In other words, everyone has a contribution to make, a truth often denied by those OA advocates inclined to silence critics with insults and derision.

Says Willinsky: "[W]e each need to look for the best ways in which we can contribute to the common goal, and in that regard I have been paying more attention when it comes to intellectual property questions, to the history of how we have arrived here."

What history tells us, Willinsky has concluded, is that there is nothing new under the sun. "[T]his opening up of access is not simply a thing of the Internet and today. My hope is that people will realize the extent to which access to knowledge has this long historic element to it that affects the advancement of learning."

It has also become apparent to him that maximising access to knowledge is rarely a simple or straightforward issue, and it is never fully settled. "History offers this sort of resonance, and reminder of how issues and concerns persist and need to be worked out anew and without end. The access question we face today is not, as some would have it, little more than an unfortunate Napster spin-off."

The post-colonial context

In taking a historical perspective Willinsky has also come to believe that the challenges currently facing scholarly communication have to be viewed in the context of the legacy of European colonialism.

Under colonialism, he explains, knowledge was defined, legitimised and distributed on a *centre and periphery* basis. "Europe created what was, in effect, an intellectual mercantile economy by which the colonial periphery supplied the flora and fauna, as well as the gold and wealth, to the centre, and out of which knowledge was produced and epistemic regimes created (in Foucault's formulation of knowledge and power). This knowledge was then sent out to the periphery, ensuring an educational subordination to the centre."

In fact, the very language used to describe and frame scholarly knowledge demonstrates Willinsky's point: scientific words and terms are invariably Greco-Latin in origin, and currently the universal language of scholarly discourse is English.

In light of this colonial inheritance Willinsky sees PKP playing a dual role. "While PKP was about moving research and scholarship online to make it more accessible, I also saw that we were, in effect, building the means for others to participate more fully in the global knowledge exchange."

He concedes, however, that the scholarly journal is itself a product of this centre/periphery model. "I certainly recognize that the journal model itself could be described as part of that imperial legacy, but at some point I think you have to own this history (which you are not about to escape) and own it by finding ways to counter it in some way, while remaining open to others challenging you on the choices made."

This of course raises a key question: to what extent, and how, can open access to the scholarly literature enable everyone to participate more fully in the global knowledge exchange — or as Willinsky elsewhere expresses it, how can it enable "equity of access and opportunity within the advancement of learning on a global scale".

Certainly OA is making more research available outside paywalls, and so improving accessibility. But is that enough?

With the global research community increasingly subject to the precepts of neo-liberalism, there would appear to be a real danger that open access will simply consolidate the developed world's dominance of the global knowledge infrastructure.

This is all too evident in the way that the research community is increasingly embracing pay-to-publish gold open access. For researchers based in the developing world this threatens to leave them standing on the periphery, struggling to play an equal part in the global research endeavour. While OA will give them access to more of the research that is produced in the Global North, they may struggle to have their own work incorporated into the global research corpus.

In short, the colonial centre/periphery model that Willinsky describes could be perpetuated.

It is no surprise therefore that Willinsky is no fan of the article-processing charge, or APC model. Indeed, he sees it as problematic for all but the most well-funded researchers. "By way of new models, I find that the APC is particularly and understandably off-putting to, well, any field or scholar that is not as well funded as the bio-medical field of the Global North where it was initiated. There has to be another way forward, one that will serve all the disciplines and regions of the world."

Publishers as service providers

What then is the way forward?

Willinsky believes that the research community cannot afford to wait for publishers to come up with a solution. Rather, it needs to take the initiative and create an OA environment more suited to its needs — by, for instance, creating stakeholder cooperatives, pooling resources and developing new models for funding scholarly communication. "My own focus, in terms of putting new models to the test, is in seeing publishing services – such as platform development, copyediting, graphic design – marketed to a publishing cooperative formed among the primary stakeholders in scholarly communication, that is, the journals, societies, libraries, and funders."

The assumption here is not that publishers will go away, but that they will be forced to reinvent themselves as service providers. In fact, says Willinsky, this is how they view the future in any case. "In my conversations with people at Springer and SAGE, it has become clear that what this looks like, for them, is the marketing of publishing services to journal editors and scholarly societies. This is consistent with open access publishing, and with moving away from the previous era of seeking to own intellectual property assets for which rents are charged through subscriptions."

Clearly, however, these publishing services will need to be affordable, and so (in light of the long-standing serials crisis) presumably they will need to be somewhat less expensive than subscription publishing. Willinsky implies that they will. As new cooperatives are created, and more community initiatives like PKP emerge, he expects prices to fall, with publishers having to compete with the new service providers and to negotiate a fair price with the new cooperatives.

As he puts it, "This is exactly where we at PKP and our friends in the publishing industry, from Atypon to Wiley, would be competing in an open market to provide the cooperative with the professional publishing services it needs."

He acknowledges, however, that many issues have still to be resolved. "How this would scale, whether through a federated model of cooperatives or by some other means has all to be worked out … these are early days, if not the formative years, for working through new models for a new era."

However, the challenge confronting the research community here may be that time is not on its side. That is, events may overtake its plans to create a better way forward. Currently, commercial publishers with established journals able to boast "must-have" impact factors are rushing to exploit open access. This could see them consolidate their grip on scholarly publishing.

Moreover, they are doing so in a way that could see the traditionally high costs of scholarly publishing locked into the emerging open access environment. Recently, for instance, both the Wellcome Trust and Research Councils UK (RCUK) have reported that the bulk of the OA funds they are making available is being sucked up by large traditional commercial publishers, and used to pay for the expensive hybrid OA options that most subscription journals have now introduced.

In reviewing the figures for 2013-2014, for instance, Wellcome's Robert Kiley reported that Elsevier and Wiley "represent some 40% of our total APC spend, and are responsible for 35% of all Trust-funded papers published under the APC model." (74% of the papers concerned were published as hybrid OA).

The story is similar at the RCUK. As the UK *Times Higher* noted in April: "Publishers Elsevier and Wiley have each received about £2 million in article processing charges from 55 institutions as a result of RCUK's open access policy."

Overall the average APC paid from RCUK's OA funds was about £1,600 ($2,422) per article, and £1,837 ($2,780) from Wellcome funds.

OA advocates rightly complain that these prices are unjustifiably high, but predict that they will fall over time. What is not clear, however, is how they will fall. What, on the other hand, *is* clear is that these costs are simply no do-able for researchers in the developing world.

Getting from here to there

One solution for the developing world, of course, is to publish its research in local journals using low-cost platforms like OJS. This is already happening: today around half the journals using OJS are based in the Global South, and Brazil is credited with developing a highly-successful digital library of OA journals called SciELO. Currently, SciELO aggregates over 1,200 local journals from Brazil and 12 other developing countries.

We might therefore see what Willinsky below characterises as a "two-world solution" emerge. This would not be ideal from his perspective. We can also see some funders and governments in the Global South beginning to express concern that a local approach could see the developing world continue to sit on the periphery of the global research endeavour.

This became evident at the end of last year, when it was revealed that Brazilian research funder CAPES (The Coordination of Improvement of Personnel in Higher Education) was planning to launch two tenders to "internationalise" 100 Brazilian journals through an agreement with a non-Brazilian publisher. The proposal was announced during a meeting attended by a few invited Brazilian editors and five global for-profit publishers: Elsevier, Emerald, Springer, Taylor & Francis, and Wiley.

Would this offer any better a solution? It would surely be a highly expensive approach. More importantly, perhaps, it could see powerful commercial publishers based in the Global North increase their stranglehold on scholarly communication, and allow them to consolidate their positon as the world's gatekeepers to "the centre" (i.e. the international research corpus).

It is no surprise therefore that Brazilian researchers organised an open letter objecting to the CAPES plan, and requesting that the tenders be suspended and reformulated so that the money is instead directed to supporting local journals and services like SciELO, rather than for-profit international corporations.

What better demonstration could there be of Willinsky's point that maximising access to knowledge is a difficult and complicated business, and that solutions have to be constantly worked out anew. He is also surely right to warn us that the challenge is all the greater in a post-colonial world.

Nevertheless, he is confident that a workable solution will eventually be found. “This is not to minimize all the ingenuity and perseverance that it will take to get from here to there,” he says.

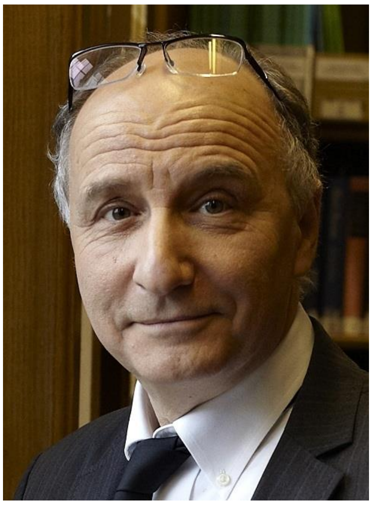

Photo courtesy Peter Searle

The interview begins

RP: Can you say something briefly about your background and research interests?

JW: I’m a Canadian by birth, with my first degree in English literature and my first line of work in school teaching.

After a doctorate in the study of education and as a professor of education, I initially studied literacy development among the young and explored the history of literary theory, dictionaries, and European imperialism as educational forces. There was to all of this an underlying fascination with the world of publishing, having been a bookish lad growing up in the small town of Sault Ste Marie that offered a Carnegie library and a drugstore book rack.

This made the shift in my focus as a professor from the study of education, in the traditional sense, to the study of scholarly communication and publishing, as itself an education system, a relatively easy step to make, and scholarly communication, it is now fair to say, entirely occupies my attention as a researcher.

RP: I believe you became interested in what is now known as open access before the term was adopted by the OA movement. So when and why did you become interested in improving access to research, and what was the first initiative with which you were involved?

JW: It was in 1998, a few years before “open access” was adopted as a term, and amid the euphoric rise of the Internet as a new publishing medium during the 90s, that I had my so-called awakening.

I had a small endowment for work on technology and literacy from the local newspaper — *Vancouver Sun* — and decided to parlay that into a collaboration with the newspaper in which I sought to bring research to bear on journalism by working with reporters to match a set of newspaper series on computers in education with the relevant research and policy analysis scholarship that readers could then access online.

The reporters were keen but I soon discovered that I could not share, due to library subscription restrictions, the research with the public, apart from abstracts or my own summaries of it.

At the same time, the university library was cutting journal subscriptions due to price increases. Something seemed terribly amiss with this picture, it seemed to me, in the early days of the Internet.

RP: As I understand it, you used to use the term "free to read" rather than open access. Is that still your preference? If so, why? If not, what changed your mind?

JW: I do think "free to read" has a certain ring to it, which first drew me to it, and it does offer, as a phrase, immediate *access* to what was at issue. But I also came to appreciate how "open access" corresponded nicely (and deliberately) to "open source software," and I was, by then, using open source software to facilitate open access, so that made sense.

But I also think there's value in having an agreed upon term to suggest the common cause that is forming around the further opening of research and scholarship (even if open access is not so agreed upon, as you go on to suggest). So I let the snappier *free-to-read* go. It is hardly up to me to set the terms of this movement.

RP: In 1998 you founded the Public Knowledge Project. I believe the PKP's initial focus was on increasing access to scholarly research beyond the traditional academic environments. But it has developed into something more than that. Can you say how and why?

JW: The Public Knowledge Project was started with this rather facile idea of making the work of the university more of a public resource through the use of the Internet. You can see the idea at work in my not entirely successful collaboration with the *Vancouver Sun* described above.

In the early days of PKP, I and a few graduate students initially turned our attentions to building a case for convincing journals and conferences to have an online presence, naively assuming that if these print outlets and academic events went online, it would lead to greater public access and thus offer a brand new and very rich source of public education.

After making little to no headway with such arguments, we then moved into open source software development. This came out of my previous experience with the educational start-up Knowledge Architecture, founded by Vivian Forssman, which ran for a few years helping students to support their high schools technical needs by teaching them project management, which is where I'd learned, from Vivian's IT industry experience, how to design online workflow platforms. I designed on paper open source editorial management and publishing software in order to answer the question of the day from online-adverse journal editors, namely, how much will it cost to put a journal online.

I was fortunate enough to draw together a wonderful team, led by the Associate University Librarian Brian Owen and technical wonder Alec Smecher at Simon Fraser University Library, who, through the research and development funds we were able to raise, created open source systems for scholarly workflow management and publishing. Together, we created Open Journal Systems (OJS) beginning in 2002, to answer the question of what will it cost to put a journal online.

It was still hard to convince editors in the early years of the twenty-first century, and I ended up pitching how it was cheaper than free (because, I lamely joked, you could sell your filing cabinets and rent out your editorial office now that you had moved your journal online). But, of course, installing software and configuring journals takes time and with open source software upgrade cycles tend to be more frequent.

Over the course of the next decade, the use of OJS has spread across the globe to the point where — with 8,000 journals actively using it in 2013 — we now feel a considerable responsibility at PKP for ensuring that this system provides a high-quality editorial workflow and publishing environment, and all the more so with roughly half of those journals in the Global South.

So in terms of your question on what PKP has developed into, I would say that it has become primarily but not entirely an open source software development and community support project in a global scale.

I and others associated with PKP continue to do both OA advocacy work with scholarly societies and libraries; we take on educational projects, such as PKP School and a MOOC on open knowledge, both under the direction of Kevin Stranack; and we pursue research on related issues of scholarly communication, such as Juan Alperin's forthcoming work on the public impact of open access in Latin America, while Cheryl Holzmeyer, Laura Moorhead, and Lauren Maggio have a forthcoming study on public health NGO staff and physician use of research.

The Access Principle

RP: In 2006 you published a book called The Access Principle. What did you hope to achieve with the book, and what was the target audience?

JW: The book was intended to establish open access as a worthy topic of a scholarly treatment. I wanted to assert that this was not simply a side line, like choosing the title of a journal, but really was part of what it meant to do research and scholarship, part of what it meant to claim to be producing knowledge for the benefit of the world. I tried to set out a case for open access in an extended way across the topics of intellectual property, economics, development, politics, rights, history, and so on.

My target audience was both those who were drawn to the idea and interested in learning about the extent of the case for it, and those who, seeing this case presented in a traditional book form (handsomely done by MIT Press, which also generously made it open access) would give the concept of open access half a chance.

Those still getting over the move to online journals and clinging to their world of print — and I stand among them in some ways, as well — needed to see the case for open access on paper.

RP: In your book you talk about the "access principle" in these terms: "A commitment to the value and quality of research carries with it a responsibility to extend the circulation of such work as far as possible and ideally to all who are interested in it and all who might profit by it."

Should I infer from this that you believe researchers have a moral responsibility to ensure that their research is as widely disseminated as possible? If so, why? And does this responsibility also fall on research institutions, researcher funders, and governments?

JW: Actually, I might go a step further than this and say that researchers (and their institutions and funders) have not only a moral responsibility but an epistemological and even a legal one, to ensure the maximum feasible access. Let me try to explain.

The moral responsibility has to do with needlessly denying someone what potentially might help them and help them help others, as in providing physicians, those working in public health, or teachers the research that might assist them in their work.

The epistemological responsibility has to do with the strength of the knowledge claim one can make for one's work when those with some interest and training in the field are unnecessarily denied access to one's work so that it does not have the benefit or strength added by their review, or the advantage of their being able to add to it.

The legal responsibility, which I am trying out here for the first time, builds on this epistemological point. Works of learning produced in the university are protected by intellectual property law, with the additional protection of the common law "academic exception" ensuring that, in the case of copyright work, it does not belong to our employers. We are offered such protection, in the USA, under the constitutional clause that states such protection is intended "To promote the progress of science and the useful arts."

If we are engaged in publishing practices, with this learning, that fails to do as much as it can to promote the progress of science and the useful arts, and in fact impedes that progress, we would appear to be violating the spirit of the law, seeking its benefits without repaying its intent.

Now, of course, most intellectual property makes no pretence to serving this noble intent, but in the case of learning, in the case of work that claims to be nothing less than promoting the progress of science, it does seem fair to at least raise the spectre of some legal responsibility.

RP: In* The Access Principle *you also say, "In reviewing the case for open access, it makes more sense to focus readers' attention on ways of increasing access, rather than holding to a strict line on whether a journal article, a journal, or a publisher, for that matter, is open or closed. This may set me off somewhat to the margins of the open access movement. But I believe that access to the scholarly literature has never been an open-and-shut case."

Can you expand on this a little, and say what you believe the potential implications of this more nuanced view of things would be (both for open access itself, and for the open access movement) were it to become mainstream thinking?

JW: This was my way of moving away from debates over arriving at the very best definition of what counts as open access and trying to encourage, more broadly, a greater openness of access (and definitions).

Access is always going to be partial, whether one thinks of it depending on the internet, language, comprehensibility, and on the list goes. But every advance in access — and I'm thinking here not just of the *New England Journal of Medicine* making everything open after six months or federal public access policies with 12-month embargoes, but the entire public library and public education movements of the nineteenth century — adds, I like to think in my more idealistic moments, to the very educational and thus democratic quality of our lives.

This doesn't mean that I am not interested in or willing to research the implications of different paths to and definitions of greater openness. Cheryl, Laura and Lauren's study, referred to above, on public health staff and physician use of research demonstrates just how much of what the study participants wanted to know, on behalf of those they serve, falls within that first 12-months of publication, otherwise known as the permissible publisher embargo period.

As well, this opening up of access is not simply a thing of the Internet and today. My hope is that people will realize the extent to which access to knowledge has this long historic element to it that affects the advancement of learning.

To try to make this point, I am completing a book-length manuscript that I'm calling *The Intellectual Properties of Learning: A Prehistory from Saint Jerome to John Locke* (currently out for review with a publisher with draft chapters here).

In this work, I explore the history of learning in the West and leading up to the introduction of modern intellectual property law with the Statute of Anne 1710. I consider the extent to which this openness has always been a defining property, and a very intellectual property, of learning.

The work examines, as well, how historic increases in access — whether in the West's access to Islamic learning in the eleventh and twelfth centuries, or the introduction of printing in the fifteenth and what the humanists made of it — lead to significant advances in the reach and scope of learning. I also found that learning could be said to possess additional properties, related to access, including its sponsorship within relatively autonomous institutional settings such as monasteries, schools, and universities.

Understanding the question of open access within this larger historical dynamic needs to be part of, if not mainstream thinking, a broader spectrum of the public, especially as it lends support to the work of education broadly speaking.

What is becoming mainstream today is public expectations around the right to know – whether through Wikipedia or WikiLeaks – and I think that this spills over into public expectations around the right to research, much as Heather Joseph at SPARC has done a marvellous job with the theme of taxpayer access in promoting open access with the U.S. Congress.

Increased access to research may well mean, I recognize, that more studies are held up for ridicule in places such as Congress, when they are federally funded, but I think having to defend our work under principles of academic freedom is a fair price to pay and I think that, over all, access by the interested public, policymakers and professionals will lead to greater appreciation of what research and scholarship has to offer, and, I dare say, greater support for it.

Gratis and libre

RP: As noted, you initially adopted the term "free to read". Interestingly, Peter Suber started out using the term "free online scholarship". I think it fair to say that both these terms imply what later became known as "gratis OA" — or what the US National Institutes of Health calls "public access". Aside from launching the OA movement, what seems to me to have been most significant about the 2002 Budapest Open Access Initiative (BOAI) is that the definition of OA it produced implies the right not just to have free access to research, but the right to reuse it too, or what later came to be known as "libre OA". What is your take on the respective merits of gratis and libre open access?

JW: While I have not been particularly involved in working out these distinctions, I greatly admire Peter Suber's and Stevan Harnad's work in setting out and naming these distinctions. It strikes me now that as these two, along with Jean-Claude Guedon and others, were doing the heavy intellectual lifting through these great scholastic feats, I was essentially tinkering away in the garage over the software, and scrambling with Brian Owen to find funding for the master builders of OJS.

Still, I certainly appreciate the value of pushing for *libre* OA and the removal of permission barriers. And I have to say that I was initially a little discouraged by the NIH use of "public access" for its policy in 2008. If the NIH had gone with *open access*, I think this undoubted breakthrough policy would have added more to the momentum of the movement.

But more generally, as is already clear to you, I find that any increase in access to research and scholarship is a gain I'm happy to get behind, knowing that no form of access is going to be complete access for everyone, and recalling my own pleasures of happened-upon research going back to when, in the teacher's lunchroom, I first came across the scholarship of Madeleine Grumet in a professional magazine.

RP: Related to the libre/gratis distinction, a longstanding division in the open access movement is that between advocates of green OA (self-archiving) and gold OA (OA publishing)? I think most of your energy and efforts have gone into advocating for gold OA, but do you support both forms of OA? If so, what role do you see each form playing? What are your views on the pros and cons of green and gold?

JW: In this, too, I like to think that I am relatively ecumenical in disposition. It may well strike you that I lean gold, but that only reminds me that in the earliest days of PKP at the University of British Columbia, we experimented, if not quite successfully, with building repository software, based on the Virginia Tech system, while promoting their use.

Much later, in 2008, I managed to convince the faculty in the Graduate School of Education at Stanford to vote in the first education school open access mandate in the United States, again based on green OA. More recently, I managed to negotiate green access for the book described in an earlier response with a publisher willing to "experiment" with this for the first time.

In all of this, it may be that I'm more drawn to taking action than to taking stands (but I realize this may be conflict-aversion in disguise). While I do continue to put energy and effort into – and take great pleasure from – the creation of software that supports open access journals and book, in my advocacy I have done my best not to work the splits around openness, but to promote its common cause, albeit with occasional slips, as I get caught up in the moment, along the way.

RP: As noted, your focus is on increasing access to research in whatever ways possible, not on insisting on strict definitions of OA. I asked what impact you felt your more nuanced approach might have on the open access movement were it to become mainstream thinking. In fact, what we are seeing is a narrowing of definition, with greater and greater emphasis being placed on an exact reading of the BOAI definition, and frequent claims that this is the only acceptable definition.

It occurs to me, therefore, that one might argue that the BOAI sowed the seeds of what is now a significant rift in the OA movement: a rift between those who insist that a text can only be described as open access if it has a CC BY licence attached to it (what libre OA advocates call "true open access"), and those who deny this, and sometimes go on to state that CC BY is in fact undesirable. What are your thoughts on this?

JW: It is interesting that you see it that way, Richard, and your work has helped to clarify some of the key stances on the definitions of open access, but from where I'm standing what is most fascinating and absorbing is the broad and general swing toward open access, and how it has at least begun to define the new normal.

What I see is a fairly complete sweep for open, or at least public, access among funding agencies across the U.S. Europe and Canada. I see an overdue recognition of Latin America's open-access–from-the-get-go. I see research libraries increasingly involved in open access publishing coalitions and journal support. And I see the major publishers and societies now offering open access titles by the score.

I don't want to be too pollyannaish about this — problems abound in what Stevan Harnad once more cleverly coined as the "gold rush" — and I think that licensing issues are very real things to wrestle with, as we do in both trying to advise OJS users about CC (CC-BY at this point) and in working with the open source community on software licensing (GPLv2 edging toward v3).

My thoughts on this more broadly are that we each need to look for the best ways in which we can contribute to the common goal, and in that regard I have been paying more attention when it comes to intellectual property questions, to the history of how we have arrived here.

Last night I was working with a prevailing medieval sentiment that held that as knowledge is a gift of God, it cannot be sold ("*Scientia donum Dei est, unde vendi non potest,*" in the words of Johannes Teutonicus in 1215 or so, according to Post et al.). That might seem to simplify everything once and for all, in those simpler times, but in reality it made it very difficult for the early universities in Paris and Bologna, pushing them away from their origins as trade guilds charging fees (where the *master* in the master's degree comes from) and back toward the sponsorship and gift economy of monasticism.

History offers this sort of resonance, and reminder of how issues and concerns persist and need to be worked out anew and without end. The access question we face today is not, as some would have it, little more than an unfortunate Napster spin-off. Which is only to say that having people come at this question of access from many different perspectives allows us to grasp the scale of the issue, and in this I am hoping that we can see and agree that access to knowledge is big.

Can we have concurrent development?

RP: As you indicated, your journey to open access started as a desire to see scholarly research made available to the public. Most OA advocates are far more focused on the need to make research papers freely available to their peers. I suspect this (and the growing interest in content mining) is why we are seeing the growing call for papers to be made available with a CC BY licence. But to play devil's advocate for a minute: let's assume that most scientists in the Global North still have access to most of the research papers they need via institutional subscriptions, and that they can email the authors for copies of papers to which they do not have access.

If we assume that is right, then what in your view should be the primary objective of the open access movement today: to provide gratis open access to the public (and the different professionals you mentioned earlier) or to provide libre open access to other researchers so that they can mine and reuse scholarly papers. (Based on what John Willbanks said to me last year it would appear that both objectives cannot be satisfactorily achieved concurrently. As Willbanks put it, "each green article without reuse rights means another article under [publishers'] control well into the next century").

JW: You play the devil well, and as such, you play on my tendencies to resist either/or propositions. I think that John Willbanks is right to insist that green papers have re-use rights, just as we are now, with a prompt from Juan Alperin, placing our green papers in our Graduate School of Education open access archive under a CC-BY license (and much as we do in recommending copyright licensing to OJS users).

But as important to science as it is to have a right to the data and to mine the literature, such rights can co-exist with increased public access and all that goes with that.

You or John may well counter that a singular focus and concentrated attention from all of us can achieve more than working at various levels and issues. Fair enough. But I can't help thinking that the world has much to gain through the varied forms of access to scholarly work that we are seeing, and maybe this, too, goes back to my school-teaching, although I have to note that the field of education has not been a hot bed of open access, with the inspiring exception of Gene Glass, who started one of the first open access journals in 1991 on the very public topic of educational policy, and which continues to flourish under the editorship of Gustavo Fischman.

RP: I think it fair to say that when you are interviewed you are usually careful to say that open access is not a threat to publishers, and that they are not about to lose their livelihood or their current revenues as a result of open access. I wonder if you have your tongue in your cheek when you say this. Like many OA advocates I think you have become increasingly concerned about the high cost of the article-processing charges that publishers are demanding to make papers open access, especially in hybrid OA journals. The reason they are setting their prices so high, of course, is precisely in order to preserve their livelihoods, and the revenues to which they have become accustomed.

If you believe that APC prices will have to come down (or perhaps give way to a different, less costly pricing mechanism) then it would seem that open access does pose a threat to publisher revenues. Would you agree with my conclusion?

JW: Ah, you seem to have kept on your devil's advocacy horns with this question as well. Do you see the irony, I wonder, in my imagining that I would have cause to reassure the publishers not to worry, when, of course, they are extremely capable of taking care of themselves.

As for taking care of their revenues, I'm sure that the publishers' revenues are not secure in a field undergoing such change. *The New York Times* reported, as I was working on these questions, that the global music industry has finally had a few years of stable revenues in the area of $15-16 billion annually, with this figure down from $26.6 billion in 1999.

Change is afoot in the circulation of culture with the onset of the digital era. We have yet to see that kind of reduction in revenues in scholarly publishing but it does suggest that "a different, less costly pricing mechanism," as you put it, may well be ahead, and I think we need to contribute to that by exploring different models. Certainly, the publishers are with Wiley Open Access and Springer Open.

If Elsevier's Managing Director Philippe Terheggen is pointing to how "Open access publishing actually presents a new opportunity to bring us closer to our authors," then the future is open access.

In my conversations with people at Springer and SAGE, it has become clear that what this looks like, for them, is the marketing of publishing services to journal editors and scholarly societies. This is consistent with open access publishing, and with moving away from the previous era of seeking to own intellectual property assets for which rents are charged through subscriptions.

By way of new models, I find that the APC is particularly and understandably off-putting to, well, any field or scholar that is not as well funded as the bio-medical field of the Global North where it was initiated. There has to be another way forward, one that will serve all the disciplines and regions of the world.

My own focus, in terms of putting new models to the test, is in seeing publishing services – such as platform development, copyediting, graphic design – marketed to a publishing cooperative formed among the primary stakeholders in scholarly communication, that is, the journals, societies, libraries, and funders.

A cooperative model would bring together the library's information science and systems expertise (touching on aggregation, discovery, accessibility, long-term preservation) with the disciplinary and editorial expertise of the journals and societies.

The cooperative would introduce new levels of transparency in costs and services for scholarly publishing; it would pool resources and set priorities for improving scholarly communication that could be shared globally. It would start small, but could grow in scale and efficiency.

Research libraries are already participating in a number of cooperative scholarly publishing ventures, from Knowledge Unlatched to the many libraries hosting journals, with University of Pittsburgh providing a great OJS-based instance.

What then of the journals and societies? We're working on developing a pilot cooperative with the anthropologist Alberto Jaminez, who has brought together an exciting collection of anthropology journals willing to explore the model with libraries.

We're in conversation, as they say, with editors of journals – from societies and/or with commercial publishers, as well as independents – in economics, education and the humanities. Raym Crow at SPARC has been helping with the financial planning, as a big part of this concept is a greater level of financial transparency and rationalization of publishing costs. There is simply not the same careful accounting of expenditures in scholarly publishing as there is, for example, in the handling of research grants.

We are about to embark on discussions with potential participants on all sides about what would constitute compelling cooperative principles, as well as sound economic and scholarly reasons, for taking this approach.

How this would scale, whether through a federated model of cooperatives or by some other means has all to be worked out; and there may well have to be some sort of appeal board for allocation decisions, with all of this deliberating about advancing scholarly communication.

We are also working on developing OJS and OMP to better serve this cooperative model with something approaching a multi-title/mega-platform approach. This is exactly where we at PKP and our friends in the publishing industry, from Atypon to Wiley, would be competing in an open market to provide the cooperative with the professional publishing services it needs.

Still, as noted, these are early days, if not the formative years, for working through new models for a new era. It is encouraging seeing others exploring related ideas, with Rebecca Kennison and Lisa

Norberg, for example, working on a similar model with more of the economics scalability worked out.

As well, the Mellon Foundation continues to be a great force for good in the humanities and has made some significant awards to library and publisher ventures, which your column has touched on with Alison Mudditt, Director of the University of California Press.

RP: To explore the theme of societies a little further. You said "I'm sure that the publishers' revenues are not secure in a field undergoing such change." Presumably the same applies to societies? Certainly I think we can say that a fear of revenue loss has led some societies to resist open access as (if not more) vociferously than commercial publishers. Of course, the problem many societies face is that they have come to view their journal programmes as "cash cows" whose purpose is to generate revenue streams to subsidise their other activities. Indeed, many believe that open access poses a threat not just to their established ways of doing things, but to their very existence. Either way, they surely are more vulnerable than commercial publishers, since the latter can turn to the capital markets /private equity firms/ venture capitalists for the necessary funds to invest in new models and manage the transition to open access.

In light of this, does the new cooperative model you are working on assume that societies' current revenues will have to be maintained at their current levels through subventions from the other partners (libraries and funders etc.), or is it assumed that they will need to run leaner operations?

JW: I am full of sympathy for scholarly societies and associations also having to adjust to the changes in scholarly communication wrought by the digital era. They play an important role in developing scholarly work and careers.

And yes, you are right there is a revenue concern, exacerbated by the diminished key membership benefit of no-or low-cost journal subscriptions, given that the library copy of the journal is just as handy to one's computer as the membership copy.

Now some have begun to take the initiative with open access publishing. The Linguistic Society of America has its eLanguage Journal Archive of six open access journals (using, forgive me, OJS), which Dieter Stein has done much to develop.

As well, I was part of a committee of the American Education Research Association that launched last year its first new journal in decades, AERA Open, while the American Anthropological Association has an open access "experiment" going on with Cultural Anthropology.

I think it is becoming clear that restricting access to the members' publications, when there is an alternative, is not perhaps the best thing for a society to pursue. On the other hand the big publishers do provide a substantial transfer of funds to the societies, enabling them to keep membership and conference fees low and provide scholarships to, for example, minority students.

What interests me about the cooperative among libraries, journals, societies, and funders is that there can be an open discussion and deliberation of what investments and expenses will advance scholarly communication. The role of the societies is not less vital or worthy of funding in the recruitment and training of editors, for example, or in running research methodology seminars for junior scholars, or offering scholarships, and other proposals.

It is good to keep in mind that the current revenue generated from scholarly publishing is in the area of ten billion dollars for English-language STM journals alone, according to their editors' association.

So the question is not one of where is the money going to come from so that such cooperatives can make allocations, for example, to societies. There is more than enough money already on the table, in all likelihood, to turn the research and scholarship of universities and research institutes into far more of a public resource and public good.

This is not to minimize all the ingenuity and perseverance that it will take to get from here to there. Nor is it to assume, for a moment, that this idea is the idea to carry us there.

Side-lining publishers?

RP: You talk about PKP competing with the likes of Atypon and Wiley etc. I am aware that in addition to OJS, PKP has developed Open Monograph Press, Open Conference Systems and Open Harvester Systems. From my perhaps naïve perspective these would seem to provide the necessary infrastructure to allow the research community to "take back ownership" of scholarly communication from publishers rather than compete with them, a development that many have argued is the inevitable consequence of the development of the Web in any case.

This encourages me to ask: to what extent might PKP (and similar initiatives) end up side-lining publishers, or even making them redundant, regardless of what your intentions were when you founded PKP, or the reasons why PKP has developed its portfolio of platforms and tools?

JW: You do give me pause with this thoughtful question, not that others of your questions haven't as well. It seems to me very clear that I do not want to reduce or side-line the role of publishing in any broad sense. I greatly value and admire the physical beauty of a well-designed book, for example, and that is the work of publishing and publishers.

In the past, I hired a book designer, Isaac Tobin, who now designs dust jackets for clothbound books at the University of Chicago Press, to bring some of that traditional publishing professionalism to our software.

But let me also come at this question in another way. For an author, it is most often the editor who defines the publishing experience, and the editor remains for us the primary focus of our workflow design for OJS and OMP. We have always thought that in easing the editor's clerical work, through our carefully organizing the editorial workflow and communications, then editors would have more time to do the vital work of helping authors develop their work, whether that journal publishes it or not. That was our intent, as you allow, but the results have enabled, much as Bepress has as well, the return of the scholar-publisher as a vital part of the scholarly publishing ecology.

We are working to improve, as well, especially for OJS 3.0, what might be thought of as the art and the craft of the small press through improved UI/UX design and greater flexibility in the publishing platform and in its publication, with much appreciated help from the California Digital Library.

Still we are not the publisher, nor a replacement for the publisher. At PKP, we are following a long tradition of tool and die makers who enable others to make things and, in this case, to publish and be publishers.

I would add that many of the journals that use OJS were not likely to have been picked up by the publishers, at least not initially. Systems such as ours have been, in this sense, champions of academic freedom, in allowing innovative new fields to create a publishing outlet for their work, and once established – and incubated – such journals may move on to more traditional publishers, as has happened with Health and Human Rights, while others, such as International Journal of Zizek Studies or Electronic Journal of Severe Storms Meteorology, continue to stay with OJS.

As for the big commercial publishers, as noted in my previous response, they are moving, as I noted, to providing publishing services, rather than acting strictly as a publisher, in the traditional sense, with in-house editors.

This new, open market may well lead to publishers offering greater value to editors, scholars, and readers, generally. I look forward to far more interesting graphic design, as well as highly effective places in which to pursue and produce scholarly work. That would be a good thing, as Professor Martha Stewart might advise.

RP: As discussed, OJS is open source software. There are, of course, proprietary alternatives available — like Bepress' Digital Commons platform that you mentioned. When I interviewed the CEO of Digital Commons, Jean-Gabriel Bankier, he pointed out that while open source solutions are free, they are not without cost. With OJS, for instance, there is a need to customise the software to the specific needs of the institution, and the cost of providing ongoing technical support. As Bankier put it, "I'm a fan of open source software, but I'm an even bigger fan of software in the cloud. Cloud-based ejournal publishing software is the future; it is easier to use, scale, build upon, and support. Digital Commons is delivered via the cloud, while OJS is mostly locally installed."

He added that Digital Commons also offers universities "teams of publishing experts and platform experts at the ready to help them support their faculty and students. There are no extra costs, so they don't have to second-guess themselves if they ever want more help or services." Does Bankier have a point?

JW: Jean-Gabriel Bankier has a point, indeed, and Bepress is clearly a great publishing operation, as it has enabled many independent scholar-publisher journals to start publishing and go open access, as well as supporting repository self-archiving.

Jean-Gabriel is right, as well and as I noted above, that libraries running software systems, even free ones, have costs associated with them.

Now, just to be clear about Jean-Gabriel's point, we also offer a hosted cloud service with technical support as you need it ably coordinated by James MacGregor. Our pricing for this hosting service is set out here. We currently have close to 400 journals using PKP's cloud solution.

I'd also clarify a further point, namely, that for those who opt to download and install OJS, there's no customization required in setting up a journal, just a filling in of templates with the materials for each journal – which one needs to do on cloud-based systems – but, yes, there are upgrades for the software available for installation twice or even three times a year.

I would also add that while we offer cloud and download solutions, our commitment to open source software is based on the principle that publishing tools should be available for local distribution and development. This relates to a post-colonial effort to move away from centre-periphery models that I discuss in my next response, but here let me simply offer an example. When we first started working with INASP in Vietnam, the original set of 20 or so Vietnamese journals were hosted at PKP in Vancouver, but in little over a year the Vietnamese scholars brought Alec Smecher over to install Vietnam Journals Online locally, as they sought to develop their system capacities.

As well, our open source software approach has resulted in the building of a large global community of users of OJS – a different sort of shareholder, and more of a share-user – who have been providing us with, for example, translations of the software into thirty or so languages, as well as interesting plugins for additional features.

This community participates in a PK Forum, posing and answering questions, as well as providing support. Although to be realistic about it, the respondent-in-chief is our Alec Smecher who landed his 10,000th post last week; I, on the other hand, repaired a few broken links for a campus student journal, and it was my first successful fix in years.

Epistemic regimes

RP: You said earlier that around half the journals using OJS are based in the Global South, and your previous answer reminds me that you take a particular interest in the developing world. Earlier, for instance, you said that, amongst other things, you studied "European imperialism as educational forces". Elsewhere you have described the problem of access to research as a post-colonial issue, and one of the legacies of imperialism. Can you expand on these imperialist/colonialist issues and their implications?

JW: This question leads me back a bit, as my forming of PKP followed on a book of mine called *Learning to Divide the World: Education at Empire's End*, which was published in 1998.

The book was a belated contribution to the counter-celebration of the Columbus quincentenary (with my book being some six years late in contributing to the counter-celebration). It delved into the considerable educational legacy of five centuries of European imperialism.

One of the great metaphors in critiquing that imperial project is how it was intellectually organized around *centre and periphery*. Europe created what was, in effect, an intellectual mercantile economy by which the colonial periphery supplied the flora and fauna, as well as the gold and wealth, to the centre, and out of which knowledge was produced and epistemic regimes created (in Foucault's formulation of knowledge and power). This knowledge was then sent out to the periphery, ensuring an educational subordination to the centre.

On finishing the book, it took me some time to come out from under the enormous weight and responsibility suggested by this study for me as an educator and a professor of education. However, I gradually realized that the one thing that I might be able to do to address the legacy – and imposition of the centre-periphery model – was to turn to our own work as scholars, and the distribution of knowledge which was continuing to contribute to this model.

While PKP was about moving research and scholarship online to make it more accessible, I also saw that we were, in effect, building the means for others to participate more fully in the global knowledge exchange that represented something of an elusive ideal.

Among post-colonial studies in literature, a landmark book with a catchy title was the edited collection *The Empire Writes Back* published in 1989, and in a sense, I began to think of OJS as perhaps providing a means for a post-colonial world to write back through peer-reviewed research (although that lacks the Star Wars savvy of the Ashcroft, Griffiths, and Tiffin title).

Open access held this promise of faculty and graduate students everywhere being able to participate more fully in the development of the research cultures and scholarly communities and norms, which follow from journal editing, reviewing, and publishing.

In 2003, I was awarded a MacArthur Foundation grant (for non-geniuses) that enabled me to meet with faculty members and research librarians in Africa, South-East Asia, and Latin America to learn more about scholarly publishing in these areas.

Through subsequent collaborations with Pippa Smart and Sioux Cumming at INASP, we have been able to develop country and regional portals for journals in Africa and Asia; we have worked, as well, with Smith Esseh in Publishing Studies at KNUST in Kumasi, who has done much training in this area, and the tireless open access advocate Subbiah Arunachalam in Bangalore.

We have worked with industry groups like CrossRef, which has proven willing to provide free DOIs to the poorest countries through INASP, DOAJ and OJS. Much as Leslie Chan's path-breaking work with Bioline International enabled journals from the South to reach the world online, we have been seeking to develop tools that made online publishing of peer-reviewed journals globally available.

I certainly recognize that the journal model itself could be described as part of that imperial legacy, but at some point I think you have to own this history (which you are not about to escape) and own it by finding ways to counter it in some way, while remaining open to others challenging you on the choices made.

In this regard, we were initially a little leery about working with Google Scholar's indexing standards, but soon found, in working with the Google engineer Anurag Acharya, that there was much to be gained by having journals using OJS in Vietnam, Nepal, Kenya and Paraguay come up in Google Scholar searches in a well-indexed form with citation counts that link these journals' articles to other articles around the world.

I would characterize our intent as seeking to level, however slightly, the playing field among journals and scholars worldwide and that we might learn from each other. That is, of course, too paint a far too idyllic picture of what resembles anything but a playing field in the conditions and circumstances of faculty and students in the Global South.

I'd also note that to provide such publishing tools is to risk their abuse, and some decidedly fraudulent operations have taken advantage of OJS in an effort to exploit this new APC market. This calls for vigilance, including perhaps authentication processes and other strategies, and it will be relevant to the cooperative model that I discussed earlier, as a way of moving away from APCs.

But overall, I do not think it calls for a stop to open access or open source software platforms such as ours, however modest and imperfect, as these approaches continue to create greater opportunities for scholars in all parts of the world to engage in research and scholarship.

Two-world solution?

RP: What is surely clear is that researchers in the developing world are unlikely to be able to afford to pay the APCs being demanded by publishers based in the Global North (both the traditional publishers and most open access publishers). I know that many publishers say they offer waivers to those in the developing world, but it is far from clear that these waivers will be offered indefinitely

(or that their value won't be eroded over time). In any case, there are a number of other reasons why researchers in the Global South are likely to find waivers unacceptable (as [outlined]() in 2008 by [Raghavendra Gadagkar]() in a letter to* Nature*).

I am wondering, therefore, if we might not see two different and geographically distinct strategies evolve in order to provide open access, with those in the developed world paying to make their papers OA, and those in the developing world making their research available through local journals and local implementations of platforms like OJS and/or journal aggregation services like ScIELO and African Journals Online (AJOL)? What would be the implications were this to happen?

JW: Yours is an interesting proposal, and all the stronger for building on existing structures and financial models. I much admire the work of SciELO and AJOL, both of whom we have worked with to improve the integration with and use of OJS.

While all of SciELO and almost all of Latin America is open access (often through government and institutional support), with AJOL, the majority of its almost 500 journals are not yet open access, so that would be one consideration to take into account. (With the cooperative idea, which I introduced above, the bundle of 500 African journals would make a strong regional instance of how such a publishing cooperative supporting open access would find great value in bringing AJOL on board, given the resulting increase and ease of access).

But any wide-scale proposal is bound to have many, many challenges to work out. The one implication of your two-world solution that I would, at least initially, be concerned about is just that: it further instantiates the divide (much as does, I realize, my use of "Global South"). On the other hand, we are seeing increasing collaboration and co-authorship among scholars across this divide and my hope would be to see a way to a global system, much as the universities of the world constitute a global system.

Still, I see value in thinking through and testing various models, such as yours. But we also need to put these thought experiments to the test in order to, with the most promising instances, gather systematic evidence of gains and advancements in access, use, and production of research.

If your two-world model begins to help AJOL journals go open access; if it appears to reduce the divide with which it begins; if it creates opportunities for greater participation in research and scholarship; then by all means, those are the implications of a model that I and many others would be happy to support and look for ways of promoting.

What remains key is that we be guided by principles – which I'd like to see include equity of access and opportunity within the advancement of learning on a global scale – while by all means working out the implications, seeking out new language, and making valuable distinctions, much as you note in your probing questions, that will help us achieve more of the historic promise of learning.

RP: In an interview at the Opening Science to Meet Future Challenges conference last year you listed some of the benefits that open data can provide, including re-analysis, replication studies, and the ability to capture, aggregate, and leverage live data streams from on-going projects. This, you said, promises a much more dramatic scientific breakthrough than open access, not least because none of it was possible until recently. As you put it, "It is one thing to say that an article is free, but articles have always been freely available in research libraries. By contrast, we have never before had the ability to aggregate and share data; and we have never before been able to check data on the fly, and build studies that deliver real time results — largely in the natural sciences it's true, but also in the social sciences and probably in the humanities too. So I would say

that in terms of scientific payoff open data will be much more dramatic than open access has been".

I am reminded of what computer scientist Steve Pettifer said to me last year (quoting Elsevier's Anita de Waard) about articles being "stories that persuade with data". He also said that research papers will increasingly have to be read by machines rather than by humans. This makes me wonder whether the very notion of the academic journal (and perhaps eventually the academic paper too) is destined for the "dustbin of history". Might it be that the future model is one in which researchers primarily share data sets, to which they simply attach a brief interpretation (or "story") of what they believe the data they have generated tell us, and then invite comments and alternative interpretations from their peers? It also occurs to me that publishers have not historically tended to seek to acquire ownership of the data on which papers are based, and so are perhaps less resistant to open data than to open access.

All of this causes me to wonder whether the anguish, conflict and disagreement we have witnessed over open access is essentially the death throes of a system of scholarly communication rapidly losing relevance and/or usefulness? Or am I talking nonsense!

JW: I do see great promise, as noted, in the curating and sharing of data. If you'll allow a final backward glance, within a year or so of the Public Knowledge Project starting, I published the book *Technologies of Knowing: A Proposal for the Human Sciences* (1999). It had at its core this near-futuristic idea of "automata-data," in which I envisioned standardized social science and biomedical data streaming from thousands of ongoing research studies into database systems that would provide real-time analysis of probabilities for just about everything, from the health effects of coffee to the best ways to teach reading, because wasn't that what a world wide web was for? And today, the Global Alliance for Genomics and Health is assembling standards for sharing and compiling data on genome sequencing and clinical outcomes that could, indeed, lead to a scoreboard of health treatment and risk probabilities.

While you are certainly right that publishers have not been as protective of data – in part because they rightly assume that copyright does not typically apply to data, at least in the USA – the sharing of data faces no small hurdles in the very setting of data standards, a task which brought together the Global Alliance, and in having the researchers incorporate this curatorial approach into their research culture and step away from our old habits of data-retentiveness.

For example, *PLOS* journals now require data deposit with submission and forms part of the blind review process. For a recent submission of ours, the policy had us thinking differently about the data, as a public resource; it was a first for us but the extra effort was clearly worth it and a good influence on our practices as researchers.

Still, to your point, in my efforts to imagine a more effective and efficient research system, I was inadvertently imagining, as well, something of an article-less social science. And put that way, it seems wrong-headed.

I do think there will be – and I support – increased data curation and such responsible sharing of one's data will be increasingly valued and recognized for its contribution (with citation counts, awards, fellowships and so on). To that end, we have worked with the Dataverse Project to include its tools for hosting well curated, cite-able data with publications using the OJS and OMP.

This upgraded data-world, however, will need to be matched at every step of the way by constant and extended analyses and re-analyses, much like the biblical commentaries without end of the medieval and early modern periods.

The sense-making and critique, with its rethinking and re-analysis, are vital aspects of making sense of the data and constantly being able to correct our course, as well as improve the whole data process. Data does not speak for itself, and if it did, perchance, it would be quickly interrupted by a stream of researchers' commentaries on how it continues to misrepresent itself. I wouldn't have it any other way.

RP: Ok. Thank you very much for taking the time to answer may questions, and good luck with your future books and projects.

If you would like to republish the interview on a commercial basis, or have any comments on it, please email me at richard.poynder@btinternet.com.