Preface: Open Divide?

Last year I was asked to write a preface for a new book called *Open Divide? Critical Studies on Open Access*, edited by Ulrich Herb and Joachim Schöpfel.

The book was sent off to the publisher at the end of last year. Below is a copy of the preface I wrote.

When the internet emerged open access to publicly-funded research appeared to be a no-brainer. The network, it was argued, could dispense with scholarly journals' print and postage costs and allow papers to be shared more quickly, more cost-effectively, and in a way that would level the playing field for those in the developing world – since it would be possible to make articles freely available on a global basis. As a result, the 2002 Budapest Open Access Initiative (BOAI) declared, the research community would be able to "share the learning of the rich with the poor and the poor with the rich … and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge."

As proof of concept, OA advocates pointed to arXiv, the online preprint server that physicists have been using to share their papers since 1991.

But while the potential benefits of open access are undeniable, making it a reality has turned out to be a slow and difficult process, and it remains far from clear that it will lead to an inexpensive or levelling way of sharing

research.

It turns out, for instance, that researchers are a surprisingly conservative bunch, a characteristic reinforced by the promotion and tenure (P&T) systems that operate in academia. Consequently, most authors have continued to share their work in the traditional manner using traditional publishers, and in ways that reinforce the traditional hierarchical and elitist culture that has prevailed in the research community since time immemorial.

Publishers were also initially cautious about open access – amply demonstrated in 1999, when the then director of the US National Institutes of Health, Harold Varmus, proposed the creation of E-Biomed. Intended to replicate and extend the arXiv model in the biomedical field, Varmus' plan envisaged a biomedical preprint server and new electronic journals managed by an E-Biomed governing body. It also assumed that authors would retain copyright in their works, a proposal that, in itself, was enough to give publishers the jitters.

Unsurprisingly, therefore, publishers responded to the E-Biomed proposal with doomsday predictions about the imminent collapse of the scholarly communication system and intense political lobbying. This saw Varmus' proposal significantly watered down and launched as PubMed Central in 2000. Gone was the preprint server, gone were the new journals, and gone was the expectation that authors would retain copyright. Gone also was what had, in essence, been an attempt by the research community to wrest control of scholarly communication from legacy publishers. For the OA movement, this was a significant defeat.

But advocates persisted in their calls for open access, and publishers had eventually to conclude that they could not hold the tide back indefinitely. Fortuitously for them, new-style open-access publishers like Public Library of Science (co-founded by Varmus) and BioMed Central (subsequently acquired by legacy publisher Springer Nature) had by then demonstrated that it is possible to fund OA by levying publication fees in place of subscriptions (i.e. offer pay-to-play gold OA).

Incumbent publishers realised that if those fees were set high enough they could embrace OA without any diminution of their substantial profits. So, they began to launch their own OA journals, and to introduce hybrid OA, which allows researchers to continue publishing in traditional journals *and* make their papers OA – so long as they pay a premium (c. $3,000 per paper).

However, some OA advocates pointed out that gold OA would unnecessarily enrich publishers at the expense of the research community, not least because hybrid OA provides publishers with an additional, rather than a replacement, revenue stream – i.e. subscriptions *and* publishing fees. As such, they suggested, researchers should continue publishing in subscription journals without paying a fee, and then self-archive copies of their papers in their institutional repositories, and in this way make them freely available to all – aka green OA. Attracted by this more cost-effective approach, funders and institutions began to introduce open-access policies requiring researchers to self-archive – with, it has to be said, limited success since most researchers simply ignored the policies.

Seeing green OA as a direct threat to their revenues, publishers began imposing ever more lengthy embargoes and ever more complex and onerous rules over when, where, and what version of a paper can be made OA. They could do this because – as a condition of publication – authors are required to assign copyright in their work to the publisher. The consequent complexity of green OA served to strengthen researchers' resistance to self-archiving, and today green OA looks like a failed strategy. Gold OA, by contrast, has gained considerable traction.

A key moment came in 2012, with the publication of the Finch Report. Produced by a UK government-appointed committee overrepresented by publishers, Finch concluded that pay-to-play gold OA was the best approach, not least because it protected publishers' existing revenues. It was at this point that publishers began to co-opt open access – a development amply aided by the fact that OA advocates were by now thoroughly divided over how to achieve open access, or even exactly what it is. As a result, funders and governments began to turn to publishers for direction more often than to the OA movement.

Thus, in the wake of Finch, other national and international initiatives have emerged that also prioritise gold OA. In 2016, for instance, a number of European funders launched the OA2020 initiative "to convert the majority of today's scholarly journals from subscription to Open Access (OA) publishing". The same year the EU called for 'immediate' open access to all scientific papers by 2020 (which inevitably implies gold OA).

The appeal of gold OA is that it is far simpler, and allows the final version of a paper (rather than a preprint) to be made freely available. Moreover, since it means that no embargoes need be imposed papers become immediately available online. Importantly, publishers far prefer gold to green OA. The problem is that gold OA increases rather than reduces the cost of scholarly communication, and so confounds BOAI's expectation that open access will be more cost-effective.

For researchers based in the global South, the emergence of pay-to-publish OA is especially troubling. Increasingly incentivised to publish in prestigious international journals (which are invariably based in the global North) researchers in the developing world face the prospect of having to pay publishing fees of hundreds or thousands of dollars every time they need to publish a paper, something few can afford to do.

As such, OA's promise that it would level the playing field has also been confounded. Indeed, OA now looks set to widen rather than narrow the North/South knowledge divide. Consider, for instance, that BOAI assumed that if a paper was made open access it would be free for anyone to access.

Elsevier's response to European calls for subscription journals to be converted to gold OA, however, has been to propose what it calls "region-specific OA". This envisages that access to papers would be granted or denied depending on a researcher's geographical location, with access limited to residents of the country/region that has paid the cost of publication. This, of course, cannot fairly be described as open access. Rather it is (counter-intuitively) an OA version of the toll access

national licensing schemes that organisations like the UK's Jisc regularly negotiate.

Elsevier's idea may come to nothing, but that such a thing as regional OA could be proposed draws our attention to the fact that – far from being inclusive – OA may further disenfranchise those in the global South. After all, Elsevier estimates that 80% of papers are still published toll access. This means that researchers in the global South now face a double barrier.

To provide faculty with access to the 80% of research behind paywalls institutions in the developing world would need to pay subscription fees, but few can afford to subscribe to more than a handful of journals. This is the historic toll access barrier.

In addition, as journals start to flip to gold OA researchers in the developing world will discover that they cannot afford to publish their own research. This is a new barrier and a direct consequence of the demands for open access; a barrier, moreover, that will exclude researchers in the global South from the "common intellectual conversation" promised by BOAI.

To cap it all, gold OA has unleashed on the world a plague of predatory journals, with those in the South said to be disproportionately impacted.

Meanwhile, anyone whose first language is not English faces a language barrier too, since English has become the *lingua franca* of scholarly communication. In addition, those without adequate internet access face a bandwidth barrier. These are not barriers that were addressed at BOAI, but they need to be taken into account when discussing open access.

Of course, researchers in the global South have the option of spurning international journals and making their work freely available in their own language, in a local repository. But this cannot provide the visibility that publishing in an international journal can, and it will not satisfy their employers' P&T requirement that they publish in prestigious journals.

In short, while OA promised to create a cheaper, faster, and more inclusive system of scholarly communication, it now seems likely to be more expensive and to widen the North/South knowledge divide. Indeed, some believe that OA could prove a new source of colonialism, with scientists in the North able to freely plunder knowledge produced in the South while continuing to define and control what counts as scientific knowledge, and who can contribute to it. Those in the developing world will still be locked out of the conversation.

Clearly, if the BOAI promises are to be met the current trajectory of open access would need some adjustment. Two developments might appear to hold out some hope.

First, there is growing interest in so-called diamond open access, in which journals charge neither publication fees nor access charges. Costs

are covered by other means – through sponsorship by a learned society, for instance, through endowments, or by means of government grants. OA advocates frequently cite as a model here SciELO – the publicly-funded Latin American co-operative publishing platform. SciELO, they point out, offers a cheaper alternative to the model emerging in the North (SciELO costs are estimated at $90 per article). Given the traction that pay-to-publish has now acquired, however, diamond OA could struggle to gain mindshare.

The second development to note is the reinvigorated preprint movement. As I write this, new services like bioRxiv, SocArXiv, EarthArXiv, and PsyArXiv are emerging on an almost weekly basis. (It is worth noting that bioRxiv is essentially the preprint server Varmus wanted to introduce 18 years ago.

Potentially, preprint servers could deliver on all three OA promises – i.e. provide a faster, cheaper, and fairer system for sharing research. Indeed, in theory, they could make the traditional journal redundant, and so deliver very significant cost savings (it is estimated that it costs just $7 per paper to post and host on arXiv).

On the other hand, papers deposited in preprint servers are invariably later submitted to legacy journals, if only in order to meet the demands of P&T committees. In a gold OA world, this would mean authors were still confronted with high publishing fees. So, it is not obvious that preprint servers will deliver the cost reductions that are essential if the developing world is to become an equal partner in the OA world.

We need also to view OA against the backdrop of a larger drive for openness. Not only does open access now encompass monographs as well as research papers (which presents a new set of problems), but we have also seen the emergence of the open data and OER movements, along with the broader open science movement. Looking further out, there are also the commons/commoning movements. All these movements are products of the internet, and they were all initially infused with a belief that some areas of human endeavour should be based on public rather than private goods.

The challenge all these movements face, however, is that we live at a time when neoliberalism – and a belief in the primacy of the market – dominates both public discourse and public policy. What the experience of the OA movement has taught us is that while alternative solutions intended to operate outside the straightjacket of the market are highly desirable (and highly desired), they are difficult to sustain. Public goods are constantly vulnerable to subversion, marginalisation and/or privatisation by commercial interests. It does not help that some open advocates have sought to promote their cause by promising it will provide commercial benefits as much as non-monetary social value. And when it comes to competing in markets the North continues to enjoy inherited advantages.

Further complicating the picture, powerful global companies like Facebook and Google now manage and control much of the information flow on the Web. Amongst other things, this means that making content freely available on the internet does not necessarily make it visible. We should not doubt that more and more OA content will become available

online, but it will increasingly be swamped by the tide of non-research information flooding the network. Locating relevant material, therefore, will become ever more difficult, and will create a growing need for specialist pay-to-find discovery services. Those wishing to participate in the common intellectual conversation who cannot afford such services will be at a disadvantage.

Finally, we could note that the Web has created the so-called "platform economy", exemplified by for-profit services like Uber and Airbnb. This is the direction that scholarly communication is now taking, with commercial repository services like SSRN, and paper sharing platforms like Mendeley, ResearchGate and Academia.edu leading the charge. Amongst other things, these platforms will aim to capture usage data and sell it back to the research community, with researchers themselves (rather than their research) becoming the product. The implications of this are not entirely clear today, but such services are unlikely to narrow the North/South knowledge divide, not least because the paywalls that the OA movement has spent the last fifteen years trying to pull down look set to be replaced by new ones.

Our conclusion has therefore to be that while most research looks set to become freely available, it is far from clear that OA will level the playing field, or lead to a more cost-effective scholarly communication system. This is unwelcome news for researchers in the global South.