Open access: brave new world requires bravery

The year 2012 heralded significant developments in open access (OA) that impacted the relationships between the major stakeholders in scholarly publishing: researchers, funders, publishers and governments. In the UK, the clear preference for a gold OA policy enunciated by the government-backed 'Finch Report' is now being implemented by the research councils. Although the policy has been modified to include green routes to OA publishing, arguments continue about the optimal route to a system of open access that can work on a global scale. Resolution of these disputes will require courage and imagination.

STEPHEN CURRY
Professor of Structural Biology and Department of Life Sciences
Director of Undergraduate Studies
Imperial College, London

Although the drive towards open access (OA) scholarly publishing has been running for a decade or more, there was such a flurry of activity in 2012 that the year might rightly be regarded as marking a significant rebirth for the movement. It therefore seems a good moment to take stock of the past 12 months and to survey the challenges that lie ahead.

Open access is, purely and simply, making the research literature available at no charge to readers[1]. Unfortunately, that is where the purity and simplicity starts and stops because as soon as you delve any deeper into the idea of freeing up access to publicly funded research, you find yourself wading through an exhausting morass of competing elements and constituents – gold versus green OA, commercial versus public interests, budgetary constraints versus the opportunities for new modes of publishing, and the complexities of a publishing system that is as much about prestige and academic career advancement as it is about the efficient dissemination of research results. The unresolved conflicts between these intertwined interests explain why, despite a year of momentous developments, discussions on the achievement of a fully operational system of global open access remain fractured and fractious.

Let us start at our arbitrarily defined beginning. For many, the issue of open access erupted from a blogpost written on 21 January 2012 by the eminent mathematician, Professor Tim Gowers[2], in which he protested the high prices charged for Elsevier journals and the company's open support for the Research Works Act, a crude legislative instrument that sought to undermine the existing OA mandate of the US National Institutes of Health and to prevent it being applied to other federally funded research organizations. Gowers publicly disavowed all further connection with Elsevier and in doing so sparked the now famous boycott of the publisher that has accumulated over 13,000 signatories[3] and ignited discussion across the scientific blogosphere and even in the press.

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The Research Works Act was ditched soon afterwards, but the debate about open access has rumbled on throughout the year. In the UK, it has been propelled politically by David Willetts, Minister of State for Universities and Science, who charged the working group under Dame Janet Finch with finding ways to increase access to publicly funded UK research. Willetts was inspired in part by difficulties in accessing papers while he was researching his book on inter-generational economic tensions, *The Pinch*, but also apparently by a general governmental impulse to greater transparency. He sees open access as a way of enriching the cultural and economic life of the UK. In a powerful speech to journal publishers, the minister acknowledged the challenges that a shift from subscription-based funding model to open access would pose

but left them in no doubt that any attempt to preserve the old model would be the 'wrong battle to fight'[4].

Willetts' position may be seen as a reflection of the transformative power of the internet, which has radically changed how we think about access to information. The colossal and growing quantities of information that can be marshalled by the web are of such a scale that we are only likely to be able to harness them by allowing free rein to information miners, in a modern-day gold rush, to sift as speculatively as they are able[5]. This is decidedly not the same as the file-sharing free-for-all mentality that has beset the music and software industries – there is not the same producer-consumer tension since researchers are collectively the primary authors, reviewers and readers of the academic literature. Open access does offer free benefits to private individuals and organizations, but these can be seen as a public good. Nor is there any real threat to intellectual property rights since, as now, investigators can patent any discoveries before publication. Rather, it is based on the sense that maximum value – in all its forms – is likely only to be extracted from publicly funded research if it is made freely available.

"…the 'Finch Report' … was a less radical and more compromised document than some had hoped for …"

Despite Willetts' bold speech, the 'Finch Report'[6], published in July, was a less radical and more compromised document than some had hoped for and so came as something of a reality check. The Report downplayed the ability of repositories to deliver green OA, favouring instead the payment of article processing charges (APCs) to make gold OA the primary vehicle for access to UK research. There were immediate concerns about the likely cost implications. Although Finch's estimates were necessarily approximate, many commentators seized on the estimated annual excess transitional costs of £50–60 million to bemoan the impact on the already overstretched UK science budget.

The new Research Councils UK (RCUK) policy[7], which was published just a few weeks after the release of the Finch Report, enacted the preference for gold OA but has also – through follow-up announcements[8] – made it clear that RCUK-funded authors and institutions may opt to make their research accessible using green OA repositories. In the autumn, RCUK finally announced how funding for APCs would be allocated as block grants to universities for the next five years; as feared, there is no new money, though the move will recycle the funds for APCs that were previously paid as part of grant awards. Universities are now working out how to make these funds available to their faculty in time for the initiation of the new policy in April 2013.

Behind this sketchy summary lies a great deal of detail and an unknown quantity of implications. Responses to the report and the RCUK policy have been decidedly mixed. Some see the preference for gold OA as a bold policy move that secures immediate access to journal articles and liberal re-use of the content (including text and data mining) under the terms of the CC-BY licence that publishers must permit in return for APCs. However, others have cautioned that the policy risks undermining the utility of green OA repositories (the most popular current route for OA) and panders too readily to the commercial interests of publishers. These divergent views are difficult to reconcile because there is too little data to arbitrate effectively. We might wish for a policy fully grounded in evidence but that is difficult to achieve in a publishing landscape that is undergoing change on so many fronts: technological, academic, economic and political. Models of the cost implications of different scenarios for transition to OA provide some useful reference points[9] but people may only buy into these insofar as their philosophical stance on OA will allow.

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The best we can do is to set out on the journey with an ideal – universal open access – but try to be pragmatic and constructive about the difficult route ahead. We also need, and it is one of the aims of this article, to gather as many stakeholders as possible into the conversation about how to take open access forward. There has been vigorous debate across the blogosphere, but too many researchers have yet to find their way there.

Part of the blame for the slow uptake of debate might be laid at the doors of universities, which have been relatively muted in their response to the Finch Report and the RCUK policy. They appear to have turned inwards to ponder the mechanics of implementation. I hope that might change; open access certainly presents new challenges (particularly for research-intensive institutions which face the highest transitional costs), but it is also an opportunity for universities to restate their mission and, in particular, to strike a more public-oriented stance. At a time when they are under greater pressure than ever to demonstrate the impact of the research that they do, the push towards open access should be embraced as a chance to show off their research mettle and their determination to engage with the society they serve.

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The lack of public positioning on open access by university leaders may also be retarding wider discussions among faculty. These are absolutely vital, not only to ensure the emergence of a functioning market in APCs, which will require academics to be involved in purchasing decisions, but also to ensure that the widest possible constituency is involved in developing the policy.

Although there have been complaints about the intransigence of the RCUK over the wording of its OA policy, most notably from Stevan Harnad[10], one of the most determined advocates for open access in the UK, the policy is not yet fixed in stone. (Stevan Harnad's response to the Finch Report, 'Worldwide open access: UK leadership?', also appears in this issue of *Insights*).

For one thing, as noted above, it has already been finessed to make clear that, despite the preference for gold OA, authors and their institutions are free to adopt green OA to comply with the RCUK policy. That this is an allowable route has been underscored by the funding mechanism announced by RCUK, which envisions a slow ramping up of funds for APCs from a starting level of 45% of RCUK-funded papers to a 75% level in five years' time. Implicit in this end goal is the recognition that green OA is likely to play an important role in making UK research available to users.

Moreover, the policy remains under review. Not only is the Finch working group committed to reviewing the OA landscape but Mark Thorley of the RCUK has also made it clear that the research councils will also be seeking to evaluate their policy after two years. Thorley has repeatedly described the process as a journey; the pragmatism of this stance has been under-appreciated in some quarters, but it should be welcomed[11]. Although it is clear that the UK has struck out in a gold direction, a move that sets the parameters for this phase of the transition, it remains to be seen how well RCUK can keep to the course it has set.

That will depend in part on how constructively the research community engages with discussion on the issues surrounding OA. Nervousness in the face of so much uncertain change is unsurprising, but the community should show courage in facing the responsibilities that accompany public funding in a democratic society. It is not just a matter of making the finances work; there are also cultural factors to be considered. A move away from our dependence on journal impact factors as crude and cruel measures of research performance will be a necessary part of refashioning the scholarly communications infrastructure to focus on its primary purpose: the efficient dissemination of the research literature. The ongoing addiction to impact factors acts as a brake on developments in OA since it gives the whip hand to established journals and inhibits the entry of new players into the publishing market[12].

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Much will also depend on the interplay between the UK policy and moves to develop OA in other parts of the world. Developments in the US and EU, both of which currently seem more likely to follow green OA routes, are likely to be particularly influential, though attitudes to OA in rising research powerhouses such as China, India and Brazil should also be considered. Ultimately, OA stands or falls as a workable ideal if the whole international community buys into it. The problem is, no one is quite sure how we are going to manage the transition.

A key question that remains for the advocates of green OA is how we get from our current position, in which journal funding comes largely from subscriptions, to a fully effective system of OA where subscriptions would be redundant. At present the relatively low take-up of green OA has meant that there has been no discernible impact on subscription income to publishers, an argument that the green lobby has frequently cited in its favour. But it is difficult to see how this situation is tenable in the long term if the goal is to make a global success of the OA project.

"… a transition via gold OA, though more costly in the short term, is more likely to foster an orderly process …"

It seems to me that a transition via gold OA, though more costly in the short term, is more likely to foster an orderly process, which is surely in the interests of most researchers. This approach is not without its problems. The Finch Report has been criticized for pandering too much to the interests of publishers. Finch herself has acknowledged that her brief included instruction not to damage the publishing industry, an admission that has coloured the reception of the report. That is not to say that the research community sees no place for private enterprise in scholarly communication; rather it has given the impression that the working group's deliberations may not have been as radical or disruptive as the ongoing ferment of technology change might demand.

Alma Swan of the influential Scholarly Publishing and Academic Resources Coalition (SPARC) has argued that Finch's preference for gold risks preserving the commercial advantages of the companies that presently dominate the market in scholarly publishing[13]. However, while I take her views seriously, I don't entirely share these reservations, thanks to a number of remarkable recent developments in OA publishing.

Particularly significant in 2012 were the births of two new OA journals, which are seeking to break new ground in quite different ways. *PeerJ*[14] aims to offer a cheaper and more community-focused alternative to the massive OA journal, *PLOS ONE*. It will be funded by a membership model, in which each author must pay a one-off fee (starting at only $99 but rising if you want to submit two or more manuscripts per year). Set up by Jason Hoyt and Peter Binfield, who are formerly of Mendeley and *PLOS ONE*, *PeerJ* has a pedigree that is steeped in internet publishing. Although *PLOS ONE* continued to enjoy a surge in its popularity and academic credibility in 2012, confounding critics of its policy of accepting all original, technically competent papers irrespective of significance, *PeerJ* looks set to be an operation to watch in 2013.

Elsewhere in the marketplace, the combined spending power of the Wellcome Trust, the Howard Hughes Medical Institute and the Max Planck Society have produced *eLife*[15], an online-only OA journal that is seeking to match the prestige of *Cell*, *Science* and *Nature*, at least in the life sciences. Free to authors at least for an initial period, *eLife* aims 'to catalyze innovation in research communication, by experimentation, collaboration, and continuous improvement'. It will be interesting to see how its main competitors will respond to this bold new kid on the block.

"Change is coming thick and fast."

Innovations in OA are not confined to the life sciences. The Royal Society of Chemistry and the particle physics community (through the SCOAP3 initiative), for example, have both been experimenting in new ways to offer OA options to researchers. Change is coming thick and fast.

Can we expect similar innovations in the humanities and social sciences (H&SS), where funding concerns are much sharper than in the life sciences? The response of these research communities to the latest policy developments has been slower off the mark but appears extremely wary, if not downright confrontational. A group of 21 history journals has set itself in direct opposition to the RCUK policy by refusing to offer CC-BY licences where APCs are paid or to permit deposition of manuscripts in repositories within 12 months of publication, which is required if RCUK-funded authors opt for green OA[16].

This radical position, which has been criticized for misunderstanding the terms of CC-BY licences[17], appears to be a negotiating stance aimed at extracting policy concessions from

the RCUK. I suspect it is too far out of tune with the prevailing mood music to change minds but we shall see. As a life scientist, I am not sufficiently familiar with the internal politics of publishing in H&SS and so hesitate to comment. However, it is worth noting that some in that community have been more positive in their embrace of the challenges of OA; for example, the academic-led Open Book Publishers set up in 2008 have already demonstrated the financial viability of an open access monograph publication.

The goal of open access may be widely shared, but the road ahead remains tortuous and complex, as I hope this inevitably incomplete analysis makes plain. The prize is worth striving for but there are few easy answers and the only thing I am certain of is that there are more arguments ahead. I hope we can approach them with open minds.

"The prize is worth striving for but there are few easy answers …"

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Stephen Curry PhD, Professor of Structural Biology and Director of Undergraduate Studies
Department of Life Sciences, Room 404A, 4th floor, Sir Ernst Chain Building, Imperial College, London SW7 2AZ, UK
Tel: +44-(0)20-7594-7632 | Mobile: +44-(0)7986-201707 | E-mail: s.curry@imperial.ac.uk | Web: www.bio.ph.ic.ac.uk/~scurry/ | Blog: occamstypewriter.org/scurry/

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