What does it cost to publish a Gold Open Access article?

*An emerging preference for Gold Open Access publishing has been stirring emotions. **Mike Taylor** highlights where the Finch Report goes wrong on cost and argues that academics should redirect their anger at publishers taking $1973 from academia in return for each paper they receive.*

There's been a lot of concern in some corners of the world about the Finch Report's preference for Gold open access, and the RCUK policy's similar leaning. Much of the complaining has focused on the cost of Gold OA publishing: Article Processing Charges (APCs) are very off-putting to researchers with limited budgets. I thought it would be useful to provide a page that I (and you) can link to when facing such concerns.

1. How much does the Finch Report suggest APCs cost?

Worries about high publishing costs are exacerbated by the widely reported estimate of £2000 for a typical APC, attributed to the Finch Report. In fact, that is not quite what the report (page 61) says:

Still, the midpoint of Finch's "£1.5k-£2k" range is £1750, which is still a hefty amount. Where does it come from? A footnote elucidates:

Houghton J et al, op cit; Heading for the Open Road: costs and benefits of transitions in scholarly communications, RIN, PRC, Wellcome Trust, JISC, RLUK, 2011. See also Solomon, D, and Björk, B-Christer,. A study of Open Access Journals using article processing charges. Journal of the American Society for Information Science and Technology , which suggests an average level of APCs for open access journal (including those published at very low cost in developing countries) of just over $900. It is difficult to judge – opinions differ – whether costs for open access journals are on average likely to rise as higher status journals join the open access ranks; or to fall as new entrants come into the market.

[An aside: these details would probably be better known, and the details of the Finch report would be discussed in a more informed way, if the report were available on the Web in a form where individual sections could be linked, rather than only as a PDF.]

The first two cited sources look good and authoritative, being from JISC and a combination of well-respected research organisations. Nevertheless, the high figure that they cite is misleading, and unnecessarily alarming, for several reasons.

2. Why the Finch estimate is misleading

2.1. It ignores free-to-the-author journals.

The Solomon and Björk analysis that the Finch Report rather brushes over is the only one of the three to have attempted any rigorous numerical analysis, and it found as follows (citing an earlier study):

Almost 23,000 authors who had published an article in an OA journal where asked about how much they had paid. Half of the authors had not paid any fee at all, and only 10% had paid fees exceeding 1,000 Euros [= £812, less than half of the midpoint of Finch's range].

And the proportion of journals that charge no APC (as opposed to authors who paid no fee) is even higher — nearly three quarters:

As of August 2011 there were 1,825 journals listed in the Directory of Open Access Journals (DOAJ) that, at least by self-report, charge APCs. These represent just over 26% of all DOAJ journals.

So there are *a lot* of a zero-cost options. And there are by no means all low-quality journals: they include, for example, *Acta Palaeontologica Polonica* and *Palaeontologia Electronica* in our own field of palaeontology, the *Journal of Machine Learning Research* in computer science and *Theory and Applications of Categories* in maths.

2.2. It ignores the low average price found by the Solomon and Björk analysis.

The Solomon and Björk paper is full of useful information and well worth detailed consideration. They make it clear in their methodology section that their sample was limited only to those journals that charge a non-zero APC, and their analysis concluded:

[We studied] 1,370 journals that published 100,697 articles in 2010. The average APC was 906 US Dollars (USD) calculated over journals and 904 US Dollars USD calculated over articles.

(The closeness of the average across journals and dollars is important: it shows that the average-by-journals is not being artificially depressed by a large number of very low-volume journals that have low APCs.)

2.3. It focusses on authors who are spending Other People's Money.

Recall that Finch's "£1.5k-£2k" estimate is justified in part by the observation that the APC *paid by the Wellcome Trust* in 2010 was just under £1.5k. But it's well established that people spending Other People's Money get less good value than when they spend their own: that's why travellers who fly business class when their employer is paying go coach when they're paying for themselves. (This is an example of the principal-agent problem.)

It's great that the Wellcome Trust, and some other funders, pay Gold OA fees. For researchers in this situation, APCs should not be problem; but for the rest of us (and, yes, that includes me — I've never had a grant in my life) there are plenty of excellent lower-cost options.

And as noted above, lower cost, or even *no* cost, does not need to mean lower quality.

2.4. It ignores the world's leading open-access journal.

PLOS ONE publishes more articles than any other journal in the world, has very high production values, and for those who care about such things has a higher impact-factor than almost any specialist palaeontology journal. Its APC is $1350, which is currently about £839 — less than half of the midpoint of Finch's "£1.5k-£2k" range.

Even PLOS's flagship journal — *PLOS Biology*, which is ranked top in the JCR's biology section, charges $2900, about £1802, which is well within the Finch range.

Meanwhile, over in the humanities (where much of the negative reaction to Finch and RCUK is to be found), the leading open-access megajournal is much cheaper even than *PLOS ONE*: SAGE Open currently offers an introductory APC of $195 (discounted from the regular price of $695).

2.5. It ignores waivers

The most important, and most consistently overlooked fact among those who complain about how they don't have any funds for Gold-OA publishing is that **many Gold-OA journals offer waivers.**

For example, PLOS co-founder Michael Eisen affirms (pers. comm.) that it's explicitly part of the PLOS philosophy that no-one should be prevented from publishing in a PLOS journal by financial issues. And that philosophy is implemented in the PLOS policy of offering waivers to anyone who asks for one. (For example, my old University of Portsmouth colleagues, Mark Witton and Darren Naish certainly had no funds from UoP to support publication of their azhdarchid palaeobiology paper in PLOS ONE; they asked for a waiver and got it, no questions asked.)

Other major open-access publishers have similar polices.

2.6. It doesn't recognise how the publishing landscape is changing.

It's not really a criticism of the Finch Report — at least, not a fair one — that its coverage of eLife and PeerJ is limited to a single passing mention on page 58. Neither of these initiatives had come into existence when the report was drafted. Nevertheless, they have quickly become hugely important in shaping the world of publishing — it's not a stretch to say that they have already joined BMC and PLOS in defining the shape of the open access world.

For the first few years of operation, eLife is waiving all APCs. It remains to be seen what will happen after that, but I think there are signs that their goal may be to retain the no-APC model indefinitely. PeerJ *does* charge, but is ridiculously cheap: a one-off payment of $99 pays for a publication every year for life; or $299 for any number of publications at any time. Those numbers are going to skew the average APC way, way down even from their current low levels.

2.7. I suspect it concentrates on hybrid-OA journals.

There are all sorts of reasons to mistrust hybrid journals, including the difficulty of finding the open articles; the very high APCs that they charge is only one.

Why do people use hybrid journals when they are more expensive than fully OA journals and offer so much less (e.g. limited length, no colour, number of figures)? I suspect **hybrid OA is the lazy option** for researchers who have to conform to an OA mandate but don't want to invest any time or effort in thinking about open-access options. It's easy to imagine such researchers just shoving their work into in the traditional paywalled journal, and letting the Wellcome grant pick up the tab. After all, it's Other People's Money.

If grant-money for funding APCs becomes more scarce as it's required to stretch further, then researchers who've been taking this sort of box-checking approach to fulfilling OA mandates are going to be forced to think more about what they're doing. And that's a *good* thing.

3. What is the true average cost?

If we put all this together, and assume that researchers working from RCUK funds will make some kind of effort to find good-value open-access journals for their work instead of blindly throwing it at traditional subscription journals and expecting RCUK to pick up the fee, here's where we land up.

- About half of authors currently pay no fee at all.
- Among those that do pay a fee, the average is $906.
- So the overall average fee is about $453.
- That's about £283, which is less than one sixth of what Finch suggests.

4. What are we comparing with?

It's one thing to find a more realistic cost for an average open-access article. But we also need to realise that we're not comparing with zero. Authors have always paid publication fees in certain circumstances — subscription journals have levied page charges, extra costs for going past a certain length, for colour figures, etc. For example, Elsevier's *American Journal of Pathology* charges authors "$550 per color figure, $50 per black & white or grayscale figure, and $50 per composed table, per printed page". So a single colour figure in that journal costs more than the whole of a typical OA article.

But that's not the real cost to compare with.

The real cost is what the world at large pays for each paywalled article. As we discussed here in some detail, the aggregate subscription paid to access an average paywalled article is about $5333. That's as much as it costs to publish nearly twelve average open-access articles — and for that, you get much less: people outside of universities can't get it even after the $5333 has been paid.

5. Directing our anger properly

Now think about this: **the Big Four academic publishers have profit-margins between 32.4% and 42%.** Let's pick a typical profit margin of 37% — a little below the middle of that range. Assuming this is pretty representative across all subscription publishers — and it will be, since the Big Four control so much of the volume of subscription publishing — that means that 37% of the $5333 of an average paywalled article's subscription money is pure profit. So $1973 is leaving academia every time a paper is "published" behind a paywall.

So every time a university sends a paper behind a paywall, the $1973 that it burns could have funded four average-priced Gold-OA APCs. Heck, even if you want to discount all the small publishers and put everything in PLOS — never taking a waiver — it would pay for one and a half PLOS ONE articles.

So let me leave you with this. In recent weeks, I've seen a fair bit of anger directed at the Finch Report and the RCUK policy. Some researchers have been up in arms at the prospect of having to "pay to say". I want to suggest that this anger is misdirected. Rather than being angry with a policy that says you need to find $453 when you publish, direct your anger at publishers who remove $1973 from academia every time you give them a paper.

Folks, we *have* to have the vision to look beyond what is happening right now in our departments. Gold OA does, for sure, mean a small amount of short-term pain. It also means a massive long-term win for us all.

This article was originally published on Mike Taylor's blog, and is published here with permission.

Note: This article gives the views of the author(s), and not the position of the Impact of Social Sciences blog, nor of the London School of Economics.

About the author: **Mike Taylor** is a dinosaur palaeontologist, computer programmer and open access advocate, affiliated with the University of Bristol. He has named two new dinosaurs, *Xenoposeidon* ("alien earthquake god") and *Brontomerus* ("thunder thighs") and written other papers so boring that his wife fell asleep while he was explaining one of them to her.

Related posts:

1. Hybrid gold open access and the Chesire cat's grin: How to repair the new open access policy of RCUK
2. Open Access needs terminology to distinguish between Gold OA funding models

3. What about the authors who can't pay? Why the government's embrace of gold open access isn't something to celebrate
4. Key Questions for Open Access Policy in the UK
5. The Finch Report illustrates the new strategy wars of open access