

Good Facts, Bad Predictions

From "Good facts, bad predictions," SPARC Open Access Newsletter, June 2, 2006.
<http://dash.harvard.edu/handle/1/4391309>

Last year, the Kaufman-Wills Group sent a detailed questionnaire to a large number of journals, and received 248 responses from OA journals listed in the DOAJ, the largest number of OA journals ever surveyed. The responses turned up details on the business models of OA journals that are not visible from their web sites.

Among the Kaufman-Wills discoveries were two that I found especially striking:

- (1) The majority of OA journals charge no author-side fees at all.
- (2) The majority of non-OA journals do charge author-side fees (in addition to reader-side subscription fees).

Table 30 of the Kaufman-Wills report shows that 52.8% of DOAJ journals charge no author-side fees at all. The percentage for subscription journals was much lower: ALPSP journals overall (23.4), ALPSP for-profit journals (44.9), ALPSP non-profit journals (10.1), AAMC journals (14.7), Highwire subset (17.6). The Highwire subset consists (p. 3) of "those making their original articles freely available at some point after publication; that is Delayed Open Access journals."

As Sally Morris put it in her introduction to the report (p. 1), "On the financial side, we were very surprised to find just how few of the Open Access journals raise any author-side charges at all; in fact, author charges are considerably more common (in the form of page charges, colour charges, reprint charges, etc) among subscription journals." As Kaufman and Wills put it in the body of the report (p. 44), "Contrary to general belief, more than half of DOAJ journals did not charge author-side fees of any type, whereas more than 75% of ALPSP, AAMC, and HW subset journals did charge author-side fees."

See Cara Kaufman and Alma Wills, *The Facts About Open Access*, October 11, 2005. Their study was sponsored by the Association of Learned and Professional Society

Publishers (ALPSP), the American Association for the Advancement of Science (AAAS), and HighWire Press (HW), with additional data from the Association of American Medical Colleges (AAMC).

<http://web.archive.org/web/20051103010701/http://www.alpsp.org/publications/pub11.htm>

For convenience, let me call these the “two facts” or “two discoveries.”

The two discoveries were not only unexpected, but strikingly favorable to OA. They should recast much of the debate about OA journals. (Kaufman and Wills made other discoveries that are more critical of OA journals.)

The report came out in October 2005, and in the next three months I saw no signs of the debate-recasting that I expected. Nevertheless in January 2006 I made this prediction:

“It will start to sink in that fewer than half of OA journals charge author-side fees and that many more subscription-based journals do so than OA journals. ... What will this mean in practice? People will stop talking about “the OA business model” for journals as if there were just one. People will talk less about how OA journals might exclude indigent authors and compromise on peer review and talk more about how toll-access journals do so. We'll start to document the range of models actually in use for OA journals and learn as much about them as we now know about the model that charges author-side processing fees. We'll get more creative in finding models that suit the range of niches, which differ significantly by discipline and by nation. We'll see OA journals use multiple sources of revenue or subsidies, allowing even those that charge author-side fees to lower their fees.”

<http://www.earlham.edu/~peters/fos/newsletter/01-02-06.htm#predictions>

This is the worst prediction I've ever made. The Kaufman-Wills figures have not been questioned, but their significance is not sinking in.

Significant for Five Reasons

The two facts should have implications for at least five aspects of the debate about OA journals.

- (1) They should put an end to the false but widespread assumption that there is just one business model for OA journals (the one misnamed the “author pays” model). Some OA journals charge author-side fees and some don't—in fact, most don't. That's at least two models. There are undoubtedly many different models among the no-fee journals, but we'll have to do a lot more digging to find out what they

are. Opponents of OA like to say that “one size doesn't fit all” but in fact OA journals have embodied this truth from the beginning.

- (2) The two facts should put an end to publisher objections that OA journals are more likely than non-OA journals to exclude indigent authors. The only basis for this charge was the hasty generalization that OA journals charged author-side fees and the ignorance that non-OA journals did so more often. Now we know that insofar as charging fees excludes indigent authors, many more subscription journals are guilty than OA journals. We know this even before we take into account that, when OA journals do charge fees, funding agencies are often willing to pay them and journals often waive them in cases of economic hardship.

<http://www.earlham.edu/~peters/fos/newsletter/11-02-03.htm#objreply>

- (3) The two facts should put an end to publisher objections that OA journals are more likely than non-OA journals to compromise on peer review. This charge is based on the hasty generalization that OA journals charge a fee for every accepted paper, and the presumption that charging such a fee creates a financial incentive to lower standards. Now we know that insofar as charging fees for accepted papers is an incentive to lower standards, many more subscription journals are guilty than OA journals. We know this even before we take into account that OA journals with many excellent submissions can often accept more papers without lowering standards (because they have no size limits) and OA journals with a dearth of excellent submissions can accept fewer papers without shortchanging subscribers (because they have no subscribers). We know it before we take into account that OA journal fees are much closer to “subsistence-level” compensation than typical subscription fees. We know it before we take into account that subscription journals justify price increases by pointing to the growing volume of published articles. We know it before we take into account that fee-charging OA journals have firewalls between their financial and editorial sides. We know it before we take into account that subscription journals with lower standards and lower rejection rates have higher profit margins (because they perform peer review fewer times per published paper).

<http://www.earlham.edu/~peters/fos/newsletter/03-02-04.htm#objreply>

- (4) The two facts should put an end to studies of author attitudes toward OA journals that misinform the interview subjects before interviewing them. I've been a referee for two studies that told authors that OA journals (per se, without qualification) charged “author fees” and then asked authors about their willingness to pay. The results were described as author attitudes toward OA journals (per se, without qualification) rather than author attitudes toward fee-charging OA journals.

- (5) Finally, the two facts should put an end to the myth that if all journals converted to OA, then universities would pay more in author-side fees than they pay now in subscriptions. I want to say a lot more about this one, so let me start a new section.

Would Universities Pay More?

Last month, two new calculations appeared purporting to show that high-output research universities would pay more in author-side fees for OA journals than they pay now in subscriptions for non-OA journals:

William Walters, Institutional Journal Costs in an Open Access Environment, a preprint forthcoming from the *Journal of the American Society for Information Science and Technology*. (The preprint was released c. April 24, 2006.)

http://web.archive.org/web/20060514153639/http://www.library.millersville.edu/public_html/walters/journal_costs.pdf

<http://legacy.earlham.edu/~peters/fos/2006/04/what-will-oa-journals-cost-universities.html>

Magaly Bascónes Domínguez, Economics of open access publishing, *Serials*, March 2006.

<http://serials.uksg.org/> (no deep link)

<http://legacy.earlham.edu/~peters/fos/2006/05/economics-of-oa-publishing.html>

Before these two studies, Phil Davis and his colleagues did a similar calculation for Cornell University, August 2004.

<https://dspace.library.cornell.edu/handle/1813/193>

<http://dspace.library.cornell.edu/handle/1813/236>

When the Walters study came out, Phil Davis started a discussion thread on it at LibLicense, April 24, 2006.

<http://web.archive.org/web/20060515181758/http://www.library.yale.edu/~llicense/ListArchives/0604/msg00106.html>

All three studies calculate the difference between present university costs for subscriptions and the costs for author-side fees in a hypothetical world in which all journals converted to OA. In doing the calculation, all three assume that 100% of OA journals charge author-side fees. That is, none takes into account the Kaufman-Wills finding that only a minority of OA journals do so. (The Davis study came out in August 2004 and could not have taken this into account.)

Moreover, all three assume that 100% of the fees would be paid by universities, none by funding agencies. Yet today, I don't know of a single university that has started to pay these fees, but I know more than a dozen funding agencies willing to do so (some overtly, some quietly). The assumption in the calculation not only reverses the current reality, and has universities pay more fees than funding agencies, it utterly zeroes out the contribution from funding agencies.

It's not surprising that under these unrealistic assumptions, high-output research universities would pay more in author-side fees than in subscriptions. But there are two ways to regard that conclusion. We can take it as a glimpse of our likely future under OA journals, or we can take it merely as the unfolding of the consequences of certain assumptions, likely or not. The first picture aims to be true to the world, while the second only aims to be true to the premises. But this means that it's either false or useless. As a picture of our likely future, it depends on the truth or likelihood of its assumptions, and so fails. But I assume that it is a true picture of its premises even if it's a false picture of the world. That is, I assume that the authors did the math accurately. So now we know what would happen if a couple of very unlikely things happened. Does this help us? Only to the extent that the scenario it describes is plausible, realistic, or likely.

The authors of these studies don't say that their assumptions are true so much as convenient. But OA opponents have seized upon their calculations as if they depicted our likely future under OA journals. This is a mistake. Anyone who wants to use the calculations as credible pointers to a likely future must go beyond what the three authors have done and argue that the assumptions are true or likely to become true. So far nobody has done that (with the two key assumptions on which I'm focusing here) and I don't see that anybody can.

It's not regrettable that the authors undertook to show the consequences of an unrealistic what-if scenario. What's regrettable is the way the conclusion is easily misinterpreted—and widely taken—as a picture of our future. It's equally regrettable that we don't yet have an equally careful picture of the consequences of more realistic what-if scenarios.

Let's continue to explore the hypothetical world in which all journals convert to OA. But instead of the very unlikely scenario in which 100% of OA journals charge fees, let's explore the scenario in which about half do and half don't—the scenario closest to a clean extrapolation from present patterns. Since present patterns may not hold, let's also explore the scenarios in which 0%, 10%, 20% ... 100% of OA journals charge fees. Let's use a wider range of assumptions, including some that are true today, and debate later about which are more likely or realistic for our future.

Let's also explore the scenario in which some considerable percentage of fees is paid by funding agencies. I've never seen a good estimate of what that percentage is today, so we can't extrapolate from the present. To be fair to all possibilities, then, let's explore the scenarios in which 0%, 10%, 20% ... 100% of author-side fees are paid

by funders. Again, let's use a range of assumptions and debate later about which are more likely.

The results could be reported in a matrix showing when universities would pay more than they do now and when they wouldn't, and (for example) whether they'd pay more if 60% of OA journals charged fees and 30% of those fees were paid by funders.

Seeing the range of assumptions and their outcomes will not only help us discuss intelligently which scenarios are most likely, but also which are most desirable. We'll draw a map of hypothetical futures enabling us to steer toward the future we want.

It's somewhere between absurd and dishonest to assume that the one scenario already studied is the most likely, especially when it's so far from the present reality and when nobody is arguing that it's a likely evolution from the present reality. Let's stop citing the result as a picture of our future and start citing it as a picture of convenient but implausible assumptions that ought be refined and replaced by more accurate assumptions in follow-on calculations.

When we re-do the calculations with refined assumptions closer to today's reality, I'm convinced they will show that universities will pay *less* for OA journals than they pay today for subscription journals, even the universities with the highest research output. I'll bet a public apology on it.

Refining the calculations and publicizing the results is important and not just to set the record straight. Let me quickly put it in context. No serious OA advocate has ever said that OA literature is free to produce or publish. It can only be made free of charge for readers if people other than readers pay the bills. Producing broadcast television is not free of cost either; in fact, it's very expensive. But it's distributed to viewers without charge because others have agreed to pay the bills—for commercial TV, advertisers, and for public TV, donors of good will. That's the general model that will pay for OA journals, though the money can come from many sources other than advertisers and donors. So far, a good number of private foundations and public funding agencies have agreed to pay the bills (article processing fees) on behalf of their grantees. This helps researchers with grant funds, but unfortunately most researchers in most fields are not funded. We can close the funding gap for all academic researchers by persuading universities to start paying the fees on behalf of their faculty—or the subset of the fees not already covered by funding agencies. This will happen sooner rather than later if universities realize that paying these fees for OA journals will *cost them less* (and benefit everyone more) than paying subscription fees for toll-access journals.

Strengths of the Three Studies

I've criticized the two false assumptions used in all three studies, but I don't want to give the impression that the studies are not valuable in other ways. Nor do I want to give the impression that they are all the same.

Davis is very good at sketching some of the turf battles and political difficulties that are likely to arise once universities start to pay OA journal processing fees. These problems, though very ugly, aren't enough to make me stop calling on universities to start paying these fees—today as an investment in a superior scholarly communication system, tomorrow from the savings on canceled subscriptions—, but they are good reasons to start thinking about these problems now, before they arise.

Davis has helpfully made his data OA in an online spreadsheet. I'd have re-done his calculation myself but his spreadsheet isn't set up to make altering the two key assumptions easy. I haven't had time to figure out how to alter these two assumptions without an extensive rewrite of the sheet's structure and formulas. (Maybe a SOAN reader can with this.)

<http://dspace.library.cornell.edu/handle/1813/236>

Walters treats two scenarios separately. Under the first, OA journals charge the same author-side fee that PLoS journals charge (\$1,500). Under the second, they charge whatever fee they need to generate the same revenue (including profit or surplus) that they receive today from subscriptions. Under the first scenario, all universities, even those with the greatest research output, would pay less for OA journals than they pay now for subscriptions. In fact, the savings would be significant. Top tier research universities, like the University of Michigan, would save about half their current serials budgets and low-output universities would save up to 97%. Only under the second scenario would the top tier research universities pay more. This distinction mitigates the harm of the two large false assumptions still present on his second scenario (that 100% of OA journals charge fees and that 100% of the fees are paid by universities), especially if we agree that subscription journals converting to OA will not maintain revenues at their old levels and will not need to.

BTW, Ray English shows in a LibLicense posting (April 27, 2006) that if the average fee per article was \$3,363 or less, then even under Walters' second scenario all institutions would benefit from the conversion of subscription journals to fee-charging OA journals, *even if* we continued to assume that 100% of OA journals charge fees and that 100% of the fees are paid by universities. Walters showed what fee would be needed to preserve journal revenues at current levels, which came to over \$6k/article, but not the fee needed to trigger savings for all universities, including those with the largest research output, which is what English computed.

<http://web.archive.org/web/20060524070558/http://www.library.yale.edu/~llicense/ListArchives/0604/msg00125.html>

Dominguez recognizes that some OA journals charge no author-side fees, but oddly, in her calculation, focuses on those that do charge fees, in effect assuming that all OA

journals, or all the ones that matter, charge fees. She also understands that a good percentage of these fees is paid by funding agencies, though again, in her calculation she assumes that the research institution on which she focuses (CERN) would pay all of the fees incurred by its researchers.

A Few Qualifications

- (1) There are two senses in which “universities will pay more” in a hypothetical future in which all journals are OA. First, high-output research universities may pay more *than low-output universities* to support OA journals. Second, high-output research universities may pay more for OA journals *than they pay now* for subscription journals. (The same distinction applies to the senses in which high-output *nations* will pay more.) The first is almost certainly true and I’ve never contested it. Nor do I think that it’s a reason to resist OA journals—it’s the flip side of the unobjectionable fact that high-output research universities pay more than low-output universities for journal *subscriptions* and would *save* more when these journals convert to OA. But that’s a subject for another day.
- (2) I’m not saying that present patterns will hold in the future. Today most OA journals charge no author-side fees. Today there are far more non-OA journals than OA journals, both in percentages and absolute numbers, that charge author-side fees. Today universities pay virtually no OA journal fees and foundations pay a hefty percentage (though we don’t know the percentage). All three patterns are in flux. My argument is that we should look at a range of likely futures, not just the one very unlikely future.
- (3) I have no idea whether the fee-based OA journals are higher in quality, lower in quality, or on average equal in quality to the no-fee OA journals. As far as I know, no one has studied this question. It only comes up here because someone might reply to my argument as follows: “Yes, most OA journals don’t charge fees today. But most of the OA journals in which elite researchers are most likely to publish do or will charge fees.” This is plausible, but the opposite guess is also plausible. Until we know more than we know now about the range of OA business models, their stability, and their relationship to editorial quality, let’s enlarge our calculation to include different scenarios.

In the meantime, we shouldn’t treat guesswork about quality as evidence of quality, and shouldn’t make assumptions about quality unless we make plural assumptions in order to investigate this space without bias. Studies that limit themselves to fee-based journals on the assumption that they the only ones that matter must not draw sweeping conclusions about “OA journals” as such, but speak carefully about “OA journals that we assume are high in quality”—just as the studies to date should have spoken carefully about “OA journals that charge fees.”

If you want a few quick examples of high-quality no-fee OA journals, then I can point to BMC's Beilstein Journal of Organic Chemistry and the Max Planck Institute's three Living Reviews on solar physics, relativity, and European governance. Like the Beilstein Journal, many other high-quality, high-prestige, and high-impact journals may prefer to arrange institutional subsidies than to charge author-side fees.

A Few Calls to Action

I'd like to revise my prediction, but it's safer to make the future than to predict it. So let me issue a few calls to action instead.

- (1) Spread the word about the two facts unearthed by the Kaufman-Wills study. When you see someone assume that there's only one business model for OA journals (namely, author-side fees), or that OA journals are more likely than non-OA journals to exclude indigent authors, or that OA journals are more susceptible than non-OA journals to lowering their standards in order to generate revenue, then correct them. We know they're wrong. When you see someone assume that universities will pay more in author-side fees than they now pay in subscriptions, correct them. We know they're not relying on a fact but on a what-if scenario with false assumptions. If enough people cite the two facts, maybe in a year or so, they really will start to sink in.
- (2) Over time, especially as high prices and OA competition cause more cancellations of subscription journals, universities will enter the game of paying processing fees at the subset of OA journals that charge fees. When that happens, not only will we have to face and work out the ugly political scenarios sketched by Phil Davis, but we will have to investigate the many no-fee business models and their relationship to journal quality. We need to know how many different ways there are to pay the bills of a peer-reviewed journal and how well they work in different niches. Let's start now.
- (3) As more institutions become willing to pay the processing fees charged by the subset of OA journals that charge fees (public funding agencies, private foundations, universities, sponsors), the terms "author fees" and "author pays" will be even more deceptive than they are today. Let's kill them once and for all. They're false when applied to the majority of OA journals that charge no fees. They're misleading when applied to journals whose fees are frequently waived or paid by sponsors on the author's behalf. And they're harmful for raising groundless or exaggerated fears among authors. They're much better for anti-OA FUD than accurate communication.

