

Practical roads to infrastructure reform

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A recurrent topic among faculty and librarians interested in infrastructure reform is the question of whose turn it is to make the next move. Researchers rightfully argue that they cannot submit their work exclusively to modern, open access journals because that would risk their and their employees' jobs. Librarians, equally correctly, argue that they would cancel subscriptions if faculty wouldn't complain about ensuing access issues. And so the discussions usually keep turning around and around, not getting anywhere.

Both groups are correct, of course, and so it boils down to which of the two obstacles is easier to overcome.

As tenured faculty myself, the only way to solve the problem on our side is to remove or at least decrease the pressure to publish in subscription journals. Many have realized this, for instance there is [DORA](#), the REF [explicitly](#) excludes impact factors for evaluation and my colleagues and I have [published](#) a review of how top-ranked journals publish the [least reliable](#) science. I would argue that we have taken all the steps we currently can reasonably take. However, there is still a long and tedious road ahead of us where many important factors are out of our control. For one, the hypercompetition for positions and funding, due, in large part, to allocation of funds on a project rather than ongoing basis, leading to an overproduction of early career scientists and cash-strapped labs, is largely beyond faculty control. Second, even if public statements eventually were to manage to effectively devalue journal rank, in an atmosphere of hypercompetition, the obvious risk-averse strategy is to [keep assuming](#) that journal rank is instead used on an informal basis: having a paper in a top journal would never hurt, while one in a 'lesser' journal could. Hence, as long as there are journals and hypercompetition, faculty will continue to risk their own jobs, their employees' jobs or the lights going out in their labs if they refuse to submit to subscription journals.

In brief, the obstacles for faculty radically changing their submission strategy are a) human nature, b) government-induced hypercompetition and c) the existence of journals.

While all three obstacles can (and perhaps should) be overcome in principle, there is probably a decent argument to be made that c) may be easier to master than either a) or b). Which brings us to the obstacles for eliminating journals by simply starving them of money. As all agree that paywalls have to go, subscriptions will have to run out at some point. The discussion is no longer about "if", it's about "when". As it appears, for the above reasons, unlikely that scholars will substantially change their ways within my lifetime, I would argue that right now is the time to let subscriptions run out as the logical next step. I have two reasons for my argument, one is technical and one is logistical.

The technical argument, spelled out in more [detail elsewhere](#) is that we now have a whole slew of solutions at our disposal to create something jokingly referred to as "legal Sci-Hub". Much as the actual Sci-Hub, it would provide convenient but patchy access to the scholarly literature, only this version would be legal (with, as now, actual Sci-Hub filling the patches not covered by legal Sci-Hub). As the current subscription-based system is also patchy, but often inconvenient, there is little reason for faculty to complain if they instead get something similarly patchy but maybe more convenient. Moreover, as the change entails an upgrade that comes with massive

savings, faculty need not even be involved in the decision, as hardly any of them would know any of the involved technicalities anyway – faculty hardly know the publishers behind their journals, let alone what a link-resolver, DOI or LOCKSS is. The only thing required is, of course, to inform them that there are a few upgrades running behind the scenes and that they are asked to pardon the dust for a while. In the same letter, faculty would also be informed that the upgrades come with such savings, that they will receive a whole host of new services that such a [modern infrastructure](#) will enable.

The logistical argument involves looking at the number of people who have to be convinced to act. If researchers are asked to act next, this would entail convincing just under [8 million](#) researchers at [~10,000 institutions](#) to risk their jobs. What are the number of infrastructure experts who need to be convinced that now is the time to bring their institutional infrastructure from the 20th into the 21st century? A large fraction of subscriptions are by now bundled up in so-called “[Big Deals](#)”. These Big Deals, in turn, are often negotiated by regional, national or supra-national consortia. These consortia constitute existing collaborations between institutions in order to solve an infrastructure problem: paying for [increasingly overpriced subscriptions](#). There are currently about 200 of these consortia organized in the “[International Coalition of Library Consortia](#)”. Hence, one would have to convince the leading individuals at only a few hundred organizations that now is the time to shift their infrastructure from subscription-based solutions to modern solutions. Clearly, this would not cover all subscriptions, but it would be so widespread, that every institution on the planet would contribute in some way or another and hence all institutions would at least receive notice of the upgrade. Starting with these consortial Big Deals should bring in several billions (US\$ or €) annually, which would easily cover implementing the more advanced components one would expect from a modern scholarly infrastructure during this transition period. Any individual researcher who would still like to read a subscription-based journal (who would submit to these journals to make them worth reading?) can still subscribe with their own funds, just as they can still write their manuscripts on type-writers or dictate them to their secretary, if they so choose. Subscriptions simply do not belong to the canon of solutions any more, that tax-funded public institutions can afford to subsidize.

Condensing these estimates to an (admittedly very simplified, but rather pointed) dichotomy, asking researchers to submit exclusively to OA journals entails convincing just under 8M individuals at ~10k institutions to risk their jobs, while asking librarians to let subscriptions run out entails asking maybe 1k individuals at ~200 organizations to do their job.

While I wouldn't dare to imply that any of these two options were trivial or even just easy, from my faculty perspective, the second option seems to be the technically and logistically less difficult one.

This insight of course does not entail shifting responsibility for change away from me personally or any of my colleagues, towards librarians. Librarians and faculty are fundamentally on the same side in this issue and share the same interests in a scholarly commons. As such, there is no way around symbiotic cooperation if we strive to overcome the significant social hurdles set up by a self-reinforcing system towards a major shift in the overall research culture.

We all need to change and adjust and here I have laid out just a few of [many reasons](#) why libraries are in a unique position to now take the second step – after faculty have started to boycott publishers like Elsevier, created OA journals, are submitting more and more of their manuscripts to them, created preprint servers and are constantly increasing their preprint-deposition. At this point, there is very little further action I can see faculty can take. Librarians have already embraced the open access movement many years ago by creating repositories at almost every institution, a vital component of a modern infrastructure. Librarians have a many centuries-long tradition of providing services for faculty. Now is the time for maybe their most critical service yet, completing the modernization of our scholarly infrastructure, a necessary next step to halt further commodization of scholarship and to keep working towards a scholarly commons.