

Unbinding Knowledge: A Proposal for Providing Open Access to Past Research Articles, Starting with the Most Important

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1. Imagining a Way to Accelerate Research

Most open access projects focus on new literature and leave open access to previously published literature an open problem for the future. This made sense in the early days of the open access movement, when helping hands, funding, and acceptance were all less common than they are today. Providing open access to new research articles is generally easier and less expensive than providing it retroactively to older articles. New articles are born digital; copyright holders are available for consent or persuasion; the benefits of increased audience and impact are most compelling at the time of publication; and a subsidy from the author’s funding agency or employer is often available at that time and not later. There are still good reasons to make new literature a higher priority than older literature. But today, when open access has significant support and momentum, there are good reasons to include older literature in our strategic vision.

Some universities are asking their faculty members to deposit all their research articles, new and old, in the institutional repository. Some journals are digitizing their back runs and providing open access to them. PubMed Central will digitize and provide open access to the back runs of selected medical journals, and the Wellcome Trust spearheads a similar project.¹ These efforts are all critical and should continue. But many journals cannot afford to digitize their back issues; many are not eligible for PMC or Wellcome digitization (if only because they’re not in biomedicine); and, most

importantly, many are still *unwilling* to offer open access to their back issues. For those journals, here's a step in the right direction.

The basic idea is for an authoritative scholar or organization to compile a bibliography of the 500 most important previously published research articles on a subject of urgent public interest, such as the treatment and prevention of HIV/AIDS. Then a hard-working soul asks the journals that published those articles to provide open access to them retroactively.

Let's say that the person compiling the list of articles is the *bibliographer*. It won't be hard to find a credible bibliographer. It could be a scholar with a track record in the field or a respected organization like the International AIDS Society.

Let's say that the person who contacts the journals is the *facilitator*. The facilitator might be a volunteer, but I expect that the work will be extensive and that foundations will be willing to fund it. The facilitator will have many tasks. First ascertain which articles from the bibliography are already open access and temporarily put them to one side. Then organize the remaining articles by journal. Contact each journal, identify the articles it published from the list, and ask it to provide open access to those articles. As needed, explain the request, answer questions, and negotiate details.

Some journals will accept these open access invitations and some will not. When the responses are in, the bibliographer and facilitator, or the organizations sponsoring them, will publicly thank the participating journals as well as the providers of the articles that were already open accessible. The sponsors will produce a revised online version of the bibliography with links to open access editions of its articles.

Articles published in journals that decided not to cooperate will not appear on the list. The project purpose is to open the literature and applaud cooperation, not to publicize or shame non-cooperation. (More on this in Section 3, below.)

For lack of a better term, let's call such initiatives *unbinding projects*. I'm hoping that unbinding projects will be tried first in medicine, where the public good is easily recognized, the need is urgent, and open access is already familiar. However, the strategy is general and could be applied wherever there is clear social utility in accelerating the pace of research. Open access to the most important papers on artificial photosynthesis, fuel-efficient engines, or pollution-scrubbing smokestacks will advance research and development on these beneficial technologies.

2. Why Would a Journal Agree?

Most journals receiving these requests will not be open-access journals, but most will have electronic editions. Providing open access to the articles identified by an unbinding project will not require peer review, editing, or manuscript preparation. It will only require moving a copy of the electronic file to an open-access Web site.² At the same

time, the journal might add some boilerplate text about the article's open-access status, and add an icon or annotation to the journal's table of contents to indicate that the article is now openly accessible.

Participating journals will help a good cause. They will help understand, treat, and prevent HIV/AIDS. To doubt this one must believe that good science is ineffective, that communicating scientific results does not make them more useful, or that the best scientific literature is already accessible to all those who can make use of it.

Participating journals will generate good will for themselves. They will become more visible as journals that published landmark articles. They will also become visible as journals willing to share knowledge and accelerate research on a matter of public importance. It shouldn't take an expensive marketing department to convert this kind of reputation into advantage in the competition for submissions, advertising, and subscriptions.

What about unbinding proposals on non-medical topics? Will journals feel the same moral force behind these requests? We won't know until we try the experiment, but it seems safe to assume that the journals publishing important articles on (say) wind power will be the same journals most receptive to the message that accelerating research on wind power is an important public good.

Peer review, editing, and manuscript preparation cost money, of course, but for almost every article included in an unbinding project, the journal will already have recovered these costs. Even if the journal sells access to its back run, this revenue is usually a very small part of its overall revenue stream. Moreover, participating in an unbinding project will only open up access to handful of its articles, not to the entire back run. The project does not ask a journal to accept or publish new articles, but merely to lift the protective barrier from previously published and previously amortized articles so that more people can make use of them.

The journal needn't release the articles into the public domain. If it is the copyright holder, then it can retain copyright.

Finally, the journal needn't worry that this kind of open access, even if extensive, would cause subscribers to cancel. That may be a worry with a general policy to provide open access to all new articles, or all past articles after an embargo period, but it does not arise with the selective, unpredictable, and retroactive opening of access to articles that turn out to be landmarks in their field.

It would be wonderful if all journals agreed to this offer, giving researchers, physicians, and the general public open access to 100% of the identified articles. But we can't expect that and we don't need that in order to justify the effort of trying.

Now imagine that similar bibliographies are compiled, and similar requests made, by the American Cancer Society, the Alzheimer's Association, the Royal Blind Society, the Epilepsy Foundation, the Leukemia and Lymphoma Society, the Malaria Foundation International. ...³

3. Applauding, not Shaming

Although the purpose is to open access to important science, and to applaud cooperation rather than shame non-cooperation, some important science journals may feel that a decision not to cooperate will be accompanied by a stigma. Working scientists will know that any list of important articles in their field will include some from that journal; hence, the journal's omission will be a sign of non-cooperation.

I see no way to avoid this perception. It will exist no matter how scrupulous the sponsors are to avoid any criticism of journals that do not cooperate. Different journals will give this perception different weights, but care and honesty in running the program will not eliminate it. Moreover, because this perception may be intrinsic to the decision not to cooperate, there may be no special reason to counter it.

But here are a few possibilities for countering it in case they are attractive to journals. All articles on the original list of 500 could be included in the published bibliography. This will give due recognition to the scientists who did the important work and the journals that published it. The drawback to this plan is that the bibliography could not link to open-access versions of articles from non-cooperating journals, and that could highlight their decision not to cooperate even more than omitting them. Another possibility is for the bibliography to link to priced or toll-access copies of these articles, at the journal web sites, in order to facilitate access for those readers who are willing to pay or who happen to have access privileges through their institutions. But these links would have to be labeled as toll access (or conversely, the rest would have to be labeled as open access) in order to help the sponsors identify the journals they wish to applaud for their cooperation. Since the balance of advantages and disadvantages for non-cooperating journals is a close call, the choice about these options might be left to the journals themselves.

A third possibility is to encourage the authors of the articles published in non-cooperating journals to provide open access to their articles themselves, through an institutional or disciplinary archive or their personal web site. Then the bibliography could link to that open-access copy. The drawback is that some journals still do not consent to postprint archiving. However, some journals that might not provide their own open-access copy of an article might consent to postprint archiving by the author.³

4. How Much Would This Cost?

The sponsoring organizations would pay for identifying the most worthy 500 articles, discovering which are already available in open-access form, contacting the journals publishing the non-OA articles, making the request, explaining it, and conducting any follow-up negotiations. The sponsoring organizations would also bear the cost of preparing and hosting an online version of the resulting bibliography with active links.

All these costs could be paid by the same organization, or they could be split roughly as suggested between a disease advocacy organization (compiling the bibliography) and a research or humanitarian foundation (facilitating the rest). This is a natural opportunity for collaboration between scientific and philanthropic organizations and for cost-sharing between organizations with common interests.

The journals would pay the cost of copying a few files to a new location, adding boilerplate open-access licensing information to each one, and making minor revisions to a few tables of contents. When the electronic file is already prepared and the server costs are already part of the journal's overhead, then there is zero marginal cost in providing worldwide open access to the file, i.e., letting more people view the file that has already been created and is already online. As noted, the journals would already have paid the costs of soliciting, vetting, editing, preparing, and publishing electronic versions of the articles, and these costs were already recovered from the journal's subscription and licensing revenue.

Journals might be very proud that their articles were identified in the bibliography, and proud to enhance their usefulness by providing open access to them. If so, then they might take on the small additional cost of a press release, or even a press conference, to announce the unbinding.

If the journal sells access to its back run, then it might lose something by providing open access to a very small but very important fraction of that back run. If it offers pay-per-view access to individual articles in the back run, rather than all-or-nothing access to the back run, then it may lose revenue from some of its best-selling articles. This is a real cost that should not be denied, although its amount will be difficult to ascertain and almost certainly small. A journal will naturally take this cost into account when deciding whether to agree to the unbinding request.

Because journals need not worry that this form of selective, unpredictable, retroactive open access will cause subscribers to cancel, their decision on the unbinding proposal will turn almost entirely on lost revenue from future sales of access to the identified articles and whether this is outweighed by the resulting benefits for public health and the journal itself. Since typically the lost revenue will be vanishingly small, the public good large, and the good will generated for the journal considerable, we can predict that many journals will agree to participate.

The costs to the sponsoring organizations will certainly be greater than the costs to any single journal (from unbinding), and probably greater than the unbinding costs of all the participating journals combined.

5. Moral Suasion v. Money

Because a journal's costs in complying with the unbinding request are so low, it is reasonable to ask journals to make this gesture for the sake of assisting an important cause.

If moral suasion does not work and the sponsoring organizations have the means, then journals could be paid to release the selected articles into open access.

Moral suasion is preferable to money for two reasons. First, participating in an unbinding project costs a journal very little. Second, the sponsoring organizations would not have to pay an extra cost to bring about this public good, freeing them to pursue similar projects on other fronts and do more for the public good with its limited resources.

The publishers participating in the HINARI program, for example, are providing free online access to entire nations in the developing world without asking philanthropists to pay their costs. They are producing the journals in electronic form anyway. Giving access to new readers who couldn't buy subscriptions costs the journals nothing, generates good will, and enfranchises huge segments of humanity. It's definitely win-win.

Someone might object that the HINARI analogy isn't entirely apt because some of the researchers who would read the articles on the HIV/AIDS bibliography would be in a position to pay for access. That is true. But extending the same line of thought shows how to answer the objection. Many of the researchers, perhaps most of the researchers, who would want to read and use the articles in the bibliography will be affiliated with institutions that already subscribe to the relevant journals. They're not just in a position to pay; they're already paying. So instead of losing more revenue, the journal gets the best of both worlds: good will for providing open access and paid access by most researchers at the same time.

Another reason why moral suasion might work here is that the journal approached to unbind a given article is the only journal that can make this particular contribution to the public good. That makes the unbinding request very different from the request for a monetary donation, no matter how good the cause. Money is fungible and anyone else could give it. This well-known fact dilutes the moral force of the request and leads many good people to hope that their neighbors will make up for them. By contrast, scholarly journals are notoriously non-fungible. This fact is normally an obstacle to open access: if journals were fungible, then journals in the same research niche would compete directly with one another, and (assuming comparable quality and prestige) affordable journals would kill off the expensive ones, and free journals would kill off everything else. But an unbinding project turns the non-fungibility of journals to advantage. People asked for help are most likely to give it when they are in a unique position to do so. When a journal is asked to provide open access to one of its articles, then it can't assume that it was targeted in bad faith (as if the article were really unimportant) or that anyone else could provide this public service.

There's no reason to rule out the possibility that some requests will be accompanied by money and some will rely on moral suasion alone. The two can coexist. If the only way to free up the most important articles on superconducting ceramics, Dutch elm

disease, or human-powered flight is to pay for them, then possibly someone could be found who would pay for them.

6. Variations on the Theme

- Free up the 500 most important papers on HIV/AIDS in 2004. Two years later liberate the most important 100 published during those two years. Repeat every two years or until all new research is open access.
- To save time and money, the group funding the bibliographer could start with existing bibliographies in the field.
- To increase the acceptance and authority of its bibliography by researchers in the field, at the expense of some time and money, the group funding the bibliographer could poll experts in the field, or even assemble an eminent editorial board just for this purpose. It could also post the draft bibliography online for a comment period.
- Journals that appreciate the logic of this project might spontaneously offer open access to articles in their back run that have somehow been identified as important. For example, when a scientist receives an award for a research breakthrough, a journal publishing some of his or her past articles could instantly provide open access to them. At the same time, it could issue a press release announcing that these important articles are now free to the research community and general public.⁵
- Likewise, individual scientists who appreciate the logic of this project might ask the journals that published their articles on matters of public importance to provide open access to them retroactively, or even immediately. Journals might be more responsive to organized projects than individual initiatives, but a groundswell of individual requests might be as effective as an organized project. Neither scientists nor journals need wait for brokers or philanthropists to mediate the unbinding requests.
- Participating in an unbinding project, or simply witnessing other journals participate, will demonstrate how open access can benefit journals and publishers, and not just their authors and readers. By making a journal's brand more visible, and cementing its reputation as a journal publishing important articles and serving important public needs, participation can help a journal compete for the next generation of important articles, not to mention advertising and subscriptions. As journals learn more about these benefits, some will move other articles from their toll-access back run to their open-access back run. Some will realize that they gain more from increasing the visibility and accessibility of their articles, at least after a certain time, than from selling access to them.
- There is clearly nothing magical about the number 500. It would be better for HIV/AIDS patients if all articles useful for treatment and prevention were openly accessible than just 500. And on some new or narrow topics, there may be far fewer than

500 useful articles already published. The bibliographer can set this number in accordance with the topic and size of the body of published literature. When scientists bypass the bibliographer and facilitator, and take their requests directly to journals, they will clearly have no particular number in mind, and journals shouldn't feel constrained by a number.

- The sponsors could create a wide-ranging web site devoted to their unbinding project. In addition to the bibliography with active links, and perhaps the archive of papers, the site could contain the sponsors' press release of public thanks and some background on the project's purpose and method. If the project's beneficiaries (for example, article authors, other researchers in the field, and AIDS patients, their families, friends, and physicians) want to offer public thanks and testimonials, this web site would be the natural place to do so. The site could also provide information for donors willing to help offset the project's costs.
- When one or two of these projects have been brought to a successful conclusion, advocacy organizations will be eager to propose new projects and scholars will be eager to nominate articles for them. If the early projects are difficult, we can expect some of the difficulties to disappear as the idea becomes more familiar and we gain experience in implementing it.

7. An Objection from the Side of Open Access

It would be ironic if subscription-based journals liked this idea more than open-access proponents did. Open-access proponents might object that this is not true open access, and that by satisfying journals, authors, and readers, it might delay progress toward true open access.

Here's my quick reply to the objection. As the Bethesda Statement on Open Access Publishing makes clear,⁶ open access is a property that belongs primarily to individual articles, and only derivatively or secondarily to journals. An unbinding project will create true open access to the articles from participating publishers. What an unbinding project will not do, on its own, is produce open-access journals that provide open access to all their articles past and future. That is true. But while there are many, highly diverse strategies for persuading conventional journals to offer open access to more of their articles, unbinding projects would not interfere with any of them. On the contrary, the most promising strategy I see for getting subscription-based journals to consider open access seriously is to get them to experiment with it. Unbinding projects are among the easiest and least risky kinds of open-access experiment. Moreover, they do not hinder the launch of new open-access journals or the spread of open-access archiving, and even boost them by directly acquainting more authors, readers, journals, and publishers with the benefits of open access. Finally, while other open access strategies are at work, having their own effects at their own speeds, this one could be

enlarging the body of open-access literature, focusing on previously published articles that would otherwise remain behind access barriers, and starting with those that could be most helpful to urgent scientific and social problems.

8. Conclusion

Opening access to important research articles will accelerate research and all the benefits of research, from new medicines and therapies to improved clinical practice. It will also benefit the journals that published the articles by generating good will, increasing their visibility, and enhancing their reputation for scientific excellence and humanitarian assistance, all of which can translate in to bottom-line advantages in the competition for submissions, advertising, and subscriptions. This method of opening access can harness the interests, energy, and resources of groups that normally have little involvement in scholarly publication. It costs journals very little. Many journals will find that it brings them a net gain and many will consent even in the face of a small loss because of the gain it brings to others. Unlike other open-access initiatives, which focus on future literature, this one opens up past articles, starting with the most useful and important. It introduces journals to the methods and economics of open-access publishing, which could lead to more experimentation with open-access publication. It doesn't ask journals to convert to open access, but limits the request in scope and risk, making it easier for journals to assess and accept. It is a frank business proposition, with true benefits for the journal to weigh against the costs. It invites deliberation, not confrontation, and moves the open-access question from sometimes obstreperous conferences to the quiet of the journal's business office. Finally, it is likely that many journals will see it as a win-win proposition, agree to it wholeheartedly, and thereby enlarge the body of open-access research literature, make their own important articles more useful, and accelerate research on a matter of vital public need.

I thank Barbara Cohen, Helen Doyle, and Debra Lappin for comments on an earlier draft of this article. I give special thanks to Darius Cuplinskas for the stimulating conversation in which this idea emerged almost fully formed. He is certainly its coauthor. [...]

Notes

1. For some of the best university policies encouraging or requiring faculty to deposit their research output in the institutional repository, see the Institutional Self-Archiving Policy Registry.

<http://www.eprints.org/signup/fulllist.php>

Unfortunately there is no definitive list of non-OA journals with OA back runs. But a good collection of such journals is available at Highwire Press.

<http://highwire.stanford.edu/>

PMC Back Issue Digitization Project

<http://www.pubmedcentral.gov/about/scanning.html>

Medical journals backfiles digitisation project, sponsored by the Wellcome Trust, the Joint Information Systems Committee (JISC), and the National Library of Medicine (NLM)

<http://library.wellcome.ac.uk/node280.html>

2. There are several ways to do this. The journal could move a copy of the electronic file to a newly-created open-access directory on its own web site. An open-access directory is simply one that is not password protected. Or the journal could deposit a copy of the file in PubMed Central or another open-access repository for that discipline. Since both acts are trivial, and take only minutes of someone's time, a journal could do both.

The leading open-access publishers today do both. BioMed Central and the Public Library of Science host their own open-access copies of their articles, and deposit copies in PubMed Central.

BioMed Central

<http://www.biomedcentral.com/>

Public Library of Science

<http://www.plos.org/>

PubMed Central

<http://www.pubmedcentral.nih.gov/>

3. For a partial list of disease advocacy organizations, see the membership roster of the U.S.-based National Health Council,.

http://www.nationalhealthcouncil.org/aboutus/membership_index.htm

4. "Preprint archiving" is the deposit of an unrefereed preprint in an open-access archive. "Post-print archiving" is the deposit a refereed version, or a version approved by a journal's peer-review process. For a searchable database of publisher policies on preprint and postprint archiving, see Project SHERPA,.

<http://www.sherpa.ac.uk/romeo.php>

5. When a scientist wins the Nobel Prize, clearly the journals that published his or her work would benefit science as well as their own standing if they provided open access to the break-

through articles. But the stimulus might come from a turn of events, not just the rising star of an author. For example, after the September 11 attacks, McGraw-Hill offered open access to a full-text book, Glenn R. Schiraldi's *The Post-Traumatic Stress Disorder Sourcebook: A Guide to Healing, Recovery, and Growth*. The fact that the McGraw-Hill was helping victims of post-traumatic stress disorder and advertising itself at the same time did not undercut the usefulness of its action. On the contrary, it is precisely by mixing self-interest with public service that public service becomes more likely and more sustainable.

Details on the McGraw-Hill offer

<http://www.mcgraw-hill.com/media/news/2001/09/20010928b.html>

6. See the Bethesda Statement on Open Access Publishing, June 20, 2003,.

<http://www.earlham.edu/~peters/fos/bethesda.htm>

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By: Peter Suber

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