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The Fallacy of Open-Access Publication



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Information is more accessible than ever. If you are curious about the cast of a TV show from 1975, or lyrics to your favorite '80s pop song, you'll be satisfied in seconds. Yet if you want to read scientific research articles, you are likely to come up empty-handed. And that "open

access" model that was supposed to offer a solution? It's created new problems.

Academic publishing has fallen into disequilibrium and desperately needs a new approach. Time and again, when new efforts have emerged to facilitate broad access to publicly funded research, private companies have intervened and fought to restrict it. In our information age, it is simply unacceptable that the public cannot readily gain access to research paid for with public dollars.

Scholarship is typically locked up in journals that are so expensive that even university libraries may be priced out of the market. One example is *Oecologia*, a highly reputable journal in our discipline (ecology). Its publisher, Springer, charges campus libraries more than \$10,000 a year for a print copy and electronic access. Publishers often bundle journals — much like cable companies package channels together — driving prices higher by making a library pay for products it doesn't want in order to get the ones it does want.

In short, we are getting fleeced. The major scientific publishers enjoy profit margins in excess of 30 percent. Such profits are stratospheric, well over the average for every

business sector of the Fortune 500. Publishers are getting rich on the backs of underfunded academic libraries and the unpaid labor of academics who serve as editors, reviewers, and authors. That system is unsustainable.

Just as cable viewers are finding new ways of watching TV, researchers are using digital tools to get access to articles without university subscriptions. Enter open-access publishing — a model that emerged in response to the excessive cost of journals. Open-access articles are not copyrighted by the publisher, and are free to everybody. Yet if anything, that model may be limiting the communication of science.

Open access has turned out to be a misnomer. Of course, free access to research findings is good for science and society. However, open access is clearly not freely open to the scholars who are required to pay exorbitant fees to publish their results, often out of their own pockets. Graduate students who wish to publish two open-access articles a year in the journals of their choice might need to use more than a quarter of their annual income to do so, if they don't have large grants to cover the fees. One journal that is exclusively open access required graduate students to provide copies of personal bank statements in order to be considered for a fee reduction. That same journal also has denied fee reductions to students who don't have external funding and who earn less than \$20,000 a year.

Advocates of open access are quick to bemoan the "paywall" that keeps people from reading research findings. The adoption of open-access publication does not eradicate the paywall, but instead moves the cost burden in front of researchers themselves. Open access has been around long enough for us to recognize that its cost cannot be borne by the external funding of individual research labs.

There are also sincere academic-integrity concerns about scholars paying money to have their work published, especially as many open-access journals are run on a for-profit basis. In a sense, open access is — or can be — payola. The only source of integrity is the faith that the editors are acting honorably.

We find both the traditional and the open-access models to be unacceptable because they impose substantial barriers

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among researchers, publication, and the public.

Let's turn to the publications that do not have huge open-access fees for authors, but have low subscription costs. A good example in our field is *Oikos*, published by Wiley, and it costs libraries a quarter of the cost of *Oecologia*.

Why is *Oikos* priced more reasonably? It is published by the for-profit megapublisher Wiley, under contract with the Nordic

Society *Oikos*. The scholars who operate the journal negotiated a contract with Wiley that keeps the subscription cost down. The story is the same for many other academic-society journals that contract with for-profit and university presses. Moreover, the contract with the publisher subsidizes the operation of the societies, which typically use those funds to support junior scientists and academics in developing nations. While this example may not hold for all academic societies in all fields, it provides a model for moving forward.

Historically, most scholarly journals were published by academic societies. But in recent decades, as the rate of scientific publication has increased exponentially, many new journals have sprung up independent of scholarly societies and operate with corporate governance models. The emergence of such independent journals has far outpaced the efforts of most academic societies to create new publishing venues.

One exception — and a good example of leadership on this front — has come from the Ecological Society of America, which has steadily added new journals to keep up with the heightened rate of publication. ESA recently ended its publishing agreement with a small academic press, and is now publishing with Wiley. That move will ensure the fiscal stability of the society and keep its journals affordable and accessible. In turn, scholarly societies like ESA benefit from shared profits that are used to promote society goals and fund grants for students to attend meetings. Some small academic societies are even

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footing the bill for open-access journals that are entirely free to authors.

Journals connected to a scholarly society tend to have low subscription costs and are far more accessible than the independent for-profit journals that charge libraries an arm and a leg. Academic societies are positioned to negotiate with large publishers for reasonable library-access rates, which means that academics would encounter fewer paywalls.

Moreover, part of ESA's arrangement with Wiley is the right to self-archive articles in public depositories — also known as "green open access." That ensures that anyone without access to an academic library can see new results as soon as they are published.

Other academic societies should follow ESA's example, and negotiate with their publishers to provide green open access for their own journals. Regardless, any researcher who encounters a paywall will find the email of the corresponding author on the same page, and in our experience, authors readily share copies of their academic articles on request and sometimes engage in valuable, science-advancing correspondence. Authors who publish their research are typically pleased to provide reprints upon request.

But of course that kind of accessibility to research articles is not uniform. That is why academic societies should take the lead on this. They are well positioned to collectively bargain with for-profit publishers to broaden access, on behalf of the authors and the editors of academic journals.

Publication through academic societies will improve science delivery and communication, and provide support to the other missions of these organizations, including public outreach and advocacy for sound science policy. Moreover, a greater share of revenues from journals could be directed toward the societies, instead of the gargantuan profit margin of the publishers. These funds can be invested into comprehensive efforts to make research findings accessible to the public.

What can we as academics do to improve access to scientific research papers?

- We can support scientific societies by supporting their journals. When we have time

to volunteer as a journal editor or reviewer, make sure it's for a journal that is part of a nonprofit scholarly society.

- We should expect compensation if the journal is not part of a scientific society and is published solely for profit. Scientific publishers could pay editors and reviewers a flat fee for handling and reviewing manuscripts. Alternately, the company could waive the publishing fees for any future articles written by volunteer editors and reviewers in its journals. Compensation would probably also increase the quality of reviews.
- We need to support our societies, but also hold them accountable to their constituency. While small academic societies tend to look directly after the needs of their members, large organizations such as the American Association for the Advancement of Science run their journals much like the academic megapublishers. The flagship publication of AAAS, *Science*, is notorious for restricting public access to important original research papers. Many of us are members of AAAS, and scientists serving on its board of directors can work for policies that more effectively serve the membership and the public.

We need to continue to promote open access for scientific publication. However, open access is not the solution to all problems in academic publishing. Our scholarly societies are capable of taking robust steps to serve scientists in this changing environment. The capacity of society journals to meet our needs will grow when we choose to publish in, review for, and subscribe to society journals.

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