COMMENTARIES

A Paywall Coming Down, Another Being Erected: Open Access Article Processing Charges (APC) may Prevent Some Researchers from Publishing in Leading Journals

Francisco E. Fontúrbel[1], and Jeferson Vizentin-Bugoni[2]
[1]Instituto de Biología, Facultad de Ciencias, Pontificia Universidad Católica de Valparaíso, Av. Universidad 330, Valparaíso 2373223 Chile
[2]Department of Natural Resources and Environmental Sciences, University of Illinois at Urbana-Champaign, Turner Hall, Urbana, Illinois 61820 USA

Two decades ago, print journals started an unprecedented journey into the digital era, making their articles freely available online. The first papers were free for download from the publisher's websites for a while, revolutionizing the access to scientific information. For those of us who spent many hours in the libraries reading papers, searching for journals, and making photocopies of selected articles, it was a game-changing leap. However, free access was quickly replaced by a subscription model that erected an access paywall, severely criticized by many (the problem is summarized well in this documentary, *available online*[1]). Access restrictions led to the emergence of broadly used "cheat" mechanisms such as SciHub (Bohannon 2016), but also gave rise to the open access movement.

In the last decade, we have witnessed the appearance of a large number of open access journals. Recently, such journals have moved toward arguably more democratized models of access to scientific information, which also spawned a very profitable but controversial editorial industry (Matthews 2018), including the rise of a long list of predatory journals (Beall 2012). Gold open access journals (i.e., authors pay to publish while readers access for free) have rapidly increased in recent years. Some prestigious journals have shifted entirely to this model, not without protests (Peterson et al. 2019). Although this new paradigm is great for readers, for researchers it means exchanging one problem for another: Now, we have to pay article processing charges (APC). Most open access journals have APCs ranging between USD 1500 and 2500, but others (including some new journals that quickly become leading

Fontúrbel, F. E., and J. Vizentin-Bugoni. 2021. A Paywall Coming Down, Another Being Erected: Open Access Article Processing Charges (APC) may Prevent Some Researchers from Publishing in Leading Journals. Bull Ecol Soc Am 102(1):e01791. https://doi.org/10.1002/bes2.1791

outlets) charge as much as USD 6000. While low-income countries have automatic APC waivers and some top universities (mostly in Europe and North America) have worked out favorable agreements, these costs are impediments for most researchers from developing countries.

Plan S, an initiative toward open access scientific publishing that began in 2018, aims to make scientific information available to anyone by 2021 (Else 2018). While this initiative has been encouraged by developed countries, many developing countries are implementing national open access policies. The fourth principle of the Plan S states "publication fees should be covered by the funders or universities, not individual researchers," but this is not the case in many developing countries where institutions rarely allocate resources for publishing fees. As for other social parameters, inequality around the globe also exists in science. Even with funding and partial waivers, researchers in developing or least-developed countries must direct the limited resources granted to personnel, equipment, and fieldwork, being unable to afford APCs. For example, an APC of USD 3000 is equivalent to a year of scholarship for a master student in Brazil, or the cost of an entire season in the field collecting data in Chile. With journals moving toward gold open access, scientists who cannot pay APC are increasingly limited in publishing their findings and competing for space in APC-free journals (Solomon and Björk 2012). Furthermore, APCs are often not transparently justified, as the actual cost breakdown is usually undisclosed.

In summary, this system leaves a large number of researchers behind a similar paywall as the one that once prevented readers from accessing scientific literature, accentuating geographical inequality in scientific output. It is urgent that publishers consider new business models and local authorities in developing countries foster appropriate policies toward open access without putting the funding burden entirely on the researchers.

Note

[1] https://vimeo.com/273358286

Literature Cited

Beall, J. 2012. Predatory publishers are corrupting open access. Nature 489:179.

Bohannon, J. 2016. Who's downloading pirated papers? Everyone. Science 352:508–512.

Else, H. 2018. Radical plan to end paywalls. Nature 61:17–18.

Matthews, D. 2018. Is it time nationalise academic publishers? Times Higher Education. https://www.timeshighereducation.com/blog/it-time-nationalise-academic-publishers

Peterson, T. A., et al. 2019. Open access solutions for biodiversity journals: Do not replace one problem with another. Diversity and Distributions 25:5–8.

Solomon, D. J., and B. C. Björk. 2012. Publication fees in open access publishing: Sources of funding and factors influencing choice of journal. Journal of the American Society for Information Sciences 63:98–107.