

Anna-Sofia Ruth

Open Access Publishing

A structured reform or a confusing mess?

Free access to all research literature is considered a legitimate principle, but Open Access terminology and the whole notion of uncontrolled distribution remain foreign to many people. When issues such as profit, prestige, career advancement and global economic inequality are involved, there is no simple way of turning the idea into reality. However, both the spiralling costs of journal subscriptions and the popularity of platforms circulating pirated research publications call for a change. It is a question of creating a sustainable model for doing and disseminating research. The purpose of this article is to provide a general view on Open Access publishing.

The spiralling costs of journal subscriptions and the high profit margins of academic publishers¹ have caused much discussion during the past several years. The concentration of publishing in the hands of just a few corporations has made such increase possible.² As early as in 2012, Harvard University stated that it cannot keep paying more and more for journals, thus encouraging researchers to publish on Open Access.³ Still, no drastic changes have taken place within the publishing industry. University libraries have had to trim their collections and discontinue journal subscriptions.

Apart from costs, an important argument for Open Access is that publicly funded research should benefit society as a whole. Therefore, it should be open to all users, including citizens, policy makers, journalists professionals and businesses. The wider the audience, the bigger the potential for gaining attention and creating multidisciplinary and inter-sectorial collaborations to foster societal impact.

Anna-Sofia Ruth, Information Specialist at the Tampere University Library in Finland and Coordinator for the Publication Forum, the Finnish register of scientific publication channels, at the Federation of Finnish Learned Societies from 2014–2017.

Beginning with the European Commission's Horizon 2020 program, many national and international research funders currently require or at least recommend Open Access publishing. Among the Nordic countries, Denmark, Norway and Sweden have set national strategies to support the adoption of Open Access. In Denmark, the goal is to have all publicly funded research openly available by 2022. In Norway, the deadline for full Open Access is 2024, and in Sweden the deadline is 2026. Such clear-cut policies are yet to be introduced in Finland and Iceland, but research institutions and important research funders in both countries have mandates for Open Access.⁴

Types of Open Access

In 2002, the Budapest Open Access Initiative declaration stated that:

“Open access to peer-reviewed journal literature is the goal. Self-archiving (I.) and a new generation of open-access journals (II.) are the ways to attain this goal. They are not only direct and effective means to this end, they are within the reach of scholars themselves, immediately, and need not wait on changes brought about by markets or legislation.”⁵

Since the declaration, many different views and many different ways of carrying out Open Access have emerged. Naturally, self-archiving and publishing in non-paywall journals remain the most well-known forms of Open Access. There is no widely accepted consensus on which is better. However, as self-archiving copies of published articles hardly changes the current publishing model, perhaps the highest hopes are set on flipping journals from the subscription-based model to the Open Access services-based model. This might not require extra funding if all the money that is already invested in the publishing system were to be redirected.⁶

Gold Open Access means publishing in a journal that contains only freely available articles. Instead of subscription fees, these journals are financed using article processing charges (APCs). Some journals are funded by library consortia or other organizations and therefore no charge is incurred. In cases where APCs are collected, the costs can often be subsidized by, for example, grant funding or institutional funding, although available funding sources depend on the discipline.⁷ The gold route also works for books and book chapters.

The publication process is often faster in open journals compared to traditional journals. Many also use Creative Commons licenses that help clarify terms and conditions. In many cases, the authors retain copyright when publishing in an Open Access journal, so the model is in some ways fairer to authors than the subscription-based model. The downside of the gold route is that the selection of open journals is not as wide and the journals are not as renowned as traditional journals. A recent study shows that Green and Hybrid Open Access articles are cited above the world average, whereas Gold Open Access articles and paywalled papers are cited below the world average.⁸ Of course, perceived quality and prestige change over time, which means this is not necessarily a permanent problem.

Green Open Access refers to self-archiving (or parallel publishing). This means publishing in a subscription-based journal and archiving a version of that article in an in-

stitutional or other open, non-commercial repository. The green route has many benefits from a researcher's point of view; it does not cost money, almost all publishers allow it in some form and it often complies with funders' requirements. While self-archiving is free of charge in terms of money, it is not so in terms of work. Unless the author has retained full copyright for the published work, there are many questions to be answered. To publish a copy of their own work, researchers must check whether the journal allows self-archiving, and if so, which version. The allowed version can be either the pre-print (not refereed), the post-print (refereed but without layout) or the publisher's PDF (final version with layout). Another thing to check is whether the journal allows self-archiving immediately or after a certain delay, an embargo period. Typical embargoes range from six months to several years. There is a tool, SHERPA/RoMEO, to help figure out some of these issues, but it does not contain every last journal or all relevant pieces of information.

Many subscription-based journals provide the opportunity to open individual articles in return for payment. This is called *Hybrid Open Access*. To authors, publishing in a hybrid journal may seem like an attractive alternative—a well-known brand and the benefits of openness in the same package. However, the problem here is that the research organization pays twice for the same article in the form of a subscription fee and an additional Open Access fee. For this reason, a host of research funding agencies do not encourage publishing in hybrid journals. APCs associated with hybrid journals are also generally higher than those associated with fully Open Access journals.

As part of licensing negotiations, many big publishers have begun to offer discounts on APCs. These offset deals allow authors working at subscribing organizations to pay less for publishing in certain journals. However, the handling of payments and contracts add administrative work in research organizations. That combined with the lack of information on the total expenses causes a risk that pub-

lications will end up costing even more than before.⁹

As the shift to Open Access has been relatively slow, it has given ground to so-called *Black Open Access*, which means access via unlicensed copies on academic social networks (ASNs), such as ResearchGate, Mendeley and Academia.edu, or pirate websites, such as Sci-Hub.¹⁰ Admittedly, it might be questionable even to include Black Open Access among the other options, but the fact is that these pirate sites are very popular.¹¹ They are also efficient. While approximately 27–47 percent of research articles are available on legal Open Access,¹² nearly 80 percent are available via illegal channels.¹³ Needless to say, this cannot be a long-term solution for making research outputs openly available.

Questionable publishers and journals

The new business model based on APCs has created some undesirable consequences.¹⁴ The term ‘predatory open access’ has been used for publishers and journals that fail to comply with responsible conduct of research practices. These publishers charge a fee but fail to perform the duties of an academic publisher,

such as carrying out peer reviews or archiving past issues. In other words, everything that is paid for is published irrespective of the authenticity or accuracy of the findings. It seems that the number of both questionable journals and the number of articles in them have been increasing quite rapidly.¹⁵

Characteristics of dubious journals include aggressive spamming, fuzzy or broad scope, poor quality websites, extremely fast acceptance and lack of information about the editorial board and staff. Questionable journals tend to use abbreviations and titles similar to those of reputable academic journals to appear legitimate. They might display fabricated “Impact Factors” and misuse logos and names of well-known databases for marketing purposes. Of course, these problems do not only affect open access publishing. It is also worth remembering that not all Open Access journals charge APCs and that charging fees does not in itself make the publisher dishonest.

Many people have used the “Beall’s List”, a website put together by academic librarian Jeffrey Beall, to help sift through suspicious journals and publishers. However, the list was suddenly taken down in January 2017. Currently, there is no curated “blacklist” of questionable publishers, and keeping one up-to-date would

Type	Advantages	Disadvantages
Gold OA = fully open journals freely and permanently accessible for everyone	Fairer conditions, lower or no APCs	Prestige of publication channels often lower, narrow selection in some disciplines, no citation advantage
Green OA = self-archiving a version of an article in an online open repository	Wide selection, free of charge, citation advantage	Laborious, access delayed by embargoes, does little to change the industry
Hybrid OA = subscription journals with paid OA option for individual articles	Wide selection, citation advantage	Laborious, higher APCs, risk of rising total costs, might conflict with funders’ requirements
Black OA = unlicensed copies on ASNs or pirate websites	Efficient	Untenable, violates the rights of copyright holders

Types of Open Access and their advantages and disadvantages.

be a full-time job because new publishers and journals pop up every week. A better solution to tackle this problem is to learn how to assess journals and recognize reliable ones. Helpful tools include the Directory of Open Access Journals and Think.Check.Submit.

Openness versus success?

According to a common view, the current scientific reward system combined with indicators such as the journal impact factor and national publication channel ratings creates incentives that work against Open Access. The problem is recognized,¹⁶ but solving it is another matter. Funders seem to look to researchers, researchers look to employers and policy makers, employers look to publishers and policy makers and so on. If change is expected, both money and rewards should be granted based on the openness of research.

The European Commission has published a report that suggests a new kind of model for research evaluation. The so-called Open Science Career Assessment Matrix takes into account aspects other than research output. In the Matrix, contributions relating to research processes, service and leadership, research impact (including commercial and societal impact), teaching and supervision and professional experience are evaluated from the perspective of Open Science. The framework can be used when recruiting and promoting researchers, evaluating grant and fellowship applications and developing institutional models for funding allocation. The report also recommends that both existing and future funding mechanisms at the national, regional and institutional levels should include incentives to support Open Science.¹⁷

Norway, Denmark and Finland use the so-called Norwegian Model to allocate performance-based funding to universities. The model consists of a national Current Research Information System (CRIS) and a publication

indicator that is comparable across fields.¹⁸ The publication indicator is weighted according to publication type and the level of the publication channel in which the research has come out. In the national classifications, there are two or three levels, with the highest level consisting of the most established publication channels of each discipline. This has caused criticism among Open Access advocates.

However, the ratings are based on the decisions made by representatives of the scientific community, which makes it possible to influence the position of Open Access publication channels. Comments and suggestions from researchers are welcome and will be taken into account when making decisions about the ratings. This can be further supported by evaluation guidelines. For example, in the Finnish rating, if two equally good journals are competing for the higher level, the journal that is either Gold Open Access or that allows self-archiving should be favoured.

There is a collaboration group with representatives from Denmark, the Faroe Islands, Greenland, Finland, Iceland, Norway and Sweden working together to create a common Nordic register for publication channels.¹⁹ Bearing in mind the national policies on Open Access in the participating countries, openness will perhaps have a visible role in the Nordic register.

Conclusion

So, what should one think about Open Access? Is it an agonizing mess of definitions and practices or a way of enhancing research and its impact on society?

At the moment, it seems to be both. Luckily, it is not up to the individual researcher to create a winning strategy for Open Access. There are several, often complementary ways to support openness. Depending on the situation, the researcher can choose whichever best serves her or his purpose.

Some Useful Tools to Access Open Access Content

- **Directory of Open Access Journals:** a community-curated online directory of peer-reviewed journals, including information on APCs and licensing – <https://doaj.org>
- **DOAJ Best Practice Guide** – <https://www.doajbestpracticeguide.org>
- **Directory of Open Access Books:** peer-reviewed books and book chapters – <https://www.doabooks.org>
- **SHERPA/RoMEO:** publisher copyright policies and self-archiving – <http://www.sherpa.ac.uk/romeo/search.php>
- **SHERPA/FACT:** funders and authors compliance tool – <http://www.sherpa.ac.uk/fact/index.php>
- **SHERPA/JULIET:** funders' open access policies – <http://v2.sherpa.ac.uk/juliet/>
- **Think.Check.Submit:** a check list for selecting a reliable journal – <https://thinkchecksubmit.org/>
- **Avoiding Predatory Journals and Questionable Conferences:** A Resource Guide – <http://dx.doi.org/10.5072/PRISM/20>
- **Principles of Transparency and Best Practice in Scholarly Publishing:** guidelines by the Committee on Publication Ethics – <https://publicationethics.org/resources/guidelines-new/principles-transparency-and-best-practice-scholarly-publishing>
- **Creative Commons Licenses:** open licensing to help share your work – <https://creativecommons.org/share-your-work/>
- **JournalTOCS:** for checking if a journal is subscription-based, hybrid or Open Access – <http://www.journaltocs.ac.uk/index.php>
- **Unpaywall:** a free add-on to discover legal Open Access publications – <http://unpaywall.org>

Notes

1. Matthews (2018).
2. Larivière et al. (2015).
3. Sample (2012).
4. OpenAIRE (2018).
5. Budapest Open Access Initiative (2002).
6. Schimmer et al. (2015).
7. Solomon & Björk (2012).
8. Piwowar et al. (2018).
9. Björk & Solomon (2014); Earney (2017).
10. Björk (2017).
11. Bohannon (2016).
12. Piwowar et al. (2018).
13. Himmelstein et al. (2018).
14. Ruth (2018). This section is based on my previous article 'How to avoid predatory publishers?' first published in Finnish at www.vastuullinentiede.fi

- under CC BY 4.0. English translation to be published in spring 2018.
15. Shen & Björk (2015).
16. Moriarty (2016); Fecher et al. (2017).
17. European Commission (2017).
18. Sivertsen (2016).
19. NSD (2018).

References

- Björk, Bo-Christer (2017). Gold, Green, and Black Open Access. *Learned Publishing* 30(2): 173–175.
- Björk, Bo-Christer & Solomon, David (2014). How Research Funders Can Finance APCs in Full OA and Hybrid Journals. *Learned Publishing* 27(2): 93–103.

- Bohannon, John (2016). Who's Downloading Pirated Papers? Everyone. *Science* 28 April 2016. [Online.] Accessed 15 April 2018.
- Budapest Open Access Initiative (2002). Available at <<http://www.budapestopenaccessinitiative.org/>>. Accessed 8 March 2018.
- Earney, Liam (2017). Offsetting and its Discontents: Challenges and Opportunities of Open Access Offsetting Agreements. *Insights* 30(1): 11–24.
- European Commission (Directorate-General for Research and Innovation) (2017). *Evaluation of Research Careers Fully Acknowledging Open Science Practices: Rewards, Incentives and/or Recognition for Researchers Practicing Open Science*. [Online.] Available at <https://ec.europa.eu/research/open-science/pdf/os_rewards_wgreport_final.pdf>. Accessed 15 April 2018.
- Fecher, Benedikt; Friesike, Sascha; Hebing, Marcel & Linek, Stephanie (2017). A Reputation Economy: How Individual Reward Considerations Trump Systemic Arguments for Open Access to Data. *Palgrave Communications* 3:17051.
- Himmelstein, Daniel S.; Rodrigues Romero, Ariel; Lev-ernier, Jacob G.; Munro, Thomas A.; McLaughlin, Stephen R.; Greshake Tzovaras, Bastian & Greene, Casey S. (2018). Sci-Hub Provides Access to Nearly All Scholarly Literature. *eLife* 7:e32822.
- Larivière, Vincent; Haustein, Stefanie & Mongeon, Philippe (2015). The Oligopoly of Academic Publishers in the Digital Era. *PLoS ONE* 10(6): e0127502.
- Matthews, David (2018). Is It Time to Nationalise Academic Publishers? *Times Higher Education* 2 March 2018. [Blog.] Available at <<https://www.timeshighereducation.com/blog/it-time-nationalise-academic-publishers>>. Accessed 2 March 2018.
- Moriarty, Philip (2016). Addicted to the Brand: The Hypocrisy of a Publishing Academic. *LSE Impact Blog* 14 March 2016. [Blog.] Available at <<http://blogs.lse.ac.uk/impactofsocialsciences/2016/03/14/addicted-to-the-brand-the-hypocrisy-of-a-publishing-academic/>>. Accessed 7 March 2018.
- NSD (2018). The Nordic List: Nordic Cooperation on Research Publication Channels towards a Common List. [Online.] Available at <<https://dbh.nsd.uib.no/publiseringkanaler/Forside>>. Accessed 13 March 2018.
- OpenAIRE (2018). Overview of Open Access in the EU Member States. [Online.] Available at <<https://www.openaire.eu/member-states-overview>>. Accessed 9 March 2018.
- Piwowar, Heather; Priem, Jason, Larivière, Vincent; Alperin, Juan Pablo; Matthias, Lisa; Norlander, Bree; Farley, Ashley; West, Jevin & Haustein, Stefanie (2018). The State of OA: A Large-Scale Analysis of the Prevalence and Impact of Open Access Articles. *PeerJ* 6:e4375.
- Ruth, Anna-Sofia (2018). Kuinka välttää saalistajulkaisuja? *Vastuullinen tiede* 15 March 2018. [Online.]. Available at <<https://www.vastuullinentiede.fi/?q=fi/julkaiseminen/kuinka-v%C3%A4litt%C3%A4%C3%A4-saalistajulkaisuja>>. Accessed 23 March 2018.
- Sample, Ian (2012). Harvard University Says It Can't Afford Journal Publishers' Prices. *The Guardian* 24 April 2012. [Online.] Available at <<https://www.theguardian.com/science/2012/apr/24/harvard-university-journal-publishers-prices>>. Accessed 20 February 2018.
- Schimmer, Ralf; Geschuhn, Kai Karin & Vogler, Andreas (2015). Disrupting the Subscription Journals' Business Model for the Necessary Large-Scale Transformation to Open Access. A Max Planck Digital Library Open Access Policy White Paper.
- Shen, Cenyu & Björk, Bo-Christer (2015). 'Predatory' Open Access: A Longitudinal Study of Article Volumes and Market Characteristics. *BMC Medicine* 13:230.
- Sivertsen, Gunnar (2016). Data Integration in Scandinavia. *Scientometrics* 106(2): 849–855.
- Solomon, David & Björk, Bo-Christer (2012). Publication Fees in Open Access Publishing: Sources of Funding and Factors Influencing Choice of Journal. *Journal of the Association for Information Science and Technology* 63(1): 98–107.