

A PhD student's perspective on open access research

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As a clinician, I strive towards providing evidence-based care. The constant nagging feeling that I could be doing more to help the people I'm working with motivates me to stay abreast of the literature, to practice critiquing articles with my peers, to work with colleagues to determine if changes to practice should be implemented on the back of new research findings, and to think about how to implement appropriate and sustainable changes to the services we deliver.

That's how it should be. But frequently, I've had trouble accessing the research literature. This is usually because the organisations I've worked in do not subscribe to SLP-specific journals, and the money, time, and effort needed to source literature is often prohibitive. While hospital librarians are fantastic and will scour the planet for relevant texts, this search takes time and, in a fast-paced clinical environment where patients have ever-decreasing length of stay, requested texts may not arrive before patient discharge. Another potential avenue would be to contact the authors of relevant papers directly. I'll admit there's been an internal barrier here; I've felt reluctant to reach out and make unsolicited requests of eminent figures in my field.

The development of my clinical practice has been hampered at times by this lack of access to research literature and the gap between the available knowledge and my clinical practice grows with every passing day. This is a source of great frustration and the sense of being unable to provide evidence-based care can, at times, result in dissatisfaction with the job.

What I need is fast, free, legal access to academic and clinical research literature. It exists in the form of Open Access.

What is Open Access?

Open Access refers to the process of making published and unpublished academic literature

freely and permanently available online (The Budapest Open Access Initiative, 2001). The intention is to enhance scientific progress by melding modern technology with the academic tradition of shared knowledge for the common good. As one early proponent of Open Access argued: "To maximize impact, minimize redundancy and speed scientific progress, authors and publishers should aim to make research easy to access" (Lawrence, 2001, p.521).

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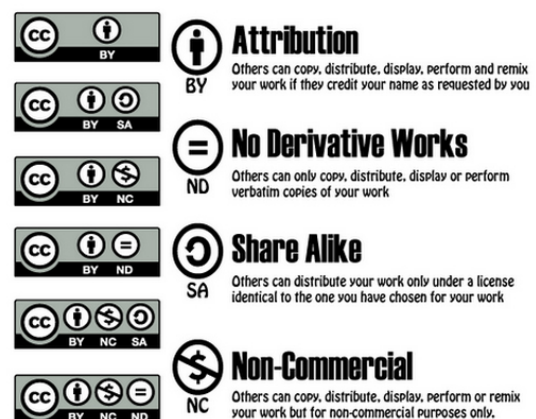


Figure 1 The "How to License Poster" from Creative Commons is an open access image distributed under the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/) (CC-BY) which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Why Open Access?

There are many potential benefits associated with Open Access publishing. Figure 2 illustrates these benefits from the perspective of the researchers sharing their work.



Figure 2 The many benefits of Open Access publishing. Image © Danny Kingsley & Sarah Brown, used under a CC-BY license.

Benefits to clinicians

From the clinician's perspective, Open Access publishing allows timely and convenient access to scientific literature that might otherwise be inaccessible. This may be especially true for under-resourced communities in developing countries. Improved access to scientific literature may enhance evidence-based practice by speeding up the synthesis of research required to update clinical practice guidelines.

Benefits to researchers

Open Access speeds up the pace of scientific discovery as researchers get prompt access to the work of others without paywall restrictions. Open Access exposes research to the wider community and the increased visibility of Open Access works may lead to more citations (Wang et al., 2015). In 2015, Wang and colleagues compared article online views and citation rates of Open Access and non-Open Access articles published in *Nature Communications*. The authors found Open Access articles received, on average, 1.5 times as many citations as non-Open Access articles and were viewed online 4.4 times more often.

Benefits to the broader community

Open Access works are freely available to everyone including researchers in less resourced institutions, professionals outside academia, and

interested laypeople in the community. Taxpayers can see the results of publicly funded research thereby improving research funding transparency, and teachers and students have access to the latest research.

Types of Open Access

There are two main vehicles for Open Access publishing, which have come to be known as gold Open Access and green Open Access.

Gold Open Access provides immediate access to an article in an online subscription journal. Some journals contain only open access articles whereas others, known as hybrid journals, may offer a mix of open and subscription content. There are costs associated with gold Open Access publishing which are usually paid to the publisher through article processing charges. These charges may be paid by authors or subsidised by a third party such as a funding body or university.

When I published the first academic paper of my career, the publisher offered gold Open Access. Naively excited by the prospect, I clicked the corresponding button only to discover the article processing charge was over \$4000. As much as I wanted my work to be freely accessible, it was well beyond my means.

The alternative is **green Open Access** which involves self-archiving a version of the article in an online repository (e.g., an institutional repository or an external subject-based repository) or on a personal website. Self-archiving does not preclude a manuscript from publication in a traditional subscription journal. Published articles can also be self-archived and are usually made available after an embargo period set by the publisher. No charges are paid by the authors or the readers to access green Open Access articles.

A 2016 OECD report on the drivers and implications of Open Access publishing found green Open Access to be a greater driver of citations than gold Open Access (OECD, 2016) leading to the argument that paying for Open Access does not increase an article's impact as much as self-archiving does (Wehner, 2018).

Which version can be self-archived?

Figure 3 shows the common names for different versions of a manuscript as it passes along the publishing pipeline. It's generally acceptable to self-archive preprints, which have not undergone peer review (Gadd & Troll Covey, 2018). If a manuscript is accepted for publication after peer review, the publisher will stipulate which version of the manuscript can be self-archived. This will often be the peer-reviewed postprint. As an author, it's important to know which version of a manuscript can be legally self-archived so you understand your rights when signing and complying with an authorship agreement. As a reader, it's also important to know which version of a manuscript you are reading, as there may be significant and fundamental differences between an un-peer-reviewed preprint and the subsequent postprint version. For example, the submitted preprint version may contain errors or be subject to validity and reliability issues that would later be addressed during the peer review process.

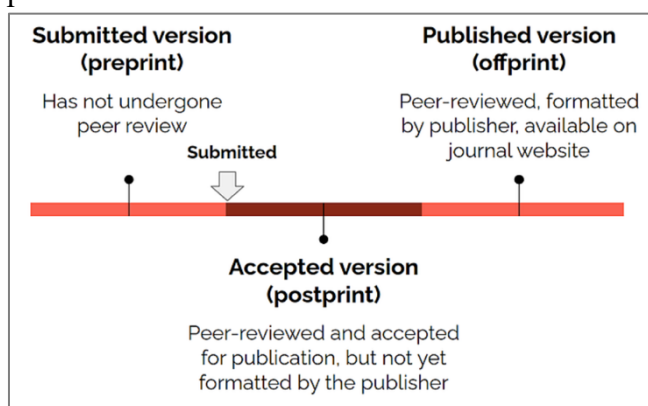


Figure 3 Terms used for an article along the publishing pipeline. Image sourced from <https://www.csdisseminate.com/self-archiving-101>, used under a CC-BY 4.0 license.

Where to find green Open Access literature

Institutional repositories

In Australia, most universities manage archival repositories. Many public funding bodies (e.g., the Australian Research Council and the National Health and Medical Research Council) mandate

that products of funded work are stored in an institutional repository. Universities typically provide support to researchers to track down and store the correct version of their published work, in line with publisher licensing agreements. Clinicians seeking open access literature may be able to source it online from the author's institutional repository. However, not all organisations engaged in research activities host a publicly-available repository. Furthermore, some researchers work across multiple institutions leaving research literature scattered across multiple repositories.

Proprietary databases

Commercial citation index databases such as Elsevier's *Scopus*, Clarivate Analytics' *Web of Science*, and PubMed Central provide selective Open Access to a vast catalogue of research literature. In the US, legislation passed in 2008 requires any research funded by the National Institutes of Health to be freely available to the public through PubMed Central within 12 months of publication (<https://publicaccess.nih.gov/>). While offering exceptional accessibility to research outputs, there's evidence of geographical and topic bias within these databases (Tennant et al., 2019); that is, most Open Access journals publish works produced in Europe or the USA and certain subject areas (such as mathematics and computer science) proliferate potentially at the expense of other geographical and subject areas.

Personal-professional websites

Researchers increasingly self-archive on a personal-professional website. Self-archiving on a website gives researchers control to collate, curate, and disseminate the products of their work. The website can be used to establish a clear online presence and develop research networks. While personal-professional websites do not replace institutional repositories, they can be used to help clinicians, researchers, students, potential employers, and funding bodies find publications thereby increasing researchers' reach and impact.

Why not Open Access?

Despite the many benefits of Open Access publishing, it remains a controversial issue. A recent article summarises ten hot topics in scholarly publishing, many of which centre around issues of Open Access (Tennant et al., 2019). Two issues of primary concern for me as a producer and consumer of research literature are:

What is the risk of plagiarism of self-archived preprints? Self-archiving a preprint prior to publication purposively makes it available to the global community. There is a risk that the ideas contained in the work could be plagiarised by a nefarious actor. However, the process of self-archiving an article on a server time-stamps the publication which establishes the so-called “priority of discovery” and provenance of the work, thereby providing some protection to authors from the threat of plagiarism (Tennant et al., 2019, p. 3).

What happens to the process of peer review in Open Access publishing? As the Director of the Harvard Open Access Project Peter Suber writes: “OA [Open Access] is entirely compatible with peer review, and all the major OA initiatives for scientific and scholarly literature insist on its importance. Just as authors of journal articles donate their labor, so do most journal editors and referees participating in peer review.” (Suber, 2004). Tennant et al (2019) “question the necessity of the current infrastructure for peer review, and if a scholar-led crowdsourced alternative may be preferable.” (p. 17). Development of effective and efficient peer review processes in the Open Access community is ongoing.

Caveats

Authors need to carefully adhere to publishers’ agreements to avoid infringing copyright, which could carry significant penalty and reputational damage. Check the publisher’s agreement before self-archiving your work. It’s important to ensure the publisher’s agreement permits self-archiving a version of an accepted manuscript prior to deposition. You can find

publishers’ self-archiving policies on the journal’s website and the Sherpa Romeo database (*see Resources below*). There are many resources available that step you through the process of self-archiving to ensure you limit the risk of infringing copyright. Contact the publisher and seek research legal advice if you are uncertain about your author rights. If in doubt, play it safe and do not self-archive until you have assurances that it is legal to do so.

It’s just as important to know which version of a paper you are reading – if it’s a preprint, you must be aware that this text has not been formally peer-reviewed and may contain significant differences to the final peer-reviewed published piece, or may not have been published at all.

Beware predatory journals! Predatory journals present as academic journals but use little to no peer review and aggressive advertising and sales techniques to generate revenue from article processing charges paid for by authors (Beall, 2021). Predatory journals pose a significant threat to the reputation and credibility of scholarly publishing. Increased transparency of the peer review and publication process has been proposed as a way to combat predatory journal practices (Tennant et al., 2019).

Conclusion

Open Access allows clinicians who have limited resources to legally access high-quality scientific literature quickly and freely. Researchers can increase the reach and impact of their work using Open Access publishing. Self-archiving permits researchers to collate, curate, and disseminate the products of their work for the benefit of all.

Resources

www.sherpa.ac.uk/romeo/index.php

Sherpa Romeo is an online resource that aggregates and analyses publisher Open Access policies from around the world and provides summaries of publisher copyright and open access

archiving policies. Search this database to find journal-specific Open Access policies.

<https://aoasg.org.au/>

The Australasian Open Access Strategy Group (AOASG) provides online resources with the aim to make Australasian research outputs open for all.

<https://aoasg.files.wordpress.com/2013/12/160803-open-access-graphic.pdf>

This Open Access graphic from AOASG neatly illustrates many of the facets of Open Access publishing and provides answers to some common questions.

<https://doaj.org/>

Use the Directory of Open Access Journals to find reputable Open Access journals.

<https://www.csdisseminate.com/for-scientists>

CSDisseminate is a volunteer organisation of speech-language pathologists advocating for greater Open Access within Communication Sciences and Disorders disciplines.

<https://scholar.google.com.au>

Google Scholar indexes many Open Access versions of scholarly articles.

References

Beall, J. (2021). Open Access, research communities, and a defense against predatory journals. *Central Asian Journal of Medical Hypotheses and Ethics*, 2(1). <https://doi.org/10.47316/cajmhe.2021.2.1.02>

Budapest Open Access Initiative. (2001). The BOAI declaration, retrieved from <https://www.budapestopenaccessinitiative.org/read> on 21/4/2021.

CSDisseminate. (2021). Self-archiving 101, retrieved from <https://www.csdisseminate.com/self-archiving-101> on 20/4/2021.

Gadd, E., & Troll Covey, D. (2019). What does 'green' open access mean? Tracking twelve years of changes to journal publisher self-archiving policies. *Journal of Librarianship and Information Science*, 51(1), 106–122. <https://doi.org/10.1177/0961000616657406>

Lawrence, S. (2001). Free online availability substantially increases a paper's impact. *Nature* 411, 521. <https://doi.org/10.1038/35079151>

NIH Public Access policy (2014). When and how to comply, retrieved from <https://publicaccess.nih.gov/> on 22/4/2021

OECD. (2016). Drivers and Implications of Scientific Open Access Publishing: Findings from a Pilot OECD International Survey of Scientific Authors, retrieved from https://www.oecd-ilibrary.org/science-and-technology/drivers-and-implications-of-scientific-open-access-publishing_5jlr2z70k0bx-en on 21/4/2021.

Tennant, J. P., Crane, H., Crick, T., Davila, J., Enkhbayar, A., Havemann, J., Kramer, B., Martin, R., Masuzzo, P., Nobes, A., Rice, C., Rivera-López, B., Ross-Hellauer, T., Sattler, S., Thacker, P. D., Vanholsbeeck, M. (2019). Ten Hot Topics around Scholarly Publishing. *Publications*, 7, (2), 34, retrieved from <https://doi.org/10.3390/publications7020034> on 22/4/2021.

Suber, P. (2004). A very brief introduction to Open Access, retrieved from <http://legacy.earlham.edu/~peters/fos/brief.htm> on 21/4/2021.

Wang, X., Liu, C., Mao, W., & Fang, Z. (2015). The open access advantage considering citation, article usage and social media attention. *Scientometrics*, 103(2), 555-564.

Wehner, N (2018). Paying for Open Access does not increase your paper's impact, but self-archiving in a repository does, retrieved from <https://access2perspectives.org/2018/10/paying-for-open-access-does-not-increase-your-papers-impact-but-self-archiving-in-a-repository-does/> on 21/4/2021.