

Open Access: opportunities and problems

Mike Calver

Environment and Conservation Cluster, School of Veterinary and Life Sciences, Murdoch University, Murdoch, Western Australia 6150, Australia. Email: m.calver@murdoch.edu.au

Not a day passes in which I do not receive multiple solicitations via email to publish a manuscript in an online, Open Access (OA) only journal – for a modest fee in \$US, of course. Judging by the flattering assessments in these solicitations, I seem to have acquired a reputation in many diverse fields including veterinary medicine, human medicine, chemistry, cell biology, sports science, and engineering, as well as my own discipline of animal ecology. This level of solicitation encourages suspicion that the whole OA enterprise lacks standards and is an invitation to vanity publishing. That is far too harsh a judgement, so it's worthwhile to examine exactly what OA publication means, what opportunities and advantages it can offer to authors and the conservation science community, and the problems it is necessary to solve.

What is OA?

According to the Australasian Open Access Group (AOASG) (<https://aoasg.org.au/what-is-open-access/>): 'For scholarly work Open Access means making peer reviewed scholarly manuscripts freely available via the internet, permitting any user to read, download, copy, distribute, print, search, or link to the full text of these articles, crawl them for indexing, pass them as data to software, or use them for any lawful purpose, without financial, legal or technical barriers other than those inseparable from gaining access to the internet itself.' OA comes in different forms. Under green OA, authors are allowed to place the text version of the final, accepted paper (commonly known as a postprint) online as part of an institutional repository, or on a personal website, without charge. It is important to note that where this form of OA exists, it is only the text version of the final, accepted paper that can be placed online, and not the PDF from the publisher. There is a requirement for the text version of the paper to indicate on the title page the details of the official journal publication, with a DOI if that is available. A link to the publisher's website for the official version is often required (and a good idea anyway if not). There may also be a time embargo on when the postprint can be placed online (e.g. a 12 month delay after acceptance or publication).

The second major form of OA is called gold OA and comes in several different varieties. If a paper is published in a journal that is completely OA, then the most common arrangement is for the author to be charged when the manuscript is accepted for publication, although in some cases another party such as the author's employer pays. Less commonly a professional society sponsors the journal for an annual fee and the author pays

nothing (e.g. *Journal of Primary Health Care*, sponsored by The Royal New Zealand College of General Practitioners (RNZCGP)). The percentage of author-pays OA journals is low: as of February 2018, there were 11 169 journals listed in the Directory of Open Access Journals (DOAJ) and of these only 3164 were fee-based (http://oad.simmons.edu/oadwiki/OA_by_the_numbers). Conventional journals may also offer an option for authors to choose to pay a fee and have their paper made available through OA. Finally, publishers may at their discretion decide that individual papers, entire special issues, or papers older than a specified period, will be available via OA without charge to the author/s. Where gold OA applies, restrictions on distributing a published paper, including placing it in an institutional repository or on another website, are relaxed substantially although conditions may still apply – the CC BY-NC-ND Creative Commons licence is common (<https://creativecommons.org/licenses/by-nc-nd/3.0/au/>). CSIRO Publishing uses the international version available at https://creativecommons.org/licenses/by-nc-nd/4.0/deed.en_US, but offers other licences if required.

OA is growing rapidly (Suber 2009, see also http://oad.simmons.edu/oadwiki/OA_by_the_numbers). The Directory of Open Access Journals (DOAJ), which maintains a list of reputable OA journals, listed over 11 000 journals and over 3 million papers on its website in early May 2018. It takes membership seriously, delisting journals suspected of editorial misconduct or not applying best practice (Sorokowski *et al.* 2017, see also the DOAJ statement of best practice at <https://doaj.org/bestpractice>). There is also a Directory of Open Access Books (DOAB), which in May 2018 listed nearly 12 000 books and book chapters from 272 publishers.

Why OA?

One argument, which is particularly strong in medical and biomedical research, is that the research is often funded by public money and therefore the public should have free access to the publications that result (McLennan 2009). That argument can, of course, be extended to other forms of scientific research, including conservation biology. OA also permits wide dissemination of research findings. There are no costs incurred by readers in accessing the publications, so those without institutional access to publications blocked by a pay wall can still locate and read OA papers (Bloom *et al.* 2008). In the specific case of conservation biology, this may greatly improve access to the results of research by researchers in developing countries

and for conservation practitioners employed by NGOs, who are likely to lack the funds to pay for conventionally published papers but will incorporate research results into their practice if they can access them (Fuller *et al.* 2014). Many OA journals are available online only and are often able to offer very fast publication without the delays associated with preparing a print version. Finally, authors asking the ‘what’s in it for me?’ question, may be attracted by the argument that because OA papers achieve wider reach they will therefore receive more citations. Although this last point is contentious, with some studies claiming and others discounting a citation advantage for OA papers (e.g. Harnad and Brody 2004, Davis *et al.* 2008, Taylor *et al.* 2008), the other advantages of OA are self-evident and are considered by some as compelling reasons to offer as much scientific research as possible through OA (Bloom *et al.* 2008, Fuller *et al.* 2014).

Problems with OA

A major and growing problem with OA is the number of exploitative journals that do not have rigorous peer review or editorial policies and exist simply to scam authors and collect the OA publishing fee. These practices have been exposed in well designed stings. In one case, bogus papers with egregious faults were submitted to a wide range of journals publishing under gold OA (Bohannon 2013). Over half accepted the bogus papers, sometimes without any evidence of peer review at all. Others, to their credit, either rejected the paper outright before sending it to review, or rejected it quickly following review. In another sting (Sorokowski *et al.* 2017), a total of 360 journals were selected in equal numbers from three journal directories: the Journal Citation Reports (JCR; journals with an official impact factor that may or may not be OA, <https://clarivate.com/products/journal-citation-reports/>), the DOAJ (<https://doaj.org/>), and Beall’s list (suspect OA journals and publishers, <https://beallist.weebly.com>). An unsolicited, fictitious CV was submitted to each journal with a request to join the editorial board. The request was accepted by none of the JCR journals, 7% of DOAJ journals, and 33% of journals on Beall’s list. Some journals that accepted offered royalty payments if the editor established a new journal.

It can be tricky to assess whether an OA journal is legitimate or not. Listing of a journal in the DOAJ, the JCR or a major bibliometric database such as Scopus or Web of Science is a good start, because they are constantly curating their collections to remove journals with questionable practice. Before it was discontinued, Beall’s list allowed prospective authors to check the bona fides of journals before selecting one. Good guidance can also be obtained via the ‘think, check, submit’ site (<https://thinkchecksubmit.org>), which offers guidelines on choosing trusted journals in all formats for the publication of research.

A related problem concerns peer review. Researchers invited to review manuscripts may be suspicious of the bona fides of the journal, and not wish to waste their time reviewing a manuscript for a journal with questionable standards that is likely to accept the paper anyway despite any concerns from reviewers. Unfortunately, lesser-known but still reputable journals may find themselves unfairly classed as suspect, thus losing the opportunity for the reviews they require.

Furthermore, OA publication is free for readers, but it is increasingly expensive for authors. If a granting body or the authors’ institution is prepared to pay the OA fees, then there is no significant cost to authors. However, if granting bodies are not prepared to pay publication costs, or these are not supported by the authors’ institution, then the authors must either bear the costs personally or divert funds that would otherwise be used for research projects to meet the costs of publication. In an ideal world, this problem could be overcome if the funds currently invested by institutions to subscribe to conventional journals were no longer needed because of OA and could be diverted to meeting the publication charges of their employees.

The final problem with OA publication applies only to exclusively online journals – what happens if the journal is discontinued? With a print journal, hard copies remain in libraries globally. With an electronic journal, who takes responsibility for archiving the publications? Serious journals are backed up in an archival organisation – such as Portico (<https://www.portico.org>, used by CSIRO Publishing) or CLOCKSS (<https://www.clockss.org/clockss/Home>). These dark archives will become available if a publisher folds, ensuring that journal articles and ebooks remain available. Many journals also deposit in a national library. For example, CSIRO Publishing complies with the requirements of the National Library of Australia and the State Library of Victoria regarding deposition of publications.

OA policy at *Pacific Conservation Biology*

PCB offers authors a range of OA options, described in full at <http://www.publish.csiro.au/pc/forauthors/openaccess>. In brief, all authors of papers published in PCB have the option of making the text version of their accepted paper available via green OA, on the condition that the title page has full reference to the publication details of the paper, including the DOI. Additionally, authors have the option of gold OA by paying a fee themselves, having the fee paid by a professional society (for example, a society sponsored special issue) or another sponsor such as an institution or a granting body. Whether or not an author chooses OA has no bearing on review or editorial process.

It’s your choice

Ultimately, authors make the call on whether or not they believe that they should publish a particular paper via gold OA. If the decision is ‘yes’, they would be prudent to check the standing of the journal they choose, especially if they are responding to an unsolicited invitation to submit. It is also important to check the exact terms of the gold OA licence. Authors intending to use green OA should also be careful to abide by the specific conditions required by their publisher.

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