

## Visibility of published papers: a collaboration between authors and publishers

Mike Calver

Environmental and Conservation Sciences, Murdoch University, Murdoch, WA 6150, Australia.

Email: [m.calver@murdoch.edu.au](mailto:m.calver@murdoch.edu.au)

I cannot recall the source and therefore risk an accusation of plagiarism, but one wit remarked that the old slogan ‘publish or perish’ has become ‘publish and perish’ – a clear reference to the sad possibility that a published paper might vanish unnoticed in the large annual output of scientific works. Pacchioni (2018, p. 74) claims: ‘Today, all publishers are unanimously committed to producing every year new periodicals, new series, new sub-sectors, and increasingly specialised journals.’ He quotes numbers in support: considering journals publishing in English alone, in 1996 there were an estimated 11 000 academic journals, rising to 14 694 in 2001 and 28 100 in 2014, giving an annual growth rate of ~3.5% a year. Turning to papers, the rapid growth of Chinese science saw 40 000 papers published in China in 1999 and 400 000 in 2013. It is easy to see how one’s contributions might be lost in the flood. As Biagioli and Lippman (2020, p. 1) phrased it, ‘“Publish or perish” is merging with “impact or perish.”’ Fortunately, there are ways in which authors and publishers can partner to increase the visibility of papers.

### Publisher services

#### *Digital object identifiers (DOIs)*

One significant service offered by publishers is registration with the International DOI Foundation (IDF) or Crossref, so they are eligible to assign a DOI to published papers or book chapters. The DOI is: ‘... a permanent alphanumeric string to uniquely identify objects. The DOI name is a case-insensitive string and is made up of a prefix beginning with “10.” and a suffix separated by a forward slash’ (Zhu *et al.* 2019). DOIs originated from a proposal from major international publishing associations in the 1990s, seeking a digital equivalent of the analogue bar code for digital, online publications. The principal advantage is that once a paper has a DOI it can be located online via content providers without the risks associated with broken links. DOIs also facilitate bibliometric analyses by identifying papers unambiguously (anyone who has attempted to resolve the myriad forms of miscitations that can arise in the literature understands this), allow publishers to readily track download records of individual papers and share this information online, and generally save time in literature searches (Meadows and Haak 2018).

The system mostly works well, although there are problems. DOIs are not universally adopted by journal publishers (e.g. Wang *et al.* 2018; Mugnaini *et al.* 2021), nor are they applied as frequently to book chapters as they are for journal papers (Yang *et al.* 2021).

Databases may make mistakes in listing DOIs too, most commonly assigning the same DOI to multiple papers (Franceschini *et al.* 2015; Zhu *et al.* 2019). Finally, Klein and Balakireva (2020) noted that entering a DOI into a search engine may generate different content provider responses depending on the network environment and the request method, which is not ideal.

The bottom line for authors remains visibility and access for their papers. Logan (2019) noted that DOI traffic was closely aligned to the university calendar (I assume the northern hemisphere one), which is a clear indication of use of DOIs in academic communities. It makes sense to publish with a journal that assigns DOIs to papers.

All papers published with CSIRO Publishing journals receive a DOI. Furthermore, as part of copy-editing and layout process, DOIs are located and added to all citations in the reference lists of papers published in CSIRO Publishing journals, where available.

### *Open Access (OA)*

The Australasian Open Access Group (AOASG) (<https://aoasg.org.au/what-is-open-access/>) defines OA as: ‘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.’ Arguments in favour of OA include:

- Making the results of publicly funded research available without further charge to the citizens who supported it
- Greater access of research to scientists in developing countries or conservation practitioners who may have poor access to extensive libraries
- Supposedly higher citations for OA papers relative to those conventionally published, although not all studies agree on this point (e.g. Harnad and Brody 2004; Davis *et al.* 2008; Taylor *et al.* 2008), not to mention that any advantage if it exists will erode as OA becomes more common.

The main disadvantage for authors is that several models of OA require authors to pay a fee, which shifts the costs from readers to authors.

Some journals are published exclusively OA, while others offer hybrid models in which authors may request for their paper to be published OA (usually for a fee). A recent innovation is the ‘read and publish agreement’ in which, by negotiation between an employer and a publisher, the employer pays a fee entitling all employees to publish in the publisher’s journals and read the papers in those journals without paying individually (Machovec 2019).

CSIRO Publishing’s OA policy is outlined at <https://www.publish.csiro.au/journals/openaccess>. Read and Publish agreements are described at <https://www.publish.csiro.au/journals/openaccess/ReadandPublish>.

### *Archiving*

Increasingly, print subscriptions to journals are being replaced with electronic ones. With these comes the risk that, should a journal be discontinued, archives of its content will be lost. Serious publishers therefore use independent archival services that maintain full copies of all publications, ready to be made available if the publisher folds, or deposit copies in a national library. CSIRO Publishing uses Portico for archiving and deposits publications with the National Library of Australia.

### *Graphical abstracts, simple summaries and research highlights*

Some publishers offer the option of a graphical abstract – a flow diagram or other visual representation of the principal findings of the work. A catchy graphical abstract may entice readers to a paper, although of course it is not available via databases and is only seen on a publisher’s site.

Simple summaries are non-technical abstracts for lay readers. They may also be useful for including in social media to enhance access. Research highlights are even more abbreviated, providing succinct dot point lists of major findings and their significance to lure potential readers. At the moment, simple summaries and research highlights are restricted to publishers’ websites and do not appear in major databases, although they may be trawled by search engines such as Google Scholar.

### *Media links*

Some publishers notify news media if they believe that an accepted paper is of likely media interest. For PCB, the Editor-in-Chief may tag a paper as newsworthy on acceptance.

### **Authors’ options**

Authors also have numerous options to increase the visibility of their work. A key first step is ensuring that they are linked unambiguously to each paper, followed by care and thought to the structure and presentation of the paper, and ending with post-publication publicity.

### *Are you the author?*

Periodically, the arts world is rocked with accusations or scandal over the true author/artist/composer of a given work. The equivalent in science is the difficulty of assigning with confidence a particular author to a particular paper. Those who doubt this can search their own records in the databases, where they

may note that some of their work has been assigned to others (usually leads to a row) or that they have been credited with someone else’s work (usually thought of as an entertaining joke). Just as the DOI is the solution to paper identification, an ORCID ID gives unambiguous identification of researchers (<https://orcid.org>).

### *Structuring the paper*

In terms of visibility, the key points in a paper are the title, the abstract and the keywords. A catchy, informative title, an abstract with clear, succinct findings with their significance, and keywords to catch searches are critical. It is also important to appreciate that search engines and databases change practices with time and to strive to ensure that your paper will turn up regardless of a search strategy. For example, prior to 1990 the Web of Science database only searched for terms in titles of papers, but expanded this to titles, abstracts and keywords later (Pautasso 2014). The search engine Google Scholar can trawl the entire paper for a term, producing an extensive list of hits. Most readers will try some form of abbreviated search, such as a keyword search. I have seen some recommendations not to repeat terms from the title or abstract in the keyword list but given the vagaries of databases and search engines, not to mention human behaviour, duplication does not hurt if there is room for it.

### *After publication*

Press releases can showcase important new findings to the media, with options for further publicity if interviews follow (the DOI or OA help journalists locate and assess the work, while an ORCID ID helps them find you and your related work). Promotions may also be made on social media, on personal websites or on institutional repositories. In their survey of authors of the *Indian Journal of Rheumatology*, Haldule *et al.* (2020) found strong support for promoting papers on social media but little evidence of action. That experience may be more widespread.

When posting online, authors should be very careful about what they can and cannot do according to copyright. Authors with an OA agreement should check that it allows them to post the pdf online and whether there are specific requirements such as linking to the publisher’s site or an embargo period where authors must wait a set time after publication before posting. Authors without an agreement to place the pdf online may have permission to place the accepted MS Word version of the paper online. Again, check! CSIRO Publishing permits Green Open Access, meaning that all authors may place the accepted MS Word version online on a personal website or their employer’s repository without charge and no embargo period. The post should contain a link to the paper on the CSIRO Publishing website.

Other post-publication actions include blogging about the paper, or perhaps writing a piece for a public interest publication such as *The Conversation*.

### **Concluding remarks**

While I empathise with those who loathe the narcissistic excesses that can accompany the promotion of scientific

research, less ostentatious action can help the visibility of one's research. Even if blogging, press releases and social media are not for you, you can still pick publishers who provide DOIs and other important services, think carefully about your title, abstract and keywords, and acquire an ORCID ID. Happy publishing!

## References

- Biagioli, M., and Lippman, A. (2020). Introduction: metrics and the new ecologies of academic misconduct. In 'Gaming the metrics: misconduct and manipulation in academic research.' (Eds. M. Biagioli and A. Lippman). (MIT Publishing: Cambridge, Massachusetts).
- Davis, P. M., Lewenstein, B. V., Simon, D. H., Booth, J. G., and Connolly, M. J. L. (2008). Open access publishing, article downloads, and citations: randomised controlled trial. *BMJ* **337**, 343–345. doi:10.1136/BMJ.A568
- Franceschini, F., Maisano, D., and Mastrogiacomio, L. (2015). Errors in DOI indexing by bibliometric databases. *Scientometrics* **102**, 2181–2186. doi:10.1007/S11192-014-1503-4
- Haldule, S., Davalbhakta, S., Agarwal, V., Gupta, L., and Agarwal, V. (2020). Post-publication promotion in rheumatology: a survey focusing on social media. *Rheumatology International* **40**, 1865–1872. doi:10.1007/S00296-020-04700-7
- Harnad, S., and Brody, T. (2004). Comparing the impact of open access (OA) vs. non-OA articles in the same journals. *D-Lib Magazine* **10**. doi:10.1045/JUNE2004-HARNAD
- Klein, M., and Balakireva, L. (2020). On the Persistence of Persistent Identifiers of the Scholarly Web. In 'Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). Vol. 12246 LNCS.' pp. 102–115).
- Logan, J. (2019). More DOIs are accessed through library discovery services than through google. *Evidence Based Library and Information Practice* **14**, 134–136. doi:10.18438/EBLIP29551
- Machovec, G. (2019). Strategies for Transformational Publish and Read Agreements in North America. *Journal of Library Administration* **59**, 548–555. doi:10.1080/01930826.2019.1616969
- Meadows, A., and Haak, L. (2018). How persistent identifiers can save scientists time. *FEMS Microbiology Letters* **365**, fny143. doi:10.1093/FEMSLE/FNY143
- Mugnaini, R., Fraumann, G., Tuesta, E. F., and Packer, A. L. (2021). Openness trends in Brazilian citation data: factors related to the use of DOIs. *Scientometrics* **126**, 2523–2556. doi:10.1007/S11192-020-03663-7
- Pacchioni, G. (2018). 'The overproduction of truth: Passion, competition and integrity in modern science.' (Oxford University Press: Oxford).
- Pautasso, M. (2014). The jump in network ecology research between 1990 and 1991 is a Web of Science artefact. *Ecological Modelling* **286**, 11–12. doi:10.1016/J.ECOLMODEL.2014.04.020
- Taylor, M., Perakakis, P., and Trachana, V. (2008). The siege of science. *Ethics in Science and Environmental Politics* **8**, 17–40. doi:10.3354/ESEPP00086
- Wang, W., Deng, L., You, B., Zhang, P., and Chen, Y. (2018). Digital object identifier and its use in core Chinese academic journals: A Chinese perspective. *Learned Publishing* **31**, 149–154. doi:10.1002/LEAP.1137
- Yang, S., Xing, X., Qi, F., and Grácio, M. C. C. (2021). Comparison of academic book impact from a disciplinary perspective: an analysis of citations and altmetric indicators. *Scientometrics* **126**, 1101–1123. doi:10.1007/S11192-020-03808-8
- Zhu, J., Hu, G., and Liu, W. (2019). DOI errors and possible solutions for Web of Science. *Scientometrics* **118**, 709–718. doi:10.1007/S11192-018-2980-7