

Editorial

The Publishing Landscape: It's the "Wild West" Out There

John R. Percy

Editor-in-Chief, *Journal of the AAVSO*

Department of Astronomy and Astrophysics, and Dunlap Institute for Astronomy and Astrophysics, University of Toronto, 50 St. George Street, Toronto, ON M5S 3H4, Canada; john.percy@utoronto.ca

Received November 8, 2016

A few weeks ago, AAVSO Director Dr. Stella Kafka sent me a link to "A Quick Tour Around the World of Scholarly Journal Publishing" (Crotty 2016). As Editor of *JAASO*, I found it interesting and timely. It touched on publishing issues which have been front-and-center in recent science media.

Scholarly Publishing

JAASO is a scholarly journal. There are thousands of them out there (28,100 according to a 2012 survey), some of them hundreds of times larger in content and circulation than *JAASO*. The volume is growing because of the information explosion, and the increasing participation of scholars in emerging nations. They are written and read mostly by professional scholars and researchers in academe and elsewhere. See *wikipedia* (https://en.wikipedia.org/wiki/Academic_journal) for a brief overview.

A good journal is one whose publishers facilitate and guard the editorial process, including the peer-reviewing or refereeing, to ensure that the journal content is of the highest quality—correct, appropriate, and original. It is one whose editors are committed to their work and whose editorial board members are genuinely interested in supporting and improving the quality and reach of the journal.

Cynics might say that many journal articles are read by only a handful of readers, or perhaps by no one. Authors use journals to disseminate their research and ideas and to critique others' research, but also to amass "Brownie points" for publications and citations. It's "publish or perish" for tenure and promotion. Ambitious authors aim for prestigious, peer-reviewed journals with high standards and high impact. The concept of journal impact or ranking is increasingly used, but controversial. Publication and citation data are also used for university ranking, which is a big thing for universities like mine (we rank somewhere between #4 and #23 in the world, and significantly higher among public universities).

The main astronomy journals (*Astrophysical Journal*, *Astronomical Journal*, *Astronomy and Astrophysics*, *Monthly Notices of the Royal Astronomical Society*) are published on behalf of non-profit scientific societies by specialized and experienced non-commercial publishers. Revenue can come from a combination of membership dues, society funding, library subscriptions, advertising, and page charges. There are also a few for-profit astronomical journals, of mixed quality.

Current Trends

Things are changing. Some of the changes serve the audience of authors and readers; some do not. Journals are increasingly electronic. Some no longer produce hard copies. In a sense, that's good and efficient, considering the increasing volume. Readers can purchase individual articles, rather than whole volumes. There's also a move towards open access, encouraged by governments and funding agencies who want the fruits of their largesse to be known. But who pays the cost? There is also a move to require publication of raw research data, partly so readers can verify that the results are correct and reproducible (see below). Again, who pays the cost? And this can be complicated if, for instance, the data are clinical and protected by a confidentiality agreement.

In some disciplines such as astronomy, there is widespread use of open-access preprint servers such as astro-ph (arxiv.org) to make unrefereed papers immediately available. How necessary is refereeing anyway, if the authors themselves are experts? And how effective is refereeing? It takes a great deal of time and effort to referee a long and complex paper. And referees are not paid or recognized. For some journals, refereeing is done on-line, by readers.

In many disciplines, notably medicine but also physical science, for-profit publishers are creating new journals. My wife and I (she is a biomedical scientist and co-editor of a non-profit journal much like *JAASO*) are constantly bombarded by messages from for-profit publishers to submit manuscripts—for a price. They especially want papers from established scientists, to give them credibility. The same publishers may organize conferences and invite speakers—again, for a price. It's "present or perish" as well as "publish or perish." And there's a trend to consolidation: large for-profit publishers engulf and devour (though consolidation does produce some economies of scale). They then "bundle" their journals and encourage university libraries to subscribe to the whole bundle. In an era of declining library budgets, this means that new journals, or small journals (such as *JAASO*) get cut. Not surprisingly, intrepid hackers are "stealing" papers from publishers' or universities' websites, and posting them where all can see. Their motives may be well-intentioned; scholars in less-developed countries may be unable to afford "astronomical" subscription costs.

For-profit publishers are also selling metadata, just as corporations like *Google* collect and sell information about

what users read online. *ResearchGate* (www.researchgate.net) is a searchable site where research papers are archived. My wife swears by it. But it is for-profit, and supported by the metadata that the publisher collects and sells. In a sense, the publishers themselves are becoming repositories, replacing libraries.

The Dark Side

There is enough hanky-panky in scholarly publishing to keep the tabloids busy. Papers are occasionally retracted from journals, voluntarily or otherwise, due to errors which may be accidental or deliberate. There are numerous cases of plagiarism, including self-plagiarism (or “recycling”), and of authors publishing several very similar papers, differing only in some “minimum publishable unit” of new data. Deserving authors may be omitted, or “honorary” authors added (perhaps for a price). Referees may steal ideas from the papers that they are reviewing. In medicine especially, there may be real or perceived conflicts of interest if the author and/or research is supported by “big pharma.”

Positive results tend to be published, negative results not, even when negative results are as important as positive ones. A recent study (Open Science Collaboration 2015) showed that the results of over half of a sample of 100 prominent psychology studies were not reproducible. This is one reason for requiring that raw data, and details of analysis, should be made available on-line. Several other studies have suggested that authors grossly over-estimate the statistical significance of the results of their research. In a survey (Fanelli 2009), about 2 percent of authors admitted to data fabrication, and up to 34 percent admitted to other questionable practices.

Female authors, or authors from smaller institutions, are judged more harshly by referees than male authors from Harvard. That’s one of the reasons for using “blind” refereeing, as *JAAVSO* does, though it’s often impossible to hide the identity of the author.

There are predatory publishers of “refereed” journals who do little or no refereeing, but say that they do. Estimates of the number of predatory journals range from hundreds to thousands. There are cases of publishers “selling” authorship of papers

to those who need it and can afford it. This often occurs in emerging nations; it is estimated (Stone 2016) that 10 percent of masters and Ph.D. theses in Iran are purchased. The U.S. Federal Trade Commission recently charged one large commercial publisher with misleading authors about the standards and impacts of their journals (Bohannon 2016). These are just a few examples, so it *is* the “wild west” out there. Fortunately, these examples are not representative of the majority of scholarly journals, especially the non-profit ones.

JAAVSO

As far as I know, *JAAVSO* does not have a dark side. We have an ethics statement on our website. We happily exist to serve the authors, *AAVSO* members, and observers, and other readers—both current and future. We are cheerfully supported (within fiscal reason) by the *AAVSO*, and depend upon the fine work by the staff—especially Mike Saladyga and Elizabeth Waagen. I and the Editorial Board and the referees are unpaid. I have never, in my half-century of refereeing and editing, been offered a bribe. We try to maintain high standards, while being sensitive to the needs and nature of our authors and our readers. We encourage existing and potential authors to publish in *JAAVSO*, and readers to read it! We encourage feedback; like anything, it can always be improved.

Acknowledgement: I thank Drs. Stella Kafka and Michael Saladyga for reading and commenting on a draft of this editorial.

References

- Bohannon, J. 2016, *Science*, **354**, 23.
 Crotty, D. 2016, web post 18 Aug. 2016 (<https://scholarlykitchen.sspnet.org/2016/08/18/a-quick-tour-around-the-world-of-scholarly-journal/publishing/>).
 Fanelli, D. 2009, *Plos One* (<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0005738>).
 Open Science Collaboration. 2015, *Science*, **349**, 943.
 Stone, R. 2016, *Science*, **353**, 1197.