Access Is Open Access Right for Astronomy?

T. J. Mahoney

Instituto de Astrofísica de Canarias

What Do Research Publications Provide?

- Scientific content (author-provided articles)
- Quality control of scientific content through peer review (provided by the journal)
- High-standard presentation through professional copy-editing, page make-up and typesetting

The last of these is outside the competence of the astronomical community.

Changing Aspects of Publishing in the Electronic Age

- Long tables tend to be available only in the electronic version of journals
- Some content (e.g. animations) can only be published electronically
- The electronic version is now the reference version for some journals
- Volume structure and numbers are becoming more flexible
- ADS enables articles, rather than volumes, to be the reader's entry point to a journal, with volumes ever more rarely being consulted on library shelves, leading to a fundamental reassessment of the role of libraries

Open Access vs Traditional Publishing

- Until recently, traditional publishing models guaranteed content, quality and presentation in exclusivity.
- OA proponents argue – along with Lord Byron – that Barrabas was a publisher (they blame the serials crisis, at least partly, on publisher greed), and that the published results of publicly funded science should be freely available to all.
- Is OA the way of the future, or is a combination of traditional publishing and OA a more sensible option?

What Is Open Access?

‘In academic publishing, **open access** (**OA**) is digital, online, free of charge, and free of most copyright and licensing restrictions access to literature and articles that have traditionally been published in scholarly journals.’

Wikipedia

The Fundamental Arguments of OA Proponents

- The serials crisis, caused by spiralling costs and subscriptions rates has caused libraries to cancel many subscriptions.
- It is only right that the results of publicly funded research should be made freely available to all.

Open Access Flavours

- Gold OA: Basically meets the Wikipedia definition: all articles OA
- Hybrid OA: Only some articles OA
- Delayed OA: Articles become OA after a proprietary (or embargo) period
- Green OA: Authors free to self-archive articles after publication in a subscription-based journal
- Non-OA: Traditional subscription-based access and pay-per-peep

Where Does Astronomy Fit In?

- *Nature*, *Science*, *Icarus*: subscription-based
- *A&A*, *ApJ*, *ApJLett*, *AJ*, *MN*: delayed OA
- The *Directory of Open Access Journals* (www.doaj.org/) currently lists 17 gold OA astronomical journals.
- Some print-only journals (e.g. *The Observatory*) remain.

The Role of arXiv and ADS

- arXiv and ADS are the astronomer's main gateway to the literature
- arXiv has effectively "greened" astronomical publishing in OA terms
- ADS is the astronomer's bibliographical godsend, but its literature coverage is limited by copyright and licensing issues
  - Many early journals unavailable through ADS

Publishing Business Models in Astronomy

- Reader suscribes, but no page charges levied, commercial publisher produces journal, non-OA (*Nature*)
- Author pays page charges, reader pays subscriptions, DOA (*ApJ*, *ApJLett*, *AJ*)
- Learned society produces journal and does not levy page charges, but readers subscribe, DOA (*MN*)
- Research Centre funds full cost of production and distribution of journal (*ESO Messenger*, *CAPj*)

The SCOAP Approach to OA

- SCOAP = ***S***ponsoring ***C***onsortium for ***O***pen ***A***ccess ***P***ublishing in Particle Physics (see Plaszczynski 2007)
- SCOAP is a partnership of research centres, funding organizations and libraries
- SCOAP pays journals for articles published: libraries benefit by saving subscription fees
- Partner SCOAP subscriptions on a pro rata basis with the number of publications per institution
- The high cost of OA journal production is recognized and addressed by SCOAP

Plaszczynski, S. 2007, in A. Heck & L. Houziaux (eds) *Future Professional Communication in Astronomy* (Brussels: Academie Royale de Belgique), 133-39

Barriers to the Freedom of Intellectual Information

- Financial – subscriptions, licences, etc.
- Legal – embargoes, copyright, etc.
- Educational
  - Research articles can suffer from a high fog index
  - Postgraduate-level training necessary to extract full intellectual content from research articles
  - Astronomical research divided into many highly specialized branches and sub-branches
  - Is astronomy not best brought to the public through expert review, abstracting and popularization? E.g. science journalists use press releases and review articles such as those in *Nature* rather than accessing the research articles themselves.

The OA Debate in a Wider Context

- By definition, OA excludes printed publications.
- Advocacy of golden OA militates against print.
- Some print-only journal remain (e.g. *The Observatory*).
- Much of astronomical literature remains undigitized.
- Some older journals, while digitized, are not freely available (e.g. *Transactions of the Royal Society*)

Some Pertinent Questions

- Who guarantees long-term security and survival of the literature? Is not a combination of paper and dititized records a more proven and sensible way to proceed?
- Is it feasible to digitize *everything* and make it *freely* available?

Conclusions

- Astronomy has chosen an evolutionary, rather than a revolutionary, approach to accessibility of research literature with a fleet of different business models in operation
- Gold OA journals are relatively few in astronomy, but
- SCOAP looks interesting:
  - It advocates restructuring the business model for quality journals and addresses the high cost of journal (even OA journal) production in an intelligent way.
- Nevertheless, print must be respected for the sake of the long-term survival of the astronomical record. Gung-ho attempts to obliterate printed copy on the high altar of e-only publishing should be resisted. OA should have no sway over the future of printed copy.

End of talk