

# Trends in Plant Science

## Open access is worth considering

--Manuscript Draft--

<b>Manuscript Number:</b>	
<b>Article Type:</b>	Letter
<b>Corresponding Author:</b>	Robert Lanfear The Australian National University Canberra, AUSTRALIA
<b>First Author:</b>	Robert Lanfear
<b>Order of Authors:</b>	Robert Lanfear
	Matthew W Pennell
<b>Suggested Reviewers:</b>	<p>Max Telford m.telford@ucl.ac.uk He is the editor of one of the OA journals on our list, so he will know better than most if we are right or wrong.</p> <p>Anurag Agrawal aa337@cornell.edu He wrote the letter that prompted ours.</p> <p>Our aim was to constructively dispel, with data, a common misconception, and we tried as much as possible not to criticise Prof. Agrawal for having the wrong end of the stick about OA publishing.</p> <p>So, we'd very much value his opinion on what we wrote, but we'd also request that the editor take into account the chance that he may be defensive of his own opinion in his review.</p> <p>Neither of us have ever met Prof. Agrawal, and I do not mean to cast aspersions here - I'm sure he's a very nice chap!</p> <p>Karthik Ram karthik.ram@berkeley.edu He is a leading figure in the open data movement, and will likely have valuable feedback on what we have written.</p> <p>Graham Coop gmcoop@ucdavis.edu A leading scientist with, in my opinion, one of the most balanced views on the merits of different publishing models.</p>
<b>Opposed Reviewers:</b>	



Robert Lanfear  
Ecology Evolution and Genetics, Research School of Biology  
Australian National University, Canberra ACT 0200  
AUSTRALIA

rob.lanfear@anu.edu.au  
PH: (02) 6125 4321  
FAX: (02) 6125 5573  
www.robertlanfear.com

10th March 2014

Dear Dr. Brink,

I'd like to submit a short letter to Trends in Plant Science. It concerns open access publishing: something that most of us are grappling with, and something that we think deserves significant clarification after reading a recent letter in your journal (Agrawal AA. 2014. Four more reasons to be skeptical of open-access publishing. Trends Plant Sci 19:133). Neither my co-author or I are open access fanatics – for example we have both published recently in TREE and various other traditional journals. But we do think that open access deserves a fair trial, and we hope you can help.

Agrawal's letter is symptomatic of a general and damaging misconception about open access publishing: that all open access journals are non-selective. Our letter describes (with evidence) the true diversity of open access publishing policies, which range from non-selective to highly selective. We think this will be of general interest to many of your readers.

It is a simple point, but one we hope you will consider publishing. It is only by providing and disseminating reliable information on publishing policies that researchers can make informed decisions, and that hiring and granting committees can make informed judgements of fellow scientists.

Yours sincerely,

Rob Lanfear

# Open access is worth considering

Robert Lanfear<sup>1,\*</sup>, Matthew W. Pennell<sup>2</sup>

<sup>1</sup> Ecology Evolution and Genetics, Research School of Biology, Australian National University, Canberra, ACT, Australia

<sup>2</sup> Institute for Bioinformatics and Evolutionary Studies, University of Idaho, Moscow, ID 83844, U.S.A.

\*Author for correspondence: [rob.lanfear@gmail.com](mailto:rob.lanfear@gmail.com)

In a recent letter, Agrawal [1] outlines his opinions on open access publishing. In it, he incorrectly conflates open-access and non-selective journals. Specifically, Agrawal [1] states that "a publication in an open-access journal only imparts [the information that it is] 'not scientifically flawed'", and later that open-access journals provide "no stamp of rigor or potential impact". Unfortunately this is a common misconception, and we would like to set the record straight: many open-access journals are highly selective.

We compiled data on the publication policies of 31 popular open access journals in biology, medicine, ecology, evolution, and plant science (Table 1, full version with journal publication policies available at Figshare [2]). Our data reveal a diversity of policies, ranging from journals that aim to publish valid science regardless of novelty or likely impact (e.g. PLOS ONE, The PeerJ), to those that are at least as selective as the most competitive closed-access journals (e.g. PLOS Biology, BMC Biology, eLife). In total, 22 of the 31 journals in our data set apply some kind of selection based on novelty and likely impact. Many open access journals also lead their fields based on metrics such as impact factors. For example, the 1st and 5th ranked journals in the Institute for Scientific Information's (ISI) 'Biology' category are both open access and highly selective (PLOS Biology and BMC Biology, with impact factors of 12.7 and 6.6 respectively), and the 2nd ranked journal in ISI's 'Zoology' category is open access and places little emphasis on perceived impact (Frontiers in Zoology, impact factor 3.9). Thus a publication in an open access journal imparts much more than the information that it is not flawed. And to the extent that impact factors can be used to estimate a publication's future citation rate [3], publications in many open access journals should be judged at least as favourably as those in closed access journals.

We agree with Agrawal that researchers should carefully consider their options when deciding where to publish. The decision affects who will see the work, how it (and the researcher who produces it) will be judged, and the rise and fall of scientific publishing models. It is therefore important that we are all aware of journals' publishing policies and reputations, both for our own science and in our judgement of others'. This is particularly important as hiring and granting committees try to keep pace with a rapidly changing publishing landscape.

## References

1. Agrawal AA. 2014. Four more reasons to be skeptical of open-access publishing. *Trends Plant Sci* 19:133.
2. Lanfear, Rob; Pennell, Matthew W (2014): Publication policies of 31 open access publishers in biology. figshare. <http://dx.doi.org/10.6084/m9.figshare.956240>
3. Eyre-Walker A, Stoletzki N. 2013. The assessment of science: the relative merits of post-publication review, the impact factor, and the number of citations. *PLoS Biol* 11:e1001675.

Table 1: publication policies of 31 open-access publishers in the biological sciences, with respect to whether or not they select articles based on novelty and perceived impact. Journals are ranked by impact factor, and those without impact factors are marked 'NA'.

<b>Journal</b>	<b>Selection for novelty/impact</b>	<b>Impact factor</b>
PLOS Medicine	yes	15.25
PLOS Biology	yes	12.69
PLOS Genetics	yes	8.52
PLOS Pathogens	yes	8.14
BMC Biology	yes	6.53
PLOS Computational Biology	yes	4.87
Genome Biology and Evolution	yes	4.76
PLOS Neglected Tropical Diseases	yes	4.57
BMC Genomics	minor	4.40
BMC Plant Biology	minor	4.35
Evolutionary applications	yes	4.15
EvoDevo	yes	3.91
Frontiers in Zoology	minor	3.87
PLOS One	no	3.73
BMC Evolutionary Biology	minor	3.29
BMC Bioinformatics	minor	3.02
Scientific Reports	no	2.93
BMC Genetics	minor	2.81
BMC Developmental Biology	minor	2.73
Biology Direct	no	2.72
Evolutionary bioinformatics	no	1.23
Ecology and Evolution	no	1.18
Applications in Plant Sciences	minor	NA
BMC Ecology	minor	NA
Ecosphere	no	NA
eLife	yes	NA
Evolution Medicine and Public Health	yes	NA
Frontiers in Genetics	yes	NA
PeerJ	no	NA
PLOS Currents	no	NA
F1000 Research	no	NA