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Guides, not gatekeepers

The 7th annual #OpenAccess Week[1] begins 20th October, so we thought we would take some time to reflect on the current publishing landscape, to recognize our editors' and reviewers' important contributions, and to encourage young authors who may be daunted by seemingly bleak terrain; we are a community.

That editors are 'gatekeepers' (Crane 1967, Simon & Fyfe 1994), abetted by reviewers (de Grazia 1963, Hojat et al. 2003), has become a common motif in critiques of modern for-profit scientific publishing (Marusic 2010). The proposition is, roughly, that editors restrict access of meritorious science to journals of perceived higher value (Hojat et al. 2003) under the guise of providing content expertise (Powell 2010), while in fact often erring in judgment (Smith 2006) and being motivated by the journal's not authors' interests[2]. Disappointing enough in its own right, when true, capricious (editorial) review takes on added significance as simple indices of publication rates and short-term impact grow in influence[3]. In an age of rapidly multiplying journals it seems increasingly possible to publish and perish. There are two broader threats too: that risky 'high impact' papers are favored over thorough but less head-turning science, and conversely that innovations are filtered out prior to publication because they are kicking the shins, rather than standing on the shoulders, of giants. In the first case, science gains a reputation for being fundamentally flawed[2,4]. In the second case, incremental advances trap disciplines within a detrimental cycle of confirmation bias (de Grazia 1963 in Crane 1967). Editors incarnated as gatekeepers protect corrupt and crumbling empires.

Open Access (OA) journals such as *PLoS ONE* and *PeerJ*, that intend to review only "scientific and methodological soundness" and take editorial decisions without determining "'impact', 'novelty' or 'interest'"[5], are promoted as possible solutions. The perception that such review should increase the flow of data, for example by reducing under-reporting of negative results (the 'file drawer problem' [Rosenthal 1979]), contributes to backing of these journals by advocates of Open Science and Big Data. Publication, in droves, by and for the masses, the logic goes, should democratize data, speed science, and enhance knowledge. Carried to its logical end, *PLoS Currents* and *rOpenSci* for example, provide tools practically for self-publishing. In these models, the sorting of science occurs after, not before, publication and is done through social media, commenting, and citation. Laudable intentions notwithstanding, the intended objectivity may be unattainable: review is susceptible to 'unconscious bias' (e.g., Englund et al. 1999, Moss-Racusin et al. 2012), social networks may coalesce around and amplify shared values (McPherson et al. 2001, Saez-Trumper et al. 2013), commenting is shaped by a subset of active network members[6], and citations are used selectively (Greenberg 2009).

Amid the clamor of clashing publication models, few have asked "what are [academic journals] for"? (Whittaker 2014:2). Simply, they should make science both more accessible and better (Whittaker 2014). Critics imply that traditional for-profit non-OA publishers do neither. Does pay-to-publish OA necessarily do either? Removing financial barriers to reading scientific papers is a 'common good' but alone is not synonymous with greater access. Fees conceivably could prohibit some authors from publishing; others may publish so much that if the proverbial needle is in a haystack, it becomes harder to find among the burgeoning pile of chaff. Yet pay-to-publish

1 http://openaccessweek.org/, last accessed 25/09/2014
2 http://www.nytimes.com/2006/05/02/health/02docs.html?pagewanted=all, last accessed 25/09/2014
3 http://www.economist.com/blogs/babbage/2013/12/whats-wrong-science, last accessed 25/09/2014
4 http://www.economist.com/news/briefing/ 21588057-scientists-think-science-self-correcting-alarming-degree-it-not-trouble, last accessed 25/09/2014
5 https://peerj.com/about/aims-and-scope/, last accessed 25/09/2014
6 e.g. https://www.facebook.com/groups/6908354463/, last accessed 25/09/2014

OA may incentivize for-profit publishers to accept more papers, and has encouraged the growth of 'predatory journals' that publish articles for profit with virtually no editorial work or quality control[7]. Another irony of OA is the rise of for-profit operations such as *Faculty of 1000* that aim to highlight important published research. Their service, provided for a fee, is effectively the same service provided free by many editors for centuries (McGinty 1999:2), i.e. a guide to how to distribute a valuable and finite resource (your time). But post-publication recommendation, in contrast to pre-publication review and editing, cannot improve the mean quality of science published.

Is there a happy medium? Although non-profit society journals are not immune to the pressures of either publishing environment, they can shift the balance in three important ways. One, they can aim to 'break even' irrespective of the number of articles published above a self-sustainable minimum. Two, they foster a 'local' community—which may be disciplinary (e.g., the *International Biogeography Society*) or geographic (e.g., QUALIS[8] and SciELO[9] in Brazil)—with strong relationships between authors, editors, publisher, and research, thus democratizing science through a diversity of communities rather than through homogenization. Three, local communities are self-reliant for longevity, encouraging a perspective that can recognize when short- versus long-term interests are warped by the current 'hype cycle'. For example, the most radical changes currently operating in the publishing ecosystem are being driven in part by enthusiasm for OA and Big Data. But these changes are inevitably destined for challenging years ahead as they morph into mature technologies[10]. A long-term perspective should fuse the merits of old and new approaches to scientific publishing, while keeping an eye on challenges—such as geographic inequalities[11]—that persist in both.

The publication process is complex and goals vary by discipline and journal type. The negative 'gatekeepers' critique may be admitted in some cases (e.g., Stern 2007), but applying the 'gatekeepers' metaphor to all situations is counterproductive; it often misrepresents the more commonplace and important roles of editors and reviewers.

Editors and reviewers are guides, not gatekeepers. Rather than filtering papers, our goal is to help authors publish the best work possible. We mostly need only provide maps through well-known landscapes between *Manuscript* and *Publication*, but also are ready to recognize untrodden routes from *Innovation* to *Breakthrough* which reduce 'herding' and stagnation (Park et al. 2014). Guides benefit the entire community: author, reviewer, editor, journal, readers. Undoubtedly, some editors and reviewers will be better guides (or guide in different ways) than others. Similarly, some authors will need little guidance, others will need much; some papers may start on an inappropriate path and need to be re-located or re-directed. All manuscripts will not succeed even in an objective and supportive 'rationalistic' system (*sensu* de Grazia 1963), but author–editor teams that work hard together will more often attain their shared goal of publishing good science.

Having recognized that editors and reviewers may act as guides rather than gatekeepers, it is easy to see their role as similar to, and largely an extension or continuation of, the role of co-authors and colleagues (de Grazia 1963, Baldwin 2014). While the fate of individual manuscripts at a particular journal will remain a short-term metric of personal success, we emphasize an understated long-term outcome of collaborative (editorial) review: that authors and academic journals share the 'benefits of the commons' as our publishing ecosystem improves.

7 See definitions, a review of editorial malpractice, and list of predatory journals at http://scholarlyoa.com/, last accessed 25/09/2014
8 http://qualis.capes.gov.br/, last accessed 25/09/2014
9 http://www.scielo.br/, last accessed 25/09/2014
10 http://www.economist.com/blogs/babbage/2014/08/difference-engine-2, last accessed 25/09/2014
11 www.scinoptica.com/pages/topics/open-access-heatmap.php; https://twitter.com/openscience/status/470035543393574912/photo/1, last accessed 25/09/2014

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