Open Access Temptations: Buyer Beware

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Abstract

Backlash against "megapublishers" which began in mathematics a decade ago has led to an exponential growth in open access journals. Their increasing numbers and popularity notwithstanding, there is evidence that not all open access journals are legitimate. The nature of the "gold open access" business model and increasing prevalence of "publish or perish" culture in academia has given rise to a dark underbelly in the world of scientific publishing which feeds off academics' professional needs. Many such "predatory" publishers and journals not only seem to originate out of India but also seem to have been patronized by academics in the country. This article is a cautionary note to early-career academics and administrators in India to be wary of this "wild west" of the internet and exercise discretion when considering/evaluating open-access journals for scholarly contributions.

Keywords: Academic publishing, Open access

1 Introduction

In September 2015, Timothy Gowers, the famous Fields Medallist from Cambridge University, announced the start of a new mathematics journal on his popular blog. Normally, in this era of proliferation of journals, announcement of a new journal would not be considered news. What was different was that the new journal *Discrete Analysis* would not only be free and open access, but also purely 'arXiv¹-overlay', meaning "…rather than publishing, or even electronically hosting, papers, it will consist of a list of links to arXiv preprints." So other than being free for both the authors and the readers, it would simply use the existing arXiv infrastructure to publish articles and updates.

Launch of a free, open access, arXiv-overlay journal was an important enough development in movement against conventional models of academic publishing to warrant coverage both in scientific journals (Ball, 2015) as well as in the mainstream media (Belluz, 2016). Success of this journal would show that it was possible to sustain academic-run digital-only peer-reviewed journals at low costs by leveraging existing established electronic archiving services.

¹arXiv (http://arxiv.org/) is the equivalent of SSRN (http://www.ssrn.com/) in physical sciences and mathematics

²Gowers (2015)

1.1 The Cost of Knowledge Protest and the Open Access Movement

A blog post in January, 2012 by Gowers about the exploitative commercial practices of Elsevier B. V., the world's largest publisher of scientific journals (Lariviere et al., 2015), had spawned a boycott ("won't publish", "won't referee", "won't edit") against it for:

- charging exorbitant subscription prices for individual journals (Gowers et al., 2012),
- its policy of bundling unwanted journals to libraries in the pretext of offering discounts, and
- supporting measures such as the Stop Online Piracy Act (Senate Bill, 2011)

The boycott running at http://thecostofknowledge.com received substantial traction among academics, and has as on date almost 16000 signatories from all over the world. While it was a first coordinated response by academics, disgruntlement against commercial academic publishers has been on the rise since the 1990s (Laakso et al., 2011; Monbiot, 2011). In 2006, all editors of the journal *Topology* resigned en-masse against practices of Elsevier, and the entire editorial board of the Springer-run journal *K-Theory* resigned in 2011 (Baez, 2011).

This backlash against established "megapublishers" has played an important role in furthering the open access movement that picked pace in early 2000s (Neylon, 2012).

In September 2001, around 34000 scholars from the world over signed an open letter to the scientific publishers pushing for "...the establishment of an online public library that would provide the full contents of the published record of research and scholarly discourse in medicine and the life sciences in a freely accessible, fully searchable, interlinked form."³

Although the petition did not make much of a dent on the practises of established publishers, it led to the formation of the Public Library of Science (PLOS) as a non-profit advocacy organization which has been the flag-bearer of the open access movement since.

Fuelled by increasing supply of PhDs (Lederman, 2014; Paris Tech Review, 2014), the spillover of "publish or perish" culture to developing countries (Higher Education in Russia and Beyond, 2016) with their unique spin, the number of open access publishers has continued to grow (Whitfield, 2011).

An unfortunate side effect, however, of this growth in open access has been a rise in "questionable" or "predatory" journals (Straumsheim, 2015) which feed off academics' professional needs by prostituting the open access model to one where authors, perhaps unknowingly, "pay and publish" their research (Stratford, 2012) with no peer review to speak of.

This note briefly outlines the growth in open access and its dark underbelly with a view to cautioning early-career academics, especially doctoral students, to be wary of

³https://web.archive.org/web/20110719181919/http://www.plos.org/about/letter. php, retrieved 20 March, 2016

this "wild west" of the internet as they consider open access journals/publishers to increase outreach of their research.

While important aspects of the problem, this article is neither a review of the circumstances and the economics behind the growth in open access, nor a discussion of the prevalent or evolving faculty incentives in academia in India. It also stays away from discussing the issues with the prevailing pre-publishing blind/double-blind peer-review model in a world where almost every professional is "linked in". The modest objective is to present the dangers that lie in the road to open access.

2 The Open Access Landscape

2.1 Defining Open Access

In words of Peter Suber, director of the Harvard Open Access Project and a fellow at the Berkman Center for Internet & Society specializing in philosophy of law, open access refers to any "...literature [that] is digital, online, free of charge, and free of most copyright and licensing restrictions."⁴

Although there exists variations on the formal definition of open access (Suber, 2012), the one given by the Budapest Open Access Initiative is generally accepted:

"By "open access" to this literature, we mean its free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited."

That is, any research to be qualified as open access must not only be freely available online, but also be free from any permission barriers. The main difference among various definitions of open access lie in their archiving and preservation policies. For a comprehensive discussion of different facets of the open access campaign and its economics, the reader is referred to Suber (2012).

2.2 Models for Open Access

It is useful to understand open access in publishing by drawing analogy with the open source movement in software development driven by Richard Stallman's maxim: "Think free as in free speech, not free beer." So while a freeware is free as in free beer (zero price), an open source software is free as in free speech (no/few restrictions).

 $^{^4}$ http://legacy.earlham.edu/~peters/fos/overview.htm,retrieved~20~March,2016

 $^{^{5}}$ http://www.budapestopenaccessinitiative.org/, retrieved 22 March 2016

⁶http://www.gnu.org/philosophy/free-sw.en.html, retrieved 15 March 2016

On the same lines, Suber (2012) describes "gratis open access" as one which only removes price barriers, and "libre open access" as one which removes both price barriers along with (some/all) permission barriers.

Separate from the gratis vs. libre distinction (which is about user rights/freedoms) is the difference in the outlet for open access, and, here, over time three models of open access have evolved.

2.2.1 Green Open Access

This has historically been the most used version of open access by researchers, where work is uploaded to an electronic repository (e.g. arXiv in physics or SSRN in economics) with an implicit understanding that it has not been necessarily (single-blind/double-blind) peer reviewed. Another version is where a university/institution enables open access by setting up a working papers series (as pre-prints and/or post-prints).

The institutional green open access model has been mostly a disorganized effort, but there now exists open source software (EPrints) made available by the Registry of Open Access Repository (ROAR; http://roar.eprints.org/) and hosted at the University of Southampton. Optimized for Google Scholar and bibliography managers, EPrints enables a fast and easy way "... to set up repositories of open access research literature, scientific data, theses, reports and multimedia". It also allows users worldwide easy access to content via metadata harvesting. As on date, ROAR contains more than 4000 green open access repositories.

2.2.2 Gold Open Access

The only way the gold open access differs from the standard model of academic publishing is that in the former authors pay for the processing charges towards publication (typically after acceptance), called the Article Processing Charge (APC). Once published the article is free for anyone to read/download. In terms of peer review, there is supposed to be no difference. While green open access repositories are typically not-for-profit, there are examples of the gold open access publishers run by both for-profit (like BioMedCentral or BMC) as well as not-for-profit organizations (like PLOS).

To compete with the rising popularity of gold open access, today all major publishers offer open access option to authors. The cost of going open access can be prohibitively high, however, and can go up to USD (\$) 5000 per article. Table 1 below gives some summary statistics on APC for some of the largest gold open access publishers.

From the table, a few things are apparent:

- Elsevier is not only the largest publisher of scientific journals, but also by far the largest in its offering of open access journals
- Among the established publishers, Springer seems to have the cheapest open access offerings

http://www.eprints.org/uk/index.php/eprints-software/,retrieved 21 March, 2016

• Most of the open access offerings have an APC of \$1000 and above (as indicated by a high median and low inter-quartile range)

Publisher	numJournals ^a	zeroAPC b	minAPC c	maxAPC c	medianAPC ^c	iqrAPC ^c
BMC	306	23 (8%)	\$735	\$2975	\$2145	\$85
Elsevier	2664	319 (12%)	\$65	\$5000	\$2600	\$1081
Kluwer	232	0 (0%)	\$500	\$4600	\$3275	\$1160
PLOS	7	0 (0%)	\$1495	\$2900	\$2250	\$325
Springer	224	97 (43%)	\$430	\$2500	\$1160	\$303
Wiley	55	1 (2%)	\$800	\$4500	\$2125	\$688

Table 1: Representative Gold Open Access APC

The obvious conflict of interest in the "author pays" model makes it ripe for abuse by crooks on both sides of the publishing market.

High APC on offer makes it attractive for corrupt publishers to start journals, and naïve or unscrupulous researchers get to "buy" a publication virtually on demand with little or no peer review to speak of. The problem has less to do with the gold open access model per se (though the nature of it does help facilitate it), and more to do with academics whose motive or professional situation/circumstance pushes them to consider such journals. Predatory publishers cannot exist without a prey in this ecosystem.

2.2.3 Diamond Open Access

A more recent development (Fuchs and Sandoval, 2013), and not as popular as the other two models, the *Discrete Analysis* 'arXiv-overlay' journal mentioned earlier is a good example of diamond open access. The articles are peer reviewed and processed as in conventional scientific publishing, but they remain free for both the authors and the readers with no APC or subscription charges. The cost element is managed by 'free-riding' on top of an existing electronic archiving infrastructure with the help of inexpensive publishing platforms (see, for example, https://scholasticahq.com/).

The diamond open access model is likely the purest form of open access that the earliest open access activists had in mind, where "...not-for-profit, non-commercial organizations, associations or networks publish material that is made available online in digital format, is free of charge for readers and authors and does not allow commercial and for-profit re-use."

2.3 The Directory of Open Access Journals

The Directory of Open Access Journals (DOAJ) project started as an attempt by the first Nordic Conference on Scholarly Communication to make it easier for libraries and

^a numJournals: Total number of open access journals by the publisher

b zeroAPC: Total number of open access journals with zero APC (as a percentage of numJournals)

^c minAPC, maxAPC, medianAPC, iqrAPC: Minimum, maximum, median and inter-quartile APC of all journals with non-zero APC

⁸Fuchs and Sandoval (2013), p. 438

aggregators to integrate open access journals in their service (Johansson and Wahlgren, 2008). Starting with around 300 journals in 2003, the DOAJ database today contains almost 11500 journals with more than 2 million articles.⁹

Tables 2 and 3 respectively give a break of open access journals by origin of country and main subjects, and Figure 1 gives a sense of their exponential growth since 2004.

Table 2: Open Access Journals in DOAJ by country of origin (top 6 by percentage)

Country	Brazil	United States	United Kingdom	Spain	Egypt	India
Percentage	9.72%	9.24%	6.89%	5.47%	4.89%	4.75%

Table 3: Open Access Journals in DOAJ by subject (top 6 by percentage)

Subject	Medicine	Science	Social Sciences	Technology Agriculture		Geography
Percentage	29.87%	21.52%	10.45%	9.55%	5.61%	4.08%

In its own words, DOAJ "...aims to be be the starting point for all information searches for quality, peer reviewed open access material. To assist libraries and indexers keep their lists up-to-date, we make public a list of journals that have been accepted into or removed from DOAJ..." 10

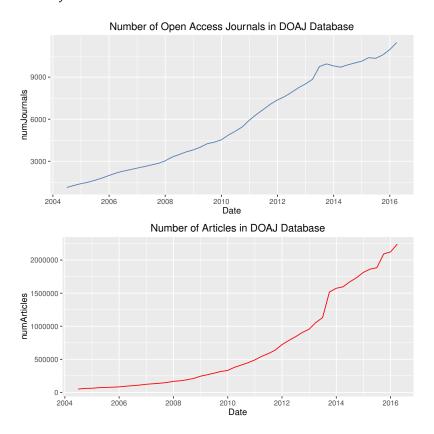


Figure 1: Growth in Open Access Journals (DOAJ, March 2016)

⁹https://doaj.org/, as on 28 March, 2016

¹⁰ http://doaj.org/about, retrieved 31 March 2016

To be listed in the DOAJ index, a journal needs to meet 13 criteria (DOAJ, 2015). For the most part these relate to documentation and the 'right' presentation of information about peer review, editorial board, APC, access and archiving, author misconduct, conflicts of interest and advertising.

Acceptance in DOAJ has become a de facto standard of legitimacy in the open access space, and is regarded as a mark of validation for any open access publisher. So much so, there is evidence that some publishers go ahead and put 'copied' image of DOAJ logo on their website irrespective of whether they have been included in its index.

3 The Science Sting and Beall's List

3.1 "Who's Afraid of Peer Review?"

John Bohannon is a popular science correspondent for the *Science* and *Wired* magazines. A biologist by training and an ex-visitor at the Harvard University Program in Ethics & Health, ¹¹ he is famous for embedding with the military forces in Kabul and Kandhar in 2010 and for his role there in getting the civilian casualty data during the Afghanistan war released by the NATO-led coalition, the United Nations and Britain (Bohannon, 2011).

In the popular media, however, he is most famous for his 2013 *Science* article titled "Who's Afraid of Peer Review?" that first exposed the scientific publishing racket being perpetrated in the name of gold open access model (Bohannon, 2013).

Backed by the *Science* magazine, between January and August 2013, he submitted 304 versions of a fake scientific paper to different gold open access journals. In his words, any referee "...with more than a high-school knowledge of chemistry and the ability to understand a basic data plot should have spotted the paper's short-comings immediately. Its experiments are so hopelessly flawed that the results are meaningless."¹²

By the time the *Science* article went to print, 157 journals had accepted and 98 had rejected the sting article. The reader is referred to his original *Science* piece for the dirt, but some of the statistics that Bohannon (2013) reports are alarming to say the least. For example:

- Of the 106 journals which performed any kind of review, 70% accepted the paper.
- Out of the 304 papers, only 36 identified scientific problems with the sting article (getting desk-rejected, of course is not exactly a cause for celebration, because that's what one would expect from an unbroken peer review process).
- Of the open access journals which were part of DOAJ, 45% accepted the paper.

An interactive map at the *Science* website¹³ displays the country of origin of publishers and their bank account (not always the same). It makes for an interesting read, and would be rather comic were it not so tragic for the academic environment at large.

¹¹ http://peh.harvard.edu/people/bohannon.html, retrieved 30 March 2016

¹²Bohannon (2013)

¹³ http://scicomm.scimagdev.org/, retrieved 30 March 2016

Perhaps not quite content with exposing the practises of unscrupulous gold open access publishers, or may be he just wanted to have some more fun, Bohannon organized another sting of sorts to bring to light the dietary and nutrition claims thrown about in the name of scientific research.

Conducted scientifically for the most part (Bohannon, 2015), this sting was a good example of what is known as *p-hacking* in statistics (Freakonometrics, 2015), and it again revealed damning practises of exploitative journals.

He found that he could easily get their paper accepted to multiple journals in less than 24 hours as long as they were willing to shell out the APC! The mainstream media and tabloids, which are even less discerning also naturally fell for it (Bohannon, 2015), including, eh, *The Times of India*!¹⁴

Bohannon's exposé have ruffled enough feathers in academia and the open access publishing community to have invited responses ranging from surprise (Shaw, 2013) to anger (Eve, 2013) by drawing comparisons with problems with the traditional models.

To cast the issue in terms of open access versus conventional model of publishing, however, is to miss the point in my opinion. There is no pretense that peer review in the conventional publishing world is foolproof (McCook, 2006). Elsevier has been known to publish fake journals (Hutson, 2009), and there is enough anecdotal evidence about favoritism in even top ranked journals. It is naïve to believe that peer review is by any means perfect - ask any grey-haired professor! What is alarming about the scam being perpetrated in the name of the gold open access model is the sheer scale and the shamelessness of it.

But if there is one man on a crusade against the shady publishers (Butler, 2013), it is Jeffery Beall, a librarian and faculty member at the University of Colorado, Denver.

3.2 Beall's lists

Since 2012, Beall has maintained a now-extremely popular blog at http://scholarlyoa.com which serves as a "critical analysis of scholarly open-access publishing". In the last four years or so since the blog has been running, publishers have grown to be afraid of finding their name (Bohannon, 2013) on his four lists:

Predatory publishers. This is a list of potential, possible or probable predatory open access publishers. As on date, there are 983 publishers, with more than 18,000 journals being published amongst them. According to Beall, this list has grown from only 18 publishers in 2011 to more than 50 times.¹⁵

Predatory journals. This is a list of potential, possible or probable predatory open access journals. As on date, there are almost 1000 journals in this category, which represents an eight-fold rise since 2013. So, in total, there are almost fake 20,000

 $^{^{14} \}rm http://timesofindia.indiatimes.com/life-style/health-fitness/diet/need-a-sweeter-way-to-lose-weight-eat-chocolates/articleshow/46770172.cms, retrieved 30 March 2016$

 $^{^{15} \}rm https://scholarlyoa.com/2016/01/05/bealls-list-of-predatory-publishers-2016/, retrieved 30 March 2016$

¹⁶ibid

journals out there across disciplines. If Beall's list is correct, and ignoring any overlap with the DOAJ journals for now, that makes the number of questionable journals more than all journals by megapublishers and DOAJ combined. This is staggering by any measure.

Misleading metrics. This is a list of questionable metrics that purport to provide valid scholarly metrics at the researcher, article, or journal level (think of it as fraud impact factors). As on date there are 41 fake metrics according to his blog.

Hijacked journals. This is a list of websites that mimic the website/domain name of a legitimate scholarly open access journal, and solicit manuscript submissions and APC. As on date there are 108 hijacked journals reported by Beall.

The criteria used by Beall for determining predatory publishers and misleading metrics are reproduced verbatim in Appendix A. Over time his blog has gained enough popularity to be covered by outlets as mainstream as the *New York Times*¹⁷ and as respectable as *Nature*¹⁸ and *The Chronicle of Higher Education*.¹⁹

Admittedly, his criteria are not scientific in any quantitative sense and rely more on intuition and experience. They have also not been scientifically validated and so rightly prone to criticism. Some have hit back strongly on these counts, and argue that the "lists should be ignored."²⁰ Although generally sympathetic to his cause and approach in general, he has also been described by arXiv founder Paul Ginsparg for being a bit too "trigger happy"(Bohannon, 2013, p.62), in the sense that he seems too eager to condemn.

To check if that is indeed the case, I have checked the websites of (almost)²¹ all journals covered under his list of predatory publishers and standalone publications. For what it is worth, my prima facie sense is that he is not over-reacting. I would encourage the reader to not take my word for it, and on a bored weekend, take a sample of some of the journals in Beall's list and check it out for oneself. For the most part, his approach and criteria seem grounded in "good sense". But then again, this is not conclusive by any means and there could be legitimate journals which have been classified wrongly.

Other than for his seemingly arbitrary criteria, he has also been criticized as having an agenda against open access movement, and being against the growth of new publishers starting off in developing countries (Nwagzu, 2016).

Going by the extensive coverage he has received,²² however, and the reader comments on his blog, the scientific community, especially academics working in not-so-large/popular universities/institutions (essentially those in the developing and under-developed countries) seem sympathetic and appreciate his efforts.

¹⁷http://www.nytimes.com/2013/04/08/health/for-scientists-an-exploding-world-of-pseudo-academia.html?pagewanted=all&_r=1, retrieved 30 March 2016

¹⁸http://www.nature.com/polopoly_fs/1.12666!/menu/main/topColumns/topLeftColumn/pdf/495433a.pdf, retrieved 30 March 2016

¹⁹http://chronicle.com/article/Predatory-Online-Journals/131047/, retrieved 30 March 2016

²⁰Crawford (2014), p. 23

²¹This is still a slowly-progressing WIP. (Notwithstanding my interest in open source, this remains an academic distraction and so, yes, it is literally a working paper and would probably remain so for a while.)

²²https://scholarlyoa.com/other-pages/research/, retrieved 31 March 2016

The *Science* sting mentioned earlier found that of the open access journals which belonged to Beall's list, more than 80% accepted his bogus article. So while Beall may be a bit too "trigger happy", his criteria does seem to work. But it is also true that about 20% of journals did rightly reject Bohannon's fake piece.

Whether finding a journal guilty when it is not is worse than believing a journal to be legitimate when it is fake is I guess a matter of personal taste between type-I and type-II errors. However, if there is no additional evidence other than the fact that a journal/publisher meets most of Beall's criteria, with the null of "journal is not fake", I would gladly accept a high type-I error any day.

3.3 Break-up of Beall's list

Although not emphasized by Bohannon, the country of origin of bank account of publishers which had the highest acceptance rate of his bogus article was India (check the interactive map at the *Science* page mentioned earlier).

To see if any pattern also showed up in Beall's list, I looked at the country-wide break-up of Beall's list of predatory publishers as well as standalone journals. The problem in doing this, as Beall has also found (see Appendix A), is that many suspect publisher/journals simply do no state their address or country of origin (a journal starting with *Canadian* doesn't necessarily mean that the country of its origin is Canada. *International* is even more vague. For all you know, the journal could be originating out of Paldi, Ahmedabad²³).

The evidence presented below, then, is based on data for only those for which publisher's country of origin was identifiable. If contact address was not available, the country of origin of its managing editor was used. If that was also not available, the country of origin of its editor-in-chief was used. For the rest, the country of origin was classified as 'Unknown'.

With that the origin of country could not be found for about $1/3^{rd}$ of publishers (out of 983) and for about $1/5^{th}$ of standalone journals (out of 993). In all 59 countries were represented for predatory publishers, and 32 for predatory standalone journals.

Table 4 gives country-wide break-up of standalone journals, and Tables 5 and 6 respectively give data for publishers and total journals covered between them (for Table 6, the percentages are based on the sample of about 10,000 journals that I have considered so far, corresponding to about 60% of the total population of journals covered in Beall's lists).

If Beall's list is correct, both the United States and India seem to have a dubious distinction of being in top 2 of all comparisons. However, although corrupt journals seem to originate mostly in the west (United States and UK add up to more than 50% for total number of journals), their success seems to be driven by contributors mostly from developing countries (data under compilation and not paper-ready yet).

 $^{^{23}}$ Yes, there does exist some from Paldi

Table 4: *Predatory standalone journals by country of origin (top 6 by percentage)*

Country	India	US	UK	Turkey	Pakistan	Malaysia	Unknown
Percentage	47.8%	7.8%	2.8%	2.1%	1.7%	1.5%	19.5%
Number	475	77	28	21	17	15	194

Table 5: *Predatory publishers by country of origin (top 6 by percentage)*

Country	India	US	Pakistan	Nigeria	UK	Canada	Unknown
Percentage	23.7%	15.6%	3.6%	3.2%	3.2%	2.3%	36.1%
Number	233	153	36	31	31	22	355

Table 6: *Predatory publishers' journals by country of origin (top 6 by percentage)*

Country							Unknown
Percentage	46.1%	19.5%	6.8%	4.7%	2.7%	1.7%	13.2%

In my opinion, in part at least the problem seems to be driven by a widespread and superficial adoption of criteria of faculty research evaluation in American academic institutions (many of which grew around/post World War II)²⁴ to developing countries without always necessarily appreciating the context. It does not help that a thoughtless replication is as easy as downloading the journal classification list from the Australian Business Deans Council (ABDC) website.

3.4 Overlap between Beall's and ABDC lists

In most well-known post-graduate schools in India, the ABDC list forms the basis for promotion and incentives for much of the beginning years of an academic. It would be good to know, then, if there are any glaring commonalities between Beall's and the ABDC list.

One would hope that there would be no overlap in the two lists, but it turns out there are 34 overlapping journals (see Table 7). The evidence from Indian business schools (not presented here) suggests that many of these have been actively patronized by faculty from even some top-ranked schools. Evidence from lesser-known, newer and private schools in the country, who are known to follow/replicate the 'performance management' model at the older schools, suggests an even higher preponderance of publications in journals belonging to Beall's list (and outside the ABDC list). This should worry the administrators.

Although not classified as open access, so not within the purview of this study, an interesting entrant into the ABDC list is Inderscience Publishers. Based out of Switzerland, and publishing more than 1100 journals across all subjects at the last count, it currently has more than 100 journals in the ABDC list, with almost all of them classified in category 'C'. Curiously, even though its journals seem to be gaining popularity as an outlet by academics, its journals seem to be hardly subscribed to by the

²⁴It is not inconceivable that the prevailing model in the US would have gone through many iterations, and would have been in response to the evolution of the job market there

libraries.²⁵ If the publisher is legit, just going by its sheer numbers, I think its journals may just well represent the most attractive arbitrage opportunity²⁶ to score some brownie points whatever the subject matter!

4 Discussion

One could argue that the evidence is hardly condemning on its own, as ABDC list has an institutional acceptance worldwide. And, as pointed out earlier, despite the attention in *Nature* and *Science*, Beall's list is unscientific and likely to suffer from type-I errors (classifying legitimate journals as predatory). Even if Beall's list is correct, it may be argued that there is no material impact even then, as at worst the paper would not be widely read (the reader is encouraged to visit the websites of offending list of journals in Table 7).

And to be fair, papers published in journals in Table 7, especially by academics working in top-ranked schools, are likely to constitute an error of omission than of commission. And probably reflects a lack of awareness and an eager research associate. After all, the overlapping journals are of only category 'C' in ABDC, so one can't really get too much leverage out of them except for some end of March 'performance credits' maybe. But then, economic incentives work in mysterious ways!²⁷

A bigger and more serious problem, however, is the spillover effect of papers by members of respected institution in possibly questionable journals on early-career academics in new schools. This could lead to some serious mis-allocation of resources away from more productive activities. And all this could be happening in the context of a developing, possibly resource-constrained, country. Also, it not only helps the predatory publishers perpetuate the scam, but also potentially corrupts the academic environment, perhaps irrevocably.

In India, of course, the problem is compounded by the fact that faculty salaries in government and quasi-government institutions are repressed to below market rates. And in an attempt to offer higher compensation and attract quality teachers and researchers, while staying within the rules, many colleges have started to reward research output monetarily based on certain, often arbitrary, 'impact factors' (which possibly explains the rise in misleading metrics).

This creates additional incentive/peer pressure to look for journals which offer multiple issues in a year, with a fast turnaround and high acceptance rates irrespective of one's areas of interest. Whoever says that moral anchors alone should drive the 'right' choices probably does not understand what it is like to be in the PhD job market, or on probation.

For what it is worth, Appendix B has some advice reproduced verbatim from Butler (2013) for those interested on how to avoid questionable outlets. Doctoral students es-

²⁵https://scholarlyoa.com/2015/01/02/bealls-list-of-predatory-publishers-2015/, retrieved 31 March 2016

²⁶See, I am a finance guy after all!

²⁷http://marginalrevolution.com/marginalrevolution/2010/06/understanding-incentives.html,retrieved 29 March 2016

pecially would do well to pay heed to the advice and carefully look at Beall's criteria as they consider open access journals for publication.

Another red flag is the quality of referee reports. Most predatory journals would only have a check-list masquerading as a referee report. Any journal with a referee report like in Appendix C should raise alarm bells (these are samples of actual referee reports). Such "acceptance letters" are usually followed by detailed instructions on payment methods (everything from SWIFT to VISA to a Western Union transfer works).

Realistically, there is no getting away from use of some kind of quantitative criteria as an input for faculty development, evaluation, growth and monetary rewards. As a matter of full disclosure, I have been, and remain, a supporter of such criteria applied with discretion and "good sense". In the world where information asymmetry is so high, it is easy to hide behind the garb of jargon and specialization, and one needs peerreview and external validation to increase transparency and accountability. At the same time administrators need to be conscious of more than just a list, and train and inform early-career academics and doctoral students so that they stay away from the muck. And all of this takes time.

5 Conclusion

If Beall's list is anything to go by, the speed at which the predatory gold open access publishers are growing is ominous. It is up to an individual to exercise discretion when considering open access journals for their research. Even the best of administrators have more balls to juggle than they have time or attention span for. So irrespective of the list patronized by any Dean, one can't be too careful. Though it would help if administrators were to get more conscious of this gold open access racket, if only for reputational reasons.

The stakes for early-career academics are high, and temptations galore. Caveat emptor!

Table 7: Journals in ABDC 2013 list which also appear in Beall's 2016 list

Journal Name	ISSN	URL
International Journal of Business and	1833-3850	http://ccsenet.org/
Management		
International Journal of Economics	1916-971X	http://ccsenet.org/
and Finance		
Central European Journal of Eco-	2080-0886	http://cejeme.org/
nomic Modelling and Econometrics		
International Journal of Statistics and	0975-556X	http://ceser.res.in/bse.html
Economics		
International Journal of Ecological	0973-1385	http://ceser.res.in/ijees.html
Economics and Statistics		
The European Journal of Economics,	1450-2275	http://eurojournals.com/EJEFA.
Finance and Administrative Sciences		htm
Journal of Academy of Business and	1542-8710	http://iabe.org/domains/iabeX/
Economics		journalinfo.aspx?JournalID=JABE
World Journal of Management and	1819-8643	http://journals.wesro.org/wjmec.
Economics		html
Mustang Journal of Accounting and	1949-1794	http://mustangjournals.com/MJAF/
Finance		index.htm
Advances and Applications in Statis-	0972-3617	http://pphmj.com/journals/adas.
tics		htm
Asian Journal of Empirical Research	1819-1924	http://scialert.net/
Review of Applied Economics	0973-1687	http://serialsjournals.com/
		journal-detail.php?journals_
		id=244
International Journal of Economic	0972-9380	http://serialsjournals.com/
Research		journal-detail.php?journals_
	1510 (500	id=41
Journal of Modern Accounting and	1548-6583	http://www.accountant.org.cn/
Auditing	2146 4552	
International Journal of Energy Eco-	2146-4553	http://www.econjournals.com/
nomics and Policy	2146 4120	index.php/ijeep
International Journal of Economics	2146-4138	http://www.econjournals.com/
and Financial Issues	1450 2003/	index.php/ijefi
Journal of Money, Investment and	1450-288X	http://www.eurojournals.com/
Banking International Journal of Business	1555 7715	JMIB.htm
International Journal of Business	1555-7715	http://www.iabe.com/
Studies (USA)		

Journal Name	ISSN	URL
International Journal of Business	1554-5466	http://www.iabe.org/domains/
Research		iabeX/journalinfo.aspx?
		JournalID=IJBR
International Journal of Business	1553-9563	http://www.iabe.org/domains/
Strategy		iabeX/journalinfo.aspx?
		JournalID=IJBS
International Journal of Strategic	1555-2411	http://www.iabe.org/domains/
Management		iabeX/journal.aspx?journalid=13
European Journal of Management	1555-4015	http://www.iabe.org/domains/
		iabeX/journal.aspx?journalid=14
Review of Business Research	1546-2609	http://www.iabe.org/domains/
		iabeX/journal.aspx?Journalid=5
Journal of International Finance and	1555-6336	http://www.iabe.org/domains/
Economics		iabeX/journalinfo.aspx?
		JournalID=JIFE
International Research Journal of	1450-2887	http://goo.gl/OWUtf2
Finance and Economics		
Journal of International Management	1993-1034	http://www.jimsjournal.org/
Studies		
Journal of Stock and Forex Trading	2168-9458	http://www.omicsgroup.org/
		journals/stock-forex-trading.php
Accounting and Finance Research	1927-5986	http://www.sciedu.ca/journal/
		index.php/afr
Asian-African Journal of Economics	0972-3986	http://www.scientificpub.com/
and Econometrics		
International Journal of Applied	0972-7302	http://www.serialspublications.
Business and Economic Research		com/journals1.asp?jid=220
SMART Journal of Business Manage-	0973-1598	http://www.smartjournalbms.org/
ment Studies		
Corporate Board: role, duties and	1810-8601	http://www.virtusinterpress.org/
composition		
WSEAS Transactions on Business	1109-9526	http://www.worldses.org/
and Economics		
Journal of International Agricultural	1556-8520	https://www.novapublishers.com/
Trade and Development		

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A Beall's criteria

A.1 Criteria for Determining Predatory Open-Access Publishers

1. Editor and Staff²⁸

- The publisher's owner is identified as the editor of each and every journal published by the organization.
- No single individual is identified as any specific journal's editor.
- The journal does not identify a formal editorial / review board.
- No academic information is provided regarding the editor, editorial staff, and/or review board members (e.g., institutional affiliation).
- Evidence exists showing that the editor and/or review board members do not possess academic expertise to reasonably qualify them to be publication gatekeepers in the journal's field.
- Two or more journals have duplicate editorial boards (i.e., same editorial board for more than one journal).
- The journals have an insufficient number of board members, (e.g., 2 or 3 members), have concocted editorial boards (made up names), name scholars on their editorial board without their knowledge or permission or have board members who are prominent researchers but exempt them from any contributions to the journal except the use of their names and/or photographs.
- There is little or no geographical diversity among the editorial board members, especially for journals that claim to be international in scope or coverage.
- The editorial board engages in gender bias (i.e., exclusion of any female members).

2. Business management. The publisher:

- Demonstrates a lack of transparency in publishing operations. Has no policies or practices for digital preservation, meaning that if the journal ceases operations, all of the content disappears from the internet.
- Begins operations with a large fleet of journals, often using a common template to quickly create each journal's home page.
- Provides insufficient information or hides information about author fees, offering to publish an author's paper and later sending an unanticipated "surprise" invoice.
- Does not allow search engines to crawl the published content, preventing the content from being indexed in academic indexes.

²⁸Reproduced verbatim from https://scholarlyoa.com/?s=criteria, retrieved 30 March 2016

 Copy-proofs (locks) their PDFs, thus making it harder to check for plagiarism.

3. Integrity

- The name of a journal is incongruent with the journal's mission.
- The name of a journal does not adequately reflect its origin (e.g., a journal with the word "Canadian" or "Swiss" in its name when neither the publisher, editor, nor any purported institutional affiliate relates whatsoever to Canada or Switzerland).
- In its spam email or on its website, the publisher falsely claims one or more
 of its journals have actual (Thomson-Reuters) impact factors, or advertises
 impact factors assigned by fake "impact factor" services, or it uses some
 made up measure (e.g. view factor), feigning/claiming an exaggerated international standing.
- The publisher sends spam requests for peer reviews to scholars unqualified to review submitted manuscripts, in the sense that the specialties of the invited reviewers do not match the papers sent to them.
- The publisher falsely claims to have its content indexed in legitimate abstracting and indexing services or claims that its content is indexed in resources that are not abstracting and indexing services.
- The publisher dedicates insufficient resources to preventing and eliminating author misconduct, to the extent that the journal or journals suffer from repeated cases of plagiarism, self-plagiarism, image manipulation, and the like.
- The publisher asks the corresponding author for suggested reviewers and the publisher subsequently uses the suggested reviewers without sufficiently vetting their qualifications or authenticity. (This protocol also may allow authors to create faux online identities in order to review their own papers).

4. Other

- Re-publish papers already published in other venues/outlets without providing appropriate credits.
- Use boastful language claiming to be a "leading publisher" even though the publisher may only be a startup or a novice organization.
- Operate in a Western country chiefly for the purpose of functioning as a
 vanity press for scholars in a developing country (e.g., utilizing a mail- drop
 address or PO box address in the United States, while actually operating
 from a developing country).
- Provide minimal or no copyediting or proofreading of submissions.
- Publish papers that are not academic at all, e.g. essays by laypeople, polemical editorials, or obvious pseudo-science.
- Have a "contact us" page that only includes a web form or an email address, and the publisher hides or does not reveal its location.

5. Poor journal standards / practice

- The publisher copies "authors guidelines" verbatim (or with minor editing) from other publishers.
- The publisher lists insufficient contact information, including contact information that does not clearly state the headquarters location or misrepresents the headquarters location (e.g., through the use of addresses that are actually mail drops).
- The publisher publishes journals that are excessively broad (e.g., Journal of Education) in order to attract more articles and gain more revenue from author fees.
- The publisher publishes journals that combine two or more fields not normally treated together (e.g., International Journal of Business, Humanities and Technology).
- The publisher charges authors for publishing but requires transfer of copyright and retains copyright on journal content. Or the publisher requires the copyright transfer upon submission of manuscript.
- The publisher has poorly maintained websites, including dead links, prominent misspellings and grammatical errors on the website.
- The publisher makes unauthorized use of licensed images on their website, taken from the open web, without permission or licensing from the copyright owners.
- The publisher engages in excessive use of spam email to solicit manuscripts or editorial board memberships.
- The publishers' officers use email addresses that end in .gmail.com, yahoo.com, or some other free email supplier.
- The publisher fails to state licensing policy information on articles or shows lack of understanding of well-known OA journal article licensing standards, or provides contradictory licensing information.
- The publisher lacks a published article retraction policy or retracts articles
 without a formal statement (stealth retractions); also the publisher does not
 publish corrections or clarifications and does not have a policy for these issues.
- The publisher does not use standard identifiers such as ISSNs or DOIs or uses them improperly.
- For the name of the publisher, the publisher uses names such as "Network,"
 "Center," "Association," "Institute," and the like when it is only a solitary,
 proprietary operation and does not meet the definition of the term used or
 implied non-profit mission.
- The publisher has excessive, cluttered advertising on its site to the extent that it interferes with site navigation and content access.

- The publisher has no membership in industry associations and/or intentionally fails to follow industry standards.
- The publisher includes links to legitimate conferences and associations on its main website, as if to borrow from other organizations' legitimacy, and emblazon the new publisher with the others' legacy value.
- The publisher displays prominent statements that promise rapid publication and/or unusually quick peer review.
- Evidence exists showing that the publisher does not really conduct a bona fide peer review.
- The publisher appears to focus exclusively on article processing fee procurement, while not providing services for readers, or on billing for fees, while abdicating any effort at vetting submissions.
- The publisher creates a publishing operation that demonstrates rapacious entrepreneurial behavior that rises to level of sheer greed. The individual might have business administration experience, and the site may even have business journals, but the owner seems oblivious to business ethics.
- The publisher or its journals are not listed in standard periodical directories or are not widely cataloged in library databases.
- The publisher copies or egregiously mimics journal titles from other publishers.
- The publisher includes text on its website that describes the open access movement and then foists the publisher as if the publisher is active in fulfilling the movement's values and goals.
- None of the members of a particular journal's editorial board have ever published an article in the journal.
- There is little or no geographic diversity among the authors of articles in one
 or more of the publisher's journals, an indication the journal has become an
 easy outlet for authors from one country or region to get scholarly publications.
- The publisher has an optional "fast-track" fee-based service for expedited peer review which appears to provide assured publication with little or no vetting.

A.2 Criteria for Misleading Metrics

- 1. The website for the metric is nontransparent and provides little information about itself such as location, management team and its experience, other company information, and the like²⁹
- 2. The company charges journals for inclusion in the list.

 $^{^{29}}$ Reproduced verbatim from https://scholarlyoa.com/other-pages/misleading-metrics/, retrieved 30 March 2016

- 3. The values (scores) for most or all of the journals on the list increase each year.
- 4. The company uses Google Scholar as its database for calculating metrics (Google Scholar does not screen for quality and indexes predatory journals)
- 5. The metric uses the term "impact factor" in its name.
- 6. The methodology for calculating the value is contrived, unscientific, or unoriginal.
- 7. The company exists solely for the purpose of earning money from questionable journals that use the gold open-access model. The company charges the journals and assigns them a value, and then the journals use the number to help increase article submissions and therefore revenue. Alternatively, the company exists as a front for an existing publisher and assigns values to that publisher's journals.

B A checklist for identifying reputable publishers

- 1. Check that the publisher provides full, verifiable contact information, including address, on the journal site. Be cautious of those that provide only web contact forms.³⁰
- Check that a journal's editorial board lists recognized experts with full affiliations. Contact some of them and ask about their experience with the journal or publisher.
- 3. Check that the journal prominently displays its policy for author fees.
- 4. Be wary of e-mail invitations to submit to journals or to become editorial board members.
- 5. Read some of the journal's published articles and assess their quality. Contact past authors to ask about their experience.
- 6. Check that a journal's peer-review process is clearly described and try to confirm that a claimed impact factor is correct.
- 7. Find out whether the journal is a member of an industry association that vets its members, such as the Directory of Open Access Journals (www.doaj.org) or the Open Access Scholarly Publishers Association (www.oaspa.org).
- 8. Use common sense, as you would when shopping online: if something looks fishy, proceed with caution.

³⁰Reproduced verbatim from Butler (2013)

C Example Referee Reports from a Likely Predatory Journal

Reviewer - 1

Evaluation Criteria	Yes	No
The paper makes original contribution	1	
The papers is well organized	√	
Author Guidelines has been followed properly in preparing the manuscript	1	
The paper is based on sound methodology	1	
Literature review is adequate	1	
Analysis and findings support objectives of the paper	1	

Decision regarding the paper

- (*) Accept the paper in its current format
- () Accept the paper with the minor changes
- () Resubmit with the major changes
- () Decline the submission

Comments and Suggestions

The paper is well organized. It reveals very good knowledge of the author in different disciplines. His/her methodology is a reflection of excellent experience in research. The findings meet the expectation of good researchers and readers.

Reviewer - 2

Evaluation Criteria	Yes	No
The paper makes original contribution	√ √	
The papers is well organized	√	
Author Guidelines has been followed properly in preparing the manuscript	1	
The paper is based on sound methodology	√	
Literature review is adequate	√ √	
Analysis and findings support objectives of the paper	1	

Decision regarding the paper

- (*) Accept the paper in its current format
- () Accept the paper with the minor changes
- () Resubmit with the major changes
- () Decline the submission

Comments and Suggestions

The introduction provides a good, generalized background of the topic. The reasons for performing the study are clearly defined. The analysis is consistent with the objectives of the study. I appreciate your effort to conduct this study.