

Global Science Books: A Tale from the Cuckoo's Nest. How Predatory Open Access Publishing Can Influence the Metrics of a Traditional Scholarly Publisher

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Abstract: Based on the July, 2013 list published at scholarlyoa.com by Jeffrey Beall, the number of references by “predatory” open access (POA) journals or publishers was quantified in Global Science Books (GSB) journals. This is the first such ever attempt by any publisher or journal to complete such an analysis. Over an approximately 6-month period, a total of 189,904 references were examined in the reference lists of 2928 manuscripts published in any journal (extant or extinct, 31 in total) over a 7-year period (January 2007 to July 2013). The objective was to assess how unscholarly or predatory publishing can impact and/or influence another publisher and how the reference lists of the surrogate publisher can be used as an unsuspecting instrument (a surrogate deposit, the cuckoo’s nest) to spread and validate POA publishers and their journals.

Keywords: Global Science Books; open access; predatory publishing, blogs

Broadly, a predatory open access (POA) publisher refers to an open access (OA) publisher that engages in practices that are deceitful, fraudulent, non-academic or otherwise meant to draw unfair benefit from scientists or authors in a dishonest or unfair way. Traditional print publishers may also be predatory in nature but limited literature exists on such predatory practices. There exists no literature yet that quantitatively examines how predatory publishing (Teixeira da Silva 2013) influences the literature, other journals or other publishers. This is the first study to show how POA publishing can, inadvertently, affect the reference lists of other

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Conflict of Interest: The author was the Editor-in-Chief of all Global Science Books (GSB) journals from 2007 until June, 2013 and was also GSB’s founder. The position held at GSB was purely voluntary, without financial remuneration or any other tangible benefits. The author declares no other conflicts of interest.

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academic publishers. Even though papers submitted to journals may pass through peer review, it is virtually impossible to block or screen out papers that appear in its reference list based on the perception that they are unscholarly. Such an action would be perceived by scientists as unscholarly or biased since scientists are free to draw upon the literature to support their studies. Critics of this opinion may claim that truly scholarly journals would include a clause in their instructions for authors that would encourage scholarly behaviour and the reliance on only scholarly texts and sources, or to limit the risk that the sources used are of unscientific nature, such as indicated by the ICEA: “Authors are responsible for the accuracy of references and are encouraged to use reliable sources.”² This presumption would, however, assume that the scholarly level of all so-called scholarly journals, OA or traditional STM print publishers, was the same, but which it is clearly not.

POA publishers potentially harm science by creating a negative perception in society about the validity of scientific findings since scientists find a quick and easy venue to publish their findings, even if at a cost (Beall, 2012). However, the inconsistent and often unfair and/or unquantified criteria used by Beall have also been the subject of criticism and concern that damage to valid, but green, start-up publishers may be unfairly targeted (Butler, 2013), even though Beall (2013) claims that POAs act as a location for authors to “game” the system and practice misconduct such as plagiarism.

The final reference lists of manuscripts that were accepted for publication in Global Science Books journals were used. GSB is a traditional print publisher specializing primarily in plant science journals that initiated in 2006 and ceased publication of the entire journal fleet in 2013. GSB journals were selected for analysis since the author was the editor-in-chief of all GSB journals over the entire period, and thus oversaw all peer review and quality control (QC)-related activities. POA publishing has increased exponentially over the past 4-6 years, seeing a 20-fold increase between 2011 and 2014.³ However, POA publishing has probably existed since the start of the OA movement (Bohannon 2013). Consequently, only references of journals that were published between 2003 and 2013 and that appeared in the July, 2013 list published at scholarlyoa.com by Jeffrey Beall were considered in this small analysis. The newly expanded 2014 list was not used for the analysis because several POA journals and publishers only started to publish in 2013, and thus rarely appeared in the reference lists of GSB journals, whose last issues were published in January, 2013. All other references – by virtue of the fact that they did not appear on the Beall list and were thus not considered to be predatory – were eliminated. From the remaining references, any references that were from traditional print journals, web-sites, books or any other reference that was not from an OA journal, were eliminated. Hybrid print-OA journals were also not included. Using the remaining list (a total of 24,527 references from the initial 189,904), the references were classified as a 0 (present) or 1 (absent) on the Beall’s list of OA predatory journals/publishers⁴, a blog that has sought to examine the predatory practices of POA publishers and stand-alone journals. Comparisons were performed manually. Each reference that appeared from a predatory publisher or predatory journal was classified as a single 0 (i.e., present) count, even if it appeared multiple times. The exercise (i.e., verification) was conducted only once (i.e., cross-assessment of reference lists was not repeated). Four ratios (E, F, G, H) based on the data explained in Table 1 were plotted on a graph on a per-year basis (Fig. 1). The overall trend for all four ratios was positive. This indicates that the number of references of papers from POA journals or publishers each year superseded the total number from the previous year. Ratios E, G and H were linear while ratio F was exponential.

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<http://www.icea.org/content/guide-authors>

³ see <http://scholarlyoa.com/2014/01/02/list-of-predatory-publishers-2014/>

⁴ <http://scholarlyoa.com/individual-journals> and <http://scholarlyoa.com/publishers>

The level of inclusion of POA journal references in GSB journals increased 9-, 64-, 7- and 14-fold over the 7-year period when using ratios E, F, G and H, respectively (Fig. 1). Even the smallest positive ratio is a worrisome sign that valid academic and scholarly journals may be being used by POA journals and publishers to expand their level of indexing and to validate their existence in the wider literature, OA or traditional. There are no other such data sets yet in the literature to confirm or disprove this hypothesis.

GSB journals have been serving as one conduit for POA publishers to validate their results, and thus existence. This is achieved by authors who have included papers from POA publishers in their reference lists of manuscripts published in scholarly peer-reviewed journals. By not actively banning or excluding the references from reference lists of GSB journals, the inclusion of a paper from a supposedly POA journal or publisher intuitively implies that it is academically sound. Since this premise in many cases is not true – hence the reason for the predatory label of such journals and publishers – GSB journals have been serving as the cuckoo's nest for the surrogate validation of potentially non-academic, false or fraudulent scientific work. Until a quantitative analysis of POA publishing is complete, the results and implications suggested by this paper will remain hypothetical, although a recent paper (Bohannon 2013) has also highlighted the risks of POA to the integrity of academic publishing, even though aspects of that study, including its design and control group, were also flawed (Becker 2014). Other publishers are urged to examine the reference lists of papers published in their journals and to, as best as possible, quantify the level of surrogate use, cuckoo-style, by POA publishers. The reader is cautioned, however, that not all POA journals listed on the Jeff Beall blog may in fact be predatory, and that predation needs to be quantified, as suggested by the Predatory Score (Teixeira da Silva 2013) in order to quantitatively prove its predatory or unscholarly nature. That work is currently underway.

There are potentially dozens of reasons, both personal and professional, that may have influenced the decline of GSB's editorial processes. However, the weaknesses, flaws and porosity of traditional peer review are well known (Teixeira da Silva and Dobránszki, 2015). A complex situation, as evidenced in the formal responses to the reviewers, as indicated in the Appendix, would have no doubt influenced the porosity of the peer review system. However, given the inherent flaws and weaknesses of the Beall list, and given the fact that there are no other comparative studies at present, I prefer to not extrapolate too much beyond what has been written here, for now. It would be important for other publishers to step forward to analyze the reference lists of their journals to quantify, using an updated (2014) version of the Beall lists, how they, too may or may not be serving as cuckoo's nests, for the POA journals and publishers.

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Table 1 Quantification of the level of involuntary predation of papers published between 2007 and 2013 in Global Science Books (GSB; www.globalsciencebooks.info) journals on a year-by-year basis according to a formally defined list (June, 2013) of predatory open access publishers and/or journals (www.scholarlyoa.com) as assessed by the number of appearances in the reference lists of GSB journals.

Year	Total No. published papers (A)	Total No. references (B)	Total No. OA references (C)	Total No. of predatory journal references (D)	E = C/A (%)	F = D/A (%)	G = D/C (%)	H = C/B (%)
2007	450	37471	861	18	1.913	0.040	0.021	0.023
2008	412	26862	1168	68	2.835	0.165	0.058	0.043
2009	512	31406	3829	167	7.479	0.326	0.044	0.122
2010	519	28634	4418	316	8.513	0.609	0.072	0.154
2011	496	29536	5617	621	11.325	1.252	0.111	0.190
2012	423	31092	7013	787	16.579	1.861	0.112	0.226
2013	93 ⁴	4903	1621	239	17.430	2.570	0.147	0.331
Totals	2905 ¹	189904*	24527 ²	2116 ³				

See graphical representation of E-H ratios in Fig. 1

E = Total No. OA references/Total No. papers

F = Total No. of predatory journal references/Total No. papers

G = Total No. of predatory journal references/Total No. OA references

H = Total No. OA references/Total No. references

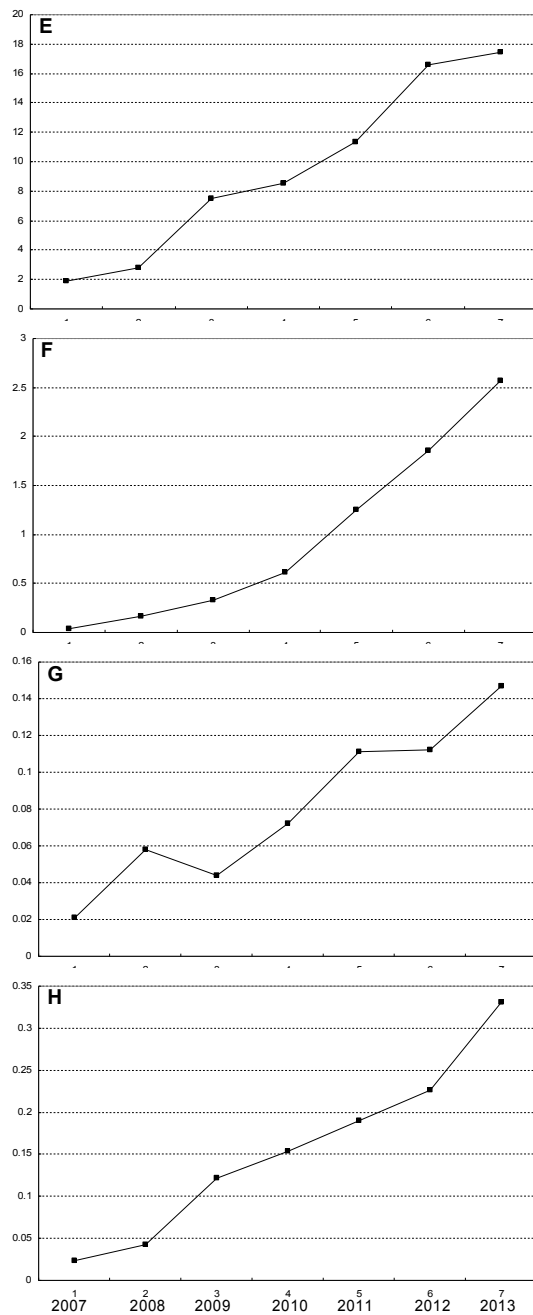
¹This is the total number of papers published, following peer review. The number does not represent the number of submitted papers (3739) or the number of rejected papers (510, assessed in a separate paper).

²This includes all references in the final version of accepted papers used for proof development and thus the final publisher version. Only references that were published between 2003 and 2013 were considered. All other references were eliminated. From the remaining references, any references that were traditional print journals, web-sites, books or any other reference that was not an OA journal, were eliminated. Hybrid print-OA journals were also not included. Thus, the true total of references was not used, i.e., 189,904* since the emphasis is on the predatory OA journals and predatory OA publishers.

³Based on references of journals and/or publishers on the Jeffrey Beall list at www.scholarlyoa.com (pooling January and July, 2013 lists).

⁴Calculated up until July 30, 2013

Fig. 1 Graphical representation of 4 relative ratios in Table 1 to show trends in different parameters over time in GSB journals. E = Total No. OA references/Total No. papers; F = Total No. of predatory journal references/Total No. papers; G = Total No. of predatory journal references/Total No. OA references; H = Total No. OA references/Total No. references



Appendix (*verbatim*, edited only for spelling mistakes, and structure)¹

[AR = author's response]

Reviewer 1

I'm in the situation of being asked to provide critical comments and suggestions in the form of peer evaluation for a manuscript which is very short and specialized, studying a globally relevant problem as emerged within a small, maybe obscure segment of OA publishing. My discomfort originates mainly from the lack of contextualization of this research in terms of traditional scientometric investigations, i.e. reference-based publication/citation networks and spatial scientometrics. It would have been more informative if the author further analyzed the POA citation data to form networks based on bibliographic coupling, or used geographical maps for presentation (something similar to what Bohannon did in visualizing his OA sting operation).

[AR: This is a major task, and the use of spatial scientometrics is not a skill that I possess. I agree whole-heartedly with the reviewer that such analyses would fortify the message, but at this moment, it is impossible for me to conduct such analyses. The main purpose of this short piece was to draw awareness to an issue that has not been explored yet at all, namely the way in which papers that are published in journals that were listed in the Beall blog lists of „predators” could enter the main-stream literature and reference lists, thus fuzzing the line between academic (peer reviewed) and non-academic or even pseudo-academic.]

The author also missed the opportunity to react critically, as an EIC and founder of GSB, to the increase experienced in the "*level of inclusion of POA journal references in GSB journals*" (line 72-73). Such retrospection could serve the interests of the wider audience, especially editors and reviewers of new OA journals who, in some cases, desperately needs to develop quality assurance guidelines against dishonest researchers. In the absence of such critical retrospection, the situation presented and studied in the ms may suggest at least one, but possibly all of the followings to the reader:

- the review process at GSB journals was flawed (or at least some editors or reviewers acted without due care and diligence), as the peer review process missed, in multiple occasions, to correct the literature base used in the manuscript before, and possibly after publication (as I fail to see discussions about any countermeasures or retraction notices in the text of the manuscript, and I was not able to find any in the GSB website).

[AR: No doubt about that. In fact, retractions in Nature will also indicate that the process is flawed, even in the world's best journals. In essence, which peer review process is perfect? It is precisely because it is porous that makes traditional peer review and the need to assess the influence of predatory publishing so essential. This small piece of mine simply provides a single-case example, and a tiny window on the process and **possible** effects. GSB is now a dysfunctional publisher without functionality, so criticisms of the literature published there will have to take place on blogs, or other suitable formats such as literature reviews.]

-due to this error, GSB as a publisher also may have started to lean towards being "unscientific" -from 2011 onwards and in average, virtually every published paper contained

¹ This Appendix contains 1.) the full peer evaluation reports of those two reviewers to whom the manuscript was assigned during the peer review process 2.) Dr. Teixeira da Silva's answers to the reviewers' comments and requests. The Appendix was published together with the article by KOME, to the explicit request of the author and with the knowledge and consent of the reviewers.

1-2 references to predatory journals. As it is not clear from the data whether some GSB journals contained a few papers with reference lists filled with predatory journals, or each and every paper published in GSB journals contained some references to articles published in POA journals, [AR: indeed, there was a peak in POA journal referencing in three journals, IJBPS, AAJPSB and MERJPSB, which could be linked, perhaps, to a cultural influence in the use of POA references to support factual or unfactual claims; this links to the above scientometrics analysis which may have revealed a country-POA use relationship] it is not possible to question the scientific quality of each GSB journal individually, but GSB as a publisher may be criticized for scientific rigor, which is not shedding good light on its journals either. As the author stated (l. 84-85) "*GSB journals have been serving as the cuckoo's nest for the surrogate validation of potentially non-academic, false or fraudulent scientific work*" –true, but this was a vicious circle, as the more articles with POA references published, the less scientific reputation GSB remained. Which was probably not stellar even at the start of the time period investigated, as GSB started as a new OA publisher in 2007-2008, according to its website. Maybe it would be more fair to say that GSB had the potential to become a reputable scientific publisher, but because of accepting articles which a.) aimed to validate potentially non-scientific or fraudulent works b.) accidentally validated such works due to author/reviewer/editorial failure in serving as scientific gatekeepers, this potential was never realized, or hindered to a significant extent. [AR: Once again, this is a strong possibility, given the restraints in human resources. Given my personal experience with dozens of plant science journals over two decades, at least, I can claim quite confidently that GSB represented a medium to high level of stringent review and quality control, but most certainly not perfect. Although I can appreciate the viewpoint by this reviewer, the tone is somewhat excessively harsh. Since the issue of POA was most likely not an issue for >95% of GSB authors, it was not this factor that led to the gradual crumbling of the publisher. It was suggested, in a survey which GSB conducted on plant scientists*, by a Serbian leader in the plant sciences, that the main reason why GSB would lose ground was based on three reasons:

- a) there was no open access model;
- b) there were no impact factors assigned to any of the journals;
- c) the journals were not indexed in any major data-bases.

* [http://www.globalsciencebooks.info/JournalsSup/images/Sample/AAJPSB_5\(1\)85-89o.pdf](http://www.globalsciencebooks.info/JournalsSup/images/Sample/AAJPSB_5(1)85-89o.pdf)]

- the increasing number of POA references and the significant decrease in published papers in 2013 (93 published papers in 2013jan-jul, cf. 4-500 papers per year in 2007-2012) is a causation, or simply a correlation? Are there any undisclosed/not presented factors here that can explain this decrease? Editors and reviewers started to reject papers with POA references, change in editorial guidelines or something else? It would be interesting to the readers to learn more about the background. [AR: This is a good point, and a detailed in-depth paper on the history of GSB and the lessons learned will be published in 2015, which will hopefully address the many queries that this reviewer is making. Even if they do show weakness in our editorial operations. As for the cause, or correlation, certainly two key events/reasons would have led to this slow-down of papers, and possibly the ironically inverse increase in the number of POA references appearing in our journals:

- a) A bitter battle (which is ongoing) with Elsevier about the ethics of collaboration and the definition of the terms of authorship:

<http://retractionwatch.com/2014/04/10/following-personal-attacks-and-threats-elsevier-plant-journal-makes-author-persona-non-grata/#more-19776>

b) An increasing personal bitterness towards science as the realization that GSB journals had been tainted by POA journals and that the peer review process had been imperfect (simply because no alternative existed within a limited human resource frame-work).

c) most likely these issues started to interfere with my ability to effectively steer the GSB ship, and indeed, failure or weakness in leadership ensued, which is the reason why I decided to terminate GSB, since no suitable strict (as I was) EIC could be found to replace me. During 2012-2013, precisely in the period that the reviewer is questioning, GSB had approached approximately 80 or more commercial publishers with the proposal of a take-over, but all of them, without exception, were only interested in the profit margins of GSB, and the IF scores of GSB journals, further accentuating my bitterness towards the traditional STM establishment. These personal stories will be openly disclosed in 2015.]

However, the aforementioned comments and critiques does not prevent me from advising the editors to accept and publish this manuscript. I'm certain that taking these comments in the vein they were intended would help the journal's audience to profit more from reading it; while no harm is done by leaving the manuscript unchanged. The analysis seems to be accurate (though, there is little that can be wrong with it) and the paper provides a particular insight about a so far neglected segment of predatory publishing. [AR: The very sad realization that what the review has stated, has several elements of truth to it, has in fact prevented me from dealing with this paper for resubmission to KOME. In part this is because this has been such a terrible personal and professional journey. I can fully understand that the reviewer would like to see more retrospective and even introspective analysis published alongside this simple data set, but the links and the possible correlations are extremely complex, so I do not want to muddy the paper with possibly tangential interpretations. I would hope that the reviewer and KOME can appreciate my position. I simply want a small data set to be out there, that would allow for deeper discussion at PubPeer, Retraction Watch, scholarlyoa.com and The Scholarly Kitchen. As I say, it is my intention to make all GSB content open access in 2015, and to also publish a memoir of the former publisher, which would then reference this small data set in KOME.]

Reviewer 2

First of all I would like to say that, in my opinion, the paper examines an extremely interesting and important topic of scientific communication. Moreover, it confers on original, innovative aspects, since, according to the author, this is the first study to show how predatory open access publishing can affect the reference list of other academic publishers. Since a reference list could be conceived as a 'communicative image' or as a compendium of the corresponding article, we could say that the way of infecting a so-called normal scientific article (and, by this, infecting a normal academic journal which contains the article in question) consists of placing a POA-article into the reference list of an article which is published in a 'truly' scholarly journal. Since I think that the article decently shows the workmanship of the author and I find the topic important and relevant as regards pure communication inquiry, I propose the article for publication in KOME. However, I have to mention two indefinabilities which, I think, could and should be discussed more precisely. First, I miss a correct distinction between articles and journals in the sense of distinguishing between sets and its elements. At least in classical logic, we could not squarely transfer the property of a given set (or class) to its elements (partition fallacies). So the properties of a given journal (a platform) could not be unproblematically corresponded to the properties of a given article in this journal. But in reference lists we normally found first of all articles and

not publishers. [AR: Indeed, this is what makes the topic so complex to analyze and quantify, because one cannot say that simply because one journal may be unscholarly that the publisher is also unscholarly. So, that is why I do not want to stray into the field of random hypotheses to try and explain the possibilities behind the data, because that could be unfair. The study simply wants to say the following:

- a) There was a publisher, called GSB, that published a set of journals that we considered scholarly simply because they were subjected to really strict peer and editorial scrutiny.
- b) Based on Beall's published lists (the only ones available, even today) of POA journals/publishers, we wanted to quantify how many of the references in the reference lists of our journals, contained papers published in POA journals or publishers.
- c) Given the fact that the Beall blog has serious flaws, and given the fact that many of the criteria on Beall's lists are flawed simply because there is no quantification of the parameters that make a journal or publisher „predatory”, I do not want to extrapolate too much beyond the sample data set, because that could be unfair on some papers, journals or eve publisher who may in fact, not be predatory. In fact, to try and quantify the level of predation, I devised, in 2012/2013, the Predatory Score: [http://www.globalscience-books.info/JournalsSup/images/2013/AAJPSB_7\(S11\)/AAJPSB_7\(S11\)21-34o.pdf](http://www.globalscience-books.info/JournalsSup/images/2013/AAJPSB_7(S11)/AAJPSB_7(S11)21-34o.pdf)]

Second, the definition of a predatory open access publisher: a predatory open access (POA) publisher refers to an open access (OA) publisher that engages in practices that are deceitful, fraudulent, non-academic or otherwise meant to draw unfair benefit from scientists or authors in a dishonest or unfair way seems a bit ordinary (in a sense of commonplace-like) to me. The author should explain in details what that the 'POA' label refers to. Is it a legal, a moral, a scientific, a political or an economic category? [AR: It is all, and it is none of these. One could for example, argue that Elsevier, PLOS or Taylor and Francis** are predatory for their pricing policies, if only that aspect alone is considered. But to try to simplistically explain what a POA it is impossible, at the moment. Please see my Predatory Score which would allow for the predatory nature to be quantified, and this is something that Jeffrey Beall should have adopted, but failed to, upon my suggestion. If we can apply the Predatory Score, which now needs to be upgraded to accommodate new factors that have emerged in 2013-2014, then we can clearly say if Publisher A or B, or journal X or Y, is “predatory”, taking into consideration legal, moral, scientific, political and economic factors.

** <http://retractionwatch.com/2014/11/20/journal-retracts-paper-when-authors-refuse-to-pay-page-charges/>]