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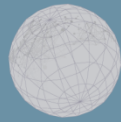
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## Predatory Open Access journals: A review of past screenings within the Flemish performance based research funding system (2014–2018)<sup>1</sup>

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### Introduction

Low quality journals and questionable ethical standards in open access (OA) publishing are of general concern in academia for almost a decade now. Beall (2010) and Eysenbach (2008) were among the first to call attention to these issues, but since then the problems relating to so called ‘predatory’ open access (POA) publishing have become structural. Shen and Björk (2015) show that the growth of the number of articles in journals associated with questionable publishers is indeed large (an estimated volume of 53,000 publications in 2010 to an estimated 420,000 articles in 2014).

The commotion around these issues also raised concerns in Flemish academia, particularly in relation to the regional performance-based research funding system (PRFS). Therefore, the Flemish Centre for R&D monitoring (ECOOM) started yearly screening exercises aimed at identifying possible POA articles and journals in which scholars in the region had published. The aim of these screenings was to allow the responsible authority to prevent POA publications from being included in the regional PRFS and the associated lists of peer reviewed journals. In January 2018, the fifth report elaborating on the yearly screening was published (Eykens, Guns, and Engels, 2018).

In this article, first, we introduce the functioning of the VABB-SHW (the Flemish Academic Bibliographic Database for the Social Sciences and Humanities, which is a parameter in the regional PRFS), and show how the yearly POA screenings fit in. Thereafter, we describe the different methods and sources that were used for the five consecutive screening exercises during 2014-2018. We also present results regarding the prevalence of POA publishing by scholars in Flanders. We conclude with some reflections on the phenomenon of POA publishing and the difficulties faced when one decides to ‘screen’ or map these practices.

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### **Background: Functioning of the VABB-SHW, the GP, and the yearly screenings by ECOOM**

The VABB-SHW was initiated in 2008-2009, and currently covers publications from the period 2000-2016. Its main aim is to better take stock of the research efforts by Social Sciences and Humanities (SSH) scholars affiliated with a Flemish university, by also taking publications not indexed in WoS (or Scopus) into account. On an annual basis, the five universities in Flanders provide ECOOM with bibliographic information of the research output from their staff that was published during the previous 2 years. ‘[T]o safeguard the academic standards of the VABB-SHW’, the Flemish government decided to establish the GP (Authoritative Panel, or ‘Gezaghebbend Panel’ in Dutch) (Verleysen, Ghesquière, and Engels, 2014). The GP consists of 18 professors who are affiliated to the Flemish Universities. One of the tasks of the GP consists of determining which journals and book publishers meet the criteria stipulated by the BOF regulation, the ‘legal backbone’ of the PRFS in Flanders.

If a journal uses an adequate peer reviewing procedure, the journal is classified as ‘peer reviewed’. The publications in them, which have been authored by a researcher associated to an SSH unit of a Flemish university, are included in the VABB-SHW. To assist the GP in this decision-making process, ECOOM delivers on a yearly basis lists of journals, publishers, books, book titles, book series, and proceedings which are derived from the bibliographic information that authors have submitted to their institutional repository. Each new edition of the VABB-SHW covers scholarly material which was published in a retrospective 10-year sliding time window (cf. Table 1, publication time-span).

To screen for publications in journals that could be considered ‘predatory’, from 2013 onwards (i.e. VABB-SHW edition IV), these yearly listings are compared with source lists of journal publishers and/or journals with questionable characteristics (i.e. publisher and/or journal blacklists), and also with journal ‘whitelists’ (i.e. Web of Science and/or DOAJ). These screenings should be considered as preventive. The aim is to avoid that publications in these journals are counted in the PRFS.

### **Methods and sources used**

Table 1 (cf. infra) shows counts of *potential inclusion* into the VABB-SHW database. Each row presents the results of the screening round for a particular VABB-SHW edition. The first column gives an overview of the publication years covered by each VABB-SHW edition (second column). In the third and fourth columns we give an overview of the total number of *potentially* predatory journals and related numbers of articles that were identified with each screening round. The methods used for each of the screenings are mentioned in column 5 (“Blacklist used”) and column 6 (“Whitelist used”).

The first two screening rounds of the submissions for the VABB-SHW editions IV and V only compared the VABB-SHW journal list to Beall’s list. From Beall’s list, publisher names and individual journal titles were collected, and matched with the data submitted for *potential inclusion* in the VABB-SHW. All matches were double-checked by the staff of ECOOM manually (Rahman, Dexters, & Engels, 2014; Rahman & Engels, 2015). Based on the information available through the VABB-SHW, it was also checked which journals were indexed in Web of Science (WoS), and which journals had previously been classified as peer-reviewed or not peer-reviewed.

**Table 1.** Numbers of journals (and articles) identified as potentially POA for each version of the VABB-SHW and sources used to identify them

Publication time span	VABB-SHW edition	No. of POA journals	No. of articles	Blacklist used	Whitelist used
2003-2012	IV	62	59	Beall's list	WoS
2004-2013	V	109	138	Beall's list	WoS
2005-2014	VI	128	315	Beall's list	DOAJ & WoS
2006-2015	VII	185	501	Beall's list	DOAJ & WoS
2007-2016	VIII	65	91	Cabell's Journal Blacklist	DOAJ
	<b>Total</b>	546	1,104		

After the first two reports, it became clear that there is a great deal of ambiguity in a screening exercise of this kind. It seems reasonable to assume that if a journal or a publishing house is on Beall's lists (and hence, is potentially predatory), such communication channels do not 'make it through' WoS' indexing services, which commonly are assumed to have high standards in journal selection procedures. We find that submissions for VABB-SHW IV included 15 journals that were indexed both by WoS and Beall's list, and submissions for VABB-SHW V included 17 of such cases. Although these cases are low in numbers, they do highlight the ambiguity and difficulty surrounding the identification of predatory communication channels.

For our purposes, this ambiguity highlighted the need to look for an extra source list. To cross-validate the blacklisting by Jeffrey Beall, and thus account for the ambiguity related to it, the Directory of Open Access Journals (DOAJ, <https://doaj.org>) was added as an additional source for the next three screenings (versions VI, VII, and VIII, see Rahman, Guns, & Engels 2015; Sīle, Guns, & Engels, 2017; Eykens et al., 2018). The addition of this 'whitelisting' method, however, showed that there is both an overlap between Beall's lists and DOAJ, and also between Beall's lists and WoS. Submissions for VABB-SHW version VI contained 13 journals that were on Beall's lists, and indexed by both WoS and the DOAJ. A closer look shows that these were all journals of the much-debated Swiss publishing house 'Frontiers' (Silver, 2017; Bloudoff-Indelicato, 2015).

From January 2017 onwards, however, Beall's list is no longer being maintained (at least not by Jeffrey Beall himself) (Beall, 2017). Thus, for our next screening Cabells Journal Blacklist (henceforth CJB) together with the DOAJ was used for the screening of version VIII. CJB is a commercial service provided by Cabells Scholarly Analytics. It has a few practical advantages compared to Beall's lists. First, it is a list of journals rather than publishers. Second, it allows for lookup by ISSN, which is much more reliable than title-based comparisons. Third, CJB provides reports listing specific violations when information on a specific journal is consulted. Jeffrey Beall also made use of a list of criteria to identify predatory publishing houses, but Cabells Scholarly Analytics does this in a structured, pre-determined and, more importantly, transparent fashion<sup>2</sup>. It is remarkable how the total number of journals that were

<sup>2</sup> The list of criteria used by Cabells Scholarly Analytics can be found at <https://www.cabells.com/blacklist-criteria>

identified as potentially predatory during the previous screenings dropped by 120 (Table 1). As we will see, this may be due to many reasons.

### **The prevalence of ‘predatory’ open access publishing among Flemish SSH scholars**

In this section, we present the results of a comprehensive approach based on the experience built up throughout the five screening exercises. Based on ECOOM’s five reports, a list of all identified, *potential* POA journals was made. Subsequently, all publications that appeared in these journals (and which were submitted for inclusion in an edition of the VABB-SHW) were identified (N = 556). The dynamic nature of black and white lists alike (i.e. some journals were removed in later versions, or some were added to Beall’s lists), however, demanded for a clearer operationalization of the ‘truly problematic’ cases. To tackle this, we chose to add an actualization to the selection of journals and used the decisions taken by the GP as a benchmark.

We checked our database for journals listed as POA by the GP (N = 146), and crosschecked their ISSNs. A list of all articles in VABB-SHW that appeared in these journals was compiled to map the extent to which there are time-related differences. To spot field related differences, all journals were manually classified according to the Fields of Science coding scheme of the Organisation for Economic Co-operation and Development (OECD, 2007).

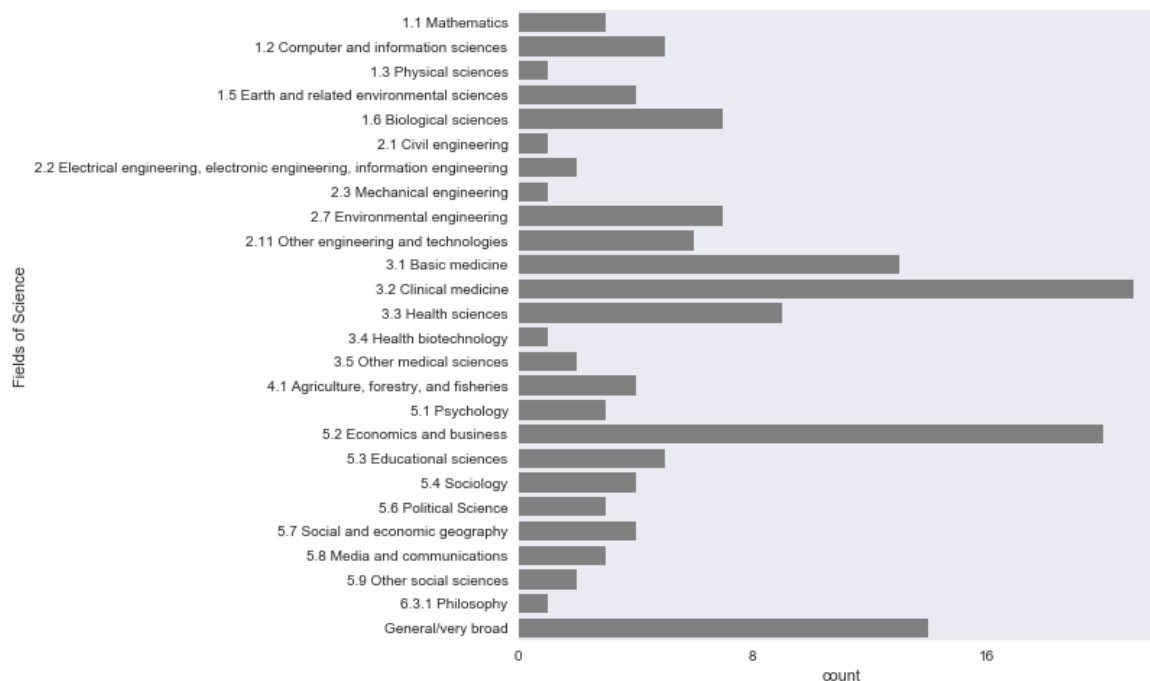
When looking more closely at the journals and the publications that appeared in them (Figure 1), some remarkable differences were found. Keeping in mind that we are studying a database for research output in the SSH, it is remarkable that there are actually more journals (59.59%) belonging to the natural, engineering, and medical sciences. Journals related to medical sciences account for 31,5% of the total. This might not be a big surprise, as Moher and Srivastava (2015) have found most ‘predatory’ publishers are active in the field of biomedical research and Manca et al. (2017) mention that POA is also a serious problem in the neurosciences and related fields.

Among the journals classified as SSH, we observe that journals related to business and economics are the most common. Humanities-related journals are lowest in numbers (almost invisible). Some journals could not be classified in a single field. They were rather broad in scope, and classified as ‘general/very broad titles’ (9,6%). Examples of these cases are *Scientific Research and Essays*, *Nature and Science*, and *The Open Journal of Applied Sciences*.

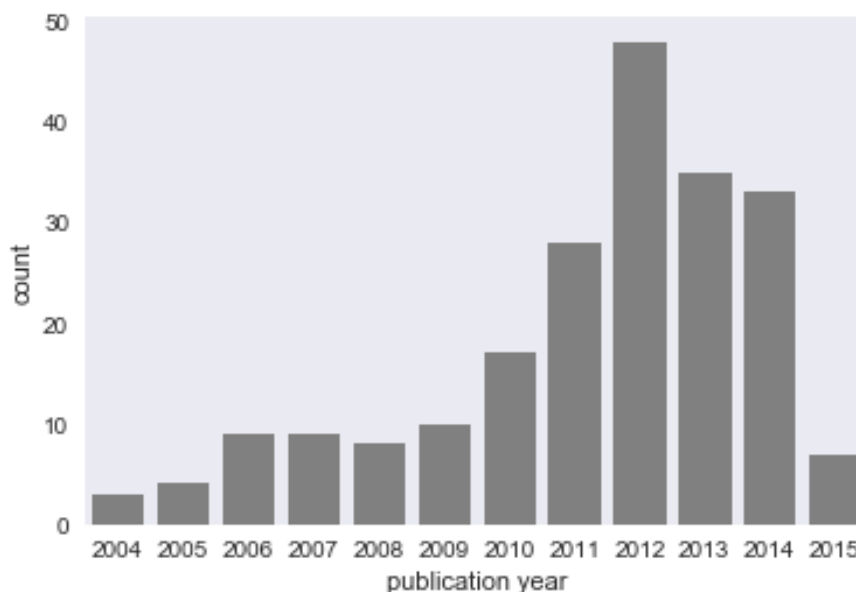
A second observation relates to the publication years of the articles that appeared in the journals. Figure 2 shows how a steep increase occurred between 2009 and 2012, which is followed by a decline from 2012 onwards. The low share of publications for the period before 2010 might indicate that the problem of POA publishing did not really exist back then, but this is not the only possible interpretation. Beall’s list, the source used for our screenings, was launched in 2012, so it is also possible that pre-2012 POA journals were simply largely invisible. The decline from 2012–2013, however, looks promising. This might be the result of a growing awareness among researchers of the problem of POA, due to awareness campaigns and other initiatives like the yearly ECOOM reports.



**Figure 1** Distribution of POA journals classified by Fields of Science coding scheme (N = 146) (OECD, 2007)



**Figure 2** Distribution of POA articles over the years of publication in VABB-SHW (N =211)



While not going into detail due to space limitations, some interesting insights can be drawn when we look at the ‘seniority’ of the authors of these publications. An author’s seniority here is operationalized by the year of the first publication in the VABB-SHW of which he or she is an author. Although we can see that almost all publications in POA journals appeared between 2006 and 2015, more than half of the authors identified have publications from before 2005. Almost a third (+30%) of all authors were already present in the VABB-SHW from 2000 onwards. Our findings here indicate that publishing in POA journals is not just a ‘mistake’ made by researchers that enter the academic world. It is an issue of concern for all researchers.

## Discussion

The discussion that exists around the terminology used to ‘classify’ journals of questionable quality or publishers with vague ethical standards (i.e. pseudo-journals, ‘predatory’ editors, or ‘predatory’ open access journals) reflects the different ‘dangers’ these practices inhibit and the diverse range of issues that come with them. While some publishers may indeed make use of questionable marketing techniques, their journals can still be legitimate (i.e. maintain an adequate peer review policy, publish original scientific research, etc.). The same goes for language. Some journals from non-English speaking editorial offices might exhibit bad English language grammar, but still deliver useful insights to the body of knowledge under scrutiny. Other journals (or publishers) do not provide any ethical standards or additional services to the scientific community that are in line with current good practices upheld in academic publishing. They publish nearly everything. These extreme cases, we argue, should be considered problematic or even dangerous for the advent of knowledge.

These differences in the nature of ‘violations’ became clear during the screening exercises as well. Some journals were indeed considered as peer-reviewed by the GP while they were also listed on Beall’s list. In contrast to Beall’s seemingly arbitrary decision-making process (e.g. some publishers were suddenly deleted from later versions of Beall’s lists), the transparency (i.e. listing and reporting violations) of CJB clarifies a lot about what is at stake when one chooses to publish in a certain journal.

Besides the large differences in violations reported, an adequate screening for POA journals is a complicated task. In addition to this, the dynamic nature of journal lists proves to be another source of confusion. The main blacklists used for the identification of POA in the VABB-SHW differed significantly during the past five years. Individual researchers are often unable to distinguish between reputable and POA publishers, and even experienced senior scientists are sometimes misled (Kolata, 2013).

Although there are large differences between individual journals (and also publishers), to be able to communicate and raise awareness around these issues, lists of journals and publishers come in handy. Our current analysis further indicates that PRFSs that include publication channels that are not included in international citation databases like WoS and Scopus (e.g. to allow better SSH coverage) need to pay particular attention to the presence of POA publications in these databases. Both locally maintained and international (citation) databases need to actively screen for POA journals and/or publishers to avoid legitimizing these practices.

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