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(Mis-)Classification of 17,721 Journals by an Artificial Intelligence Predatory Journal Detector

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Abstract

The SCImago Journal Rank (SJR) ranks journals into four quartiles (Q1–Q4). SJR serves as a safelist for journal selection, when trying to avoid predatory journals, as journals that have been indexed by SJR are seen as having stringent publishing standards. An AI-based tool, the Academic Journal Predatory Checking System (AJPC), claims to be able to differentiate suspected predatory journals from normal journals. In this study, we asked (25 March 2023) AJPC to classify the top 2500 journals (based on SJR ranking). We found that 65.64% of these journals were classified as "suspected predatory", 33.28% were classified as "normal", while 1.08% of the journals could not be classified. A follow-up run (30 March 2023) returned different results (89.20%, 10.16% and 0.64%). This set of results is worrying, not only because of the number of SJR journals that are thought to be "predatory", but also because of the difference in results when using the same tool a matter of days apart. We extended our analysis and looked at seven stand-alone publishers (Elsevier, Frontiers, MDPI, OMICS, Springer Nature (incl. Nature Portfolio), Taylor & Francis and Wiley). In total, we asked AJPC to classify 17,721 journals. The results confirm that we should be concerned about the classifications provided by AJPC. For example, 100% (4756) of Elsevier journals were classified as "suspected predatory". Even Springer Nature (which includes the journal that published the AJPC paper) has journals which were classified at "suspected predatory". We thus urge caution against relying on AJPC at present. We also urge the AJPC's authors to provide an explanation as to why a journal is classified in a particular way, as part of their user interface. We are willing to conduct further analyses should AJPC be revised and updated as it could provide an important service to the scholarly community.

Keywords Blacklists · Erroneous criteria · Opacity · Predatory journal detector · Transparency

Extended author information available on the last page of the article

Introduction

It is widely accepted that predatory publishing—which is an unscholarly publishing model that promotes self-interest rather than knowledge integrity and ethical publishing values—is a threat to the sustainable maintenance of a reliable scientific basis of knowledge [1]. That threat arises not only because of lax peer review and quality control, but because of the risk of promoting pseudoscience [2], ultimately eroding public trust [3]. To date, only one publishing house has been deemed to be a "predatory" publisher in a US court of law, OMICS International, a classification that OMICS has challenged [4, 5]. OMICS has used deception to further disguise its publishing operations by rebranding as different names, as a possible strategy to dissociate them from the word "OMICS" [6]. Yet, if the threat of predatory publishing is so well known, then why is it that not more journals and publishers have been unmistakably classified as such? One reason may be that the criteria that were used to establish watchlists (blacklists) and safelists (whitelists) have not been sufficiently sensitive to differentiate "suspected predatory journals" (or publishers) from truly scholarly ones that apply, overall, stringent ethical policies and quality control. Another reason may be that finding an overwhelming amount of evidence that shows that a journal or publisher is "predatory", and then prove it in a court of law can be a costly and drawn-out process, and one that few may be willing to undertake.

To date, academics have relied heavily on watchlists and safelists to guide themselves as to which journals are safe or unsafe to publish in, with two of the most popular watchlists being Beall's Lists and Cabells' Predatory Reports, although both have issues, such as lack of specificity, as well as inaccurate matching of scholarly or unscholarly criteria, and thus ultimate classification [7, 8]. This may result in an erroneous label, and the risk that a scholarly journal (or publisher) is erroneously classified as being "predatory" [9, 10]. It is not easy to distinguish predatory from exploitative characteristics [11], and the frontiers between low-quality and scholarly journals (or publishers) may be obscure, lying in a grey zone [12]. For these reasons, many academics in recent years have made considerable efforts to try and understand the phenomenon of predatory publishing, as well as to find ways of distinguishing predatory and scholarly entities.

To our knowledge, there was currently—until now—no reliable tool available to academics that was able to automatically screen a journal (or publisher) and determine whether it is predatory, or not. Thus, as academics interested in the phenomenon of "predatory" publishing, we were pleased to learn about an artificial intelligence (AI) tool that claimed to make this distinction [13]. If accurate, this tool would be a ground-breaking advancement in the world of academic publishing because it would not only be able to distinguish the figurative white from black, but also all shades of gray in between. Curiously, at around the same time that Chen et al. [13] was published, another paper also advertised a separate AI-driven tool that claimed to be able to distinguish predatory from legitimate journals [14].

The tool we refer to was announced in a paper published in Springer Nature's *Scientific Reports* [13], which is a Q1 journal in Elsevier's SCImago Journal Rank

(SJR), ranked 11th in the Multidisciplinary field. The authors claim that their tool, the Academic Journal Predatory Checking System, abbreviated as AJPC, is able to distinguish "suspected predatory journals" from "normal journals" [13]. AJPC appears to screen journal websites for language-based signals, verifying their listing against two watchlists (Beall's Lists and a derivative of Beall's Lists) and one safelist (BIH Quest), classifying them as either a "normal journal" or a "suspected predatory journal". Prospective authors, or members of the public, can openly verify this classification using AJPC. SJR is a popular journal ranking list that ranks journals based on citations, then classifies them into four quartiles (Q1–Q4), where Q1 represents the top 25% or quartile [15].

The objective of this research was to test AJPC against what are considered to be scholarly journals that typically undergo stringent peer review and follow best publishing practices.

Tool and Methods

The AJPC User Interface

The AJPC service is freely and openly available online.[1] At this URL, the user is presented with a web page, as shown in Fig. 1. To use the service, a URL is entered, and the search button is pressed. This leads to a screen that displays the results (see next section). We note that there is limited information available after January 2021 (Fig. 1A) and that the results are for reference only. We also note that the authors acknowledge that occasional incorrect judgements may be returned (Fig. 1A). Depending on the country from where a user accesses AJPC, and possibly the browser type, the landing page carries a different visual and information (Fig. 1A versus 1B).

Importantly for this research, it is also stated that there is a limit of 15 requests per minute. For this research, thousands of requests (see methodology below) needed to be submitted, and when we first started this research on 23 March 2023, we certainly exceeded that figure. This limitation was noticed during data collection.[2] We contacted the authors (26 March 2023) to ask for unrestricted access while we completed our research, but never received a response. Given this, we operated within their stipulated guidelines.

AJPC Output and Results

There are, essentially, three results that can be obtained from AJPC: 1) The journal is "normal"; 2) the journal is "suspected predatory", or 3) the journal is "suspected predatory" but with some additional information from three other data sources.

[1] http://140.113.207.51:8000/

[2] We suspect that this limit was imposed following our heavy usage, for which we apologize.

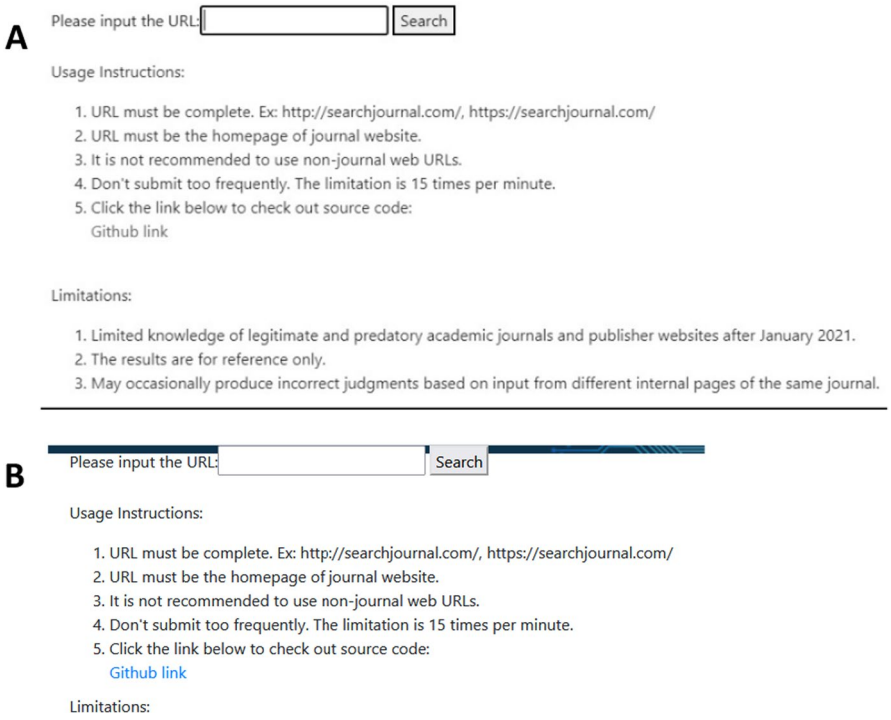

Fig. 1 The user interface for the Academic Journal Predatory Checking System (AJPC), as viewed by the two authors in different countries and browsers. **A** Screenshot taken in Malaysia, using either Firefox or Chrome; **B** Screenshot taken in Japan, using Firefox. Screenshot dates: 30 March 2023 (**A**), 27 March 2023 (**B**)

Figure 2A shows a screenshot of the visual that is displayed when the journal is "normal", Fig. 2B for when it is "suspected predatory", and Fig. 2C when it is "suspected predatory" but it is also found on Beall's List[3] [16, 17], Stop Predatory Journal's list[4] or BIH QUEST Whitelist.[5] Importantly, all three resources were last updated on 11 November 2020, i.e., AJPC is relying on datasets or journal classification systems that are, at minimum, 30 months outdated. That, in itself, would reduce its specificity and thus reliability.

[3] https://beallslist.net/standalone-journals/. Last accessed: 30 March 2023.

[4] https://predatoryjournals.com/journals. This is the URL provided on the AJPC website, but the link is broken, when we attempted to access it (30 March 2023). The last archived memento at the Internet Archive is from 20 December 2021: https://web.archive.org/web/20211220083526/https://predatoryjournals.com/journals/

[5] http://s-quest.bihealth.org:3838/OAWhitelist/. This is the URL provided on the AJPC website, but the link is broken, when we attempted to access it (30 March 2023). The last archived memento at the Internet Archive is from 3 March 2021: https://web.archive.org/web/20210303113839/http://s-quest.bihealth.org:3838/OAWhitelist/. We also found the following possibly related websites: https://github.com/quest-bih; https://github.com/quest-bih/OpenAccessPositiveList

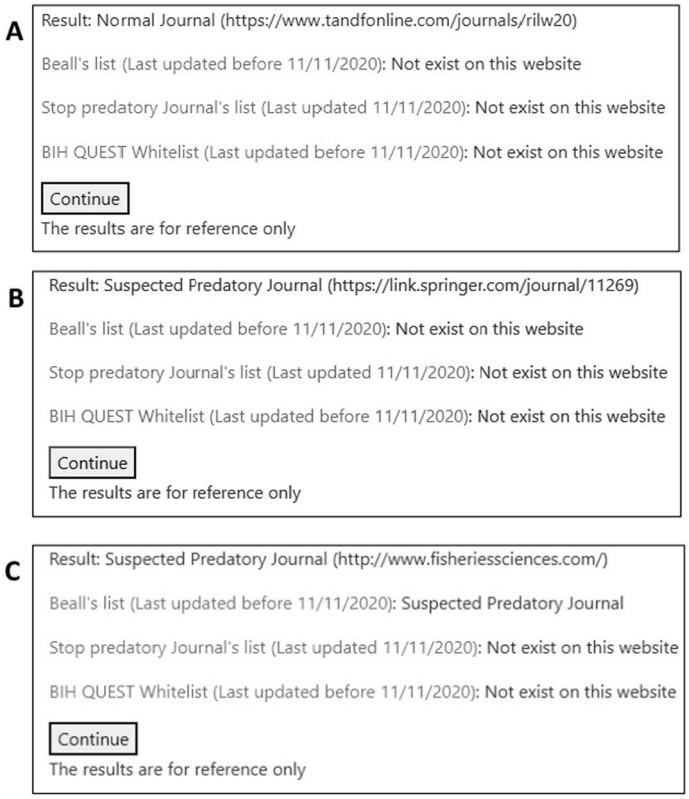

Fig. 2 Representative screenshots of different outputs by AJPC. **A** Display when the journal is "Normal"; **B** display when the journal is "Suspected Predatory"; **C**Display when the journal is "Suspected Predatory", with additional information. URLs of journals may be found in the first line of each screenshot

We observed that if a journal is suspected to be predatory but not does not appear on Beall's List, Stop Predatory Journal's list or the BIH QUEST Whitelist (i.e., those that would display messages shown in Fig. 2B), no reason is provided as to why that journal was classified as "suspected predatory", unless the user wants to read and fully understand Chen et al. [13]. This, in our opinion, is an important omission, which we comment on during our analysis.

Methodology

AJPC does not provide an Application Programming Interface (API) but requires the user to enter a journal's URL and press the search button each time. This is reasonable for the occasional manual query but is not suitable for analyzing a large number of journals. For the purposes of research, it is important to sample a significant number of journals, so that the results are more meaningful. Therefore, we adopted the following seven-step methodology.

1. To gather the journals' homepage URLs, which are required by AJPC, we collected the first 50 pages (2500 journals) from the SJR web site and all the journals from the other publishers we analyzed (see Table 1). We utilized a browser scraper[6] to collect this data, but the data is freely available and could have been collected by copy/paste. However, this would have taken a considerable amount of time, probably too much, rendering this research untenable.
2. The URLs were incorporated into a cURL command. cURL is a cross platform tool that enables the transfer of data using various network protocols. Using cURL enables the user to emulate entering a URL onto the AJPC website and pressing the search button. As an example, if a terminal (e.g. the CMD window on a Windows platform) is opened, the following command can be entered: curl -d "website= https://link.springer.com/journal/13324" 140.113.207.51:8000/login This command emulates access to the website, entering the URL and pressing the search button. This command displays the HTML to the screen. If " >> *filename*. html" is added to the end of the cURL command, the HTML will be stored in *filename*. If this is adjusted for each cURL command, the HTML for every journal query can be captured.
3. If the AJPC website is used manually, a screen is displayed that shows the results (for an example, see Fig. 1). Rather than capture every screen (as a screenshot), we used cURL to capture the HTML. This is preferable to a screenshot as the HTML is a text file that can be interrogated further because it is structured text. Being HTML, we can also render the HTML should we wish to do by, by opening the HTML in a browser.
4. Once the 2500 URLs for SJR and the URLs for the publishers had been analyzed by AJPC, the text (HTML) files were analyzed. For example, the files were searched for the string "Result: Suspected Predatory Journal" and "Result: Normal Journal", which showed whether the URL in that text file—and thus journal—was (suspected) predatory, or not. The results of that analysis are presented later in this paper.
5. Some URLs could not be used. This was for a variety of reasons such as not being available when scraping, they could not be processed by AJPC, etc. We did not concern ourselves with these as they represented a small proportion, and thus did not affect the results we present. The number of URLs that could not be analyzed are mentioned in the relevant analysis section.
6. As already noted above, the AJPC service is "rate limited", so that only 15 requests can be made per minute.
7. A first run for SJR (Table 2, 1a) and the seven publishers was conducted on 25 March 2023. A second run was conducted for SJR (Table 2, 1b) on 30 March 2023.

[6] https://webscraper.io/. Last accessed: 30 March 2023.

Table 1 The organization (SJR) and publishers[1] used in this study

#	Organization/Publisher	URL	# of Journals	Date of URL collection	Date of URL analysis
1	SJR	https://www.scimagojr.com/journalrank.php	2500	23 Mar 2023	23 Mar 2023
2	Elsevier	https://www.sciencedirect.com/browse/journals-and-books	4756	24 Mar 2023	25–27 Mar 2023
3	Frontiers	https://www.frontiersin.org/journals	193	24 Mar 2023	26 Mar 2023
4	MDPI	https://www.mdpi.com/about/journals	423	24 Mar 2023	25 Mar 2023
5	OMICS	https://www.omicsonline.org/open-access-journals-list.php	705	24 Mar 2023	24 Mar 2023
6	Springer Nature	https://link.springer.com/journals/a/1	3821	28 Mar 2023	28 Mar 2023
7	Nature Portfolio[2]	https://www.nature.com/siteindex	174	28 Mar 2023	28 Mar 2023
8	Taylor & Francis	https://www.tandfonline.com/action/showPublications	3017	24 Mar 2023	26–27 Mar 2023
9	Wiley	https://onlinelibrary.wiley.com/action/showPublications	2306	24 Mar 2023	25–27 Mar 2023
TOTAL			17,895		

[1]After SJR, publishers are listed alphabetically

[2]The publisher is Springer Nature, but this set of journals is represented separately

Table 2 Results of the classification of the organization (SJR) and publishers[1] by AJPC

#	Organization/Publisher	# of Journals analyzed	# Suspected Predatory (%)	# Normal (%)	# Not analyzed (%)
1a	SJR	2500	1641 (65.64)	832 (33.28)	27 (1.08)
1b	SJR	2500	2230 (89.20)	254 (10.16)	16 (0.64)
2	Elsevier	4756	4756 (100)	–	–
3	Frontiers	193	1 (0.52)	192 (99.48)	–
4	MDPI	423	1 (0.24)	422 (99.76)	–
5	OMICS	705	645 (91.49)	51 (7.23)	9 (1.28)
6	Springer Nature	3821	166 (4.34)	3655 (95.66)	–
7	Nature Portfolio[2]	174	1 (0.57)	173 (99.43)	–
8	Taylor & Francis	3017	110 (3.65)	2907 (96.35)	–
9	Wiley	2306	2306 (100)	–	–

[1]After SJR, publishers are listed alphabetically

[2]The publisher is Springer Nature, but this set of journals is represented separately

Results

Dataset and Notes

Table 1 provides an overview of the global dataset and Supplementary file 1 provides a full list of the journals across SJR and the seven publishers that were considered as "suspected predatory" journals. The spreadsheet can be filtered by the publisher and classification to display all the "suspected predatory" journals for a given publisher. There are some notes, as follows:

1. SJR was analyzed as this provides a representative sample of what is usually perceived to represent legitimate peer-reviewed (and thus not predatory) journals [15]. The top 2500 journals were used as this seemed to be a reasonable number to draw conclusions, balanced against the analysis time to process the entire SJR dataset, which comprises 27,339 entries.
2. We note that some of the top 2500 SJR entries include some books and conference proceedings, but we did not make any exception for these. For simplicity, we use the term "journal(s)" to refer to all of these publications.
3. The top 2500 SJR journals represent a broad range of publishers, and we thought it would be informative to look at a cross section of publishers, analyzing all of their journals.
4. We selected Elsevier, Taylor & Francis, Springer Nature (including the Nature Portfolio), and Wiley as the large and mainstream publishers, which tend to be regarded as legitimate publishers. We also note that Chen et al. [13] is published in *Scientific Reports*, a Nature Portfolio journal, which is another reason why we included this publisher. We also selected OMICS as a proven predatory publisher [4, 5], with the assumption that all of its journals should show up as predatory. We also selected two other publishers (Frontiers and MDPI) which have attracted

some controversy in the past [18, 19], and which are dominant open access mega journals [20]. We stress that we do not make any judgements about the publishers that were analyzed, taking as neutral a stance as possible. Our only interest is how AJPC would classify these journals.

5. We note that Wiley states that it publishes 2793 journals but only 2306 URLs were scraped. This is because some journals are listed, and they point to their new name, so they do not have a URL that can be scraped.

Analysis: SJR and Seven Publishers

Once the URLs had been collected and processed through AJPC, we were able to analyze the HTML that had been returned via text analysis tools. We used the Windows findstr command in a CMD terminal to look through all the HTML files to search for "Results: Suspected Predatory Journal". The actual command used was:

findstr /S/I/M/C: "Result: Suspected Predatory Journal" *.txt >> Suspected.txt

This produces a list of files (in the text file "Suspected.txt") of all the files where the search phrase appears. The search term can be adjusted depending on what the user wishes to search for. We first analyzed each publisher, then draw some conclusions.

SJR

When asking AJPC about the top 2500 SJR journals, 65.64% (1641) of the journals were suspected of being "predatory", 33.28% (832) were considered "normal" (i.e. not "predatory") while 27 (1.08%) of journals could not be classified (Table 2, 1a).

To try and find out why so many journals were classified as "suspected predatory", we interrogated all the HTML/text files. None of the journals had any additional information (see Fig. 2C about this class of classification).

To have almost two thirds of the journals in SJR (from those sampled) classified as "suspected predatory journal" is worrying, especially when no information is provided as to why they have been classified as such.

Following these classifications, and in discussion with the editor-in-chief where Chen et al. [13] had been published, it was suggested that the AJPC tool was overwhelmed by our initial research. We note that we contacted the authors of Chen et al. on a number of occasions in March and April 2023 to ask various questions and to seek clarification, but the response that was received was neither clear, nor did it resolve our concerns as to why so many highly ranked journals were classified as "suspected predatory journals".

We ran the SJR dataset again, with the following results: 89.20% (2230 journals) were classified as "normal", 10.16% (254 journals) were classified as "suspected predatory" and 0.64% (16 journals) could not be classified (Table 2, 1b). The journals that could not be classified returned a message saying "fail to crawl".

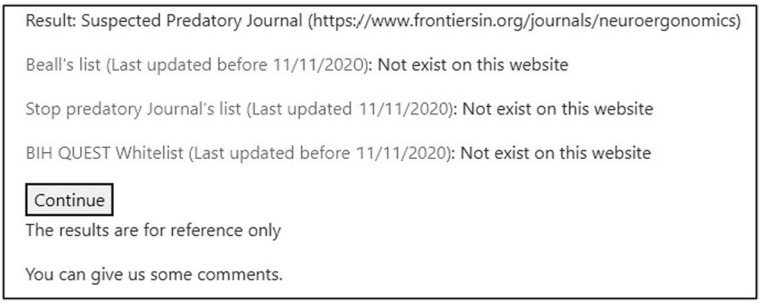

Fig. 3 AJPC classified *Frontiers in Neuroergonomics* (https://www.frontiersin.org/journals/neuroergonomics) as a "suspected predatory" journal

The fact that SJR still returned over 10% as predatory is still worrying. It is also worrying that the AJPC tool, in a matter of five days, could return classifications that were significantly different from each other.

Elsevier

All 4756 Elsevier journals were considered "suspected predatory" by AJPC (Table 2). It is very hard to believe that all of Elsevier's journals would be considered predatory. We ran a text analysis on the 4756 HTML files and none of them showed up in any of these three additional criteria (e.g., appearing on Beall's List). It would be interesting to know details as to why AJPC considers every single Elsevier journal is "suspected predatory".

Frontiers

Of the 193 Frontiers journals, only one was classified as "suspected predatory" (Table 2; Fig. 3).

MDPI

Of the 423 MDPI journals, only one was classified as "suspected predatory" (Table 2; Fig. 4).

OMICS

OMICS publishes 705 journals or, at least, this is the number that was observed on its website when we collected the URLs. We note that Kendall and Linacre [21] reported that OMICS published 742 journals and that Cabells held 968 Predatory Report records. It is unclear why this discrepancy exists, and it could be worthy of a separate investigation. One hypothesis is that OMICS, as well as being a publisher

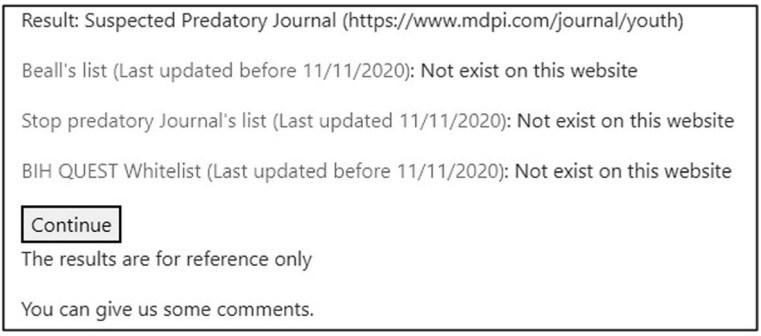

Fig. 4 AJPC classified *Youth* (https://www.mdpi.com/journal/youth), published by MDPI, as a "suspected predatory" journal

in its own right, has also purchased other publishers and the way these are counted (or not), may have contributed to the overall OMICS portfolio.

The analysis shows that 645 (91.49%) of OMICS journals are "suspected predatory", 51 (7.23%) are considered "normal", and nine (1.28%) could not be analyzed (Table 2).

Similar to the SJR results, the output is also worrying. OMICS is probably accepted by most people, at least those who have investigated them, to be a predatory publisher [4, 5]. For AJPC to classify 7.23% of their journals as "normal" raises a red flag and, at a minimum, should be explained by AJPC as to why these journals are not considered to be "predatory".

We carried out an additional analysis to see how many journals had some explanation. Two of the 645 suspected precatory journals carried additional information (Fig. 5A, B).

1. The *Journal of Fisheries Sciences*, according to AJPC, is listed on Beall's List, which indicates that this journal was not on the original Beall's List but was later included, although no date is given when it was added to the updated list, nor are any specific reasons provided for this classification.
2. *International Journal of Drug Development and Research*, according to AJPC, is listed on Beall's List (Fig. 5B), which says that this journal was on the original Beall's List. Here too, no exact reasons why it is considered as "predatory" are provided.

We note that OMICS (the publisher) was listed on the original Beall's List. Given this, we would have expected that any OMICS journal would be marked as "suspected predatory".

Springer Nature

Springer Nature publishes 3821 journals. Of those 3655 (95.66%) are considered "normal" and 166 (4.34%) are "suspected predatory" (Table 2). The list of

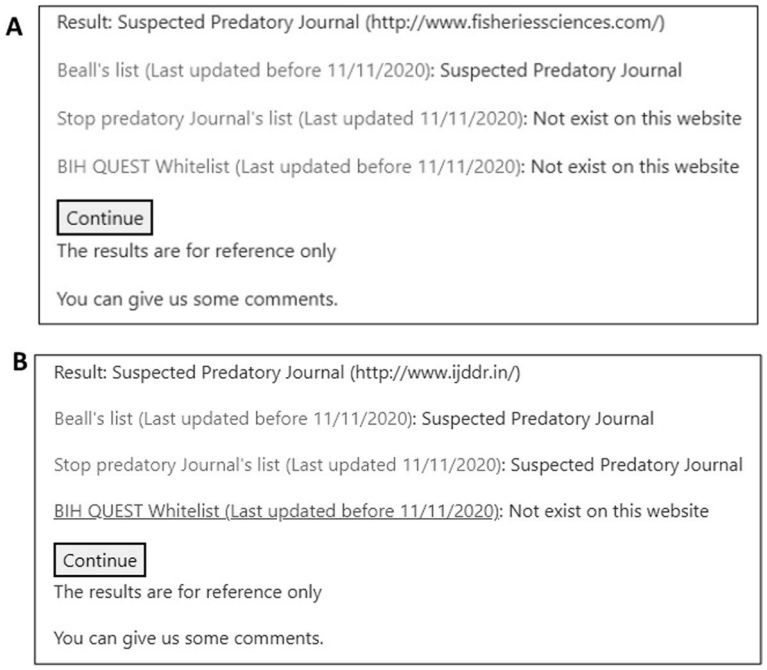

Fig. 5 Representative screenshots of two OMICS journals considered by AJPC as being "suspected predatory". **A** The *Journal of Fisheries Sciences* (https://www.fisheriessciences.com/), which AJPC found listed on Beall's List. **B** *International Journal of Drug Development and Research* (https://www.ijddr.in/), which AJPC found listed on Beall's List and Stop Predatory Journal's List

166 journals that are "suspected predatory" can be found in Supplementary file 2 (Appendix A). None of those 166 journals reported any additional information (e.g. being on Beall's List), so there is no information as to why they were classified as being "suspected predatory". Having 4.34% of Springer Nature's journals classified as "suspected predatory" is a cause for concern, especially without additional information to explain why such a large volume of journals have been classified as such.

Springer Portfolio

Of the 174 journals that the Nature Portfolio publishes, one, *Nature Digest*, was labelled as "suspected predatory". The other 173 journals (99.43%) were classified as "normal" (Table 2).

Taylor & Francis

Of the 3017 journals, 110 (3.65%) were classified as "suspected predatory", with 2907 (96.35%) being classified as "normal". The 110 journals that are suspected to be "predatory" can be seen in Supplementary file 2 (Appendix B). None of those 110 journals reported any additional information (e.g. being on Beall's List), so

there is no information as to why they were classified as being "suspected predatory". Having 3.65% of Taylor & Francis journals classified as "suspected predatory" is worrisome, especially without additional information to explain why such a large volume of journals have been classified as such.

Wiley

All of Wiley's 2306 journals, i.e., 100%, were considered "suspected predatory" by AJPC. We find it hard to believe that all of Wiley's journals would be considered "predatory". One of the shortcomings of AJPC is that it does not give any indication as to why a journal is suspected to be predatory, other than the three criteria shown in Fig. 2C. We analyzed all of the 2306 HTML files returned from AJPC and none of them showed any further information, other than saying that they were "suspected predatory".

Summary of Results

For ease of reference, the results have been summarized in Table 2.

Discussion

In this study, we used a recently published tool, AJPC [13] to test the "predatory" status of 2500 SJR-indexed journals, as well as the full journal collections of seven stand-alone publishers (Elsevier, Frontiers, MDPI, OMICS, Springer Nature (incl. Nature Portfolio), Taylor & Francis and Wiley). In total, we asked AJPC to classify 17,721 journals. We were surprised at two levels. On the one hand, we were surprised to see that not all OMICS journals were classified as "suspected predatory", with as many as 7.23% of their journals being classified as "normal", even though OMICS was found to be predatory in a court of law [4, 5]. On the other hand the classification of 100% of Elsevier and Wiley journals titles as "suspected predatory" suggests that AJPC may be making serious classification errors, i.e., misclassifying "normal" journals as "suspected predatory", and vice versa.

As was argued in the Introduction, academics require a reliable online and freely accessible tool that would be able to offer the "status" of a journal when prompted. We were initially enthusiastic about the prospect that AJPC could be the tool that academia has been craving since the issue of "predatory publishing" started to become popular, primarily through the passionate debate at the Beall blog, and via his watchlists (blacklists) [16, 17]. However, much to our disappointment, not only was the output of AJPC likely erroneous, misclassifying journals as one status when in fact they are likely to be of another status, we also found several other issues with AJPC that left us concerned about its reliability as a tool to assist academics in the search for a legitimate scholarly journal, or to appreciate the potentially "predatory" nature of a journal they might wish to submit their paper to:

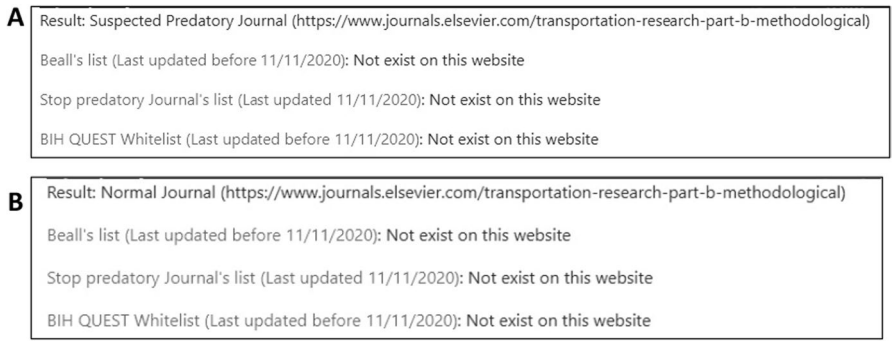

Fig. 6 An Elsevier journal title (*Transportation Research Part B: Methodological*) that was initially classified as "suspected predatory" **A** on 23 March 2023 at 21:04 (GMT + 7), but changed to "normal" less than a week later **B**, on 28 March 2023 at 23:39 (GMT + 7)

1) The status of a journal could change, sometimes apparently, upon a whim, and without any public explanation (Fig. 6A, B), as exemplified by the two sets of SJR classifications, just 5 days apart (Table 2 1a vs 1b).
2) The lack of accountability by the authors, who do not always respond to queries regarding AJPC, either by email or via the online request form, or do not provide sufficiently clear or public explanations for their tool's discrepancies in classification.
3) The absence of precise reasons why a journal is classified as "suspected predatory" (and to a lesser extent, "normal").
4) The URLs of one of the two watchlists that AJPC bases its classification on, as well as the safelist, are dysfunctional (see footnotes 4 and 5) and outdated by 30 months.

As already noted before, watchlists (blacklists) that fail to provide a transparent set of criteria for negatively categorized journals have seemingly "died", and the websites that hosted those services are no longer functional (404 errors), while the anonymous entities that curated such websites have provided no explanation, or apology, to the public or academics who relied on such websites as reference points to select journals, either for safe submission ("normal") or to avoid submission ("suspected predatory") [7, 22]. The two most popular watchlists thus far, those by Beall and Cabells, also have weaknesses, namely that none of the blacklisted journals or publishers offer a concise list of the precise violations that led to their negative classification, in the case of the former, or an outdated set of criteria for the latter [7, 8, 23]. The criteria for inclusion in safelists or watchlists are the backbone of such lists, and errors, lack of clarity, ambiguity and other non-specific problems reduce their usefulness and reliability.

We offer in this paper evidence of the potentially erroneous classification of several hundreds, maybe even thousands, of prestigious and highly ranked journals. This anomalous output was already noted in four highly respected journals related to academic publishing [24]. Even the classification of *Scientific Reports* changed

within a fortnight, without any reason being given [25]. Given the absence of access to the reasons for these classifications, the onus lies with the authors to provide an open and transparent explanation. We would also respectfully request that *Scientific Reports* provide an editorial lead to resolve the concerns raised in this paper and allow the authors to provide an explanation—via a corrigendum or addendum—for the above-stated concerns so that all academics may learn.

Future Work

It would be interesting to compare the AJPC classification with that by other ranking tools, such as Cabells. The authors do not have access to Cabells because it is a subscription-based service, but we would invite Cabells to carry out an analysis and report the results. There is also value in reporting the results for niche-based clusters of journals, for example, the FT50 journals [23], or thematically defined groups, which would comprise an appreciation of ranked journals across publishers, even if the sample sizes are smaller. This would allow niche academics to critically assess the classification by AJPC. We encourage more academics to become proactively involved and to test AJPC to appreciate issues such as the reproducibility of output.

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Declarations

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