Predatory publishing practices: what researchers should know before submitting their manuscript

Predatory publishing is currently a critical problem for researchers, particularly with the continuous rise of online journals and the increasing challenge of distinguishing between journals that can be trusted and those which should be avoided. This article begins by providing an overview of predatory publishing, focusing specifically on its definition and impacts and the prevailing predatory practices current in scientific publications. Next, the article discusses how researchers can avoid publishing with predatory publishers. We recommend that researchers do not rely solely on watchlists, rather that they develop their own skills to enable them to detect predatory practices. Finally, the article provides some practical recommendations and resources for researchers to use to assess journals as publishing venues.

Keywords
scholarly publishing; predatory publishing; deceptive journals; publishing ethics; questionable publishers

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Definition of predatory publishing

The term 'predatory' publishing was initially introduced by American librarian Jeffrey Beall, who created and maintained a free list of 'potential, possible, or probable predatory publishers and journals'.[1] This list was widely used and discussed among research communities even though it received criticism for its subjective evaluation criteria and the damage caused to the reputation of open access (OA) publishing. People have long been misled into believing that predatory publishing is unique to OA journals, while predatory behaviours could be seen among traditional commercial publishers as well.[2] Predatory journals are also known as dubious, deceptive, or fake journals. However, concerns about academic fraud are not limited to predatory practice committed by publishers through predation on researchers but also include individual research misconduct engaged by a researcher or researchers which can take various forms, namely, falsification, fabrication and plagiarism. Recently, a rising threat posed by the activities of 'paper mills', where organizations offer scholarly papers, authorship or other deceptive academic products for sale, has worsened the situation. This article specifically concentrates on predatory publishers and journals. It contributes to the current literature on this topic by providing recommendations on how to self-detect predatory journals curated from the authors' many years of practical experience in assessing the quality of OA journals. The recommendation also includes a list of available resources that researchers can use for selecting a journal for their research.

Efforts to define what constitutes predatory journals and publishers continue in academic articles and public discussions but, at the time of writing, there remains a lack of general agreement on these definitions by key stakeholders. This article will use an international consensus definition published in the journal *Nature* that helps to cover this gap.[3] Predatory journals and publishers are defined as 'entities that prioritize self-interest at the expense of scholarship and are characterized by false or misleading information, deviation from best editorial and publication practices, a lack of transparency, and/or the use of aggressive and indiscriminate solicitation practices'.[4] It is acknowledged that the dynamic nature of

predatory behaviours has made it challenging to distinguish a predatory journal from a journal that is poorly resourced.[5] The relatively low costs of setting up electronic journals made possible by digital technologies has also increased the number of online journals, albeit with many of them lacking editorial rigour. Some journals judged to be suspicious may fail to comply with good editorial and publishing practices due to limited budget and resources and do not necessarily have the intent to deceive authors.

The impact of predatory publishing

Predatory publishing is a global threat, with every country experiencing it at different levels. A study identified the extent of predatory journals in the Brazilian journal ranking system using Beall's list, the Directory of Open Access Journals (DOAJ), Scimago Journal and Country Rank (SJR) and Journal Citation Reports (JCR), and indicated that while there was an exponential growth, it only represented a small proportion.[6] By contrast, in India predatory publishing has been widespread,[7] and the University Grants Commission-Consortium for Research and Academic Ethics, popularly known as UGC-CARE, list was launched in 2018 to combat this menace.[8] Earlier studies indicate that early career researchers from developing countries are assumed to be the largest contributors to predatory journals,[9] however, recent empirical evidence found that articles in such journals are authored by researchers from all levels of academic experience and not limited to early career researchers.[10]

'Predatory publishing is a global threat, with every country experiencing it at different levels'

These predatory journals corrupt the scholarly record, posing a threat to the credibility and integrity of scientific research. They also tarnish the authority of researchers who may have publications in such journals and naively remain unaware of their ill-reputed practices. On the other hand, authors may be wilfully publishing in these illegitimate journals, especially in regions where research assessment is based on quantity rather than quality, because publishing in them is an easy way to get your research published quickly with little or no scrutiny.[11] Retractions from such journals are difficult, with authors and their institutions permanently linked to predatory publishers, damaging their future career prospects.[12] Predatory publishing also creates a dent in research funding, with resources and money being wasted on research outputs that bear no value to science or society. According to one study, 60% of articles published in predatory journals receive no citations over the five-year period following publication, compared to only 9% in journals listed in the Scopus index.[13] On the contrary 'junk' science may be cited by other studies, generating information that is misleading and harmful in some cases. Avidan and Shapiro found an article published in a medical journal that references a study including fabricated research data.[14] The implications of such research built on fraudulent publications are huge.

'These predatory journals corrupt the scholarly record, posing a threat to the credibility and integrity of scientific research'

Predatory outfits have been quick to reinvent themselves to evade detection. A gloomy consequence is the recent emergence of academic paper mills practising large scale fraud with sophisticated techniques to manipulate the content of the article.[15]

A list of prevailing predatory practices in scholarly publishing

In the past, predatory journals could be identified by obvious cues such as poor language, badly designed websites, exaggerated claims of their indexing status and the prominent display of their 'citation metrics' either fabricated or presented with an intent to mislead authors. A popular strategy is to portray a journal as an international title and/or with a multidisciplinary scope promising quick review and publication in the hope of luring authors under pressure to publish in an international journal. Of course, more evidence about article

quality, the legitimacy of the editorial board, reputation and transparency of the publisher and review process is required before labelling a publisher as predatory.

To avoid confusing a predatory journal with a legitimate journal, researchers must gain sufficient awareness of these predatory practices, and practise diligence before submitting their research for publication. Some of these known predatory publishing practices are listed below:

'researchers must gain sufficient awareness of these predatory practices, and practise diligence before submitting their research for publication'

- **Retconning**
  Recognized predatory publishers rebrand themselves and offer the same titles under a different name. For example, OMICS, a predatory publisher and conference organizer, has other publishing brands like Hilaris, ImedPub and Longdom.[16]
- **Publishing bootlegged articles**
  These publishers republish or plagiarize articles from legitimate journals and pass them off as original work. This also includes fabricating archives by copying articles and changing the dates to make them look as though they were published earlier.[17]
- **Hijacked journals**
  These are duplicate websites or illegal 'clones' of a legitimate journal, including print journals, with the purpose of misleading authors to believe they are the authentic journal and collect author charges.[18]
- **Questionable conferences**
  Many journals, especially those that conceal their business models, run sham conferences. Authors are lured to present at conferences held in international destinations and conference fees are collected in exchange for promised publication of their presentation. Conference organizers and committee members may often be found on the journal's editorial board, implying little or no peer review due to the conflict of interest.[19]
- **Selling authorship**
  These publishers not only sell articles that may have been already accepted but also offer co-authorship to these articles. Authors are promised publication in legitimate journals cited in coveted indexes.[20]

How can researchers avoid predatory publishing venues?

'it is of critical importance for researchers to go beyond checking watchlists and to develop their own skills to self-detect predatory practices'

When it comes to detecting predatory publishing, the first response from researchers may be to choose a watchlist where they can find quick and easy answers. The purpose of designing a watchlist or similar is to register deceptive and dubious publishers and journals, however, this remains a controversial activity which continues to receive some criticisms such as lack of reliability and transparency on the common scientific criteria used to determine predatory journals as well as vulnerability of such a list to personal bias.[21] In fact, there is no single watchlist that can guarantee identification of all the existing journals.

Due to these limitations, it is of critical importance for researchers to go beyond checking watchlists and to develop their own skills to self-detect predatory practices, such as those championed by the Think. Check. Submit initiative.[22] Researchers are also encouraged to acquaint themselves with trusted resources, such as the DOAJ, a global index of fully OA scholarly journals across all disciplines and languages that is freely accessible to everyone. It receives and reviews an average of 800 applications from OA journals every month and in 2022 only 26% of the journals that applied were accepted into

the index. The DOAJ is committed to combating predatory publishing practices and engages an expert team of reviewers to keep the index free from predatory publishers, helping to protect researchers from becoming trapped by such publishers.[23] These rigorous standards have made the DOAJ a reliable, de facto source of quality OA journals for not just the scientific community but for anyone wishing to access credible information. In fact, listing journals in the DOAJ makes them compliant with funder initiatives such as Plan S[24] in Europe and the electronic journal collection in Latin America, SciELo-Chile.[25]

So far, many frameworks are available to detect predatory journals. A systematic review by Cukier et al. identified a large number of checklists published in the past eight years but stressed that very few are evidence-based.[26] With little or no empirical evidence, the usefulness of some checklists can be questioned, and they may not provide a definite answer if the journal is predatory.

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Recommendations	Warnings that alert predatory behaviours
1. Read the journal's focus and scope to confirm whether their published articles do match the stated scope	Claiming a wide scope with articles accepted from any topics
	Advertising international scope, but with articles published mainly by local authors and on local topics
	References cited are not related to the scope of the article published
2. Look closely at the journal and its publisher to make sure they have good credentials among the research communities	Misleading information: Impact Factors displayed from unknown or nonstandard services
	False claims to be affiliated or listed in legitimate industry organizations such as the DOAJ, COPE, DORA etc. / societies/universities that fail verification
	Displaying an ambiguous or fabricated 'western' address to pose as an international publisher
	Geographic location of the publisher is different from the editorial board
	Lack of transparency in the publisher information about the ownership and business models
3. Investigate the journal's editorial boards or other advisory bodies to verify if they are experts in the subject areas stated in the journal's aims and scope	The expertise of the editorial boards fails to match the scope of the journal
	Editorial board members listed cannot be verified with the provided credentials
	Editorial board members are listed without their knowledge
	Multidisciplinary scope but with an editorial board that is not sufficient to review all areas
	Claiming an international focus with no international editorial board members
4. Assess the quality of the journal's website. It should be clear, easy to navigate and contain the required information accessible from the homepage	Missing or unclear information on the journal's website about editorial process, author charges, contact details, publication ethics, etc.
	Intrusive advertising: not related to the focus of journal
5. Read author guidelines with particular attention to the journal's peer review policy and check the content the journal publishes for quality and relevance to your research field	Claiming quick process for reviewing articles
	Publishing articles of suspicious qualities, such as out of scope and plagiarized contents
6. Check the other services the publisher makes available to the authors	Organizing conferences with promised publication in their own journals
	Offering paper editing services for authors with guaranteed publications in their own journals

Table 1. Recommendations

Table 1 presents some practical recommendations derived from the authors' professional experience in evaluating OA journals and publishers, which can serve as a reference point for researchers when they choose a journal to submit their manuscript to. To prevent predatory publishers from using these recommendations to evade detection, the authors have refrained from a full discussion.

Other resources available to researchers

This section will summarize an additional list of resources available to further assist researchers in making the best decision for their research. Some could also be used by librarians when they make a recommendation to researchers on how to select the right journal.

The university or research institute specific guidelines or checklists

Many university libraries and librarians offer their researchers guidelines or a checklist for reference to help them understand and identify predatory publishers, for example, the Be iNFORMEd checklist from Duke University's medical centre library[27] to assess the quality of a journal and the listing of Open Access Journal Quality Indicators developed by two librarians from the Grand Valley State University (GVSU) Libraries[28] to evaluate open access publications.

Tools from other industry organizations

- The DOAJ[29] maintains a list of journals that falsely claim to be in the DOAJ
- Retraction Watch[30] provides an updated list of hijacked journals
- Think. Check. Submit[31] is a tool for researchers to identify presumed legitimate publications
- Think. Check. Attend[32] is a tool that guides researchers to choose whether an academic conference can be trusted to attend and submit their abstracts to
- Latindex[33] a regional indexing database in Latin America, creates guidelines for local researchers to avoid publications in predatory journals
- B!SON[34] is a journal recommender tool using DOAJ metadata to give researchers a list of suitable OA journals for their publication based on thematic relevance.

Other reading materials

- The 2022 version of COPE's Committee on Publication Ethics' principles of transparency and best practices that elaborates the best publishing and editing standards for scholarly publishers and editors to conform to[35]
- The latest report from the Interacademy Partnership (IAP) on combating predatory academic journals and conferences available in seven languages[36]
- An e-book titled *The Predator Effect: Understanding the Past, Present and Future of Deceptive Academic Journals* authored by Simon Linacre[37]
- COPE's discussion document on predatory publishing covering introduction to and potential solutions to counter this issue.[38]

Abbreviations and Acronyms
A list of the abbreviations and acronyms used in this and other *Insight*s articles can be accessed here – click on the URL below and then select the 'full list of industry A&As' link: **http://www.uksg.org/publications#aa**.

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