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The challenge of predatory publishing in India and steps taken to prevent it

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Abstract. India continues to account for a large share not only in publishing predatory journals but also in publishing papers in such journals. The sheer number of academics in India, the continued pressure on them to publish, and the country's capabilities in information technology are the driving forces. Despite sporadic attempts to find acceptable alternatives to using publication metrics for evaluating scientists and academics, the number of papers published by them in journals, a metric usually refined by introducing some measures of the quality of the journals in which the papers are published, continues to be the most widely used criterion for evaluating research performance. This emphasis favours predatory or deceptive journals because they offer rapid publication and usually have more modest article-processing charges. To prospective authors, such journals often appear indistinguishable from legitimate scholarly journals. This article (1) seeks to bridge that gap in knowledge by suggesting some ways of choosing the right journals and pointing out a number of features of predatory or deceptive journals to help authors to identify and avoid those journals; (2) offers a brief overview of measures taken by the authorities in India to curb predatory journals and the practice of publishing papers in such journals; and (3) suggests some novel ways other than publication metrics of assessing researchers.

Keywords: pressure to publish, publish or perish, predatory journals, scams in scholarly publishing, India

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Проблема хищнических изданий в Индии и меры, принимаемые для ее решения

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Резюме. Доля Индии в издании хищнических журналов по-прежнему велика, велик и процент публикаций авторов из Индии в подобных журналах. Движущими силами этого процесса являются растущее число ученых, продолжающееся давление на них с требованием публикаций, а также возможности страны в области информационных технологий. Несмотря на спорадические попытки найти приемлемые альтернативы использованию публикационных метрик для оценки труда ученых, количество опубликованных статей с некоторой поправкой на качество журнала остается наиболее широко используемым критерием для оценки эффективности исследований. Эта практика способствует развитию хищнических или мошеннических журналов, поскольку они предлагают быструю публикацию и, как правило, взимают скромную плату за подготовку статьи к печати. Будущим авторам бывает сложно отличить такие журналы от настоящих научных изданий. Автор данной статьи (1) стремится восполнить этот пробел в знаниях, предлагая способы выбо-

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ра правильных журналов и указывая на признаки хищнических или мошеннических журналов; (2) предлагает краткий обзор мер, принимаемых властями Индии для ограничения хищнических журналов и практики публикации документов в них; (3) предлагает ряд новых способов оценки исследовательского труда, помимо публикационных метрик.

Ключевые слова: давление публиковаться, публикуйся или погибни, хищнические журналы, мошенничество в научном издательском бизнесе, Индия

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Introduction: the problem of predatory journals

Roop Singh was happy about his presentation at the conference on solar energy: his research showed a way to make solar cells a bit more efficient, and several participants had complimented him on his novel solution. He was to get his PhD shortly. Which is why Roop Singh was delighted when he received an invitation from the *International Journal of Sustainability Research* to submit to the journal a manuscript based on his work. Although he had never heard of that journal or seen it on library shelves, he accepted the invitation because the journal promised to publish his manuscript within ten days of submission. Within five days of submitting, he received the page proofs of his paper and a request to pay $350 so that his paper could be published. The request shocked him, because the invitation had never mentioned any such condition. When he declined the request, he was curtly informed that the publication had been put on hold pending payment. It also meant that Roop Singh could not submit his work to any other journal.

Similar fate awaits many early-career researchers who are deceived by what are often termed as deceptive or predatory journals, which exploit the pressure to publish or the researchers' desire to add more publications to their CVs. Although the above is a fictitious case, it is by no means uncommon. Predatory journals also pray on researchers in other ways.

- Claiming a false impact factor.
- Republishing – without acknowledgement, let alone permission – papers that have already been published in other reputable and legitimate journals.
- Inserting additional text into the version submitted by the author.
- Adding – without intimation, let alone consent – the names of well-known experts to the editorial boards of such journals.
- Giving the names of well-known Western cities as places of publication.

What drives authors to predatory journals

The oft-repeated maxim, namely "Publish or perish", sums up the main force that drives authors to predatory journals. It is this compulsion to publish at all costs that creates a demand that predatory journals have emerged to meet. In turn, the demand is fuelled by the use of simple metrics such as the number of papers published, the amount of funding secured, and the number of research scholars mentored in performance appraisal of scientists and academics – metrics that are far more convenient and quicker than actually reading the published output, visiting the laboratories or sites where the work is carried out, and talking to the end-users or beneficiaries of applied research.

India offers a rich field to predatory journals simply because of sheer numbers: the number of universities (1057 in August 2022), the number of research institutions (216), the number of full-time researchers and academics (more than 60 000), and so on. The large number of researchers – and an even larger number of PhD candidates and post-doc workers – makes for stiff competition when it comes to career advancement. And the number becomes even larger if we add teachers in higher education – who are also expected to publish at least two papers every year. A survey of Indian authors showed that those working in colleges affiliated to universities as well as autonomous colleges contributed a little more than half of the papers published in predatory journals [1].

Unfortunately, the requirements to publish research papers are seldom accompanied by any formal instruction in how to publish them. Even when such formal instruction is available in the form of courses in writing or communication skills, it rarely covers such aspects as how to choose the right journals and how to avoid predatory journals. On top of that, in many cases those who guide early-career researchers have themselves risen in the hierarchy on the strength of their publications in predatory journals. As pointed out by Gerashchenko [2], "the share of publications in potentially predatory journals tends to increase if a leader with such publications assumes office, especially if the university is research-oriented".

Because choosing the right journal certainly lowers the chances of unwary researchers submitting their manuscripts to predatory journals, let us look at some systematic approaches to choosing the right journal. The right choice is also important because the most common reason why submissions are "desk-rejected", or returned to authors without peer review, is a clear mismatch between the scope of the journal and that of the submitted contribution.

Choosing the right journal

Given the dauntingly wide choice of journals that confronts early-career researchers, many limit the choice to a few journals they or their supervisors are familiar with. However, the search for the right journal needs to be more thorough and systematic. Authors should also keep in mind that just as they would like to be published in high-status journals, journals and their publishers are also in competition with other journals to attract better-quality manuscripts.

Authors may also be constrained in their choice by the requirements imposed by those who funded the research or by the policies of the institution that employs the authors. Here are some ways of shortlisting the more appropriate journals, assuming that you have drafted the title of the proposed manuscript and its abstract.

Use Google Scholar. Paste the title of the proposed manuscript in Google Scholar's search box and examine the results for names of journals that appear more frequently. If you have also chosen the keywords for the manuscript, repeat the search using those keywords. The chances are that the journals that appear more frequently in the search results are a good fit for your manuscript.

Examine the list of references cited in your manuscript. Journals that appear more frequently in the list of references are also likely to be a good fit for your manuscript because they have published papers that you have chosen to cite in your manuscript.

Use publishers' websites. All major science publishers offer web pages to help you find the right journal. Variously titled as "journal finder"(Elsevier and Wiley), "journal selector" (Springer), and "publication recommender"(IEEE), all the web pages work similarly: all provide a box for the title of the manuscript and another for its abstract; you paste the items into the respective boxes and click the spot that invites you to find the journals. The search can be narrowed by specifying the broad subject domain. The suggestions offered by the web page are limited to the journals published by the given publisher: for instance, https://journalfinder.wiley.com will limit the choice to journals published by Wiley; journalsuggester.springer.com, to journals published by Springer; and so on.

Use third-party services. Besides publishers, some other agencies also help academic authors in finding the right journal for their manuscript. "Manuscript matcher" (Web of Science), for example, limits the choice to only those journals that are indexed by the Web of Science; "Open journal matcher", to open-access journals; and https://thinkchecksubmit.org/ not only helps in finding trustworthy journals but also offers useful tools and resources "to educate researchers, promote integrity, and build trust in credible research and publications".

Carry out "due diligence". Although the above ways will help you shortlist a few journals, it is necessary to study the information available on the website of each of the shortlisted journals before choosing your target journal. In particular, read the journal's scope and target readership. Many journals publish research in different categories such as full-length or original research papers, short communications, letters to the editor, case reports, and reviews. See which category your

proposed manuscript fits into and mention that in the covering letter addressed to the editor at the time of uploading your contribution. Lastly, supplement the information available on the website by examining a few recent issues of the journal and at least skimming through a couple of papers published in them. This scrutiny will help you later in preparing your manuscript for that particular journal.

Whereas the above tips will help you choose more suitable journals, you also need to know how to avoid predatory journals. Although predatory journals try to mimic the more reputable and mainstream journals, they often fail in those attempts: if you know what to look for, it is easy enough to identify predatory or deceptive journals.

Tips on identifying predatory journals

Many signs give away predatory journals if you examine their websites or even the invitation email you may have received from such journals to submit your manuscript to them. Such tell-tale features include emails to authors soliciting articles, promise of rapid publication, inadequate or misleading information about physical location of the journal's office, and very large editorial boards but typically scant or missing information on the affiliations of their members.

Emails from journals inviting submissions. Early-career researchers should be particularly aware of email messages from journals addressed to the recipients by name and even mentioning their work or field of expertise, inviting them to submit their manuscripts to the journal and promising quick publication. Although it is natural for researchers to be happy because their work is recognized, they should be aware that such emails are sent out *en masse* and are simply the equivalent of marketing mails and messages. Reputable journals never send out such invitations because they attract enough submissions even without such solicitation.

Emails sent out indiscriminately to solicit submissions have two other features: the text is usually written in poor English and the recipients are also requested to forward the emails to their colleagues.

Researchers should also know of two situations under which reputable journals sometimes solicit submissions through email. First, those who have made significant contributions to a field of study are often invited to write reviews presenting the current status of their field of expertise; secondly, a journal planning a special issue devoted to a fairly narrow topic sometimes invites contribution to that issue from those working on that particular topic. Such legitimate invitations make it clear that the invited contributions will be subject to peer review. A warning is in order, however, with respect to special issues. As the journal *Nature* reported in 2021, "Hundreds of articles published in peer-reviewed journals are being retracted after scammers exploited the processes for publishing special issues to get poor-quality papers – sometimes consisting of complete gibberish – into established journals" [3].

Promise of rapid publication. Given that most submissions take between 6 months and 2 years to get published, the promise of rapid publication is alluring, especially to early-career researchers who are keen to make a name for themselves quickly and to have some published papers to strengthen their CV. Although many reputable journals also use rapid publication as a point in their favour, they display these details quite differently, typically by giving the average duration between submission and the final decision to publish (or to reject) the manuscript and publishing the relevant dates as part of the published paper. Deceptive journals, on the other hand, offer a blanket turn-around time, typically two weeks, in the email soliciting manuscripts for publication; many of such emails even give a specific date of publication of the next issue and promise to publish all submissions in that issue provided they are received before a stipulated date (again, usually a couple of weeks before the date of publication).

Bogus impact factor. Given the overriding importance given to a journal's impact factor, prospective authors are attracted to journals with a high impact factor (often displayed on journals' websites) without realizing that the impact factor thus displayed may be fraudulent, either because the journal in question is not part of Web of Science at all or because the term 'impact factor' is preceded by another word that qualifies the term (such as Universal Impact Factor, Global Impact Factor, and ISI Impact Factor). One way to verify such a claim is to check whether the

journal is included in the *Master Journal List* (https://mjl.clarivate.com/home) published by Clarivate Analytics, the entity responsible for awarding the genuine impact factor.

Missing or misleading or inadequate information on the physical location (street address) of the journal's office. Scrutinizing the information on the physical location of a journal's office, as published on the journal's website, often reveals discrepancies; for example, a journal with the word 'European' in its title, as in *European Journal of XYZ*, may show an office address in India. At times, the discrepancies are less easy to detect, as in the case of a journal claiming to have its offices in London but giving a postcode quite different from what a London postcode should be.

Large editorial boards. To impress potential authors, deceptive journals often claim to have extensive editorial boards, with members drawn from every continent. It is not uncommon to list well-known academics as members of the editorial board without their knowledge, let alone consent. Often, the names of members are listed without affiliation – only the country is mentioned. In a well-publicized case, journals were approached by a fictitious academic with a request to consider the applicant for a suitable editorial post: "In many cases, we received a positive response within days of application, and often within hours. Four titles immediately appointed Szust editor-in-chief" [4].

The lesson for potential authors is clear: do not submit your manuscript to such journals, which you can identify if you practise due diligence. Besides the tell-tale signs described above, look for other evidence and consult your peers and seniors. For instance, pick a few papers from your target journal that were published in the preceding 18 to 24 months and check whether any of those have been cited and, if cited, the journals that have cited those papers. Check also whether any papers published in a few leading and well-known journals in your field have cited any papers from the target journals. Ask if anyone has published a paper in that journal before and what their experience has been. If the journal claims to be open access, check whether it is included in the *Directory of Open Access Journals* (because listing in this directory typically involves some scrutiny of the journal).

Lastly, before uploading the manuscript, make sure that you are uploading it on the authentic website, because entire websites of journals have been hijacked – your manuscript may end up with a predatory journal despite all the precautions. One tool is *the Retraction Watch Hijacked Journal Checker* (https://retractionwatch.com/the-retraction-watch-hijacked-journal-checker/), which currently lists 150 journals and the associated web addresses.

Curbing the menace of predatory journals in India

Now that you know what predatory journals are and how to identify them, it is time to discuss what has been done to curb their operations and to educate academics and researchers. Although countermeasures are being taken worldwide, for the purpose of this article I will focus on India.

That said, it must be admitted that India is yet to take the single most important step that can strike at the roots of predatory journals, namely lowering the current emphasis on publication of papers in evaluating researchers and academics. Unless we develop a more scientific way to evaluate scientists [5], they will keep feeding predatory journals either in ignorance or in the cynical belief that "experts who evaluate their publication lists will not bother to check the journal credentials in detail" [6].

Relaxation in the requirement to publish for the award of a PhD degree. Fortunately, the University Grants Commission proposes to revise the regulations for the award of PhD degrees, the most relevant revision being the change from 'must publish' to 'it is desirable to publish', as can be seen from the following excerpt.

Before "must publish at least one (1) research paper in refereed journal and make two paper presentations in conferences/seminars before the submission of the dissertation/thesis for adjudication, and produce evidence for the same in the form of presentation certificates and/or reprints."

Proposed revision "It is desirable that the research work of Ph.D. scholars is published in peer-reviewed or refereed journals and presented in conferences/seminars. The quality assessment of Ph.D. degrees should be the responsibility of the Institutions. The institutions are free to evolve guidelines in this regard, if needed."

Even at present, such publication may or may not be mandatory and the matter is left to the awarding university or institution. Even within the different IITs (Indian Institute[s] of Technology), such as IIT Delhi or IIT Madras, the requirements vary. When such a requirement exists, again it is up to the awarding institution to specify whether the paper(s) must be published only in journals indexed by the Web of Science or Scopus or simply in any peer-reviewed journal. India has no national-level equivalent of such databases, and *Indian Science Abstracts* is selective not in terms of journals but in terms of affiliation, because it selectively publishes the abstracts of papers that carry Indian affiliations.

In assessing scientists and academics, publications in foreign journals typically carry more weight than those in Indian journals although, unlike China, Indian institutions offer no cash rewards for publishing in more prestigious journals (and China too is doing away with such incentives).

Weeding of dubious journals from the approved list of journals. The University Grants Commission in India was set up by the federal government for "coordination, determination, and maintenance of standards of teaching, examination, and research in university education." The commission had created a whitelist of quality journals. However, the criteria for inclusion were so lax that a later scrutiny removed more than 3000 of the nearly 5000 journals included in the original list [7]. The original list was scrapped and replaced with the *UGC-CARE Reference List of Quality Journals*, carefully curated by the Consortium for Academic and Research Ethics. This list divides the approved journals into two categories, namely those that meet the stipulated criteria and those that are indexed in globally recognized databases.

Establishment of the Centre for Publication Ethics. The consortium mentioned above set up a separate centre, the mission of which is "Enhancing and propagating quality research and promoting ethical publishing practices amongst the faculty and research students" (https://cpe.unipune.ac.in/). The centre has a cell devoted to analysing journals. It is this centre that is responsible for drawing up the criteria mentioned above. The centre also offers a 2-credit course (30 hours), titled 'Research and Publication Ethics', for all those who register for a doctorate degree with Pune University (officially known as Savitribai Phule Pune University). The 1-month course (https://cpe.unipune.ac.in/Home/Course) is mandatory, and each participant pays Rs 4000/- (about 3000 Russian roubles in September 2022). The course focuses on "basics of philosophy of science and ethics, research integrity, publication ethics. Hands-on-sessions are designed to identify research misconduct and predatory publications. Indexing and citation databases, open access publications, research metrics (citations, h-index, Impact Factor, etc.) and plagiarism tools will be introduced in this course".

Approved list of journals for researchers in agriculture. Because many topics within agricultural science are location specific, many such topics – whether particular crops or a particular climate or a particular region – have independent journals devoted to them. Although legitimate, these journals are seldom covered by such international indexing databases as Web of Science and Scopus. Given the importance of metrics, especially the Impact Factor (awarded by Clarivate Analytics) – which these journals lack – the National Academy of Agricultural Sciences in India has its own whitelist, also divided into two categories, namely those journals with the Impact Factor as awarded by Clarivate Analytics and those without. For the second category, NAAS has its own rating, a score capped at 20, which is assigned based on the information provided by the journal publishers in a prescribed format and the evaluation of scientific content and its presentation. However, the exact method of scoring is not transparent, and NAAS's website is silent on the details (although a list of journals so approved can be downloaded from http://naas.org.in/NJS/journals2022.pdf).

Although it will be desirable for similar institutions in disciplines other than agriculture to draw up such lists – for instance by the three major science academies in India as a collaborative effort – no such effort is under way at present. The three academies are Indian National Science Academy (INSA) in New Delhi, the Indian Academy of Sciences (IAS) in Bangalore, and the National Academy of Sciences (NAS) in Allahabad.

The future

It should be clear by now that the main driver of predatory journals is the emphasis on publication metrics in evaluating scientists and academics. Publications are indeed a useful measure but instead of reducing that measure to mere numbers, it should be possible to use a practice already entrenched in academic publishing – namely peer review. I suggest that those being evaluated be asked to submit a list of, say, five publications and these be formally peer-reviewed for the worth of their contribution to science. These peer reviews will differ from the traditional peer review in one major aspect – namely the reviewers will be paid for this service, just as it is customary to pay an honorarium to examiners or to external members of selection committees.

We also need innovation in evaluating research, and one way is to link research – especially applied research – to tangible and measurable outcomes: for instance, an agricultural researcher working on a given crop can be assessed in terms of the impact of his or her research on the yield of that crop or, even better, the profitability of that crop to growers. If that is cumbersome, we should consider ensuring that the intended beneficiaries of research are represented on committees that evaluate researchers.

In 2021, the Indian Council of Agricultural Research revised the curriculum for post-graduate programmes (https://education.icar.gov.in/syllabus.aspx). The curriculum features a course, namely "Technical writing and communication skills", which seeks to equip students "with skills to write dissertations, research papers, etc." The course is mandatory for all branches of agriculture including animal sciences. (The author had the opportunity to deliver one such course for the University of Agricultural Sciences, Dharwad, Karnataka, India, as soon as it was decided to offer it.) Non-agricultural universities differ in this respect: in some universities, such a course is mandatory; in some, it is optional; in yet others, it is non-existent.

These courses on writing skills meant for researchers – especially early-career researches – should include practical advice on choosing the right journal and, equally important, avoiding the wrong journals when it comes to publishing the results of research. I hope this article is a step in that direction.

Whereas the above measures address the 'demand' side of the business of deceptive journals, we also need to initiate regulate the "supply" side. Such associations of editors and publishers as EASE (European Association of Science Editors) and ASEP (the Association of Science Editors and Publishers) should lobby the governments to enact suitable regulations to curb predatory journals and help the state to identify them. A particularly encouraging and recent development is the *Agreement on Reforming Research Assessment* [8], drafted by Science Europe, the European University Association, and Dr Karen Stroobants, based on inputs from more 350 research organizations from more than 40 countries[1]. Becoming a signatory to this document makes it obligatory for the signatories to change how they assess researchers. Because India lacks such organizations, the initiative must come from the science academies mentioned above, the University Grants Commission, and the relevant federal ministries including those of science and technology and of education.

Conclusion

Predatory journals continue to thrive given the importance placed on publication in assessing the impact of research and the performance of researchers. Whether that importance will decline in the future and more appropriate methods will be developed for such evaluation is a moot point. At present, researchers should remember that their manuscript represents substantial investment of time, effort, and money on the part of its authors, institutions, and funders (if any): the product is too important to be entrusted to a journal simply because the authors are in a hurry to publish.

[1] The Agreement on Reforming Research Assessment is now final. Science Europe. News. 20 July 2022 (Article updated on 03 October 2022). URL: https://www.scienceeurope.org/news/rra-agreement-final/

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