Since the 1990s, scholarly publishing has been transformed from subscription print-based paradigm to an open access and digital publishing model, but this transformation has been accompanied by unethical and predatory publishing practices.\(^1,2\) ‘Pay-to-publish’ predatory journals abuse the open-access publishing model, and their main intention is to make money out of authors for their editor–owners.\(^3,4\) The defining characteristic of predatory journals is the lack of a proper peer review process, despite their claims to the contrary.\(^4\) The spectrum of victims of predatory journals varies widely and includes inexperienced, early-career and naïve researchers from both developing and high- to upper middle-income countries, together with experienced researchers.\(^3-5\) To circumvent this, several black and whitelists have been created. Beall’s list of potential or probable predatory journals remained the go-to list until its sudden closure.\(^6\) Later, similar lists such as the Stop Predatory Journals website (https://predatoryjournals.com), and institutional lists such as those published by the University Grants Commission (UGC) India, and several other commercial bodies and associations appeared; however, they have been criticized for several reasons, including their poor methodology and lack of transparency.\(^7-9\) The world of scholarly publishing is not purely black and white, and there are always some grey areas; therefore, we cannot rely on any such listings.

Given the history of errors in white and black listings, and the ongoing criticism and controversy surrounding them, would it be appropriate to say that the term “predatory” is a misnomer? Recently, scholars have questioned the validity of the term and have proposed alternatives in order to avoid stigmatizing legitimate, low-quality journals or journals that have not yet been indexed.\(^4\) Additionally, when non-serious scholars seek out predatory journals as an easy and fast route to publication in order to increase their number of publications, and consequently support them through the payment of article processing charges, the term ‘predatory’ appears to be out of context.\(^4,10\) It is more like a symbiotic relation between researchers who try to cheat the system, and greedy publishers.\(^4\)

Another question concerns whether predatory practices are really limited to journals from developing countries, and whether it is appropriate to label emerging journals as “predatory”? Evidence suggests that predatory practices can also be seen in established journals.\(^4\) For instance, Bohannon’s sting showed that even journals from mega-publishers such as Elsevier, Wolters Kluwer, and SAGE could accept a bogus paper.\(^11\) Similarly, Elsevier has been criticized for high subscription costs, publishing several journals that basically serve as adverts for unnamed drug companies, and charging readers for open-access articles.\(^12\)
Generally speaking, being indexed in databases like PubMed and the Directory of Open Access Journals is considered an important determinant of a journal’s quality. However, these databases have been criticized for their inclusion of predatory journals. Similar errors have been noted in the case of organizations such as the Open Access Scholarly Publishers Association. Of course, no blacklist or whitelist can substitute for a detailed investigation of a journal. In fact, some authors argue that the selection of journals for inclusion in scholarly databases is rarely transparent, and that many excellent journals exist (with a significant national or regional readership) that may not be indexed in such databases; thus, indexing is insufficient to determine the quality of a journal.

So how do we draw a line between emerging, legitimate journals and dubious, pay-to-publish journals? In this context, several criteria including the Predatory Rate and Predatory Journals Algorithm have emerged. Recently, Eriksson et al. have suggested comprehensive criteria for differentiating between the two, with the aim of ending the use of the misnomer “predatory”, where they categorize journals into two distinct types based on their characteristics: 1) low-quality journals, and 2) deceptive journals. However, these criteria lack robustness to clearly differentiate between low quality versus deceptive journals. In fact, there is a significant overlap among the features proposed to differentiate the two categories of the journals. For instance, the scope of low-quality journals may not necessarily be broad but it may be true for deceptive journals in most of the cases. Similarly, special issue outside the scope of the journal may be a feature of most of the deceptive journals but not of the low-quality journals. Likewise, spamming researchers, whose expertise is out of the journal’s scope, to submit manuscripts is typically associated with deceptive journals. Although debatable, indexing in irrelevant agencies or not being indexed in relevant databases is an overlapping feature of both the low-quality and deceptive journals.

At the same time, however, it should be noted that the speed of review varies from journal to journal, and the type of publication. For instance, letters and opinion pieces may not necessary undergo peer review and may simply be reviewed by the journal’s editors; these articles can be quickly accepted and published. Similarly, some journals set very short deadlines for reviewers (i.e., 1 or 2 weeks), which may be another reason why a manuscript can be quickly accepted. For that reason, it is important that the scientific community stops using the misnomer “predatory” as a generalized term, due to its limitations, and which erroneously includes low-quality journals from the developing world. Therefore, we need a more rigorous and specific set of criteria to differentiate between low-quality versus the so called ‘deceptive’ journals (Table 1).

Researchers suggest that low-cost, open access publishing serves a useful purpose in the global arena. Giving space to regional journals would help to reduce deceptive publishing practices, and help socioeconomically disadvantaged authors to publish in legitimate, open-access journals at no or low cost. Similarly, scholars suggest that instead of discussing predatory publishing, we should start distinguishing between deceptive and low-quality journals.

Some authors argue that we should educate researchers in “scholarly publishing literacy” or “science literacy” in order to improve their understanding of open-access publishing practices. Moreover, creating a research environment that promotes critical thinking among researchers can be an effective way to foster an understanding of the difference between legitimate and deceptive publishing practices. Institutions and mentors should try
Revisiting the Term Predatory Open Access Publishing

Aims and scope

| Components          | Deceptive or parodical (spoofy) journals | Low quality legitimate journals | High quality open-access journals |
|---------------------|------------------------------------------|---------------------------------|----------------------------------|
|                     | The scope is too broad, i.e., it covers  | The scope is narrow and in line | The scope is narrow and in line   |
|                     | both biomedical and non-biomedical topics, | with the title of the journal, which is clearly | with the title of the journal, which is clearly |
|                     | irrespective of the title of the journal. | mentioned on the website of the journal. In case of a | mentioned on the website of the journal. The |
|                     | They publish special issues on topics that | multi-disciplinary journal, the scope may be | special issues are aligned with the |
|                     | are clearly outside the scope of the journal. | broad, covering biomedical and non- | scope of the journal. |
| Peer-review         | They accept all submitted papers and pretend | They have a review process but the quality | They have a review process involving |
|                     | to have a peer review process. | may be limited by the lack of skilled | skilled reviewers or editors. |
| Affiliation         | They are not affiliated with any organization or university. | In most of the cases, they are affiliated with an organization, society, or university. | They may or may not be affiliated with an organization, society, or university. |
| Quality of published papers | The published papers are of poor quality because they have never been peer-reviewed or edited. In most of the cases, they publish a large number of papers per issue. | Even if academic in nature, the published papers are of poor quality (because of lack of skilled editors and reviewers). They publish limited number of papers per issue. | The published papers are of good quality because of the presence of skilled editors and reviewers. They publish limited number of papers per issue. |
| Invitations         | They invite researchers to submit manuscripts with expertise in fields that are clearly outside the scope of the journal. | They invite specific researchers in the field; however, some may invite researchers from a diverse scientific background. | They do not send invitations unless otherwise subscribed by the researchers. |
| Indexing            | They state false or misleading information about their indexing service(s) and/or are indexed in irrelevant agencies or not indexed in relevant databases. | They are indexed in irrelevant agencies or not indexed in relevant databases. They do not have a strategy for the digital preservation of the research archive. | They are indexed in relevant agencies or databases. They have a strategy for the digital preservation of the research archive. |
| IF                  | They falsify the information about the IF or similar metrics. Most of these journals claim to have an IF, although the journals are too new to have one. | They mention the metrics issued by questionable or irrelevant agencies (such as Index Copernicus) but there is no falsification of information. | They mention the metrics issued by relevant agencies. |
| Editorial board     | It states false or misleading information about its editorial board. For instance, it lists bogus names on the editorial board or includes well-known researchers — who might not have expertise aligned with the scope of the journal — without their permission. | There are very few editors, who are from a single institution or country, or there is a lack of detailed information about the editors. | They have a broad list of editorial members and contain detailed information about the editors. |
| Article processing charges | State false or misleading information about the costs involved in publishing with them or authors are surprised to discover hidden fees. | Do not have article processing charges in most of the cases but if there are some charges then they are explicitly mentioned. | The article processing charges and the waiver policy is explicitly mentioned on the website. |
| Quality check or monitoring | They are not monitored by or member of a regional or international organization. | They are monitored by or member of a regional or international organization. | They are monitored by or member of a regional or international organization. |
| Ethics and misconduct | They have no information about the strategy for handling misconduct (such as plagiarism, salami slicing, or a retraction policy). | They have no or vague information about the strategy for handling misconduct (such as plagiarism, salami slicing, or a retraction policy). | They have clear information about the strategy for handling misconduct (such as plagiarism, salami slicing, or a retraction policy). |
| Website             | The website is either not up-to-date or lacks important information about submission requirements and manuscript processing and reviewing. | The website is either not up-to-date or, in some cases, may lack important information about submission requirements and manuscript processing and reviewing. | The website is up-to-date and contains important information about submission requirements and manuscript processing and reviewing. |
| Manuscript submission | The manuscripts are submitted through the email of the journal or directly on the journal’s website. | The manuscripts are submitted through the journal management system or through the email of the journal. | The manuscripts are submitted through the journal management system. |
| Address and contact | They do not usually mention the contact details including the contact person, address, and phone numbers. In most of the cases, a blank form is given or a WhatsApp number is available for contacting the journal. There is false or misleading information about the location of the journal. | They clearly mention the contact details including the contact person, address, and phone numbers. | They clearly mention the contact details including the contact person, address, and phone numbers. |

IF = impact factor.

Table 1. Criteria for deceptive or paradoxical (spoofy) journals vs. low quality legitimate vs. high quality open-access journals

It is important to educate researchers in how to determine the legitimacy of a journal. A good starting point for learning about positive and negative journal characteristics is the algorithm provided by the World Association of Medical Editors and the rubric “Open Access Journal Quality Indicators” (https://www.gvsu.edu/library/sc/open-access-journal-quality-indicators-5.htm). Moreover, Clark and Thompson’s recommendations for developing a publication
strategy may help. The Think-Check-Submit (https://thinkchecksubmit.org) initiative by the International Network for the Availability of Scientific Publications (INASP) is also a good way to start learning about the quality of a journal. For a more thorough analysis of the journal’s quality, INASP provides a checklist of 108 criteria based on publishing practices and standards. These are a few ways that the authors should try and learn about deceptive journals. Additionally, researchers need to understand that legitimate, new journals and low-quality journals from developing countries may not necessarily be indexed in databases or directories such as Clarivate Analytics. Therefore, such journals should not be considered deceptive. Since indexing in databases is becoming more and more difficult, and given that databases are skewed in favor of developed countries, the existence of local or regional databases such as the Croatian “Hrcak”, “SciELO” in Latin America, the Korean “Science Central”, and the “African Science Citation” Index can serve a good purpose. In order to avoid wasteful publishing practices and promote research integrity in non-mainstream science countries, the Sarajevo Declaration of the Balkan and Mediterranean countries is a good step, and further such steps would help to improve publishing standards and the scientific prestige of developing countries. Other similar moves include the Dakar Declaration and the Council for the Development of Social Science Research in Africa (CODESRIA) open access conference.

Institutions and universities whose authors have published in predatory journals could be asked to write an official retraction letter to these journals, and submit their rewritten papers to legitimate journals. As such, serious researchers who have erroneously published their papers in such journals do the same. Examples of such incidents were discussed by a few scholars, where authors retracted their paper from a predatory publisher and published it in a legitimate journal. Researchers and institutions should not rely on blacklists or whitelists, given the limitations that were discussed earlier. Similarly, institutions or regulatory organizations should be careful when issuing guidelines or policies. For instance, the new policy of the Medical Council of India has been criticized for the inclusion of a questionable indexing service called Index Copernicus, and overtly excluding legitimate open-access journals. A similar error was noted in the guidelines published by the UGC India. In their recruitment procedures, institutions and organizations should not consider applications that show evidence of publishing in deceptive journals, and the same criteria should be adopted in the selection and promotion process for faculty positions.

Recent evidence suggests that developing countries contribute little to education against predatory journals; thus, experienced scholars from developing countries should get involved in the scientific discourse about deceptive and low-quality journals. Almost all journals published in developing countries face problems such as poor infrastructure, insufficient funding, lack of visibility and readability, limited distribution and low citation impact. Journal editors from these counties are therefore advised to evaluate their publishing practices and identify anything that may appear dubious or that meets the criteria for a deceptive journal. Although open-access journals from such countries do not charge authors, which keeps them out of the potential predatory circle, editorial standards should be sufficiently transparent to avoid meeting the criteria for a predatory journal.

Several names such as dodgy, fraudulent, pseudo, questionable, sham, and illegitimate have been previously used for the ‘predatory’ journals. A recent paper suggested replacing the term “predatory” by “parodical” publishers because they expose, among other aspects of the dark side of contemporary knowledge production, the prevailing commercial context along
with the marginalization of scholarship from the global South and the strong bias toward research from mainstream Northern countries. Some authors even argue that the giant journal publishers have also been involved in unethical publishing practices but the focus of discourse on predatory publishing practices has always been on the periphery in order to exempt the central countries and commercial elites from being into the spotlight. Since the current paradigm of scholarly publishing does not consider the problems of publishers and authors from the developing countries of global South, some authors argue that the researchers should intend to publish in local journals and publishers from this region and should strive to promote the standards of their journals. This implies that the regional journals should be interested in quality than the quantity and the commercial elites, at the same time, should consider revising their publishing model so that it may be inclusive of the authors from non-mainstream science countries.

To conclude, there is need of a well-formulated, uniform terminology for predatory publishing practices. The responsibility collectively lies with journal editors, institutions and organizations. Educators and researchers should avoid publishing in deceptive or parodical (spoofy) journals and help raise the standards of legitimate, low-quality journals. It is time for the scientific community to decide which path to take: towards deception or towards helping low-quality journals.

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