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Here come the predators!

EDITORIAL

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A tidal wave of predatory journals and fraudulent research is undermining trust in science. Now more than ever it pays to be critical, both as a reader and an author.

Photo: Einar Nilsen

In 2008, the library scientist Jeffrey Beall received an increasing number of emails from academic journals with an invitation to publish his work (1). Beall was more intrigued than flattered, as the invitations had a striking number of spelling mistakes for academic journals, and their websites looked suspiciously amateurish. He gave the phenomenon a name which has stuck: *predatory journals* (2). Their business model was simple. For a substantial sum, researchers could publish their articles in a journal with a prestigious-sounding name, but which in reality do not conduct a proper peer review or any other form of quality control. For the journal, it was easy money, and the researchers could finally publish their articles without interference from troublesome peer reviewers and nitpicking editors. However, Beall understood that such unethical publishing practices could become a significant problem for science and society. He created a website listing the predatory journals, which when it was taken down in 2017 contained more than 1000 journals (3).

The problem has since become much greater. Cabells' Predatory Reports, which is a kind of successor to Beall's list, achieved a dismal record in 2021 when the number of predatory journals registered surpassed 15 000 (4). This represents a considerable proportion of the worldwide total of around 40 000–50 000 academic journals (5).

Not everything that ends up in the predatory journals is rubbish. There are many examples of honest researchers, including from Norway, who have been tricked into sending legitimate research into the hands of the predators. However, due to the (often total) lack of quality control, the phenomenon corrupts our shared knowledge base. The so-called paper mills are an example of this. These are companies that produce quantities of fake academic papers (6). For a tidy sum of money, anyone can buy themselves authorship of an 'academic' article that will typically be published in a predatory journal, no less.

This and other types of outright fraud are becoming a considerable problem for research credibility. A study from 2023 suggests that up to 24 % of all articles published in the field of medicine are either plagiarised or simply just made up (6). The stream of fake research not only harms trust in science in general, but also increases the risk that fraudulent articles will find their way into literature reviews, where in the worst case they could influence clinical practice. Deliberately misleading 'research' can also spread disinformation, ignite conspiracy theories and give a 'scientific' veneer of credibility to the quack's dubious products.

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The predators' methods have become increasingly more sophisticated. Their websites are no longer full of spelling mistakes, they adorn themselves with indexing in recognised databases, and may list reputable scientists among their co-workers. You often need to look carefully to discover something fishy: the indexing turns out to be counterfeit, it transpires that the reputable scientists are listed against their will, and the journal's contact information is non-existent. Some predators use names that are close to those of reputable journals, such as The New American Journal of Medicine (7), confusingly similar in name to The New England Journal of Medicine and The American Journal of Medicine, both serious journals. Others simply steal entire journals and publish them as their own, in a manoeuvre known as hijacking (8). The methods can include taking over the domain name of a legitimate journal or changing one letter of the URL, so that readers are tricked onto the fake website. A study from 2023 found that even the reputable database Scopus had unknowingly indexed hundreds of articles from these 'stolen' journals (8).

Many are attempting to deal with the problem. For example, artificial intelligence is being used to unmask articles and journals with signs of being predatory, and authors can use a simple, free checklist when in doubt about a journal's trustworthiness (9). Blacklists of predatory journals have proven difficult to maintain, but the opposite, lists of reputable journals, is a good alternative. Journals indexed in databases such as PubMed should be quite safe, and to find credible open-access journals, the Directory of Open Access Journals (DOAJ) is the best place to look (10). The Norwegian Register for

Scientific Journals, Series and Publishers provides a good overview of journals that give publication points (11). Our own journal, by the way, can be found in all three places.

If, as an author, you are still in doubt, you can use a simple self-test: critically read a selection of articles in the journal you are considering sending your article to. Do you find them interesting, credible and of good quality? If not, choose another journal. The predators are out there. There are many of them, and they are after your research and your money.

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