As the publication market has changed, the number of journals has increased significantly. In some fields, there are so many publications that it is difficult to keep track of them all. They include some journals that do not feel obliged to comply with the rules of good scientific practice, and instead use the academic publishing market purely as a business model for the publishers. These publications, which are usually referred to as “predatory journals”, charge authors publication fees or article processing charges (APCs), but do not organise peer reviews or other appropriate forms of quality control.

The publication of research findings in such journals primarily harms the authors involved, but also weakens public confidence in scientific research. In the following, we describe the phenomenon of predatory publishing in greater detail and present the necessary safeguards.

What is the difference between predatory journals and serious journals?

One of the main differences between predatory journals and serious scientific journals is that predatory journals largely do without editorial or quality control measures. In addition, one or more of the following will typically apply:

- Predatory journals do not provide transparent costing – it is often unclear from the journal’s online presence or website what costs will be incurred and what they relate to.
- Predatory journals list misleading or false information about indicators, especially impact factors.
- Predatory journals offer very fast publication of manuscripts they receive, which is incompatible with the length of time usually required to carry out a serious review process.
- Predatory journals list academics on their publishing/editorial boards without their knowledge and even against their will.
- Predatory journals carry out aggressive marketing, e.g. by mass mailing personalised emails to potential authors.

2 See https://www.hrk.de/resolutions-publications/resolutions/beschluss/detail/statement-on-predatory-publishing/
Predatory journals imitate the name or online presence of established journals.

What role do predatory journals play in academic publishing as a whole?

The predatory journal phenomenon has been around for at least ten years, but the number of suspect journals has increased significantly in recent times. For instance, Shen and Björk concluded, in a study published in 2015, that there were around 8000 predatory journals in 2014 which published around 420,000 articles between them. Other figures are more conservative and estimate 4000 predatory journals and 135,000 published articles for the same year. This represents around 6.5–13% of all known specialist journals and 5.9–18.3% of all specialist articles.

Who publishes in predatory journals?

In Germany, a research network of NDR, WDR and Süddeutsche Zeitung journalists found in summer 2018 that over 5000 authors had published work in predatory journals, although that figure includes a large number of one-off publications and few prolific writers. Comparing this figure with the total number of academic staff at universities and non-university research institutes in Germany (around 290,000) gives a percentage of 1.7%. It is, therefore, a small percentage of researchers who publish in predatory journals. Within the Leibniz Association, the figure for the period between 2010 and 2018 is less than 0.5 per mille, based on a random sample of publications in OMICS Publishing Group journals. The high proportion of one-off publications suggests that, in the past, many scientists published in predatory journals unknowingly.

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4 See https://waltlishost.org/2015/11/ppppredatory-article-counts-an-investigation-part-1/
5 According to “Ulrichs Web of Serials”, there are over 60,000 academic and scholarly journals worldwide, see http://www.ulrichsweb.com/ulrichsweb/analysis/help/usas_faq.asp
6 The total number of articles in academic and scholarly journals was around 2.3 million in 2014, according to the World Bank: https://data.worldbank.org/indicator/ip.jrn.artc.sc
7 https://www.ndr.de/nachrichten/FakeScience-Fragen-und-Antworten.fakescience198.html
9 According to the Federal Statistical Office of Germany, there were 242,000 people on the full-time scientific staff of universities in 2016 (see https://de.statista.com/statistik/daten/studie/248211/umfrage/personal-an-deutschen-hochschulen-nach-personalgruppen/). In addition, just under 50,000 scientists are employed in non-university research (see https://www.bundesbericht-forschung-innovation.de/de/Ausseruniversitare-Forschungseinrichtungen-1654.html).
10 See also https://www.leibniz-gemeinschaft.de/medien/aktuelles/news-details/article/faktencheck_zur_wdr_dokumentation_100003570/.
Is an article in a predatory journal necessarily inferior?

The quality of an academic article can only ever be assessed on its own merits. This is where an individual review process carried out by other specialists in the field plays a key role. Peer reviews are usually organised by the specialist journal and require a certain amount of time. Predatory journals avoid this work and publish submitted articles immediately without assessing them. This means that it is impossible to prove that an article published in this way is necessarily defective, but it should be noted that the article has not passed through an adequate review process.

Do predatory journals have something to do with open access?

Predatory journals rely on a business model based on APCs or publication fees, as do many reputable open access journals. However, a serious open access journal will usually charge a fee only once they have decided to accept the article based on the results of the peer review, and not in advance. In addition, approximately 70% of all journals listed in the Directory of Open Access Journals (DOAJ) do not charge any publication fees.11 This applies in particular to open access journals in the humanities and social sciences – areas in which publication fees have not become an established part of the publishing culture.

How can researchers safeguard against being published in a predatory journal?

Authors can use a number of checklists to assess journals, as well as looking them up on whitelists.

Checklists:

- A good overview of the criteria you can use to differentiate between serious journals and predatory journals is available on the Think – Check – Submit site.12
- The “Principles of Transparency and Best Practice in Scholarly Publishing” of the Committee on Publication Ethics (COPE)13 are also useful.
- The website of the Open Access Scholarly Publishing Association (OASPA) lists the minimum requirements for its members.14

Whitelists:

- A whitelist of open access journals that meet formal quality requirements is provided by the Directory of Open Access Journals (DOAJ).15

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12 https://thinkchecksubmit.org/
13 https://publicationethics.org/resources/guidelines
14 https://oaspa.org/membership/membership-criteria/
15 https://doaj.org/
Quality Open Access Market,\textsuperscript{16} an initiative that started in the Netherlands, provides a database in which individual journals are rated using crowd sourcing.

What steps can research institutions take?

Research institutions should provide advice and information to help researchers (not just early-career researchers) avoid being published – either knowingly or unknowingly – in predatory journals. The German Rectors’ Conference (HRK) mentions, for instance, the role of supervisors and experienced co-authors in providing advice on subject-specific publishing standards.\textsuperscript{2}

In this connection, it should also be mentioned that although each researcher is fundamentally free to choose where they are published, the knowing dissemblance of quality standards is a form of scientific misconduct. In addition, research institutions should ensure that they give priority to the quality and content of research results, especially in their recruitment and appointment processes, but also in personal evaluations. Examples of institutional measures for achieving this include:

- Adopting institutional publishing guidelines, maybe as part of the rules of good scientific practice, and appointing responsible contact persons, e.g. ombudspersons\textsuperscript{17}
- Providing advice and information by trained staff (e.g. open access officers) at information and training events, including teaching people how to identify dubious forms of publication
- Referring to existing whitelists or creating whitelists of serious specialist journals\textsuperscript{18}
- Excluding publications in predatory journals from evaluation processes, appointment processes and publishing funds
- Labelling frequent emails from dubious publishers and journals as spam

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\textsuperscript{16} https://www.qoam.eu/journals
\textsuperscript{17} https://www.leibniz-gemeinschaft.de/forschung/gute-wissenschaftliche-praxis/ombudspersonen/
\textsuperscript{18} Some professional associations are already drawing up whitelists based on surveys. An example in the field of business studies is: https://vhbonline.org/en/service/jourqual/.