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Cultivating integrity: Addressing the impact of predatory publishing on agricultural research

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Introduction

- The Open Access (OA) Initiative, promote free access to articles across all fields of science on the internet. This marked a meaningful change in the way scientific articles are published.
- Some major publishers continue with this business model in the digital world. However, they have made partial attempts to adopt the OA framework by integrating "article processing charges" (APCs) that can reach several thousand dollars.
- Several companies that present themselves as scientific publishers, offer to publish under OA with significantly lower APCs. However, on numerous occasions, it has been revealed that their peer review process is either very lenient or sometimes non-existent.
- Predatory publishers and journals, exploit the APC payment model, promote unethical practices and undermine the principles of OA. This has resulted in the proliferation of low-quality articles that threaten to infiltrate legitimate scientific literature (Beall, 2012).
- One of the areas where it can cause significant effects is in agricultural research, where critical and widely debated topics such as climate change or genetically modified organisms converge.

Objective

To bring visibility to the issue of predatory publications, their potential impacts on the scientific community, and to the indications of how to detect when a publication is potentially predatory.

Methodology

A literature review was conducted on the impact of predatory publications on research. The methodology is divided into three stages: source selection, search and data collection, and literature analysis.

Results

The impacts of predatory publications and potential issues.

Instead of disappearing, predatory journals have increased through the years (Figure 1).

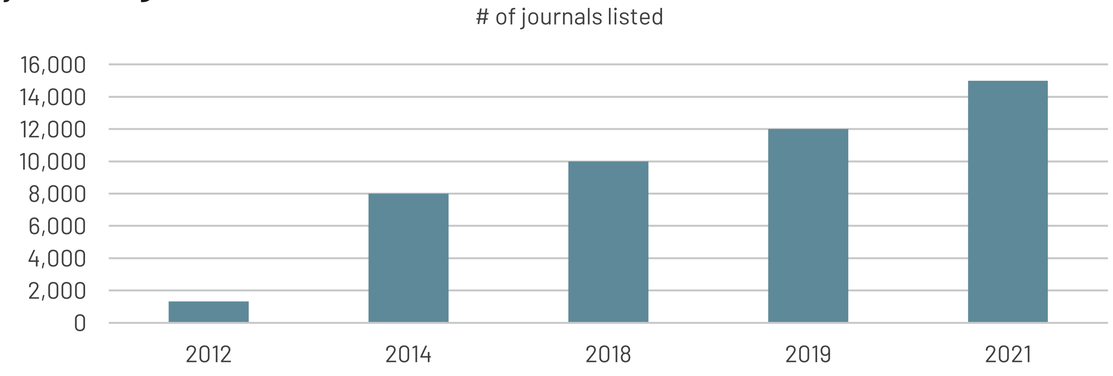

Figure 1. Growth of the estimated number of journals classified as predatory. Source: Own elaboration using data from Beall (2012); Shen & Björk (2014); and Linacre (2018-2021).

A significant number of those publications have managed to infiltrate legitimate scientific literature. An experiment demonstrated how some articles from journals classified as predatory were cited in three of the world's largest aggregators of scientific papers (Table 1).

Table 1. Percentage of articles cited in Web of Science (WoS) from predatory journals.

Journal	# of articles	Cited in WoS	%	Cited in Elsevier	Cited in P One
A	90	33	37	2	0
C	95	24	25	1	0
E	656	40	6	3(5)*	0(17)*
F	N/D	2	-	0	0
G	N/D	1	-	0	0

*Journal E had a legitimate origin but was later acquired by a predatory publisher. Value in brackets corresponds to articles published prior to the acquisition. Source: Adapted from Anderson (2019).

Even if the document contains relevant and accurate data on the topic, being cited in legitimate literature indirectly contributes to validating all the content published in that source.

Editorial Contamination: the threat to science and agriculture

Not only is science subject to be corrupted, but it can also influence the public agenda through the media. The 'Chocolate Sting' is a demonstration of predatory journal articles can reach wider audiences.

Given the lack of scientific rigor in predatory publications, climate change deniers can find ideal conditions to spread pseudo-scientific views, creating enough noise to sow doubt among some readers.

Predatory publications serve as fertile ground for crafting false narratives within the public opinion, or even for informing policymakers.

How to identify a potentially predatory publication

It's not possible to establish a definitive standard for categorizing a source as predatory. However, be aware of a series of indicators like:

1. Receiving an invitation to publish previous work.
2. Unprofessional appearance, false or irrelevant, metrics and indexing.
3. 'Polifacetic' or 'mega journals' publishers.
4. Articles published beyond the journal's focus and scope.
5. National or international affiliations that do not correspond.
6. Think, check, submit: thinkchecksubmit.org

Conclusions

- Authors must focus on quality over quantity, avoiding citing sources from potentially predatory journals, and maintaining constant dialogue with funders to counter the "publish or perish" pressure.
- They must also safeguard scientific integrity and academic reputation by verifying that the journal they plan to publish is legitimate. If an unfamiliar journal is being considered, they should review the editorial policies, committee, copyright, fees, and publication timelines.
- Authors' choice of where to publish should not be based on the rush to publish that some journals promote, as this can compromise the rigor necessary to assess the quality of the work.

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