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The Gray Zone Between Legitimate and Predatory Open Access Scientific Publishing

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ABSTRACT

Certain open access publishers based on the article processing charges model have found it highly profitable to operate within a gray zone that encompasses both legitimate and predatory publishing practices. In this context, maximum profits can be obtained by adequate combinations of journal acceptance rates and elevated article processing charges. Considering that the gray zone can be particularly challenging to identify and that it poses risks for authors aiming to establish academic carreers, we believe it is important to provide a comprehensive description of it. (REV INVEST CLIN. 2024;76(1):1-5)

Keywords: Predatory publishing. Open access publishing. Article processing charges.

COMMENTARY

Under the traditional model of scientific publishing, revenue is generated through subscriptions, and copyrights for the published content are transferred to the journal. Consequently, the open access (OA) movement originated with the purpose of having freely available, digital, online information, with less restrictive copyright and licensing barriers. However, the OA model based on article processing charges (APC) inherently carries a continuous temptation to prioritize economic interests over academic ones, as it relies on the number of published articles[1]. This has led to the rise of deceptive, fraudulent, and predatory publishing practices, which involve charging publication fees to authors without verifying the quality and legitimacy of articles, and without granting editorial and publishing services that legitimate academic journals provide[2]. Therefore, researchers are advised to use a variety of tools and practical resources to discern trusted publishers[3].

Cabells is a trustworthy scholarly analytics company that offers information on journals' quality, competitiveness, visibility, and integrity. The company curates a database called *Journalytics,* which includes over 11,000 reputable academic journals (whitelisted), as well as *Predatory Reports,* the largest database of

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predatory journals (blacklisted)[4]. According to Cabell's criteria, academic violations committed by journals are categorized as severe, moderate, or minor based on their extent and nature[5]. Journals that commit severe violations are included in *Cabell's* blacklist. Although journals that commit minor or moderate violations are not formally included in the blacklist, they still give rise to concerns that prevent their inclusion in whitelists. This has resulted in a *de facto* "gray zone" of over 50,000 journals[6]. Some OA publishers have discovered it to be more lucrative to operate within this gray zone, incorporating legitimate and predatory characteristics[7], where maximum profits can be obtained by adequate combinations of journal acceptance rates and high APCs. Given that the gray zone can be particularly challenging to identify and poses risks for authors aiming to establish academic careers, we find it essential to provide a description of it.

Peer review is the gold standard for establishing legitimacy in academic publishing[8]. Nevertheless, when conducted superficially, its ability to distinguish between genuine science and non-scientific content is limited. Journals within the gray zone engage in peer review with varying degrees of rigor to achieve the desired acceptance rates, as rejected articles do not generate any revenue. The quality of peer review directly impacts journal acceptance rates and indirectly influences APCs, as increased rigor enhances legitimacy, allowing for higher publication fees to be charged. It is the responsibility of each researcher to conduct a meticulous analysis of a journal's content before submitting an article for publication. Yet, even when a journal employs open peer review, assessing the quality of the peer review process would necessitate expertise in the specific field[9].

To gain legitimacy and visibility, certain blacklisted journals have succeeded in getting included in respected databases such as Scopus[10], PubMed[11], MEDLINE, or Embase[12], while being left out from others. Similarly, some journals in the gray area are listed in databases and have received acknowledgment from associations formed by legitimate editors such as the Committee on Publication Ethics; the International Committee of Medical Journal Editors; the Open Access Scholarly Publishing Association; the Directory of Open Access Journals; and the World Association of Medical Editors[7]. Due to their legitimacy characteristics, some gray area journals are also included in the Web of Science, have been recognized by the Journal Citation Reports, and might even possess reasonable impact factors. Still, impact factors can be artificially increased through the practice of both journal and publisher self-citation[13]. Therefore, citations are not an unequivocal sign of quality. It is important to note that gray zone publishers can impose higher APCs due to their legitimacy characteristics. As indicated on their websites, standard fees range from $1500 to 3,000 USD, depending on the specific journal and type of article. In contrast, according to some estimates, predatory journals charged an average of $178 USD for articles published between 2010 and 2014[14]. The disproportionate growth of journals through the release of special issues may have adverse implications. When this model is exploited, special issues are commonly coordinated by guest editors who may lack expertise and could potentially have conflicts of interest[15]. In this context, guest editors tend to weaken the standards and diminish the role of the original editors who established the journal's reputation. Aggressive email communication with authors, rapid publication timelines, and high acceptance rates are common strategies also used by gray zone publishers (Table 1). In any case, what is deeply concerning regarding APC-based OA gray zone publishers is their dynamic nature, which enables them to gain legitimacy or potentially engage in predatory practices. In March 2023, Clarivate announced the removal of 82 journals from the Web of Science core collection[16]. As a result, these delisted journals lost their impact factor. In addition, Clarivate expressed its ongoing commitment to identifying problematic journals and delisting those that do not meet their quality criteria. The OA publishers most affected by this action are shown in Table 2[17]. The selective delisting of journals from each publisher suggests that journals within the same publisher have different degrees of legitimacy, and the legitimacy of a journal and its publisher can fluctuate over time. It can also be inferred that an unspecified number of journals in the gray zone are potentially predatory and have not been delisted yet.

Another regrettable consequence of publishers' voracity is that APCs represent a barrier to OA publication for scientists from the Global South[18]. This situation places them in a detrimental cycle of disadvantage, as articles published in OA journals usually have

Table 1. Legitimacy and predatory features used by gray zone publishers

Legitimacy features	Comment
Are not in Cabell's blacklist	Gray zone journals avoid blacklisting (*e.g.,* Beall's or Cabell's) by not committing severe violations[6].
Perform peer review	Gray zone journals conduct peer reviews with differing levels of rigor, sometimes offering open peer reviews.
May be indexed in some databases	Indexation in relevant databases (*e.g.,* Web of Science, Scopus) provides legitimacy and exposure[10-12].
May obtain recognition from associations of legitimate editors	Recognition from the COPE, ICMJE, OASPA, DOAJ, and WAME provides legitimacy[7].
May have an impact factor	May obtain recognition from the Journal Citation Reports of Clarivate Analytics.
Can charge high APCs	Gray publishers usually charge $1500-3000 USD. Predatory journals charge on average $178 USD[14].
Predatory features	**Comment**
Are not in Cabell's whitelist	Gray journals commit minor/moderate violations that prevent whitelisting[6].
Journal's growth via special issues	In this context, special issues are coordinated by guest editors who lack expertise and may have conflicts of interest[15].
Aggressive email contact	Illegitimate journals actively solicit papers from scholars[5].
Fast publication	Fast publication may jeopardize effective peer review.
High acceptance rates	Revenues come from accepted articles in the APC-based open access model.

APC: article processing charges; COPE: Committee on Publication Ethics; ICMJE: International Committee of Medical Journal Editors; OASPA: Open Access Scholarly Publishing Association; DOAJ: Directory of Open Access Journals; WAME: World Association of Medical Editors.

Table 2. Publishers with Web of Science delisted journals[17]

Publisher	Journals in Web of Science	Web of Science delisted journals	%
Hindawi LTD	163	15	9.2
Routledge Journals, Taylor and Francis LTD	1187	4	0.3
Wiley-Hindawi	26	4	15.4
AME Publishing Company	18	2	1.1
BMJ Publishing Group	59	2	3.4
MDPI	207	2	1.0
Sage Publications LTD	428	2	0.5
Springer	1060	2	0.2
Springer Heidelberg	301	2	0.7
Wiley	1356	2	0.1

For a comprehensive list of all journals delisted in March 2023, please consult reference 17.

significant online visibility and receive citations over time. Unfortunately, this type of metric is usually considered in performance evaluations of scientists[19]. Moreover, the peer review crisis is closely related to publishers' ambitions because the peer review process relies on unpaid analysis of articles by expert volunteers. While APC-based OA publishers have increased publication fees and the number of articles published, they refuse to pay reviewers arguing that payments would be unethical or that reviewing must be driven by altruism. Consequently, numerous scientists are declining review requests more often and are becoming increasingly frustrated with OA journals that benefit from the unpaid work of reviewing while charging expensive fees to publish in them or read their content[20]. In this context, the United States government announced that federally funded research should be free to read as soon as it is published, starting in 2026[21]. This measure, which initially aims to implement universal access to scientific literature, could now pose a threat to researchers who serve as unpaid reviewers, and as authors who must pay for publication.

OA publishers have indeed evolved, creating a range of varying degrees of legitimacy. By manipulating acceptance rates and APCs, they can maximize their revenues, pushing the boundaries of the peer review system[22]. This raises concerns about the potential impact on the standard of peer review. To what extent do market policies of OA publishers determine the quality of scientific publications? The ambition of OA companies is challenging the entire system: it is overwhelming reviewers who receive no compensation, requiring authors to pay substantial publication fees, and theoretically benefiting readers with free access. However, the quality of publications may ultimately suffer. It is the APC-based OA publishers who truly benefit from this situation.

Authors should also be careful when using the services offered by OA publishers, designed to aid in the journal selection process by considering the manuscript's scope, content matching, keyword analysis, and other criteria. While these services can be helpful, they should be seen as a starting point rather than the sole determinant. A complete analysis should be conducted to assess the characteristics of legitimacy and illegitimacy of the suggested journals before making a final decision.

Certainly, scientists are under constant pressure to publish. This is because respected institutions worldwide require scientists to produce a determined number of publications per year in journals of a specific impact factor. Furthermore, graduate students usually need to publish their findings to obtain the degree. To meet these demands, authors sometimes publish their legitimate findings, in questionable journals. Furthermore, the insufficient financial support for research, especially in low and middle-income countries, worsens this situation. In summary, researchers struggle between the quality of their research and the need to meet the publication expectations of their institutions. In any case, scientists and institutions are responsible for identifying trusted journals and exposing deceptive publishers. Unfortunately, there are a few cost-free organizations assisting researchers with these difficult tasks, such as the Predatory Reports website[2], the Think. Check. Submit website[3], Beall's list of potential predatory journals and publishers[23], and the List of Predatory Journals[24]. Therefore, it is desirable for the new OA policy to be supported by free-of-charge services that enhance the monitoring, reporting, and delisting of journals that fail to adhere to good editorial practices.

In conclusion, APC-based OA publishing model provides benefits in terms of accessibility, speed, and visibility. Nevertheless, it presents challenges, including financial burdens, predatory practices, and biases such as affordability and Global South bias. It is advisable for researchers to conduct thorough evaluations of publishers, particularly when engaging with those in the grey zone, and remain fully aware of the associated risks when opting for this publishing route.

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