Hesitant to Publish: Growing Academic Misconduct in Scholarly Publishing Drives Author Uncertainty

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EXECUTIVE OVERVIEW
Introduction

Recent events in scholarly publishing have forced the scholarly community's attention onto the protection of editorial quality and combatting academic fraud. In 2023, authors began reckoning with significant issues of uncertainty, which have caused them to reconsider and revise their publishing strategies:

- Publishers identifying sophisticated paper mills and peer-reviewer rings
- Large scale retractions from journals particularly regarding special issues
- Unusual number of journal delistings from the Web of Science

Our scholarly publishing community is indeed somewhat stratified based on perceptions of "rank" among publishing venues. However, researchers can generally expect to succeed and to progress their career so long as a widespread threshold is met for the integrity of the scientific record across all reputable journals, irrespective of journal metrics of prestige and the self-correcting nature of science that sometimes results in retractions. **However, when a journal is subjected to systematic fraud in the manner outlined in this paper, subsequent retractions—and possible delisting—can influence community perceptions in a manner that ultimately damages an author's publishing record.**

To its detriment, the academic community has depended to a large extent on a positive association between a researcher's work and publication in high impact factor journals. This dependence can be limited to a lingering, subjective use of journal impact factor (JIF) as a surrogate for quality that is being slowly, but progressively, deemphasized. However, it also manifests as researchers of certain countries having specific, immutable requirements for the journals in which they publish based on JIF or on agency determined lists.

Given this pervasive author uncertainty, researchers and administrators require an appropriate explanation of the rapidly growing battle against academic fraud that is

being waged by publishers[1]. Crucially, the scholarly community needs a sober analysis of proper editorial protocols, quality control, and rigor that limits the use of flawed surrogates such as JIF and the influence of anecdotal perceptions arising from the scholarly publishing community's policing of academic fraud. This paper aims to summarize for authors the editorial problems and solutions faced by publishers and to recommend a clear, objective path toward selecting venues in which to place their work based solely on the quality and rigor of a publisher's operations.

To understand the consequences of paper retractions, we discuss the following:

1. The history and misuse of bibliometrics in the genesis of academic misconduct
2. The battle against paper mills, peer reviewer rings, and hijacked publishing models
3. Visualization of this fight in the form of mass retractions and journal delistings
4. Insights into the reaction of authors, governments, institutions, and publishers to these events
5. Recommendations for the scholarly community and authors as individuals to evaluate publishing options, participate in the fight against academic fraud, and direct publishers toward systems of quality control

1 It should be noted by the reader that this battle against academic fraud is not limited to large, generalist publishers. Dedicated scientific and learned societies who derive a significant portion of their operating budget via publishing also face this struggle. Indeed, it is these publishers who may be the least resourced for handling such issues. Innovation in editorial quality and widespread systems of fraud detection are likely to depend, in part, on the efforts of large, well-capitalized publishers.

Highlights

OA Journals

After the March Clarivate retractions, both polls and user behavior indicated authors still consider OA journals to be a practical submission choice.

Retraction Watch

As of December 2021, 3,450 fraudulent papers had been identified by Retraction Watch.

The Cost

The cost of a coauthorship slot could be as low as €180, but the ramifications of an article retraction will follow a researcher - especially one in their early career - for a lifetime.

BACKGROUND

Past and current events in scholarly publishing

Academic publishing has been evolving since the creation of the first scientific journals in the 17th century, but the rate of change has increased significantly over the last 100 years. Prior to World War II and the rapid onset of digitization, most journals were published by scientific societies (1). By the 1990s, the world was well into the Information Age, and academic publishers accounted for 40% of scientific journals (2). In 2022, Nishikawa-Pacher found that the 100 largest publishers accounted for 28,060 journals[2] (3).

Understandably, publishers are interested in receiving manuscripts for the most impactful and high-quality research being conducted globally. They require a metric for determining and reporting on their success in this regard. As such, journals rely on basic bibliometrics. The most widely used metric is the journal impact factor (JIF), though it is not the only available measure. Other evaluative bibliometrics include the h-index, average time from submission until publication (4), SCImago Journal Rank (SJR), Source Normalized Impact per Paper (SNIP), CiteScore (5), and Altmetrics (6).

Despite other options, JIFs have long been used as a proxy to judge the relative "importance" of a journal within its field; to put it simply; the JIF was meant to be a tool for librarians to use when ordering journals for their university collections and both publishers and readers felt that work that was being cited—understood as de facto approval by qualified peers—has some correlation to quality. However, this idea has become warped since its inception; depending on who you ask, you may be told a JIF represents a journal's prestige, its selectivity, or its scientific rigor. In truth, a JIF only measures one thing: the ratio between the number of citations a journal received in that year for articles they published in the two preceding years and the total number of "citable items" published over the same time span (7). Citation rates themselves have been subjectivity determined by context. Regardless of the debate over the validity of this surrogate, we are at least keenly aware, and decidedly certain that the magnitude of differences in citation rates hardly have the sensitivity to allow for the valid comparison

2 With no central database, it is difficult to determine exactly how many journals exist in a given year, or even a given day, with how rapidly the digital publishing landscape changes, but we can say with sufficient confidence that for-profit publishers have taken a large portion of the publishing volume.

of quality or ranking across journals[3].

There are numerous problems with this structure. They have been described in detail by several scholars across varying fields (3, 8–12), but no universal solution has been agreed upon. Even within a single discipline, researchers disagree on how research (and journals) should be evaluated, even if we can all generally agree that the current metric is not ideal.

The root of the JIF problem

The crux of the problem is that the JIF is designed to describe the relationship between publications to one another but is instead being used to evaluate authors or institutions. Regardless of a researcher's career stage, bibliometrics play a role in their reputation (13). It is unsurprising that publishing at a "high level" is a top concern, especially among early career researchers (ECRs) (13, 14), as this perceived impact will influence potential collaborations, job prospects, and available funding.

The effectiveness—and exploitation—of the special issue model

Authors who are supported or rewarded based on their output are incentivized to publish in journals with higher impact factors. Journals are aware their high scores will attract more submissions, and more submissions mean higher revenue.

Enter the special issue model. There was and is nothing inherently dangerous about a special issue or journals that choose to publish them. Before the OA model took off, a special issue served "the purpose of delving more deeply into a specific topic" (15). These collections of articles could include research studies and literature reviews. Sometimes special issues would focus on an underserved niche within a discipline or highlight emerging techniques. Getting invited to participate in a special issue also simply felt good; being recognized by one's fellow scholars can be extremely validating, no matter what a researcher's career stage. The special issue serves as a useful and effective curatorial tool; this in truth is consistent with the primary function of a scholarly journal.

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3 Indeed, Clarivate Analytics, arbiter of the JIF, finally made the sensible decision to take JIFs from the thousandth down to tenths in their reporting. We hope—with little faith—that some poor early career faculty has not had the misfortune of having JIFs to the tenth cited to them during adjudication of their research productivity.

A special issue is usually presided over by a guest editor who is considered an expert in the specific topic on which the special issue is focused. While some publishers require prospective guest editors to submit an entire dossier before agreeing to publish a special issue (16), other publishers will invite guest editors for special issues with topics already decided upon (17).

By inviting a small army of guest editors to manage a legion of special issues, some publishers were able to multiply their content output in a short period of time. MPDI was able produce two times as many special issues as regular issues in over 90% of their journals from 2018 to 2019 (17). Frontiers went from 33,000 published papers in 2019 to 125,000 in 2022, with their proportion of special issues (though Frontier would have you call them “Research Topics”) jumping from 60% to 70% in that same time period; Hindawi experienced a staggering jump in special issues (from 17% in 2019 to 53% in 2022) right before the paper mill submissions were discovered (18).

When a publisher has such large number of guest editors, it becomes difficult to ensure each individual is a qualified subject expert and, on top of that, capable of acting as an “editor-in-chief” for a single, special issue. To be an expert within a field does not bestow upon one the ability to handle the demands of journal publishing. These are two entirely different skillsets, and for some academics, the overlap with their research skills is minimal. While it is entirely plausible that the publishers felt that the special issues were relevant to the current research attitudes, the logistics are such that it becomes easier for a non-expert or a bad actor to slip through the screening process when so many potential “editor-in-chiefs” are being presented.

Despite the potential pitfalls when it comes to handling manuscripts and publishing an issue, special issues present a reward that is worth the risk for publishers. One analysis of communication journals found that between 2015 and 2019, 75% of journals achieved a higher average JIF with articles published in special issues than they did with articles published in their regular issues (15). Presumably, this means that the research within is also being cited more frequently; any author putting out work wants it to impact the discipline at large. Getting it in front of as many eyes as possible is an

attractive proposition, especially if the author may be facing evaluations at their place of employment or upcoming funding applications.

Alongside specialist journals promoting special issues, megajournals (e.g., PLOS One, Scientific Reports) have also benefited from the structure of JIFs and their widespread use in individual and institutional evaluation. Megajournals are generalist journals that publish any manuscript with scientifically acceptable methods and empirical results without asking questions of scope or readership, as would a more traditional, niche journal.

Megajournals have become particularly popular within the life sciences, though they exist across all disciplines, and some even umbrella over several. They have become popular choices for many authors, though where an author publishes still depends on their individual niche and the origin of the megajournal (i.e., an older journal established in print, such as Nature, as opposed to newer OA models, such as PeerJ or Scientific Reports) (19).

Despite these differences, the number of articles published by megajournals increased over 6.5-fold between 2010 and 2015 (20). Like the OA model, it is clear that the megajournal has become an accepted structure within contemporary science.

While traditional journals evaluate manuscripts and demand they fit within a certain scope, elite journals within the megajournal system tend to have far fewer articles with few or no citations. However, there were more articles within traditional journals that had two citations or less than within megajournals (20). If most or all articles within megajournals are getting at least a few citations, this benefits the publisher (from a rising JIF, and more authors interested in publishing, thus paying the APC) as well as the author, who will receive citations (and have an article in a journal with a high JIF).

The emergence and industrialization of paper mills

With authors facing increasing pressure to publish and seemingly endless opportunities with new journals, special issues, and megajournals, some struggle to keep up with their research and publishing schedule. If they have not received adequate funding or otherwise lack resources, they may find themselves in even deeper water. Authors who are not native English speakers face additional hurdles when it comes to publication, as English is the unofficial “language of academia”.

A recent study found non-native English speakers needed 91% more time to read a paper, and 51% more time to draft a paper. Once they are finished writing, they are a striking 12.5 times more likely to receive requests for revision based on language (21). Already crunched for time, researchers who feel pushed “publish or perish” may find themselves turning to a “paper mill” for assistance.

While the industry was once a legitimate attempt to help authors who struggle with English write their manuscripts, paper mills have become factories pushing out fraudulent papers at an industrial scale. There are two types of paper mills: those that generate plausible papers and those that put out almost incomprehensible manuscripts (19).

While the latter form is most likely the output of artificial intelligence or extreme forms of plagiarism (in which segments from various papers are copied and pasted together like an ill-fitting puzzle), the former is more insidious in that papers may look legitimate upon first glance. In most cases, a genuine manuscript has been taken and tweaked to look like a normal piece of work, and depending on the skill of the paper mill, to avoid plagiarism detection. In some cases, the manuscripts have been outright stolen and depend on a language barrier to obscure the truth (22).

Though the origins of this industry may have been well-meaning, people have since discovered there is a lot of money to be made here. For example, the value of co-authorship slots offered by International Publisher LLC was estimated to be about $6.5 million USD between 2019–2021 (23). A similar site promises placement in a prominent journal on a manuscript that has already been accepted; alternatively, you can purchase an entirely new paper with a 100% guarantee of placement in a high-impact journal (24). A review of this website found that scholars from at least 39 countries purchased coauthorship slots with prices ranging from €180 to €5,000 depending on factors such as placement of the author's name and where the article is in the publication process (23).

In another example, undergraduates at an Indian dental school churned out manuscripts as part of their final exam; students systemically cited faculty members — regardless of whether the topics actually had anything to do with one another — thus inflating overall citations and boosting this evaluation metric (25). As a result, Saveetha Dental College topped the list as the most cited dentistry institution in the world (26). It now enjoys a top spot amongst national and global dental schools.

Unfortunately, there is no real estimation of how many of these paper mills exist, or how many of these papers are being submitted to journals. It can be very difficult to spot the more legitimate-looking frauds before a pattern has been established. In the second scenario, when papers that seem nonsensical or poorly constructed pass editorial and peer review, it may suggest editors are overloaded and not carefully reviewing manuscripts, or it may suggest members of the editorial board have been compromised, perhaps even working with the paper mill.

Once these papers make it into journals, they might provide an initial boost to citations, though these may be nonsensical or not applicable to the manuscript itself. After so many years, however, these papers begin to be retracted, sometimes en masse (27–29). As of December 2021, 3,450 fraudulent papers had been identified (23). There have

been multiple mass retractions over the past several years.

> In October 2022, Wiley announced it would be halting special issues in Hindawi journals (a pause that ended in January 2023) at a cost of $9 million USD, after the discovery of mass peer review manipulation (25). Later, Hindawi announced it would shutter four journals that had been overrun by paper mills; the publisher felt they were beyond repair (30).

In addition to special issues and megajournals, paper mills may also take advantage of "hijacked journals", journals whose brands have been replicated or stolen by a malicious third party (31). The hijacked journals may be still functioning, or they may have been recently closed, with a third party swooping in to steal their identity before potential authors realize any change has been made. Not only do these journals trick authors into submitting to an illegitimate journal, but they also lack editorial rigor, allowing an easy pass for a paper mill trying to push out as many publications as possible.

The real cost of retractions

While it is obvious that a paper retraction harms the publishing author, it is less clear what happens to authors who've published legitimate papers in journals that later become delisted. When Clarivate Analytics announced it would delist Oncotarget in 2018, authors reported their dismay, confusion, and shock. Many authors from around the globe indicated they wouldn't have submitted their manuscripts in the first place if they knew Clarivate was considering the journal for delisting and were concerned what would become of their papers —published, but without a JIF (32).

> The primary issue here is that Oncotarget had become a venue for researchers with strict JIF requirements. As such, the association between JIF and research quality deviated even further from the weak relationship generally present in academic publishing. If the JIF was already becoming an uncomfortable example of Goodhart's law , then Oncotarget was seemingly built as an homage to the concept[4].

Outside of losing a metric that many researchers rely upon for professional or funding evaluation, the effect of a retraction tends to vary based on a researcher's career stage, sex, and the "publicity" of the retraction event (31). Like in many cases concerning JIFs and bibliometrics, ECRs are some of the most highly impacted individuals.

DEALING WITH UNCERTAINTY IN THE PUBLISHING SYSTEM

Governments

To deal with all this rise in uncertainty caused by paper mills and their impacts on special issues, OA journals, and JIFs, some institutions and governments have taken it upon themselves to approve or reject specific journals or publishers. For example, the Norwegian Register for Scientific Journals is a governmental whitelist intended for researchers to use when deciding where to publish their research (32, 33). This list also indicates which journals and publishers the Norwegian government does not recommend (33). In South Africa, research institutions report their outputs to the Department of Higher Education and Training (DHET), which then allots a subsidy to each institution based on their contributions to scholarly journals. The DHET keeps lists of approved academic journals to which researchers may submit (34), effectively prescribing where a researcher must publish if they wish to receive funding.

The degree to which an individual is judged by the JIF of the journals in which they publish seems to vary by their institution or country of residence. In Nordic countries, JIFs have been used in assessment of individuals as well as in the allocation of university resources (35). In China, some researchers have reported university use of the number of international publications to evaluate their faculty members (36), while JIFs have impacted resource allocation to researchers in Canada (35, 37) and Hungary (38). In the United Kingdom, university officials use bibliometrics when reporting to the government and informing their own institutional strategies (39), while the Brazilian National Research Council uses a combination of factors (including citation metrics) to rank researchers when awarding funding (37). Interestingly, researcher perceptions for the use of citation indicators (e.g., for getting hired, obtaining funding, monitoring their scientific impact) differs by country, age, and discipline, with ECRs from China

4 Our economics readers will be familiar with the proposed notion that "Any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes". Plainly, when a measure becomes a target, it ceases to be a good measure. "Collapse" is indeed the appropriate term for Oncotarget and its JIF.

report the greatest use of citation indicators (13). This may be due to the way some Chinese institutions evaluate researchers (36) or provide monetary incentives to publish research in journals listed within the Web of Science (40).

The Chinese government is not alone in their desire to reward productive scientists. Monetary rewards based on bibliometrics can also be found in Australia, Mexico, Scandinavia, South Africa, Uganda (40), and Iran (41). In theory, rewarding someone for quality research or productive output is understandable, and even commendable. The issue is that there is no simple, standard measure by which to judge the quality of someone's research. Such a metric would have to include a base rationale supported by a theoretical framework and the appropriate statistical methods for both the questions being asked and the type of data collected. Even reproducibility and repeatability vary across disciplines; replicating a chemical reaction is more straightforward than reproducing ecological observations in the field.

Research institutions

These changes are not limited to the governmental level. Some institutions and funders are taking matters into their own hands. Starting in 2020, the Chinese Academy of Sciences began releasing a yearly 'early warning journal list'. The list considers multiple criteria and provides several ranks for journals ('high', 'mid', 'low', and 'no' risk) with the purpose of prompting researchers to choose publishers that exhibit quality control over manuscripts (34, 42). African Journals Online is a non-profit organization that provides online hosting for over 650 peer-reviewed journals from Africa with the intention of making research from Africa globally available with strict quality requirements (43).

Publishers

Publishers are also attempting to reckon with increasing author uncertainty in a system they once trusted. The Committee on Publication Ethics (COPE) updated their guidelines regarding systematic manipulation of the publication process (44, 45). These updates include suggestions for publishers to be more transparent with one another and authors, as well as specify exactly what actions will be taken if they become suspicions of malicious behavior (i.e., the use of paper mills or peer reviewer rings).

By adopting these updated guidelines, publishers will be held to higher standards than before. Additionally, some publishers have taken the initiative to update their individual integrity statements and quality control practices. In response to finding

Hindawi's special issues were being targeted by "bad actors", their parent company, Wiley, opted to suspend Hindawi's special issues from mid-October 2022 to mid-January 2023 (26).

Later in 2023, Hindawi released a statement about changes in their journal portfolio in response to systemic manipulation within the editorial process. "Discontinuing these journals is not a decision we made lightly. These journals have published Special Issues that have been impacted to such an extent that we feel it is in the best interest of the scholarly community to discontinue them. We know that considerable effort has been put into these journals and appreciate all the editors and peer reviewers who have contributed time and expertise to evaluating legitimate research over the years. We also recognize the impact on authors who have published legitimate research in these journals." (47) While this recognition may feel paltry to researchers as compared to the effort and funds poured into their researcher, it is ultimately best for the health of the entire academic publishing industry to trim the 'sick' limbs to protect the rest of the tree.

It is important for publishers to recognize and publicly decry these manipulations of the editorial process rather than sweep them under the rug. Scientific rigor is at the heart of peer review, and it should not be up to independent 'whistle blowers' to monitor a publisher's behavior – not if the publisher wishes to be a credible source of scientific information. We should appreciate the service these whistleblowers provide, as indeed, these issues may have gone undetected even longer, but the ball must be placed in the publishers' court.

Each publisher's behavior should be evaluated independently. While Wiley/Hindawi have paused lucrative processes and shuttered journals, others have taken a less hardline approach. IEEE continues to retract papers from journals and conference proceedings at an apparently yearling tick. At the end of 2022, IEEE's retractions (over 10,000) accounted for over 25% of those that could be found in Retraction Watch's database (47). This behavior suggests a more systematic problem that either isn't being addressed or needs more aggressive treatment. Authors will consider retraction volume going forward.

An updated ethics statement is not the only tool publishers have employed as they try

to combat decreased trust in the publication process. Increasing editorial staff helps reduce the burden on individuals.

The International Association of Scientific, Technical, and Medical Publishers (STM) is spearheading the Integrity Hub, an effort to develop new tools to detect plagiarized and paper mills paper and further reduce some of the burden on editorial staff (48).

Figure 1. STM's flowchart to prevent academic fraud and reduce the burden on editorial staff, recreated from materials presented by the STM (48).

One such tool, a web application used for the detection of paper mills, was released in April 2023 and has already been adopted by over 20 publishers (48, 49). Updated author guidelines are another tool in the publisher's kit; by outlining the protocol for publisher

review and retraction of papers, they may be able to conduct reviews of suspicious papers in batches rather than one by one.

It should be noted that there are also several independent lists to be found on the internet indicating which journals or publishers the list's authors believe to be predatory; however, many of these lists are not transparent in their evaluations. With this opaqueness, COPE recommends these websites be viewed with the same caution and suspicion a journal's website might be.

How can an individual author deal with this uncertainty and reduce their risk?

Amidst all this upheaval, what is an individual researcher supposed to do?

It can be overwhelming when trying to determine a journal with proper scope, only then to be faced with a whole barrage of additional questions: Is this journal legitimate? Is it indexed? Is it participating in activities to intentionally inflate its JIF? Is the editorial board being unknowingly manipulated by a ring of reviewers or a paper mill?

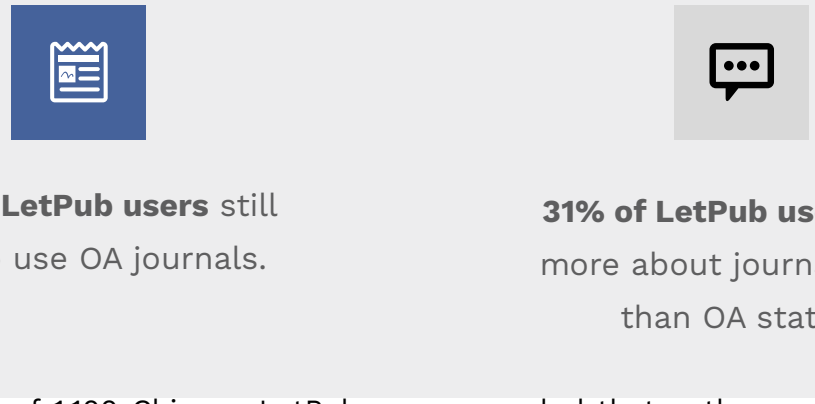


Figure 2. A survery of 1,100 Chinese LetPub users revealed that authors were not concerned about a journal's OA status after the Clarivate delistings in March 2023.

In early April 2023, we sent out a survey to 1,100 clients who'd recently availed themselves of LetPub's services[5]. LetPub's Chinese userbase revealed that 43% of authors still plan to use OA journals after the March 2023 delistings, while another 31% indicated they do not care about a journal's OA status as much as they are concerned with its

5 From April 4 thru April 8, 2023, a questionnaire was sent to LetPub's Chinese userbase. Authors were able to vote in a poll anonymously regarding their feelings towards publishing in OA journals following Clarivate's revelation it had delisted 50 journals at the end of March 2023.

scope. **Behavior on LetPub's Journal Selector—a popular tool with over 40,000 available journals, 60,000 journal reviews, 3 million visitors, and 12 million page views monthly—has also indicated that authors have not grown more or less worried after March's Clarivate delisting**; authors still seem to be searching journals based on scope, content, and JIF. With this in mind, there are several steps an author can take to adopt a more robust publishing strategy to avoid potentially publishing in a journal that later has its reputation questioned.

The first thing an author needs to do is assess potential risk factors. The issues regarding paper mills and peer review manipulation are pervasive across the industry, not limited to a few disciplines or publishers. For example, switching from a Hindawi journal to a journal published by the IEEE is not likely to reduce risk; both have been targeted by paper mills in the past. Indeed, they are more likely to be under-resourced for the battle against academic misconduct.

When investigating any potential journal, an author should first visit the journal's author guidelines to review their statement on publication ethics. With the rise of paper mills, AI authors, and peer review rings, many publishers have updated or clarified their statements to make their expectations explicit. If you cannot find these statements, it is best to steer clear of that journal. If you're on the fence, it is perfectly reasonable to reach out to the managing editor or editorial office to ask for clarification. Any journal or publisher who refuses to explain their publication ethics should be dismissed as an option.

Another tactic is to investigate metrics outside of the JIF. While Clarivate has recently taken steps to make the rating system more equitable, these changes have not been in play long enough to fully understand the repercussions. It is also important to investigate the aims and scope of a journal. If they have published manuscripts similar to yours, that is a positive sign. If you find they haven't been publishing for a long period of time, that is a sign to be cautious. There is absolutely nothing wrong with publishing in a young journal — in fact, this the only way journals ever grow — but you will want to make sure you weigh other factors more heavily.

Where is the journal indexed? Indexes such as Scopus (50), Web of Science (51), and PubMed Central (52) are well-known and trusted within the scientific community. Does

the index make sense given the journal? For example, finding a journal from the United States indexed in African Journals Online should raise some red flags. Indexes are run and maintained by humans, and there are new journals being created every day. It is impossible for an index's staff to review every journal on a weekly or even monthly basis, so it is important for an author to review multiple metrics themselves.

Authors should also consider the peer review process. Any journal without peer review should be dismissed as an option. If the journal cannot explain what the process is, that is another red flag. If complaints about the peer review process come up when you search the journal or publisher, you should keep that in mind and consider your other options.

What kind of resources does the journal offer for the editors and reviewers? Journals who publish guidelines for editors and reviewers alongside their guidelines for authors are more likely to have a more robust peer review system, which will ultimately provide a better critique for any manuscript. If the journal doesn't have a published standard for peer reviewers, they could also provide access to peer review training; some websites, such as Accdon's Peeref, provide detailed training for both new and experienced peer reviewers. Individuals who complete this training are awarded a certificate, as with any professional training program, which can also allow journals to select higher quality peer reviewers for manuscripts submitted to them.

If you need more structure when determining a journal's suitability, we recommend using Think. Check. Submit.'s checklist. Think. Check. Submit. is an initiative promoted across the academic publishing industry in response to concerns regarding publication ethics and the rise of individually published blacklists circulating the internet (53). Available in dozens of languages, this resource is intended to guide researchers in

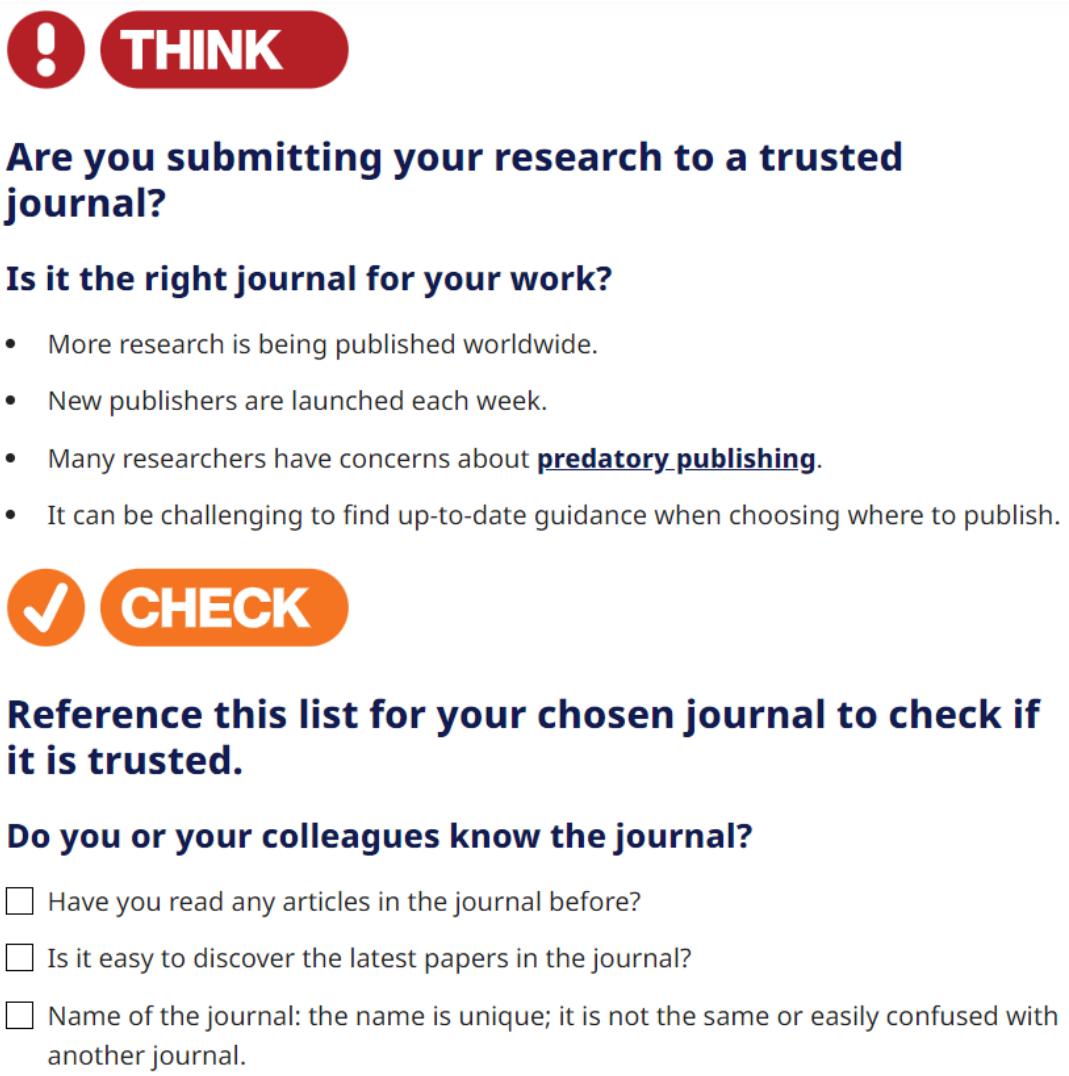


Fig. 3. A snapshot from Think.Check.Submit's online journal checklist (53).

If you are at the end of this list and still having trouble deciding where to submit your manuscript, there is nothing wrong with reaching out to a peer or colleague. Getting experiences from other academic professionals is a great way to gage the legitimacy of a journal. You can also employ journal selection tools, but keep in mind that those hosted by a publisher will likely only have their own publications listed. A third-party journal selection tool is more likely to provide all possible options, as well as unbiased reviews, if that is a function of the site.

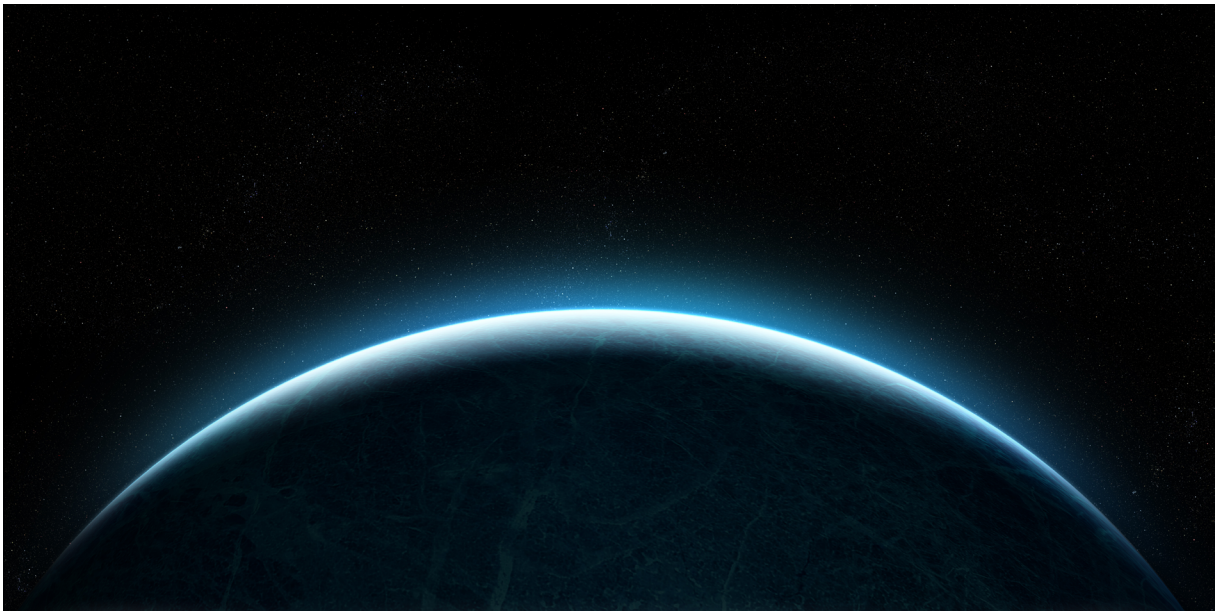
If you need more personalized support, there are also publishing professionals who can assist you. They can give you their opinion as a third party, as well as make suggestions regarding what a peer reviewer might comment on. As they aren't attached to the work, they will have an easier time offering suggestions on the scope and caliber of journals you may have the most success with.

CONCLUSIONS AND RECOMMENDATIONS

Scholarship is not immune to fraud and misconduct. There is much to be gained by members of the scholarly community, and the massive growth in research output over the last several decades has increased the scope of the problem. Emerging research countries contribute disproportionately to this growth, and institutional norms and controls may struggle to keep pace. The assertion that a reliance on JIF has incentivized this academic misconduct is not controversial. However, change has been slow because the consequences have been diffuse and not entirely disruptive across academia. Unfortunately, the scope of the problem has now undermined institutions within academic publishing that were previously taken for granted. Trust and credibility are critical to communicative aspect of science that allows for the kind of scientific and technological progression of the last century.

We implore journals to assume a significant role in combatting academic fraud and misconduct from the publishing side. Publishers must launch an open and demonstrative fight against this misconduct. They are required to make editorial quality the paramount concern of their operations. We expect that this will be the hotly contested front when it comes to journal submissions. It is incumbent upon the publishers to prove their credibility and earn the trust of authors.

We implore authors—and the scholarly community as a whole—to be diligent and committed in their value judgements. Researchers and administrators need to move on from metrics of limited use such as the JIF and abandon traditional notions of prestige and importance. They should be vetting journals and academics based on the quality of the work and the quality of the readership. Concentrate your publishing within venues that have, and continue to implement, robust protocols, standards, and tools for maintaining publishing quality and combatting the introduction of fraud and misconduct into the scholarly corpus.



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