Educating early career researchers about threats and options for academic publishing

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Abstract: Ill-conceived national or institutional policies, such as setting publication quotas for PhD candidates, professorships or continuing academic appointments, contribute to the demand for disreputable journals and drive poor and corrupt practices in publishing and dissemination. Replacing such policies with more realistic targets, coupled with the necessary support and guidance is a far more desirable approach. The intended audience for this presentation is academic policymakers, researchers and supervisors of PhD students and post-docs. Our presentation will summarize the EPAD[1] approach to developing skills on ethical publishing and dissemination that are important to everyone concerned about academic publishing. Sharing our ideas and listening to ideas from other people responsible for the development of early-career researchers' skills and knowledge will be of mutual benefit.

Résumé : Les politiques nationales ou institutionnelles mal conçues, telles que la fixation de quotas de publication pour les candidats au doctorat, les postes de professeurs ou les nominations universitaires permanentes, contribuent à la demande de revues peu recommandables et favorisent les pratiques médiocres et corrompues en matière de publication et de diffusion. Remplacer ces politiques par des objectifs plus réalistes, associés au soutien et aux conseils nécessaires, est une approche bien plus souhaitable. Cette présentation s'adresse aux décideurs politiques universitaires, aux chercheurs et aux superviseurs de doctorants et de post-docs. Notre présentation résumera l'approche de l'EPAD[2] pour développer les compétences en matière de publication et de diffusion éthiques qui sont importantes pour toute personne concernée par la publication universitaire. Partager nos idées et écouter les idées d'autres personnes responsables du développement des compétences et des connaissances des chercheurs en début de carrière, sera d'un bénéfice mutuel.

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[1] Ethical Publishing and Dissemination

[2] Ibidem

Introduction

Academic publishing can be a minefield, even for experienced researchers. Choosing where to publish is the first hurdle, then after facing a long wait for a response, being told the paper has been rejected can be soul-destroying. Even when the paper is being considered for publication, reading through peer review feedback can be quite a challenge and knowing how to respond improves with experience. Most researchers will remember their early experiences of publishing and the confusion and sense of failure they may have felt at that time.

Many young researchers have been unknowingly seduced by an email from a disreputable or "predatory" publisher, promising fast publication in a "indexed" journal, with a wide range of subjects accepted, peer review may or may not be mentioned. If there is peer review at all, it will be inconsequential, with little or no feedback to help the author. Likewise, the article processing charge (APC) may or may not be apparent initially, but publication will depend on payment (Eaton, 2018).

ECRs may also be attracted by invitations to international conferences, often in some exotic location. Perhaps they are offered the chance to deliver a keynote and promised automatic publication of their paper in what is claimed to be a prestigious indexed high-ranking journal (Gillis, 2018). This is part of the money-grabbing predatory publishing industry. Having arrived to deliver their research or "keynote" address, the researcher is unlikely to find anyone interested in what they have to say, just a room full of people from a range of different subjects, who have also been taken in by the scam (Gillis, 2018; Sack, 2017).

The authors are members of a working group called Ethical Publishing and Dissemination (EPAD), established by the European Network for Academic Integrity (ENAI). We believe that it is desirable for more experienced researchers to guide early career researchers (ECRs), to help them to understand the process of publishing and dissemination, avoid the dangers that lurk in the undergrowth and reap the benefits of success in their academic writing.

About EPAD

The working group meets regularly, recently mainly virtually, to discuss developments and share ideas for research and activities. The current 17 active EPAD members have a range of experiences and interests relating to academic publishing. The current members represent ten different countries and a range of disciplines, including medicine, linguistics and computer science.

The objectives of the working group are to:

- Identify, define and characterize questionable editorial, publishing and dissemination practices
- Promote institutional academic integrity, using existing checklists to identify disreputable publishers and conferences
- Disseminate good practice – with reference to COPE (Committee on Publication Ethics)
- Highlight the threats from disreputable publishers and conferences
- Provide support to students and scholars for developing knowledge and skills in distinguishing reputable from disreputable publications / journals / events
- Conduct research about this phenomenon, for example – explore where / how / to what extent academic progression and promotion depends on the predatory industry
- Network/collaborate with institutions, working groups, other people interested in this topic (EPAD, n.d.)

The purpose of this paper is to share our ideas and communicate with other parties with similar interests. Our most common and effective activity is running summer schools, workshops and webinars to raise awareness about the threats to science from disreputable and predatory publishing. We are especially keen to promote the value of educating ECRs about publishing practices and options, which is the focus of this paper.

Through previous events we have amassed a range of useful materials, including exercises, presentations, recordings of events, literature sources, examples of threats and freely available guidance materials. All members of the working group contribute their knowledge and expertise to the task of collecting useful materials. It is the policy of ENAI to openly share materials we develop through Creative Commons licensing, made available via the web site (ENAI, n.d.).

To introduce the relevant concepts, we will first explore literature highlighting different funding models for commercial and non-commercial publishers, to explain the advantages and disadvantages of various publishing options. We will then investigate available literature focusing on good practice in scientific publishing. The third literature topic we will briefly cover here concerns the drivers of questionable practices, fraud and corruption in academic and scientific publishing.

Literature

a) Options for academic publishing

The financing of academic publishing has spawned a wide range of different models, which can confuse anyone unfamiliar with this industry. Publishing involves administration, peer review, editing, typesetting, curation, marketing, printing and maintenance, which takes time and effort, therefore someone has to pay for this service. It could be that the readers pay, which typically used to be through individual purchases or institutional library subscriptions. Recently some institutional subscriptions have been replaced by agreements between national consortia and the major publishers, with some agreements still in progress (Ross, 2022). An alternative model is when the author pays, typically through an article processing charge (APC). The APC may come from project funding, institutional budgets or researchers' own pockets.

It also must be recognised that academics themselves contribute a great deal of voluntary effort to oil the wheels of the publishing industry. Not only do peer reviewers give their services for free, but the authors and editors of journal papers often do not get paid. There have been several calls recently for peer reviewers to be paid, for example in an article by Brainard (2021).

Clearly, an author publishes their research results to make them available at the earliest opportunity to other researchers and those interested in the field of research. Ideally, authors do not want barriers, such as paywalls and embargoes, to impede access to their results. However, some publishing models are designed in this way to generate revenue. Other publishing models are designed to facilitate free and open access. The Open Access Academy provides a useful list of academic publishing types:

> **Eprint** – a digital version … available online for a repository.
> **Green OA** – making a version … freely available in a repository.
> **Gold OA** – making the final version … freely available immediately upon publication by the publisher.
> **Diamond OA** – a form of gold open access in which there is no author fee (APC).
> **Hybrid** – a type of journal in which certain articles are made open access for typically a significantly higher price (relative to full OA journals), while others remain toll access.
>
> (Open Access Academy, n.d)

In addition to commercial publishing, many professional bodies, institutions and special interest groups have their own publishing companies and/or journals. These are often not-for-profit companies or may have charitable status, which may be a more affordable and quicker to publish option. The downside is that these journals may be lower profile than some of the high-ranking journals, restricting the reach for readership and perceived prestige of publishing in a high-ranking journal. There have also been many recent cases of journals of all types being hijacked or cloned by unscrupulous agents, who use them establish a paper mill, publish pseudo-science or make money from unsuspecting authors, built on the journal's good ranking and reputation (Abalkina, 2021; Grove, 2021).

A newer, more rapid approach to publishing, which is becoming increasingly popular, is using a pre-print server. A pre-print published on a reputable server, such as ArXiv (physical sciences) SocArXiv (social sciences), bioRxiv (biology), should be subjected to editorial "sanity checks", before publishing online. Open peer review then should follow, when peer reviewers post their critique of the manuscript on the same server. The authors will then make the necessary modifications before submitting to their chosen journal. Researchers accessing pre-prints must understand that the paper has not yet been peer reviewed and the uncertainty about reliability of the results needs to be acknowledged.

There is confusion in some quarters, with doubts about the quality of all open access journals and the "author pays" model, for example in Turkey the national agency YOK initially issued national regulations excluding consideration of any papers published in journals that had an APC, mistakenly assuming that the APC was a sign that the journal was predatory or disreputable (Glendinning et al., 2022), but this mistake was later corrected.

b) Good practice in academic publishing

The Committee on Publication Ethics (COPE) defines the standards of operation for the publishing industry through guidelines, research and discussion documents (COPE, n/d). They advise publishers, editors and editorial boards on good practice and they also highlight and investigate cases of malpractice and corruption. Advice for early career researchers on authorship often comes from the experience of their supervisors and colleagues. However, poor practice is sometimes needlessly perpetuated, because not all experienced researchers and academics follow best practice in their own research, scholarly authorship and choice of publishers and journals. Academics who supervise a large number of post-graduate students, or post-doctoral researchers, may not have time to monitor and guide the related research and publication activities. In addition, some supervisors may not see this as part of their responsibility.

Clearly, the main purpose of scholarly writing is to communicate useful findings from research and practice in a timely manner, to people who would benefit from this new information. For this reason, it is important for any author to select a journal or publishing source that can be accessed by the intended readership, rather than to publish in an obscure journal that is not readily available or easy to find. A good quality publisher will help to promote all the papers in journal issues it publishes and maintain the catalog of previous editions, to make sure that back-copies are accessible. The editor will only accept papers that are in the right scope for the journal and, even then, only after a desk-check for general quality and at least two recommendations from reliable, suitably qualified peer reviewers (Jalalian and Mahboobi, 2014).

Best practices also involve the conduct of the authors. It is important to be aware of the rules on who qualifies as an author. It is not uncommon for a PhD student's supervisor to demand that they are first author, despite minimal contribution from them to the paper, which is clearly an abuse of power. There are documented cases of people selling authorship to non-contributors, for profit (Littman, 2021). This type of conduct is increasingly being recognised as publication fraud (Oransky, 2022).

The peer reviewer is an equally key role in the publication process. Peer review feedback can be a source of trepidation by both ECRs and more experienced authors. Understanding the reasons for and benefits of good peer review can make a huge difference to an ECR's outlook and response to reviews. A supportive peer review can provide important guidance for authors, especially ECRs, on how to develop their writing and communication skills. Therefore, teaching about this process is a vital part of training requirements and preparation for academic publishing.

Careful selection and appointment of qualified peer reviewers by an editor, ideally with guidance or induction on the specific review requirements, can enhance the quality of feedback to authors and potentially speed up the review process for everyone. Providing training for those taking the role of a peer reviewer can also greatly improve the quality of peer reviews. It is useful for ECRs to gain some experience by serving as a peer reviewer, when they have enough expertise, as this will educate them about the publication process, academic writing styles and the processes they need to follow as an author.

Retractions are often viewed as a negative aspect of publishing. However, this is not always the case. Ethical retraction happens when genuine errors are found after publication. The retraction notice serves as a warning to readers that the

findings are unreliable, but the paper can be reinstated after corrections (retract and replace).

The importance of teaching ECRs about good practice in publishing cannot be overstated. However, there is a darker side to the publishing industry, which we will consider next.

c) Drivers of corruption in academic publishing

As stated earlier, dissemination of useful findings should be the prime motive for scholarly publishing. However, there are many other reasons people feel compelled to publish, sometimes even when they have nothing to disseminate. An active publication record is often required by higher education institutions for appointment to an academic post, academic promotion, to secure tenure, for reward or financial bonus or just to stay in post; sometimes these publication demands and rules are driven by national policies (Glendinning et al., 2019).

These misguided "incentives", often called "publish or perish", are largely what is fuelling corruption in the publishing industry (Glendinning et al., 2019), combined with unscrupulous chancers who set up disreputable publishers, sometimes called predatory publishing companies, to make a quick profit at the expense of both vulnerable and opportunistic academics, with none of the quality aspects required for scholarly publishing (Beall, 2017).

Peer review fraud is a serious form of corruption (Day, 2022; Fenske, 2021). A typical scenario is a group of friends, or use of multiple fake IDs, who register as peer reviewers to endorse journal papers authored by other members of the group (Barbash 2014; Mills & Inouye, 2020). This practice has resulted in high numbers of retraction of papers containing high levels of (translated) plagiarism, fake research, fabricated results and sometimes nonsensical content (Oransky, 2021). Neglectful and incompetent reviewers can have a similar impact on the quality of published science.

In addition to predatory publishing, other recent scams include hijacking and impersonation of reputable journals, to deceive authors into submitting and paying them the APC, but only pretending to provide the required editorial services (Abalkina, 2021; Grove, 2021). These fake and corrupted journals are also used to boost publication counts of authors who publish special editions containing unscientific papers, typically on diverse unrelated topics, that have not been subject to genuine peer review.

The hijacking of reputable journals and the high number of retractions coming to light recently from commercial publishing giants, such as Springer Nature (Marcus, 2021), Sage (Oransky, 2021) and Elsevier (Oransky, 2018), means that

asking researchers and authors to refer to white-lists and black-lists to verify the reputation of a journal, is not always helpful. Knowledge of both appropriate and inappropriate practices is essential training for ECRs, to ensure that they are alert to scams and understand how to recognise genuine good-quality journals.

Recommendations

The extent of fraud and corruption in publishing varies greatly in different parts of the world. Higher education institutions and national policy makers should take care to understand the full implications and any unintended side-effects of policies they design or adopt relating to publication counts of academics and related incentives and disincentives for academic publishing. As discussed earlier, inappropriate publishing practices that may result include bullying ECRs to secure undeserved authorship, publishing in predatory journals, or otherwise subverting the publishing or peer review process for personal gain.

Institutions and other support services for students, academics and researchers should make available reliable and good quality guidance, advice and training on the etiquette and protocols of ethical publishing, including the available options and threats. There are many useful resources readily available for free, such as the guidance at the University of Calgary (Eaton, 2018), the COPE discussion documents on authorship and predatory publishing (COPE 2014, 2020) and information about identifying fake academic conferences (Sack, 2017).

All those involved in the process of academic and scientific research and publishing need to be aware and alert for the warning signs that characterize poor quality, hijacked or predatory journals and publishers, either by developing their own guidance or using readily available resources (for example, Eaton, 2018; Centre for Journalology, n.d.; COPE, 2020; Think Check Submit, n.d)

On a regular basis, ECRs, their supervisors and line managers are advised to seek out available support, training and guidance to ensure they are fully up to date on the latest knowledge, skills, threats and challenges related to academic publishing. This type of training should be made mandatory for ECRs, but also built into continuing professional development (CPD) of all people involved in publishing for academic and research purposes.

Conclusions

Considering the negative and positive aspects of scholarly publishing discussed already, it is clear that this can be a minefield for both established researchers and ECRS, but it is something that all researchers must learn to navigate.

The provision of training and support, particularly designed for ECRs, as advocated through this paper, can help to overcome the barriers and reap the benefits of a successful career in research and scholarly publication.

The EPAD working group is committed to developing resources, training, workshops, summer schools and guidance to help researchers, ECRs and their supervisors, navigate the difficult and complex world of academic publishing.

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