

Troubling Trends in Publication Ethics

Harry Levinson

Editor-in-Chief



We expect generally that our colleagues who submit papers to JM³ will have made efforts for their submitted manuscripts to be truthful representations of their understanding of their papers' topics, and that the underlying technical work will have been executed competently. Nevertheless, the process for publishing in SPIE's journals, including JM³, is based on an element of skepticism, formalized in reviews for every submitted manuscript. The primary purpose of this review process is to ensure the publication of good quality papers by providing checks for accuracy and clarity of exposition. Such reviews, conducted by people who have expertise in the papers' subject areas, are preceded by screenings performed by SPIE staff, who use software

tools for detecting plagiarism, including self-plagiarism.

As part of my involvement with SPIE publications, in addition to serving as the editor-in-chief for JM³, I am a member of a subcommittee that addresses issues involving publication ethics that cannot be handled routinely by the editors of the individual SPIE journals or by SPIE staff. My time on the ethics subcommittee has been eye-opening. We are seeing increasing levels of unethical behavior from authors throughout scholarly publishing, and society publishers like SPIE are not immune.

Plagiarism has long been a problem in scholarly publications, and it continues to be. Generally, this has involved individual authors. In any large group of people, it can be expected that there will be an occasional bad apple, so these instances of unethical behavior were not too disconcerting, even if it was disappointing to find that some scientists or engineers behaved unethically. There are now new tools involving artificial intelligence that can provide such bad actors with more sophisticated means to support their misconduct. It remains to be seen if it will be possible that the use of artificial intelligence, such as large language models like ChatGPT, to fabricate fraudulent papers will be detectable by conscientious reviewers.

Software has been used before to generate text. A few decades ago, a programmer at Monash University in Australia produced a Postmodernism Generator that created sentences that were indistinguishable from those found in peer-reviewed postmodernism journals. Hopefully, genuine intellectual fields such as engineering will be less susceptible to the artificial creation of papers that have a semblance of legitimacy, even when more recently developed sophisticated software is used to generate them.

More alarming than plagiarism, including the potential for AI-created manuscripts, are new trends, such as "peer review rings" and "citation rings," which involve collusion among multiple researchers. Rather than there being isolated bad actors, these rings involve groups of people working in concert. With a peer review ring, submitted papers are reviewed by members of the ring who provide positive reviews for papers of dubious quality. Since editors generally assume that reviewers are doing their jobs and that papers are subjected to critical reviews, peer review rings can go undetected. Sometimes, editors themselves have been part of the peer review rings. Fortunately, personal relationships can also be used beneficially, and editorial boards are typically composed of people with reputations for integrity. The editors, in turn, select trusted people to be reviewers. Reliance on personal relationships is a dual-edged sword; having people involved in the review process who know each other makes it harder to identify peer review rings, as they have characteristics common with trustworthy review processes.

Citation rings consist of people who agree to cite each other's papers. Sometimes these citations can have nothing to do with the papers in which they are included as references, which is in fact one clue that a citation ring might be in operation. Citation is typically not important for

people working in industry, but it can be significant for people working in academia, where the quality of research is often measured by the extent to which it is cited. Having often-cited papers could be crucial for getting tenure. It is more typical in industry for the value of research to be gauged by the degree to which it results in products that customers want to buy – a much better metric of quality in fields of engineering. Nevertheless, all manuscript reviews do need to include assessment of the references for relevance.

Fortunately, to date there have been few ethical issues identified with papers that have been submitted to JM³. Occasional instances of plagiarism seem to involve a certain lack of understanding by authors about what constitutes plagiarism and that it is not permitted in SPIE journals, although this may simply be a reflection of the more general decline of rigor in the intellectual world. Thus far, though, JM³ has been free from coordinated unethical activities, and hopefully this will continue.