

Scientific Watch May 2023 (Bulletin n°4)

The scientific watch led this month to the selection of 23 papers. Eleven of them deal with research misconduct and questionable research practices: retractions [1-4], other publishing practices [5-8] or useful aspects for their management [9-11]. Eight address integrity issues related to the use of new technologies: *ChatGPT* [12-17], social media [18] or the metaverse [19]. Finally, two focus on good practices [20,21] and two on training [22,23].



ISSUE OF THE MONTH

Retracted, but still cited

Having analysed around 90 papers listed in Retraction Watch (RW), an American team has shown that studies on COVID-19 that have been retracted continue to be cited [1]. According to this analysis, the papers were cited an average of 44.8 times, which is higher than the average for other papers published in the same journals. The mention of "retracted" or "withdraw" in their title had no impact on the number of citations.

How to limit the spread of retracted papers? Another team studied the effectiveness of information channels for reporting retractions, comparing 405 articles that were retracted and reported on RW (an "unofficial" information channel) with 1001 articles that were retracted but not listed in RW (which were reported solely via "official" information channels, such as journals' retraction notices) [2]. According to this study, reporting on RW appears to be more effective when articles are retracted 2 years or more after publication – with up to 36.7 % fewer citations for articles retracted 3 years or more after publication, and 60 % fewer citations 4 years after retraction.


For the authors of these two studies, if the official information channels alone are not sufficient in limiting the dissemination or citation of retracted papers, this is mainly due to the lack of information on the reasons for the retraction, and the lack of standardisation between journals when such information is provided.

- [1] T. Taros, C. Zoppo, N. Yee, J. Hanna and C. MacGinnis, « Retracted Covid-19 articles: significantly more cited than other articles within their journal of origin », *Scientometrics*, vol. 128, n° 5, p. 2935-2943, May 2023, doi: [10.1007/s11192-023-04707-4](https://doi.org/10.1007/s11192-023-04707-4).
- [2] H. Xu, Y. Ding, C. Zhang and B. C. Y. Tan, « Too official to be effective: An empirical examination of unofficial information channel and continued use of retracted articles », *Research Policy*, vol. 52, n° 7, Art. n° 104815, Sept. 2023, doi: [10.1016/j.respol.2023.104815](https://doi.org/10.1016/j.respol.2023.104815).




MISCONDUCT AND QUESTIONABLE RESEARCH PRACTICES

Continuing on the theme of retraction:

- [3] A.-C. Pinho-Gomes, C. Hockham, and M. Woodward, « Women's representation as authors of retracted papers in the biomedical sciences », *PLOS ONE*, vol. 18, n° 5, e0284403, May 2023, doi: [10.1371/journal.pone.0284403](https://doi.org/10.1371/journal.pone.0284403). 
- [4] X. Zheng, J. Chen, A. Tollas, and C. Ni, « The effectiveness of peer review in identifying issues leading to retractions », *Journal of Informetrics*, vol. 17, n° 3, Art. n° 101423, Aug. 2023, doi: [10.1016/j.joi.2023.101423](https://doi.org/10.1016/j.joi.2023.101423).

Other practices related to scientific publishing:

- [5] E. A. Fong, R. Patnayakuni, and A. W. Wilhite, « Accommodating coercion: Authors, editors, and citations », *Research Policy*, vol. 52, n° 5, Art. n° 104754, June 2023, doi: [10.1016/j.respol.2023.104754](https://doi.org/10.1016/j.respol.2023.104754).
- [6] T. C. Kwee, M. Almaghrabi, and R. M. Kwee, « Scientific fraud, publication bias, and honorary authorship in nuclear medicine », *Journal of Nuclear Medicine*, vol. 64, n° 2 p. 200-203, Feb. 2023, doi: [10.2967/jnumed.122.264679](https://doi.org/10.2967/jnumed.122.264679).
- [7] A. McDonald, K. McCausland, L. Thomas, M. Daube, and J. Jancey, « Smoke and mirrors? Conflict of interest declarations in tobacco and e-cigarette-related academic publications », *Australian and New Zealand Journal of Public Health*, vol. 47, n°3, Art. n° 100055, June 2023, doi: [10.1016/j.anzjph.2023.100055](https://doi.org/10.1016/j.anzjph.2023.100055). 
- [8] C. Bricker-Anthony and R. W. Herzog, « Distortion of journal impact factors in the era of paper mills », *Molecular Therapy*, vol. 31, n°6, p. 1503-1504, June 2023, doi: [10.1016/j.ymthe.2023.05.008](https://doi.org/10.1016/j.ymthe.2023.05.008).

Useful for managing misconduct and questionable research practices:


- [9] A. Scull, « Rosenhan revisited: successful scientific fraud », *History of Psychiatry*, vol. 34, n° 2, p. 180-195, June 2023, doi: [10.1177/0957154X221150878](https://doi.org/10.1177/0957154X221150878).
- [10] M. K. Noordewier, « Support for those affected by scientific misconduct is crucial », *Nature Human Behaviour*, vol. 7, n° 6, p. 830, June 2023, doi: [10.1038/s41562-023-01607-8](https://doi.org/10.1038/s41562-023-01607-8).
- [11] I. Buljan, R. Tokalić, V. Tomić, M. Vidak, and A. Marušić, « Student Moral Foundations in the Context of Research Misbehavior: An Experimental Study », *Journal of Empirical Research on Human Research Ethics*, vol. 18, n° 3, p. 154-160, July 2023, doi: [10.1177/15562646231168919](https://doi.org/10.1177/15562646231168919)



NEW RESEARCH PRACTICES

Generative artificial intelligence systems, such as ChatGPT:

This article published in *Research Integrity and Peer Review* highlights the opportunities offered by generative AI systems for the peer review process [12]. The two authors present how this type of tool could improve peers comments (particularly for those whose native language is not English) or transform their draft notes into well-written text, leaving them more time to assess the methods. *ChatGPT* could also reinforce the rigour of peer review by comparing results more quickly with those of a large number of similar studies. As they allow a broader and more systematic exploration of the available data, these tools could also be useful to editors by facilitating the identification of peers or the selection of relevant manuscripts. The risks previously discussed in articles selected for earlier bulletins are also presented, such as the perpetuation of bias, the unreliability of the content generated or the breach of confidentiality of discoveries that have not yet been published. Based on their analysis, the authors make nine recommendations. These include training for researchers and the introduction of mechanisms to ensure a “full transparency” regarding the use of these tools. They encourage international scientific committees and societies to express their position on this matter, [as the COPE has done](#).

[12] M. Hosseini and S. P. J. M. Horbach, « Fighting reviewer fatigue or amplifying bias? Considerations and recommendations for use of ChatGPT and other large language models in scholarly peer review », *Research Integrity and Peer Review*, vol. 8, n° 1, p. 4, May 2023, doi: [10.1186/s41073-023-00133-5](https://doi.org/10.1186/s41073-023-00133-5). 

[13] E. Agathokleous, C. J. Saitanis, C. Fang, and Z. Yu, « Use of ChatGPT: What does it mean for biology and environmental science? », *Science of The Total Environment*, vol. 888, Art. n° 164154, Aug. 2023, doi: [10.1016/j.scitotenv.2023.164154](https://doi.org/10.1016/j.scitotenv.2023.164154).

[14] T. Arun Babu and V. Sharmila, « Using artificial intelligence chatbots like ‘ChatGPT’ to draft articles for medical journals – Advantages, limitations, ethical concerns and way forward », *European Journal of Obstetrics & Gynecology and Reproductive Biology*, vol. 286, p. 151, July 2023, doi: [10.1016/j.ejogrb.2023.05.008](https://doi.org/10.1016/j.ejogrb.2023.05.008).

[15] G. M. Currie, « Academic integrity and artificial intelligence: is ChatGPT hype, hero or heresy? », *Seminars in Nuclear Medicine*, in press, available online: May 2023, doi: [10.1053/j.semnuclmed.2023.04.008](https://doi.org/10.1053/j.semnuclmed.2023.04.008).


[16] M. Gottlieb, J. A. Kline, A. J. Schneider, and W. C. Coates, « ChatGPT and conversational artificial intelligence: Friend, foe, or future of research? », *The American Journal of Emergency Medicine*, vol. 70, p. 81-83, Aug. 2023, doi: [10.1016/j.ajem.2023.05.018](https://doi.org/10.1016/j.ajem.2023.05.018)


[17] R. Hirani, B. Farabi, and S. Marmon, « Experimenting with ChatGPT: Concerns for Academic Medicine », *Journal of the American Academy of Dermatology*, in press, available online: May 2023, doi: [10.1016/j.jaad.2023.04.045](https://doi.org/10.1016/j.jaad.2023.04.045).



Social media and metavers:


More than just a distraction, the metaverse¹ is likely to be the future of the Internet. The authors of this commentary [18] review the opportunities that this virtual environment could offer for research, particularly in terms of reproducibility, one of the pillars of scientific integrity. By replacing traditional laboratory notebooks, immersive 3D recordings would enable protocols to be recorded with greater precision, giving anyone the opportunity to closely (re)experience the experimental conditions of the study. Authors also warn against the risks of such uses, such as potential conflicts of interest arising from dependence on large companies – whose primary interests are not necessarily the advancement of knowledge – or the lack of rules and guidelines, necessary to ensure the veracity and reliability of the science available on the metaverse.

[18] D. Gómez-Zarà, P. Schiffer and D. Wang, « The promise and pitfalls of the metaverse for science », *Nature Human Behaviour*, in press, available online: May 2023, doi: [10.1038/s41562-023-01599-5](https://doi.org/10.1038/s41562-023-01599-5). 

[19] D. Güerer, J. Hubbard, and W. Bohon, « Science on social media », *Communications Earth & Environment*, vol. 4, Art. n° 148, May 2023, doi: [10.1038/s43247-023-00810-9](https://doi.org/10.1038/s43247-023-00810-9). 


GOOD RESEARCH PRACTICES

[20] M. J. Bolland, G. D. Gamble, A. Avenell, D. J. Cooper, and A. Grey, « Distributions of baseline categorical variables were different from the expected distributions in randomized trials with integrity concerns », *Journal of Clinical Epidemiology*, vol. 154, p. 117-124, Feb. 2023, doi: [10.1016/j.jclinepi.2022.12.018](https://doi.org/10.1016/j.jclinepi.2022.12.018).

[21] A. R. Thompson *et al.*, « The NAGPRA Nexus, Institutional Integrity, and the Evolving Role of Archaeological Laboratories », *Advances in Archaeological Practice*, p. 1-14, March 2023, doi: [10.1017/aap.2022.43](https://doi.org/10.1017/aap.2022.43). 

¹ In this commentary, metaverse is defined as « an immersive and persistent 3D environment in which people synchronously interact with others, with virtual agents and objects, and with representations of objects from the physical world » [18].

EDUCATION & TRAINING

- [22] M. van den Hoven, T. Lindemann, L. Zollitsch, and J. Prieß-Buchheit, « A Taxonomy for Research Integrity Training: Design, Conduct, and Improvements in Research Integrity Courses », *Science and Engineering Ethics*, vol. 29, n° 3, p. 14, Apr. 2023, doi: [10.1007/s11948-022-00425-x](https://doi.org/10.1007/s11948-022-00425-x). 
- [23] D. Pizzolato and K. Dierickx, « The Mentor's Role in Fostering Research Integrity Standards Among New Generations of Researchers: A Review of Empirical Studies », *Science and Engineering Ethics*, vol. 29, n° 3, p. 19, May 2023, doi: [10.1007/s11948-023-00439-z](https://doi.org/10.1007/s11948-023-00439-z).

