

Scientific Watch February 2024 (n°12)


The scientific watch led this month to the selection of **35 papers**. Eleven deal with misconduct and questionable research practices [1-11]. Five of them focus on issues specific to scientific publishing [12-16]. Three deal with integrity issues associated with new research practices [17-19]. The remaining articles address training [20-22], research evaluation [23-25], definitions of scientific integrity [26], [27] or its institutionalisation [28]. Seven additional papers come from a special issue of *Les Cahiers Portalis* [29-35].



FOCUS OF THE MONTH

Environmental research: self-censorship among young scientists

This Canadian team is examining how environmental researchers perceive political interference in science. Several years after a "war on science" interfered with the work of federal researchers,¹ 741 scientists responded to this survey to testify on their ability to conduct research and communicate their findings free from political pressure. The vast majority of respondents (84%) said that they had never been asked to make inappropriate changes to their work - that is, to minimise or hide results or to include misleading information. According to the authors, these results show a clear improvement, which could be due to the introduction in 2018 of a model scientific integrity policy designed to protect research carried out in federal agencies. However, 13% state that they are aware of situations where the transfer of scientific knowledge to inform public decision-making were compromised by political interference. Climate change and pollution were the two areas most often impeded - for example, to minimise environmental risks or to justify an existing law or policy. For the authors, the most significant impact of political interference remains the one that affects the researchers themselves: because of fear of the media or the negative impact on their careers, 12% say they have engaged in some form of self-censorship. This phenomenon seems more common among young researchers. Other recent studies in the United States and Australia have produced similar results, identifying self-censorship as one of the main factors limiting scientists in their public communication.

- [1] M. E. Robertson et al., « Interference in science: scientists' perspectives on their ability to communicate and conduct environmental research in Canada », FACETS, vol. 8, p. 1-31, available online: nov. 2023, doi: [10.1139/facets-2023-0005](https://doi.org/10.1139/facets-2023-0005).


¹ In 2013, the rise in cases of political interference on Canadian scientists working in governmental bodies led some to refer to this period as a "war on science". For more information: Roberston, Manjulika E. 2023. « Bringing Evidence Back from the Dead: A History of Interference in Science in Canada ». *Dalhousie Journal of Interdisciplinary Management*, vol. 17, juillet 2023 <https://ojs.library.dal.ca/djimm/article/view/11771>.




MISCONDUCT AND QUESTIONABLE RESEARCH PRACTICES

Map of misconduct

These researchers from the Chinese Academy of Sciences analysed nearly 26,000 cases of article retractions resulting from scientific misconduct - looking in particular at any disciplinary differences and the types of misconduct. While the retraction rate is relatively low (6.8 retractions per 10,000 articles), the study shows that this rate differs across disciplines. For example, in the field of Electrical Engineering, Electronics & Computer Science, this rate is 10 times higher than in the field of Physics. They also highlight the emergence of new types of reasons for retraction. Whereas initially, articles were generally retracted following occasional deviations from good practice caused by a single individual, fabrication, falsification and plagiarism account for only around 42% of the reasons (when these are related to misconduct). At the same time, retractions due to fake peer-review (around 46% of reasons in this study), fake articles created by papermills (around 9%) and content generated by artificial intelligence systems (around 4%) are now growing.

- [2] M. Li and Z. Shen, « Science map of academic misconduct », *The Innovation*, vol. 5, n°2, art. 100593, march 2024, doi: [10.1016/j.xinn.2024.100593](https://doi.org/10.1016/j.xinn.2024.100593). 

Discussions on various types of misconduct


- [3] The Lancet, « Safeguarding research integrity », *The Lancet*, vol. 403, n° 10428, p. 699, Feb. 2024, doi: [10.1016/S0140-6736\(24\)00349-0](https://doi.org/10.1016/S0140-6736(24)00349-0). 
- [4] T. Köstenbach and I. Oransky, « Salami slicing and other kinds of scientific misconduct: A faux pas for the author, a disaster for science », *Information – Wissenschaft & Praxis*, vol. 75, n° 1, Feb. 2024, doi: [10.1515/iwp-2023-2041](https://doi.org/10.1515/iwp-2023-2041).

Factors influencing misconduct and perverse incentives


- [5] D. R. Grimes, « Is biomedical research self-correcting? Modelling insights on the persistence of spurious science », *Royal Society Open Science*, vol. 11, n° 1, art. 231056, Jan. 2024, doi: [10.1098/rsos.231056](https://doi.org/10.1098/rsos.231056). 
- [6] S. Conix, S. D. Peuter, A. D. Block, and K. Vaesen, « Questionable research practices in competitive grant funding: A survey », *PLOS ONE*, vol. 18, n° 11, art. 0293310, Nov. 2023, doi: [10.1371/journal.pone.0293310](https://doi.org/10.1371/journal.pone.0293310). 
- [7] S. Meirmans, « How Competition for Funding Impacts Scientific Practice: Building Pre-fab Houses but no Cathedrals », *Science and Engineering Ethics*, vol. 30, art. 6, Feb. 2024, doi: [10.1007/s11948-024-00465-5](https://doi.org/10.1007/s11948-024-00465-5). 
- [8] K. S. Guba and A. O. Tsvinskaya, « Ambiguity in Ethical Standards: Global Versus Local Science in Explaining Academic Plagiarism », *Science and Engineering Ethics*, vol. 30, art. 4, Feb. 2024, doi: [10.1007/s11948-024-00464-6](https://doi.org/10.1007/s11948-024-00464-6). 



Case stories



- [9] E. J. Calabrese and P. B. Selby, « Muller misled the Pugwash Conference on radiation risks », *Journal of Occupational and Environmental Hygiene*, vol. 21, n° 2, p. 136-143, Jan. 2024, doi: [10.1080/15459624.2023.2268664](https://doi.org/10.1080/15459624.2023.2268664).
- [10] M. Schotanus-Dijkstra, « An accidental discovery of scientific fraud: A reconstruction », *Health Care for Women International*, vol. 45, n° 4, p. 409-411, Feb. 2024, doi: [10.1080/07399332.2024.2310709](https://doi.org/10.1080/07399332.2024.2310709). 

Animal research

- [11] A.-L. Chaber, R. Warne, and G. K. Moloney, « Navigating discrepancies in macaque trade reporting: A response to Kolby et al. (2023) and a call for enhanced transparency », *One Health*, art. 100687, available online: Feb. 2024, doi: [10.1016/j.onehlt.2024.100687](https://doi.org/10.1016/j.onehlt.2024.100687).  ²

SCIENTIFIC PUBLISHING

Predatory Journals

- [12] A. Chandra and S. Dasgupta, « Predatory Journals: What the researchers and authors should know », *The American Journal of Medicine*, available online: Feb. 2024, doi: [10.1016/j.amjmed.2024.02.015](https://doi.org/10.1016/j.amjmed.2024.02.015). 
- [13] C. Hollier and N. McGrath, « Predatory Journals », in *Reference Module in Social Sciences*, Elsevier, 2024. doi: [10.1016/B978-0-323-95689-5.00064-X](https://doi.org/10.1016/B978-0-323-95689-5.00064-X).
- [14] B. Soulé, « Open access, nouvelles formes de marchandisation de l'édition scientifique et effets sur les stratégies de publication ». Feb. 2024, available at: <https://univ-lyon1.hal.science/hal-04468603>. 

Retraction



- [15] D. F. Sacco, A. J. Namuth, A. L. Macchione, and M. Brown, « Differences in Support for Retractions Based on Information Hazards Among Undergraduates and Federally Funded Scientists », *Journal of Academic Ethics*, Jan. 2024, doi: [10.1007/s10805-024-09505-y](https://doi.org/10.1007/s10805-024-09505-y).
- [16] E.-T. Zheng, Z. Fang, and H.-Z. Fu, « Is gold open access helpful for academic purification? A causal inference analysis based on retracted articles in biochemistry », *Information Processing & Management*, vol. 61, n° 3, p. 103640, May 2024, (available online: Jan 2024) doi: [10.1016/j.ipm.2023.103640](https://doi.org/10.1016/j.ipm.2023.103640).

² This is a response to a comment on the following article, selected for the Bulletin of March 2023: R. K. Warne, G. K. Moloney, et A.-L. Chaber, « Is biomedical research demand driving a monkey business? », *One Health*, vol. 16, juin 2023, doi: [10.1016/j.onehlt.2023.100520](https://doi.org/10.1016/j.onehlt.2023.100520).





NEW RESEARCH PRACTICES



Generative artificial intelligence systems

- [17] L. Zhou, A. C. Wu, P. Hegyi, C. Wen, and L. Qin, « ChatGPT for scientific writing – The coexistence of opportunities and challenges », *Journal of Orthopaedic Translation*, vol. 44, p. A1-A3, Feb. 2024, doi: [10.1016/j.jot.2024.01.005](https://doi.org/10.1016/j.jot.2024.01.005). 
- [18] P. Hetzschoeldt, « Is AI giving us more than we can or even should handle? », *Learned Publishing*, vol. 37, p.63-65, Jan. 2024, doi: [10.1002/leap.1593](https://doi.org/10.1002/leap.1593). 
- [19] D. A. J. C. Jessup and P. M. T. Coroneo, « Comment on *Large Language Models in Ophthalmology Scientific Writing: Ethical Considerations, Blurred Lines or Not at All?* », *American Journal of Ophthalmology*, available online: Feb. 2024, doi: [10.1016/j.ajo.2024.01.039](https://doi.org/10.1016/j.ajo.2024.01.039).

EDUCATION AND TRAINING


- [20] J. L. Morris et al., « Modalities for teaching responsible and ethical conduct of research online: Lessons learned from an undergraduate workshop in Utah », *PLOS ONE*, vol. 19, n° 2, art. e0296461, Feb. 2024, doi: [10.1371/journal.pone.0296461](https://doi.org/10.1371/journal.pone.0296461). 
- [21] S. Dubbaka, « Incorporating implicit bias into research integrity education: Response to 'Why and how to incorporate issues of race/ethnicity and gender in research integrity education' », *Accountability in Research*, available online: Aug. 2023, doi: [10.1080/08989621.2023.2247974](https://doi.org/10.1080/08989621.2023.2247974).
- [22] É. Noël, « Désin-formation », *Balisages*, n° 7, Feb. 2024, doi: [10.35562/balisages.1244](https://doi.org/10.35562/balisages.1244). 

RESEARCH EVALUATION

- [23] A. Hassankhani, M. Amoukhteh, P. S. Vasavada, and A. Gholamrezanezhad, « Beyond the H-Index and Towards a Comprehensive Framework », *Journal of the American College of Radiology*, available online: Jan. 2024, doi: [10.1016/j.jacr.2024.01.015](https://doi.org/10.1016/j.jacr.2024.01.015).
- [24] B. Riou, C. Funck-Brentano, T. Similowski, and P. Corvol, « SIGAPS, un système dévoyé pour évaluer la recherche en santé », *La Presse Médicale Formation*, vol. 5, n° 1, p. 3-4, Feb. 2024, doi: [10.1016/j.lpmfor.2024.01.010](https://doi.org/10.1016/j.lpmfor.2024.01.010). 
- [25] P. Sathishkumar, « How an Indian dental college climbed the ranks: A bibliometric analysis with emphasis on self-citation – Reply », *Oral Oncology Reports*, vol. 9, art. 100235, March 2024, doi: [10.1016/j.oor.2024.100235](https://doi.org/10.1016/j.oor.2024.100235). 



DEFINITIONS AND PERSPECTIVES

[26] S. M. Field, J. Thompson, S. de Rijcke, B. Penders, and M. R. Munafò, « Exploring the dimensions of responsible research systems and cultures: a scoping review », *Royal Society Open Science*, vol. 11, n° 1, art. 230624, Jan. 2024, doi: [10.1098/rsos.230624](https://doi.org/10.1098/rsos.230624). 

[27] C. Adamsbaum and M. Samama, « L'intégrité scientifique, que devons-nous savoir et transmettre ? », *Journal d'imagerie diagnostique et interventionnelle*, available online: Feb. 2024, doi: [10.1016/j.jidi.2024.01.002](https://doi.org/10.1016/j.jidi.2024.01.002).

INSTITUTIONALISATION

How can we address the growing pressure for research security while keeping the global scientific system as open as possible? Several funding agencies around the world have addressed this question during regular meetings from 2019 to 2023 - including the annual meeting of the Global Research Council. A researcher from Lund University in Sweden analysed the content of these discussions. His aim was to explore how geopolitical competition affects the scientific system and to better understand the role of funding agencies in confronting this challenge. In particular, the participants felt that it was necessary to find appropriate governance mechanisms, that include dimensions of research integrity, and to identify good research practices for dealing with foreign interferences. These discussions led to several recommendations, such as:

- Identify and improve knowledge on research security issues (e.g. related to scientific integrity, data sharing or mobility);
- Take into account the relational dimensions of international research networks and in particular shared responsibilities;
- Emphasise awareness-raising among researchers and organisations rather than compliance (i.e. ensuring that they develop the skills needed to make good decisions);
- Better understand and promote reciprocal scientific exchanges.

[28] T. Shih, « The role of research funders in providing directions for managing responsible internationalization and research security », *Technological Forecasting and Social Change*, vol. 201, art. 123253, Apr. 2024, (available online: Feb. 2024) doi: [10.1016/j.techfore.2024.123253](https://doi.org/10.1016/j.techfore.2024.123253). 



Special issue "L'intégrité scientifique des juristes", *Les Cahier Portalis*, on the institutionalisation of scientific integrity in France

- [29] V. Lamy, « L'éditorial des Cahiers », *Les Cahiers Portalis*, vol. 12, n° 2, p. 9-14, 2023, doi: [10.3917/capo.012.0009](https://doi.org/10.3917/capo.012.0009).
- [30] P. Corvol, « L'irrésistible ascension de l'intégrité scientifique », *Les Cahiers Portalis*, vol. 12, n° 2, p. 19-23, 2023, doi: [10.3917/capo.012.0019](https://doi.org/10.3917/capo.012.0019).
- [31] J.-F. Kerléo, « Les libertés académiques et la déontologie universitaire », *Les Cahiers Portalis*, vol. 12, n° 2, p. 25-61, 2023, doi: [10.3917/capo.012.0025](https://doi.org/10.3917/capo.012.0025).
- [32] S. Sydoryk, « Intégrité scientifique du juriste et explicitation du positionnement théorique. L'"aveu théorique" comme préalable à l'intégrité scientifique ? », *Les Cahiers Portalis*, vol. 12, n° 2, p. 63-71, 2023, doi: [10.3917/capo.012.0063](https://doi.org/10.3917/capo.012.0063).
- [33] J. Saison, « Intégrité scientifique et déontologie en santé », *Les Cahiers Portalis*, vol. 12, n° 2, p. 73-81, 2023, doi: [10.3917/capo.012.0073](https://doi.org/10.3917/capo.012.0073).
- [34] T. Mulier, « Le serment doctoral, un bavardage et rien de plus ? », *Les Cahiers Portalis*, vol. 12, n° 2, p. 83-94, 2023, doi: [10.3917/capo.012.0083](https://doi.org/10.3917/capo.012.0083).
- [35] G. Filliatreau, « L'intégrité scientifique : des normes professionnelles fondées sur la recherche », *Les Cahiers Portalis*, vol. 12, n° 2, p. 95-105, 2023, doi: [10.3917/capo.012.0095](https://doi.org/10.3917/capo.012.0095), also available on: <https://hal.science/hal-04506818>. 