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FRENCH OFFICE FOR RESEARCH INTEGRITY

Research on Research Integrity

Scientific Watch Summer 2023 (n°6)

The scientific watch led this month to the selection of 59 papers. Twenty-one of them deal with research misconduct and questionable research practices [1]–[21]. Eighteen focus on issues specific to scientific publishing [22-39]. Ten address integrity issues related to new research pratices [40]– [49]. Five relate to training and education [50]-[54], three to institutionalisation [55]-[57] and two to the definition of research integrity or responsibility [58], [59].

SUMMER FOCUS

Clinical trials: battle against zombies

Zombie' trials - fake randomised clinical trials (RCTs) that look like real research - are a growing concern, as reported in Nature last July. The study of more than 500 trials published in *Anaesthesia* between 2017 and 2020 showed that 44% of the 153 RCTs for which raw data were available contained false data, with 26% of them, the "zombies", being completely unreliable.[1] These trials are likely to spread information that is not scientifically sound. However, they have a substantial impact on the meta-analyses carried out to inform clinical decisions and recommendations [1].

To help counter these "zombies", an international team has recently developed a new tool: the *TRACT checklist* [1]. This checklist is used to assess the reliability of RCTs according to 7 criteria applicable to any type of trial. These criteria are indicative of unreliability, for example:

- Timeframe: some critical timeframes cannot be too short (between recruitment and submission of the article, for example).
- Author group: trials published by 3 authors or less, particularly for trials involving several research centres; several trials published with the same first (or last) author in a short time lapse.
- Governance: lack of information about ethical approval. Trials should be listed in an official register and approved by an ethics committee.

[1] B. W. Mol *et al.*, « Checklist to assess Trustworthiness in RAndomised Controlled Trials (TRACT checklist): concept proposal and pilot », *Research Integrity and Peer Review*, vol. 8, n° 1, p. 6, June 2023, doi: 10.1186/s41073-023-00130-8.

[1] JB Carlisle, « False individual patient data and zombie randomised controlled trials submitted to Anaesthesia », *Anaesthesia*, vol. 76, n°4, p.472-479, avril 2021, doi: 10.1111/anae.15263.

MISCONDUCT AND QUESTIONABLE RESEARCH PRACTICES

To continue on the unreliability of certain clinical trials and their impact:

[2] N. E. O'Connell *et al.*, « Trials we cannot trust: investigating their impact on systematic reviews and clinical guidelines in spinal pain », *The Journal of Pain*, available online : July 2023, doi: 10.1016/j.jpain.2023.07.003.

[3] V. Berghella *et al.*, « Improving trustworthiness in research in Women's Health: A collective effort by OBGYN Editors », *American Journal of Obstetrics & Gynecology MFM*, vol. 5, n°9, Art. 101085, July 2023, doi: 10.1016/j.ajogmf.2023.101085.

[4] F. Frank *et al.*, « Raising concerns on questionable ethics approvals – a case study of 456 trials from the Institut Hospitalo-Universitaire Méditerranée Infection », *Research Integrity and Peer Review*, vol. 8, n° 1, p. 9, Aug. 2023, doi: 10.1186/s41073-023-00134-4.

Studies on the occurrence of misconduct in the scientific literature:

Two specialists from the *Taylor and Francis* group's *Publishing Ethics and Research Integrity* team publish their observations on the cases of misconduct investigated by their team since its creation in 2017. The number of cases has grown steadily, reaching almost 3,000 in 2022. Recurring misconduct includes plagiarism, authorship issues, and concerns about the integrity of scientific data (or images). Cases concerning data integrity have increased by 20% since 2017, and are systematically coming with an increase in the number of articles retracted. Among the key actions identified to safeguard the research integrity of publications, the two specialists advocate the promotion of a culture of self-correction. Researchers should be encouraged to report their honest errors in order to foster the correction of science. To achieve this, we need to overcome the stigma associated with retraction, the primary objective of which is still perceived as punitive.

[5] S. Alam and L. Wilson, « Perspectives from a publishing ethics and research integrity team for required improvements », *Journal of Data and Information Science*, vol.8, n° 3, July 2023, doi: 10.2478/jdis-2023-0018.

[6] R. G. Forbes, « Field emission: Applying the "magic emitter" validity test to a recent paper, and related research-literature integrity issues », *Journal of Vacuum Science & Technology B*, vol. 41, n° 4, Art. 042807, July 2023, doi: 10.1116/6.0002739.

[7] H. Coudane *et al.*, « Scientific misconduct: Plagiarism and non-compliance with disclosure of interest: Retrospective analysis of 1 year's submissions to Orthopaedics & Traumatology: Surgery & Research », *Orthopaedics & Traumatology: Surgery & Research*, available online: July 2023, doi: 10.1016/j.otsr.2023.103663.

[8] W. R. Schumm, D. W. Crawford, L. Lockett, A. AlRashed, and A. Bin Ateeq, « Research anomalies in criminology: How serious? How extensive over time? And who was responsible? », *Accountability in Research*, available online: July 2023, doi: 10.1080/08989621.2023.2241127.

Analysis of the reliability of existing scientific data:

[9] G. Castle, M. S. Kennedy, and B. L. Allen, « Stuck in the mud: Persistent failure of 'the science' to provide reliable information on the ecological roles of Australian dingoes », *Biological Conservation*, vol. 285, Art. 110234, Sept. 2023, doi: 10.1016/j.biocon.2023.110234.

[10] E. J. Calabrese and P. B. Selby, « Muller mistakes: The linear no-threshold (LNT) dose response and US EPA's cancer risk assessment policies and practices », *Chemico-Biological Interactions*, vol. 383, Art. 110653, Sept. 2023, doi: 10.1016/j.cbi.2023.110653.

[11] S. K. Keener, S. Kepes, and A.-K. Torka, « The trustworthiness of the cumulative knowledge in industrial/organizational psychology: The current state of affairs and a path forward », *Acta Psychologica*, Art. 104005, Aug. 2023, doi: 10.1016/j.actpsy.2023.104005.

[12] W. D. Davis, L. Schumann, D. D. Evans, E. Ramirez, and J. Wilbeck, « Guest Editorial: Exposing Research Misconduct and Data Misrepresentation Targeting Nurse Practitioners in Emergency Care », *Advanced Emergency Nursing Journal*, vol. 45, nº 3, p. 165, Sept. 2023, doi: 10.1097/TME.0000000000000466.

Plagiarism and other questionable research practices related to authorship:

[13] A. Picciariello, A. Dezi, and D. F. Altomare, « Undeserved authorship in surgical research: an underestimated bias with potential side effects on academic careers », *Updates in Surgery*, July 2023, doi: 10.1007/s13304-023-01581-w.

[14] E. Smith, « "Technical" Contributors and Authorship Distribution in Health Science », *Science and Engineering Ethics*, vol. 29, nº 4, June 2023, doi: 10.1007/s11948-023-00445-1.

[15] C. Mitchell, « Max-Neef (2005) and the great transdisciplinary swindle: Lack of originality or something more worrisome? », *Ecological Economics*, vol. 213, Art. 107953, Nov. 2023, available online: Aug. 2023, doi: 10.1016/j.ecolecon.2023.107953.

Perverse incentives, in particular pressure to publish:

[16] M. Paruzel-Czachura, L. Baran, and Z. Spendel, « Publish or be ethical? Publishing pressure and scientific misconduct in research », *Research Ethics*, vol. 17, nº 3, p. 375-397, July 2021, doi: 10.1177/1747016120980562.

[17] S. D. Shaw and G. Nave, « Don't hate the player, hate the game: Realigning incentive structures to promote robust science and better scientific practices in marketing », *Journal of Business Research*, vol. 167, Art. 114129, Nov. 2023, available online: July 2023, doi: 10.1016/j.jbusres.2023.114129.

Factors associated with a lack of integrity:

[18] B. Xie, X. Zhang, X. Gao, and X. Zhou, « Are Callings Always Ethically Good? Why and When Occupational Calling Inhibits Unethical Decision-Making Among Researchers », *Journal of Business Ethics*, June 2023, doi: 10.1007/s10551-023-05471-4.

[19] T. C. Kwee, M. T. Almaghrabi, and R. M. Kwee, « Which factors are associated with fraud in medical imaging research? », *European Journal of Radiology*, vol. 164, Art. 110884, July 2023, doi: 10.1016/j.ejrad.2023.110884.

[20] W. P. Ng, K. Y. Pang, P. B. Ooi, and C. W. Phan, « Perceived Research Misconduct Among the Pharmacy Academics and Students: A Cross-Sectional Survey Study in Malaysia », *Journal of Academic Ethics*, July 2023, doi: 10.1007/s10805-023-09487-3.

Conflicts of interest and private sector interference:

This team from the University of Bath has explored today's influence of the tobacco industry on science. To do this, they analysed a corpus of documents from the Foundation for a Smoke-Free World (a scientific organisation created by Philip Morris International intended to be independent) - in particular, scientific publications and preprints of studies that the Foundation funds. Using the *Science for Profit Model* - a typology of influence strategies - as an analytical framework, they highlight the existence of a number of such strategies, particularly with regard to the production and publication of research on tobacco. Lack of declaration of conflicts of interest, cherry picking of studies, orientation of the interpretation of results: several of the practices identified lead the authors to recommend the implementation of more robust systems to protect research integrity.

[21] T. Legg, B. Clift, and A. B. Gilmore, « Document analysis of the Foundation for a Smoke-Free World's scientific outputs and activities: a case study in contemporary tobacco industry agnogenesis », *Tobacco Control*, available online: May 2023, doi: 10.1136/tc-2022-057667.

SCIENTIFIC PUBLISHING

Benefits and risks of open science for research integrity:

[22] M. G. Bertram, J. Sundin, D. G. Roche, A. Sánchez-Tójar, E. S. J. Thoré, and T. Brodin, « Open science », *Current Biology*, vol. 33, nº 15, p. 792-797, Aug. 2023, doi: 10.1016/j.cub.2023.05.036.

[23] C. Roelens, « Esquisse d'éthique et d'une politique minimaliste de la science ouverte », *Adjectif*, n°2–T3, July 2023, https://adjectif.net/spip.php?article588

[24] J. Rodriguez-Pomeda, F. Casani, and A. E. Serrano-López, « Reflections on the diffusion of management and organization research in the context of open science in Europe », *European Management Journal*, available online: Aug. 2023, doi: 10.1016/j.emj.2023.08.006.

[25] C. C. S. Liem and A. M. Demetriou, « Treat societally impactful scientific insights as open-source software artifacts », in *2023 IEEE/ACM 45th International Conference on Software Engineering: Software Engineering in Society (ICSE-SEIS)*, p. 150-156, May 2023, doi: 10.1109/ICSE-SEIS58686.2023.00020.

[26] M. J. Valladares-Garrido *et al.*, « Association between the use of Sci-Hub and consultation of scientific journals by medical students from six Latin American countries: A secondary analysis », *Heliyon*, vol.9, n°8, Art. 17868, July 2023, doi: 10.1016/j.heliyon.2023.e17868.

Integrity of the peer review process:

[27] M. J. Ali and A. Djalilian, « Readership awareness series - Paper 6: How to write a good peer review report? », *The Ocular Surface*, vol. 29, p. 508-510, July 2023, doi: 10.1016/j.jtos.2023.07.006.

[28] J. V. Willis *et al.*, « Limited online training opportunities exist for scholarly peer reviewers », *Journal of Clinical Epidemiology*, vol. 161, p.65-73, July 2023, doi: 10.1016/j.jclinepi.2023.06.023.

[29] J. V. Willis *et al.*, « Knowledge and motivations of training in peer review: An international cross-sectional survey », *PLOS ONE*, vol. 18, nº 7, Art. 0287660, July 2023, doi: 10.1371/journal.pone.0287660.

[30] A. Rovetta *et al.*, « An Improved Peer-Review System to Compensate for Scientific Misconduct in Health-Sensitive Topics », *Public Health Reviews*, vol. 44, June 2023, doi: 10.3389/phrs.2023.1605601.

[31] I. Stelmakh, C. Rastogi, R. Liu, S. Chawla, F. Echenique, and N. B. Shah, « Cite-seeing and reviewing: A study on citation bias in peer review », *PLOS ONE*, vol. 18, nº 7, Art. 0283980, July 2023, doi: 10.1371/journal.pone.0283980.

[32] P. Jia, W. Xie, G. Zhang, and X. Wang, « Do reviewers get their deserved acknowledgments from the authors of manuscripts? », *Scientometrics*, vol. 128, p. 5687–5703 July 2023, doi: 10.1007/s11192-023-04790-7.

Retraction and studies on retracted papers:

[33] T. Zilberman, I. Margalit, D. Yahav, and N. Tau, « Retracted publications in infectious diseases and clinical microbiology literature: an analysis using the retraction watch database », *Clinical Microbiology and Infection*, available online: July 2023, doi: 10.1016/j.cmi.2023.07.022.

[34] I. A. Palla, M. Singson, and S. Thiyagarajan, « Systematic examination of post- and pre-citation of Indian-authored retracted papers », *Learned Publishing*, available online: Aug. 2023, doi: 10.1002/leap.1572.

[35] X. Wang, N. Gao, H. Chen, et W. Wang, « Review of retracted papers in the field of neurology », *European Journal of Neurology*, available online: July 2023, doi: 10.1111/ene.15960.

Responsibilities of scientific publishers:

[36] H. Bai *et al.*, « Dermatology Journal Advisory Boards and Editorial Independence », *JAAD International*, available online: Aug. 2023, doi: 10.1016/j.jdin.2023.08.001.

[37] R. E. Silver, E. Lin, and B. Sun, « Applied linguistics journal editor perspectives: Research ethics and academic publishing », *Research Methods in Applied Linguistics*, vol. 2, nº 3, Art. 100069, déc. 2023, available online: Aug 2023, doi: 10.1016/j.rmal.2023.100069.

Interference in the creation of journal lists:

[38] J. Wang, W. Halffman, and Y. H. Zhang, « Sorting out journals: The proliferation of journal lists in China », *Journal of the Association for Information Science and Technology*, vol. 74, nº 10, July 2023, doi: 10.1002/asi.24816.

Impact of papers published in predatory journals:

[39] D. Stephen, « Medical articles in questionable journals are less impactful than those in non-questionable journals but still extensively cited », *Scientometrics*, vol. 128, nº 8, p. 4509-4522, Aug. 2023, doi: 10.1007/s11192-023-04763-w.

NEW RESEARCH PRACTICES

Generative artificial intelligence systems, such as *ChatGPT*:

[40] R. H. Pickler, « Artificial "Intelligence" and Scientific Integrity », *Nursing Research*, vol. 72, nº 3, p. 165, June 2023, doi: 10.1097/NNR.0000000000000651.

[41] M. Blum, « ChatGPT Produces Fabricated References and Falsehoods When Used for Scientific Literature Search», *Journal of Cardiac Failure*, vol. 29, n°9, July 2023, doi: 10.1016/j.cardfail.2023.06.015.

[42] S. Boussen, J.-B. Denis, P. Simeone, D. Lagier, N. Bruder, and L. Velly, « ChatGPT and the stochastic parrot: artificial intelligence in medical research », *British Journal of Anaesthesia*, vol. 131, n°4, July 2023, doi: 10.1016/j.bja.2023.06.065.

[43] T. R. Grigio, H. Timmerman, and A. P. Wolff, « ChatGPT in anaesthesia research: risk of fabrication in literature searches », *British Journal of Anaesthesia*, vol. 131, nº 1, July 2023, doi: 10.1016/j.bja.2023.04.009.

[44] M. Salah, H. Al Halbusi, and F. Abdelfattah, « May the force of text data analysis be with you: Unleashing the power of generative AI for social psychology research », *Computers in Human Behavior: Artificial Humans*, vol. 1, nº 2, Art. 100006, Aug. 2023, doi: 10.1016/j.chbah.2023.100006.

[45] M. N. Kammer, « A Case Study in Artificial Intelligence-Generated Manuscripts », *CHEST*, vol. 164, nº 2, p. 478-480, Aug. 2023, doi: 10.1016/j.chest.2023.05.003.

[46] J. Menichetti, M. A. Hillen, A. Papageorgiou, and A. H. Pieterse, « How can ChatGPT be used to support healthcare communication research? », *Patient Education and Counseling*, vol. 115, p. 107947, Oct. 2023, available online: Aug. 2023, doi: 10.1016/j.pec.2023.107947.

Issues related to science in times of crisis:

[47] B. Green, « Should infectious disease modelling research be subject to ethics review? », *Philosophy, Ethics, and Humanities in Medicine*, vol. 18, nº 1, p. 11, Aug. 2023, doi: 10.1186/s13010-023-00138-4.

Emerging issues with social media:

[48] K. Takashima, J. Minari, S. Chan, and K. Muto, « Hope for the best, but prepare for the worst: Social media posted by participants in stem cell clinical trials », *Regenerative Therapy*, vol. 24, p. 294-297, déc. 2023, available online: Aug. 2023, doi: 10.1016/j.reth.2023.07.009.

[49] L. Sauvat, A. Bleibtreu, and N. Peiffer-Smadja, « Les réseaux sociaux pour l'infectiologue », *Médecine et Maladies Infectieuses Formation*, vol. 2, nº 3, p. 130-138, Sept. 2023, doi: 10.1016/j.mmifmc.2023.06.007.

EDUCATION AND TRAINING

[50] A. Saltelli, « Teaching scientific research integrity: A case study », *Innovations in Education and Teaching International*, available online: July 2023, doi: 10.1080/14703297.2023.2237949.

[51] K. Labib *et al.*, « Co-creating Research Integrity Education Guidelines for Research Institutions », *Science and Engineering Ethics*, vol. 29, nº 4, p. 28, July 2023, doi: 10.1007/s11948-023-00444-2.

[52] M. vd Hoven, H. Mol, et R. Verhoeff, « Evaluating empowerment towards responsible conduct of research in a small private online course », *International Journal for Educational Integrity*, vol. 19, nº 1, Art. nº 1, Dec. 2023, available online: Aug 2023, doi: 10.1007/s40979-023-00139-y.

[53] E.-O. Im *et al.*, « The Current Status of Research Mentoring in Nursing Across 4 Countries: A Discussion Paper », *Advances in Nursing Science*, vol. 46, nº 3, p. 277, Sept. 2023, doi: 10.1097/ANS.0000000000000449.

[54] L. M. Rasmussen, « Why and how to incorporate issues of race/ethnicity and gender in research integrity education », *Accountability in Research*, available online: July 2023, doi: 10.1080/08989621.2023.2239145.

INSTITUTIONALISATION

Management and governance of research integrity:

These researchers from Moi University in Kenya conducted interviews with 27 research regulators (holding high administrative positions such as in ethics committees or national research regulatory bodies). The aim of this study is twofold: to study both their perception of the occurrence of misconduct cases and their perception of the capacity of institutions to handle these. Concerning the occurrence of misconduct: they perceived plagiarism as the main misconduct and rarely mentioned other types of misconduct such as fabrication or falsification. For them, it is primarily a question of student behaviour. Concerning the capacity of institutions to manage misconduct, the respondents mentioned several difficulties, such as the absence of national guidelines or legal framework on research integrity and a lack of uniformity in the mechanisms for investigating cases at local level.

[55] E. Were, J. Kiplagat, E. Kaguiri, R. Ayikukwei, and V. Naanyu, « Institutional capacity to prevent and manage research misconduct: perspectives from Kenyan research regulators », *Research Integrity and Peer Review*, vol. 8, n° 1, p. 8, July 2023, doi: 10.1186/s41073-023-00132-6.

[56] K. A. Marinou and I. A. Dontas, « European Union Legislation for the Welfare of Animals Used for Scientific Purposes: Areas Identified for Further Discussion », *Animals*, vol. 13, n° 14, Art. n° 14, July 2023, doi: 10.3390/ani13142367.

[57] G. Solis Sánchez, G. Alcalde Bezhold, and I. Alfonso Farnós, « Research ethics: From principles to practical aspects », *Anales de Pediatría (English Edition)*, vol. 99, n° 3, p. 195-202, Sept. 2023, doi: 10.1016/j.anpede.2023.06.016.

DEFINITIONS

[58] S. E. Kolstoe and J. Pugh, « The trinity of good research: Distinguishing between research integrity, ethics, and governance », *Accountability in Research*, available online: July 2023, doi: 10.1080/08989621.2023.2239712.

[59] D. L. Mann and L. M. Rasmussen, « Who Should Be Accountable for Scientific Accountability? », *JACC: Basic to Translational Science*, vol. 8, n° 8, p. 1040-1042, Aug. 2023, doi: 10.1016/j.jacbts.2023.08.001.

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