

# Scientific publishing has a language problem



**Science is international, but scientific publishing is dominated by English-language publications. This disproportionately benefits native or fluent English speakers. We want to take steps to address the imbalance this creates, and new technology may help.**

**G**overnments worldwide are putting increasing resources into science, and the number of researchers is **growing worldwide**. This diversity of thought brings tremendous benefits. However, the currency of science is publication in academic journals. Scientific publishing is also growing, but it is not a level playing field. The landscape of scientific publishing is dominated by researchers in a small number of countries<sup>1</sup>, and by publications in English<sup>2</sup>.

This has serious implications for the quality and influence of international science. For example, in Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) international biodiversity assessments, 96.6% of citations are in English<sup>3</sup>. Yet national assessments rely on non-English scientific papers<sup>4</sup>. Owing to the dominance of English-language publishing, international decision-makers may be ignoring some of the most important scientific work.

This issue of *Nature Human Behaviour* features contributions from eleven scholars discussing the **future of academic publishing**, several of whom raise the issue of language barriers. Yap Boum II discusses how these can reinforce colonial power relations and calls on the industry to decolonize, starting with multilingual publishing. This would promote not only diversity of thought, but also greater equity.

English-language dominance in publishing reinforces barriers for scholars whose first language is not English<sup>5</sup>. These barriers impact peer review: authors whose primary language is not English experience worse review outcomes<sup>6</sup>. This is probably due to reviewer and editor bias: authors whose first language is English are more likely to be favourably reviewed and invited for resubmission, but this difference disappears when author identity is blinded to reviewers<sup>7</sup>. These empirical



data shed an uncomfortable light on the academic publishing industry. We strive for greater diversity, equity and inclusion (<https://www.nature.com/collections/daficfhiff>), yet we continue to cause minoritized scholars to experience injustice.

One solution to this is for the publishing industry to offer publication and editing in multiple languages. This is advocated by Yap Boum II, whose **contribution** is accompanied by a French translation. We previously published non-English-language summaries of a Comment on overcoming language barriers in science<sup>5</sup> to increase its accessibility to a wider audience, including those who do not speak English as their first language. We also welcome the inclusion of material in other languages – including the full version of a manuscript – as supplementary information.

However, these examples are the exception rather than the rule, and piecemeal efforts are unlikely to solve systemic problems. For one thing, publishing a translation currently requires additional resources and editorial oversight, which means extra labour and costs. As in other steps taken to foster inclusion<sup>8</sup>, the costs are borne by members of the population they seek to include.

AI language tools, however, are becoming increasingly sophisticated. We are optimistic that AI-powered translation has the potential to create more equitable access to science<sup>9</sup>, and we're excited to explore how we might be able to use this technology at *Nature Human Behaviour*.

We understand some aspects of what it means to be a scientist whose first language is not English. We are a team of eight, five of whom do not speak English as their first language. In our everyday editorial decision making, we take steps to minimize the disadvantages faced by authors who do not speak English as their first language.

When we make initial decisions on whether or not to send research out for peer review, we do not take language quality into account. As long as submissions are **accurate and readable**, we consider them on the basis of their scientific merit, and no paper is ever rejected for poor language. Sometimes our reviewers raise concerns about the quality of English language used in research manuscripts. In such cases, as long as there is no barrier to understanding, we explain to authors (and reviewers) that we do not take language issues into consideration when making decisions. We do not expect authors to write in perfect English, nor reviewers to correct linguistic errors – that is the job of our copyeditors.

We are following discussions around the use of generative AI for overcoming linguistic disparities faced by scientists<sup>9</sup> and the possible unintended consequences of removing language barriers entirely<sup>10</sup>. The authors of the latter piece used ChatGPT for English editing, illustrating the use of AI in overcoming language barriers. However, we recognize that these are early days, and we do not yet know the impact that AI language tools will have on our community.

Scientific publishing is dominated by English. As a traditionally English-only journal, we are part of the problem. But linguistic diversity brings incredible value to the scientific endeavour, and we want to help to foster more diverse and inclusive science. We will publish non-English translations and summaries where resources allow, and we will look to new ideas and technologies that foster a more

linguistically diverse science without costs to innovation.

Published online: 24 July 2023

## References

1. Gomez, C. J., Herman, A. C. & Parigi, P. *Nat. Hum. Behav.* **6**, 919–929 (2022).
2. Hamel, R. E. *AILA Rev.* **20**, 53–71 (2007).
3. Lynch, A. J. et al. *One Earth* **4**, 269–278 (2021).
4. Amano, T. et al. *Nat. Sustain.* <https://doi.org/10.1038/s41893-023-01087-8> (2023).
5. Amano, T., Rios Rojas, C., Boum li, Y., Calvo, M. & Misra, B. *Nat. Hum. Behav.* **5**, 1119–1122 (2021).
6. Smith, O. M. et al. *Nat. Ecol. Evol.* **7**, 512–523 (2023).
7. Fox, C. W., Meyer, J. & Aimé, E. *Funct. Ecol.* **37**, 1144–1157 (2023).
8. Tzanakou, C. & Pearce, R. *Gend. Work Organ.* **26**, 1191–1211 (2019).
9. Berdejo-Espinola, V. & Amano, T. *Science* **379**, 991 (2023).
10. Nakadai, R., Nakawake, Y. & Shibasaki, S. *Nat. Hum. Behav.* <https://doi.org/10.1038/s41562-023-01652-3> (2023).