EDITORIAL

The linguistic barrier of science for no-native english speakers

Angelo **Barbato** [1, *], Andrea **Barbato** [2], Davide **Barbato** [3]

[*] **Correspondence to:**
angelo.barbato@unipd.it. ORCID: https://orcid.org/0000-0002-6762-3822

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[1] Professor of Pediatrics and Pediatric Pulmonologist, Department of Women's and Children's Health, University of Padua, Padua, Italy
[2] Adjunct Professor of Dynamic Identity, Salesian University Institute of Venice (IUSVE), Venice, Italy
[3] Adjunct Professor of Web Design, Salesian University Institute of Venice (IUSVE), Venice, Italy

In recent years, several papers have been published on the challenges faced by no-native English-speaking researchers in their publications in English-language journals. Journals with the highest Impact Factor are in English language, and researchers understand what it means to publish in such journals (1). Beyond prestige and personal satisfaction, this serves to attract new contributions for research, and is directly related with promotion, prestige, and academic positions (2).

In a study published in PLOS Biology in July 2023, a group of authors from various nationalities distributed a questionnaire to students and researchers for data collection, which was then processed in a centralized manner (3). Participants involved researchers from 8 countries, some native English speakers (including some from United Kingdom), and others no-native English speakers. The survey aimed to quantify the effort required by individual researchers to perform 5 types of scientific activities in English and in their first language (reading articles, writing, publishing and dissemination, participating in conferences) and compare the estimated effort among researchers with different linguistic and economic backgrounds.

The authors used the values of English-speaking countries as reference for data processing.

The paper had 908 participants with an average age of 39 years (range 18-77 years) and a median research dedication of 13 years. The results are surprising. No-native English speakers take 91% more time to read an article and 51% more time to write one in English. They experienced a rejection rate 2.6 times higher and a revision rate 12.5 times higher.

This is also clearly demonstrated in another study where authors made a randomized control study in which scholars judged the scientific quality of several scientific abstracts (4). Each abstract had two versions with identical scientific content, but the language in one version was conformed to standards for international academic English, and the language in the other version was not (but it was still comprehensible). Scholars may give abstracts lower ratings of scientific quality when the writing does not conform to standards of international academic English; and this leads to rejection of the paper in English-language journals. These results unequivocally demonstrate that fluent English speaker researches from economically affluent states have several advantages that make them publish more than others in prestigious journals.

KEY WORDS
Linguistic barrier; no-native English speakers; researchers.

Participation in Conferences

Regarding conference participation, the authors of the article published in PLOS (3) demonstrated that no-native English speakers need 94% more time

to prepare and practice an oral presentation, 30% often decide not to participate in the conference, and 50% decide not to give an oral presentation. This well-established habit causes a significant scientific loss, as researchers miss out on what they could contribute if they could present in their native language, different from English. There are no automatic translation systems (e.g., Google Translate) that can overcome this handicap. A solution proposed by the authors of this article is to encourage a greater use of languages from other nations in presentations and reports at conferences. The authors suggest efforts by journals and congress organizations of various scientific societies to avoid losing the additional contributions that researchers could bring, currently hampered by translations, in accordance with UNESCO's recommendations (5).

Preparation of Scientific Journals and Books

As for the translation of articles, since English writing will continue to dominate major scientific journals, the use of Artificial Intelligence (AI) in the near future could be of great utility. However, the debate on the use of AI in the scientific world is still very intense, particularly in opposing views. Some believe that the use of Large Language Models (LLM) like ChatGPT in producing scientific content should be excluded "a priori" as it would not produce "original" products (6). Others argue that, when used appropriately, these tools can improve equity in science, alleviating current linguistic disparities (7).

This perspective seems to be shared by many. In an interview conducted by Nature on the potential major benefits of generative AI for science, the most popular response among the 1600 respondents was that it would help researchers who do not have English as their first language (8).

We strongly agree with this position and we hope that a conscious use of these new technologies can simplify the dissemination of knowledge from researchers of all countries, mitigating the linguistic barriers that hinder the sharing of scientific research by no-native English speakers.

(Our is an example of a text translated with the assistance of the ChatGPT Chatbot)

REFERENCES

1. Measuring Your Impact: Impact Factor, Citation Analysis, and other Metrics: Measuring Your Impact. University of Illinois Chicago. 2023. Available from: https://researchguides.uic.edu/. Accessed: Feb 12, 2024.
2. Hanauer DI, Sheridan CL, Englander K. Linguistic Injustice in the Writing of Research Articles in English as a Second Language: Data From Taiwanese and Mexican Researchers. Written Communication. 2019; 36(1), 136-54. https://doi.org/10.1177/0741088318804821.
3. Amano T, Ramírez-Castañeda V, Berdejo-Espinola V, Borokini I, Chowdhury S, Golivets M, et al. The manifold costs of being a non-native English speaker in science. PLoS Biol. 2023;21(7):e3002184. doi: 10.1371/journal.pbio.3002184.
4. Politzer-Ahles S, Girolamo T, Ghali S. Preliminary evidence of linguistic bias in academic reviewing. J Engl Acad Purp. 2020;47:100895. doi: 10.1016/j.jeap.2020.100895.
5. UNESCO. UNESCO recommendation on open science. 2021. Available from: https://www.unesco.org/en/open-science/about. Accessed: Feb 12, 2024.
6. Thorp HH. ChatGPT is fun, but not an author. Science. 2023;379(6630):313. doi: 10.1126/science.adg7879.
7. Berdejo-Espinola V, Amano T. AI tools can improve equity in science. Science. 2023;379(6636):991. doi: 10.1126/science.adg9714.
8. Van Noorden R, Perkel JM. AI and science: what 1,600 researchers think. Nature. 2023;621(7980):672-5. doi: 10.1038/d41586-023-02980-0.