



## Will Scientific Publishing be Influenced by Artificial Intelligence?

Large language models (LLMs) based on AI have recently gained significant attention for their potential to revolutionize scientific writing. These LLMs, such as ChatGPT (OpenAI), can generate grammatically correct and semantically coherent text, which could save researchers time and effort when writing their papers. Moreover, LLMs can also help researchers generate new ideas and explore new writing approaches. These models are capable of analyzing vast amounts of data and identifying patterns, trends, and relationships that may not be immediately apparent. Positively seen, this capability means that LLMs can assist researchers in discovering new research ideas and perspectives.

However, from an Editorial Board perspective, the use of LLMs in scientific writing raises concerns and could even be potentially dangerous. One of the main concerns is that these models may automate the writing process, which could lead to a decline in critical thinking, creativity, and ultimately in the long-term quality of published research. If researchers rely solely on an AI model to generate their papers, they may miss out on the process of developing their ideas, which is crucial to the scientific process.

Another potential danger of LLMs is the issue of bias in the data that they have been trained on. These models learn from vast amounts of text, including scientific papers, which may contain biases or errors. If these biases or errors are not detected by the authors and reviewing peers, they may lead to inaccurate or misleading publications. Moreover, the use of language models in scientific writing also raises ethical concerns.<sup>1</sup> For example, models could be used to fabricate research results, leading to fraudulent scientific publications with potentially severe consequences. They could also be used to plagiarize content, which could undermine the integrity of scientific research.

Nevertheless, can we avoid the use of LLMs by authors when developing their manuscripts? The answer is simple: No, we cannot. Therefore, publishers must establish new criteria or guidelines for authors with respect to the use of LLMs. Publishing houses like Springer Nature have already reacted to this new development, and others will certainly follow.<sup>2</sup>

In conclusion, while language models offer exciting possibilities for scientific writing, researchers must remain mindful of their limitations and ensure they use them responsibly. Critical thinking and creativity must remain central to the scientific writing process. Editors and reviewers must also be vigilant in detecting biases and errors in the data used to train these models and take steps to ensure the integrity of published research.

On behalf of the entire Editorial Board team,

Irena Sailer, Editor-in-Chief

A handwritten signature in black ink, appearing to read 'Irena Sailer'.

### REFERENCES

1. Thorp HH. ChatGPT is fun, but not an author. *Science* 2023;37:313.
2. Tools such as ChatGPT threaten transparent science; here are our ground rules for their use. *Nature* 2023;613:612.

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