EDITORIAL NOTE

Artificial Intelligence in scientific publications?

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Artificial Intelligence (AI) is here to stay. The discussion about whether it should be considered a scientific area (e.g., Simon 1995) has long become superfluous, and several segments of society have doubts about how to deal with the consequences of the increasing and, for the most part, undetectable use of AI tools. Artwork, pictures, concerts, speeches, and even movies where real artists are digitally rejuvenated and can act side by side with images of performers who have been deceased for decades, at the same time cause enchantment and concern. One cannot avoid wondering if a time will come when we may lose the ability to distinguish reality from fiction. The spread of more elaborated and verisimilar fake news is just one of the negative consequences that can be propagated and promoted with these new technologies.

The most recent advent of AI is the language model software ChatGPT, which is becoming increasingly popular (e.g., Sample 2023). By being able to produce human-like responses to a variety of subjects and situations, this AI tool has raised possibilities, but also concerns. An undeniable advantage is to expedite written routine work with minimal human intervention, which speeds up the flow of information and increases productivity (e.g., Haleem et al. 2022). On the other hand, the editorial and journalistic markets are thinking about global initiatives on how to protect themselves against potential damages related to intellectual property. In education, teachers are concerned about the likely possibility that essays written by their students are not the result of extensive research, but conceived in minutes as the outcome of a couple of loose sentences and ideas that were entered with a few clicks on the computer, using language model software.

Nowadays, there have been a variety of issues regarding science that are starting to be discussed, such as efforts to address gender gap (e.g., Staniscuaski et al. 2021) and the correct (and fair) evaluation of bibliometric indexes (e.g., Kowaltowski et al. 2021). But AI is also beginning to enter the radar of the scientific community (e.g., Hutson 2022) with the potential to overshadow these other discussions. Manohar & Prasad (2023), for example, when presenting a rare case of a chronic autoimmune disorder, reported their experience with using ChatGPT when writing their article, pointing out that, despite the general help including bibliographic references, their attempt was hampered by the lack of scientifically sound information. Others have considered ChatGPT even as coauthors (O´Connor & ChatGPT 2023), which generated many criticism (e.g., Hill-Yardin et al. 2023). One way or another, the use of such AI language programs is increasingly getting widespread, not without raising eyebrows regarding ethical issues (e.g., Rossoni 2022).

A more comprehensive study on the perception and consequences regarding the use of ChatGPT in a variety of university courses was recently published and led to worrying conclusions (Ibrahim et al. 2023). Surprisingly, the performance of this language model program yielded results at least comparable to those achieved by students in many of the courses analyzed. Furthermore, current programs developed to detect texts generated by ChatGPT have not proven effective. Additionally, students increasingly perceive the validity of using this type of resource, something that can be considered a potential problem within academia, including the training of new scientists.

Even for the most skeptical observer, it must be admitted: over time, these AI programs are improving, with the results becoming more convincing and accurate. This trend appears to be unstoppable, especially taking into account the extensive – whether permitted or not – collection of information to improve program decision-making processes. It may not be long before editors of scientific journals, who already have many challenges to face (e.g., Kellner 2021), may be confronted with the problem of separating articles written in a "traditional" way from those elaborated with substantial AI input. Certainly, this distinction will prove necessary, since publications have (and will continue to have) important consequences in the evaluation of researchers (e.g., Diele-Viegas 2022). How AI will fit into all of this is a mystery, still very difficult to unravel.

The more I think about the subject, I always come to the same conclusion that I defended even before the advent of AI, which begins to expand in the preparation of papers: the greater weight of responsibility for the content of a scientific article must necessarily fall on the shoulders of authors, despite the increasing need for editors and reviewers to undertake a meticulous review of manuscripts before publication.

Considering paleontology, my area of expertise, I keep wondering if it would be possible to provide enough anatomical data that, together with images, could allow a machine with the "right" AI tool to describe and interpret a fossil... Does this mean that my colleagues and I could lose our jobs and go extinct like the dinos and other fossil organisms that we study?

And just for the record: I resisted and did not use ChatGPT in preparing this text. But I must admit that Google Translator and the grammar and spelling checker built into the word processor were, as always, a great help...

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