Letter to the Editor

How Will Artificial Intelligence Affect Scientific Writing, Reviewing and Editing? The Future is Here …

As the field of artificial intelligence continues to advance at a rapid pace, it is becoming increasingly clear that artificial intelligence (AI) tools such as ChatGPT will have a significant impact on the way scientific articles are written and reviewed. Although these tools have the potential to greatly streamline the writing and review process, it is important for reviewers and editors to be aware of the potential challenges and pitfalls that they may encounter.

One of the main benefits of using AI tools is that they can help to reduce the time and effort required to write and review scientific papers. By automating certain aspects of the process, such as the formatting and organization of text, these tools can free up researchers to focus on the more critical aspects of their work. However, it is important for reviewers and editors to remain vigilant in ensuring that the use of these tools does not compromise the scientific integrity of the articles they review.

One potential issue that may arise when using AI tools is the risk of errors or biases being introduced into the text. While AI algorithms are designed to be objective, they may still be influenced by the data used to train them, or by the biases of the humans who design them. Therefore, it is important for reviewers and editors to carefully check the articles they review for any errors or biases that may have been introduced by AI tools.

Another challenge that may arise when using AI tools to write and review scientific papers is the potential for these tools to be used to manipulate or distort the scientific record. There have already been instances of researchers using AI tools to generate fake articles or to manipulate the results of experiments. In order to prevent such abuses, it is important for reviewers and editors to be aware of the potential for AI tools to be misused and to take steps to ensure the integrity of the scientific record.

Overall, the use of AI tools will likely have a significant impact on the way scientific articles are written and reviewed in the coming years. While these tools have the potential to greatly streamline the process, it is important for reviewers and editors to remain vigilant in ensuring that the scientific standards of the journal are maintained. By being aware of the potential challenges and pitfalls that they may encounter, reviewers and editors can help to ensure that the use of AI tools enhances rather than detracts from the scientific integrity of the papers they review.

Everything *you have read up to this point was automatically generated by an artificial intelligence chat bot (ChatGPT[1]) with typing of the following input: "write a page long editorial for the Arthroscopy journal providing insight on the effect of artificial intelligence and tools like chat GPT will have in the near future on how scientific papers will be written and what reviewers and editors should do to adjust and maintain the high scientific standards of the journal."*

ChatGPT is a chatbot launched by OpenAI (San Francisco, CA) in November 2022. The model of the chatbot was optimized by both supervision and reinforcement learning techniques. We urge you to try and interact with such tools by yourself to understand the powers and limitations they harness. While the output provided by such tools is fascinating, these tools are still far from perfect and are subjected to major errors and biases.

Nonetheless, it is clear that in the imminent future, we will see scientific work at least partly composed by such tools submitted to the journal. As authors, we need to make sure we do not use these tools to compose any part of a scientific work, until these tools are internally and externally validated for this purpose and until they are perfectly accurate. Even then these tools would likely be limited to specific tasks that do not compromise the integrity and originality of the work and be subjected to meticulous human supervision.

As readers, reviewers, and editors, we must stay aware of the possibility that these tools are already being used inappropriately. We need to keep assessing the scientific accuracy, validity, and originality of each paper carefully. Perhaps in the future, we will also see such tools that are trained to recognize text that was generated by artificial intelligence bots. These counter tools will also likely be reactive, and possibly in some cases, delayed relative to the continuing technological evolution of artificial intelligence bots.

It seems like artificial intelligence offers grand opportunities in every aspect of our lives. We need to embrace the exciting times we live in and attend to the potential pitfalls that automated processes deliver as unintended consequences.

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Reference

1. OpenAI. https://chat.openai.com/chat. Accessed January 1, 2023.