EDITORIAL

GPT-4, artificial intelligence and implications for publishing

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The launch of GPT-4 has generated significant excitement, but also raised concerns about the impact of artificial intelligence (AI) on a range of human activities. Created by OpenAI, GPT-4 is described by the company as "the most advanced system, producing safer and more useful responses".[1] Bill Gates has proclaimed this technological breakthrough as 'the most revolutionary advance in technology since 1980' after the programme passed the Advanced Placement Biology exam with a maximum score.[2] GPT-4 is able to understand images and has gone onto pass other exams with flying colours.[3,4] AI programmes, such as DALL-E 2 (also created by OpenAI), is able to generate pictures, or illustrations from text. In response, other technology companies, such as Google, have promptly launched similar AI software. Although there may be attempts to regulate its use, AI is likely to continue to evolve and permeate various aspects of society, automating routine tasks, and potentially replacing certain jobs.

ARTIFICAL INTELLIGENCE AND PEER REVIEW

In academic publishing, there are ongoing discussions about the use of AI to write manuscripts and review papers. Peer review is a time-honoured tradition and although variations exist (such as double-blinded vs. single-blinded vs. open reviews), it relies on experts critiquing manuscripts to reject flawed submissions and improve the final, accepted articles. With the advent of AI, instead of having to wait for human peer review (which can lead to delays of weeks to months), the submitted text and figures can be assessed in a matter of seconds. Although this may be game-changing, and reduce the workload on human experts, there is a risk that reviewers will use the same software, inevitably generating identical reviews. Moreover, a good review does more than just identify flaws, or provide language editing. A good review is a key part of the editorial decision-making process and explores the implications of the paper for current practice, identifies the best way of presenting this new information, while also highlighting any limitations. Current versions of AI are based on data drawn from the published literature, but they do not have the in-depth specialist knowledge or understanding of a human reviewer. As such, reviews generated by AI lack field-specific critical input and may provide a superficial overview. If, in future, AI-generated reviews minimise the human contribution, then credits provided to reviewers (e.g., Publons) will need to be carefully considered. To circumvent this, journals could potentially ask reviewers to declare the extent to which AI generated the review before deciding if credits can be assigned. This declaration would need to be transparent so that readers are also aware that AI had played a role in the peer-review process.

AI may also help Editorial Boards to assess whether a submitted article is original. In its current form, this evaluation is in part based on confidential scoring and comments, along with use of plagiarism software. The integration of AI-powered image analysis could enhance the process by enabling the identification of manipulated images. Furthermore, the identification of suitable reviewers is also a time-consuming process. It is possible that AI could make this faster and more effective to further improve the peer review process. These additional features would be a boon to busy academics who serve on editorial boards.

ARTIFICAL INTELLIGENCE AND AUTHORS

The implications of AI for authors and academic institutions are also vast. With the availability of software to create figures and text, manuscript preparation would be faster and less labour-intensive. This would be especially beneficial to authors whose first language differs from the

destination journal. However, given that the training of AI software relies on human-collected data, it is possible for stereotypes to be reinforced. Therefore, it is crucial for authors to remain vigilant and take steps to mitigate any potential bias. Manuscripts generated by AI originating from the same software will likely have the same uniformity of style, devoid of the character and voice of the author. This question of originality, as well as the ownership of creative work generated by AI has further implications:

- Just as they do now, when professional writers are used, publishers may need to decide if they require the authors to declare the proportion of the manuscript generated using AI.
- The reputation of academic institutions may be at risk if a substantial number of academics use AI without declaring this.
- The contribution of an author creating the first draft (typically the first author) may be diminished. However, they will remain accountable for the accuracy of the published work.
- Will the ease of generating manuscripts using AI lead to a huge increase in submissions, so negating any potential efficiency improvements in peer review?

Transparency is key to these issues, and it is essential to declare the involvement of AI in manuscript preparation to provide editors, reviewers and readers with this additional information to allow a thorough evaluation of the work's credibility.

In summary, the advent of AI is a harbinger of a new era in publishing, one in which laborious processes (such as the drafting of manuscripts and peer review) might become more efficient. However, these potential advantages need to be balanced with the ethical and transparent use of AI. With the speed of roll-out of AI and its potential for further development, editorial boards will need to make rapid decisions on how best to respond to ensure they act responsibly for authors, reviewers and their readers.

Declaration: No part of this Editorial was written using AI.

Conflict of interests: none declared.

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