

Pismo uredništvu (Letter to the Editor)**GENERATIVE AI USE IN THE MODERN PUBLISHING PROCESS: ETHICAL AND PRACTICAL CONSIDERATIONS
(AI IN THE MODERN PUBLISHING PROCESS)**

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To the Editor,

Ever since the introduction of early Artificial Intelligence (AI) models, such as virtual assistants like Apple's Siri (2011), and Amazon's Alexa (2014), AI has become increasingly integrated into our daily lives. Although its development was gradual, a major turning point came with the emergence of generative AI chatbots in 2022. Since then, generative AI has been widely adopted for everything from simple, routine tasks to more complex applications such as content drafting and editing.

Currently, most academic publishers have policies that permit the use of generative AI in manuscript preparation, provided its role is limited to improving language, grammar, and fluency. However, strict limitations apply to its use in generating content, analyzing data, or drawing scientific conclusions, as AI cannot be held accountable for the accuracy or integrity of the manuscript.

A recent study conducted by a major scientific publisher showed that a majority of researchers support the use of AI for tasks such as editing or translating manuscripts, provided that its use is transparently disclosed¹. Support is especially

strong among early-career researchers and those from non-English-speaking countries. Some survey participants also believe that authors should disclose the prompts used to generate AI-assisted content¹; a prompt refers to the specific instructions or queries given to an AI tool to produce a desired output. However, this approach has limitations: prompt engineering is often iterative and tailored to specific tasks, making prompts difficult to standardize or meaningfully reproduce. Additionally, requiring prompt disclosure could unintentionally reveal sensitive research strategies without offering substantial insight into the scientific content².

AI tools now support nearly every stage of scientific manuscript preparation. For literature reviews, platforms such as SciSpace, Semantic Scholar, and Elicit help researchers find and evaluate relevant studies. Tools such as GPT-4 and BioGPT assist with content generation, while citation managers such as Zotero, Mendeley, and Scite streamline referencing. Services like Grammarly, Wordvice AI, and QuillBot handle proofreading and text optimization. Formatting tools, including Underleaf and Scribbr, ensure adherence to journal style guides. To uphold integrity, originality

checkers such as iThenticate and Turnitin verify text authenticity, while WithdrarXiv supports retraction status checks³. Even more rapid development of these tools is expected following the release of open-source generative AI models, such as DeepSeek, introduced in the past year.

In contrast to manuscript writing, the use of generative AI for reviewing scientific papers remains limited. Fewer than 10% of academics report using such tools in the peer-review process, and the vast majority do not consider it a viable option¹. Yet, while clear policies exist for authors regarding AI use, guidance for reviewers remains largely undefined.

Although authors are currently bound only by ethical guidelines to disclose the use of generative AI in their writing, editors and reviewers have a responsibility to detect and address its inappropriate use. Various tools have been developed to help identify AI-generated content, with the goal of preserving academic integrity and transparency. Platforms such as iThenticate, apply linguistic pattern recognition and text similarity analysis to flag potential AI involvement. However, recent findings highlight the limitations of these tools. In a study evaluating 11 widely used AI detectors, most failed to reliably identify AI-generated text, even before any evasion strategies were applied. Simple modifications such as paraphrasing, minor grammatical changes, or character substitutions were sufficient to render the text virtually undetectable by all platforms tested⁴. Human evaluation by native speakers may serve as a useful complement to AI detection tools for identification of AI-generated content. A recent study found that both medical and humanities experts accurately distinguished AI-generated medical texts, relying mainly on linguistic features rather than content familiarity⁵. However, integrating this approach would require reviewers to undergo training and accept additional workload — an unrealistic expectation in a system where peer review is unpaid and where journals already face challenges in securing willing reviewers.

Overall, the future of AI in scientific writing remains uncertain. Scientific progress depends on creativity, problem-solving, and critical thinking, hallmarks of general intelligence, while generative AI reflects *narrow* intelligence, designed for specific, well-defined tasks.

The limitations of even state-of-the-art narrow AI models, such as OpenAI o3-mini, DeepSeek-R1, Claude-3.7-Sonnet-Thinking, were, for the first time, systematically examined in a groundbreaking study by Apple. While these models performed well on standard mathematical benchmarks, the study showed they break down when faced with more complex reasoning tasks. They display inconsistent logic, fail to apply explicit algorithms, and experience a complete collapse in accuracy beyond a certain threshold of difficulty. Paradoxically, their reasoning effort declines as task complexity increases, even when sufficient computational resources are available⁶. This might explain common AI failures, such as hallucinations (confabulations), contradictions, and unpredictable variations in responses to identical prompts⁷. These findings call for caution when applying AI to complex scientific tasks like manuscript drafting, literature summarization, or data interpretation, and they reinforce the critical need for continuous human oversight at every stage of the scientific process.

Given these limitations, we must recognize that current AI tools can only assist with specific stages of scientific writing such as literature search, drafting, citation, and formatting. Their use is increasingly regulated by publisher policies and often monitored by AI detection systems but still require rigorous human oversight to ensure accuracy and ethical compliance. In contrast, peer review remains an inherently human process, relying on expert judgment and contextual understanding. Looking ahead, the true challenge will be in finding ways to ease the scientific workflow through AI integration without diminishing the creativity, innovation, and accountability that define meaningful scientific work.

Key words: AI Detection Tools; Artificial Intelligence; Manuscript Preparation; Peer Review Policy; Scientific Publishing; Scientific Writing

Conflict of Interest

All authors declare no conflict of interests.

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