Editing Practice

EDITORIAL

Responsible peer review in the artificial intelligence era: Bridging global standards with local realities

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INTRODUCTION

Peer review remains the cornerstone of scholarly publishing, yet it is also one of the most contested and evolving processes in academia. For decades, it has served as the principal quality-control mechanism, ensuring that published research meets rigorous scholarly standards. However, its implementation varies significantly across regions, disciplines, and journal models, leading to long-standing debates over transparency, bias, reviewer fatigue, and inequitable access to publishing opportunities.

In recent years, artificial intelligence (AI) has moved from being a peripheral aid to becoming a significant part of editorial workflows. Once limited to basic keyword-based searches, AI now supports plagiarism detection, reviewer matching, language refinement, and even preliminary manuscript triage.[1–3] For many, these developments mark a turning point where peer review might become faster, more inclusive, and potentially fairer.

Yet the promise of AI is accompanied by important concerns. As argued in *Why the Scholarly Publishing Community Has Failed to Contain Predatory Journals,*[4] technological adoption without robust policy frameworks can increase inequities rather than reduce them. In the context of peer review, this risk is particularly relevant for journals in underrepresented research regions where access to advanced tools is limited, training is inconsistent, and governance infrastructure may be underdeveloped.

GLOBAL STANDARDS AND LOCAL REALITIES

International frameworks such as those from the Committee on Publication Ethics (COPE),[5] the Asian Council of Science Editors (ACSE),[6] and the European Association of Science Editors (EASE)[7] outline principles of integrity, confidentiality, fairness, and accountability. These organizations also emphasize transparency, ethical reviewer selection, and appropriate training as essential to quality peer review.

However, applying these principles in practice can be difficult. Many smaller journals, especially in low- and middle-income countries, operate without the financial resources to license advanced AI platforms. Others may have access to tools but lack the editorial training needed to interpret AI-generated recommendations critically. In some contexts, cultural norms such as collaborative or consensus-based reviewing differ from the individualized, double-blind peer review common in Western publishing.[8]

This diversity means that while global guidelines offer a shared ethical framework, operational realities vary widely. Addressing these differences requires policies that are sensitive to local publishing cultures while remaining anchored in internationally recognized best practices.

OPPORTUNITIES AND RISKS: A COMPARATIVE VIEW

While AI's potential in peer review is clear, so are the

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Table 1: Opportunities and risks of AI-assisted peer review

Opportunities	Risks
Automates routine checks such as plagiarism, statistical consistency, and reference formatting[1,9]	Algorithmic bias if trained on skewed or non-representative datasets[2,10]
Expands reviewer pools by matching manuscripts with global expert databases	Lack of transparency in decision-making with limited explainability
Provides language support for non-native English authors, improving clarity and accessibility	Over-reliance on automation could reduce human critical judgment
Reduces reviewer fatigue by streamlining repetitive tasks	Inconsistent policy adoption may create uneven ethical standards between journals[4]
Improves efficiency in editorial decision-making[2]	Data privacy and confidentiality concerns when manuscripts are processed by third-party AI

AI, artificial intelligence.

associated risks. Table 1 outlines the main opportunities and challenges, with examples from the literature and current editorial practices.

THE RISKS OF A UNIFORM APPROACH

A common mistake in AI adoption is assuming that tools and policies designed for well-resourced, high-volume journals can be applied without adaptation in low-resource contexts. Without modification, such tools may perpetuate disparities by favoring English-language outputs, privileging researchers with access to high-quality institutional data, and reinforcing established academic networks.

Some AI platforms are proprietary and require significant subscription fees. While such costs may be manageable for large publishers, they can be prohibitive for regional or society-owned journals. This creates a risk of a two-tiered publishing environment in which elite journals operate with cutting-edge tools while smaller journals rely solely on manual processes, widening the innovation gap.

RESPONSIBLE ADOPTION: POLICY BEFORE TECHNOLOGY

Responsible integration of AI into peer review should begin with clear policy frameworks. Journals need to define acceptable uses, disclosure requirements, and the roles of human editors in interpreting AI-generated recommendations. ACSE's recent white paper on AI in peer review[5] emphasizes that without transparent policy, the benefits of AI will be unevenly distributed and ethically uncertain.

Capacity building is equally important. Editors, reviewers, and authors must receive training not only in the use of AI tools but also in understanding their limitations and potential biases. Such training can address issues of fairness, data privacy, and the scope of automation. Workshops, online modules, and collaborative learning can help close the knowledge gap, particularly in regions where technical expertise is still emerging.

INCLUSIVITY AND DIVERSITY IN AI DEVELOPMENT

For AI to serve as a genuine equalizer in peer review, its underlying datasets must reflect the diversity of the global research community. Tools trained mainly on English-language or Western-centric datasets risk marginalizing research from other linguistic and cultural contexts.[8]

Developers have a responsibility to ensure that AI systems are inclusive from the outset. This involves incorporating multilingual datasets, engaging with regional editorial bodies such as ACSE, and testing tools across different disciplines and journal models. Inclusive development can help prevent AI from becoming another source of exclusion in scholarly publishing.

KEEPING HUMAN OVERSIGHT CENTRAL

Regardless of technological advances, human judgment must remain central to peer review. Editors provide contextual understanding, ethical reasoning, and subject expertise that algorithms cannot replicate. While AI can assist in identifying issues or suggesting reviewers, the final decision to accept, revise, or reject a manuscript must remain with human editors.

Clear communication with authors and reviewers about the use of AI in the review process is also essential. Journal policies and submission guidelines should specify when and how AI tools are used, reinforcing transparency and trust.

CONCLUSION

In a time when scholarly publishing is under close scrutiny, trust is the foundation that sustains its credibility. AI can support that trust if adopted with transparency, inclusivity, and adherence to established ethical standards. Guided by organizations such as COPE, ACSE, and EASE, which foster both international dialogue and regional capacity building, the scholarly community can align technological innovation with ethical responsibility.

The future of peer review will depend not only on the technologies introduced but on the values preserved. With foresight, inclusivity, and a commitment to fairness, AI can contribute to making peer review more efficient, equitable, and globally representative.

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