



Review Article

Multidisciplinary journals: an examination of ontological and ethical aspects

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Abstract

This study examines the emergence, functions, and accompanying debates surrounding multidisciplinary journals in the context of contemporary academic publishing. Journals such as Heliyon, Scientific Reports, and PLOS ONE, published by major publishers like Elsevier, Wiley, Nature Portfolio, and PLOS, represent a trend of uniting diverse scientific fields under a single publishing platform. While publishers of multidisciplinary journals justify their existence ontologically with arguments such as the necessity of interdisciplinarity in solving scientific problems and facilitating academic knowledge exchange, their motivation to increase commercial profitability is also evident—particularly through the APC (Article Processing Charges) and waiver policies they implement. These journals also provide opportunities for young and less experienced academics to participate in scholarly publishing, as reflected in the profiles of their authors. Publishers claim to apply high ethical standards and transparent editorial processes in these journals. However, the high volume of publications inherent in the nature of multidisciplinary journals has also led to ethical concerns. One significant example is the delisting of Elsevier's Heliyon journal from the Web of Science index in 2024. While the innovation and accessibility offered by multidisciplinary journals are commendable, it is recommended that oversight be strengthened to prevent ethical violations.

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Introduction

Recently, major publishing houses have begun to adopt an approach that resembles the ancient Greek tradition of gathering all sciences under a single umbrella—despite the fact that science today continues to evolve into more specific and innovative fields. As a result, journals that publish articles from every discipline have begun to emerge. This development has given rise to the concept of the "Multidisciplinary Journal" in academic publishing.

Multidisciplinary journals do not focus solely on a specific field of science; they publish articles from a variety of disciplines including health, social sciences, engineering, natural sciences, and the arts. In this respect, multidisciplinary journals serve as academic publishing platforms that address multiple fields rather than just one. This approach allows for greater visibility of research, facilitates knowledge exchange, and promotes interaction between different disciplines. Consequently, both intra-disciplinary and interdisciplinary interactions increase (Wagner et al., 2011). Furthermore, by offering multiple disciplinary perspectives on specific topics, these journals contribute to broader knowledge production (Jacobs & Frickel, 2009).

Due to these qualities, the multidisciplinary journal model has been presented by leading publishers as a strategic publishing solution. Their role in supporting knowledge transfer, encouraging collaboration, and serving as a meeting point for different disciplines makes them highly innovative. Below, some prominent multidisciplinary journals by major publishers are reviewed:

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SAGE Open

SAGE Open covers a wide academic audience including the humanities, behavioral sciences, and social sciences. It is an open-access multidisciplinary journal. The name of the journal is also notably appealing. It began publishing in 2011 and emphasizes interdisciplinary contributions, analytical depth, and research methodology. The journal practices transparent editorial processes and open peer review (SAGE, 2024). It is indexed in Web of Science and Scopus, offering strong global accessibility.

Heliyon (Elsevier)

Heliyon is a multidisciplinary open-access journal published by Elsevier that has gained popularity in recent years. It accepts articles from all disciplines, including both the social and natural sciences. The publisher states that the editorial process is quality-focused and that there are section editors for each discipline. It aims to create a network of scientific communication and to reach authors and readers across all disciplines (Elsevier, 2024). Furthermore, the journal prioritizes methodological soundness of articles over their originality or novelty.

Science Letters

Science Letters is a prominent journal in the field of multidisciplinary publishing with a distinctive approach. It provides space for short research papers, case studies, and letters to the editor. It stands out with its concise publication format and rapid editorial processes. As an open-access journal, it offers effective solutions for the quick publication of research articles. The journal claims to contribute to the development of interdisciplinary relationships (Science Letters, 2023) and encompasses a broad range of fields and disciplines.

iScience (Elsevier)

iScience is one of Elsevier's multidisciplinary journal offerings. It was launched in 2018 and covers a wide spectrum of disciplines including natural sciences, social sciences, and environmental studies. The journal aims to foster academic collaboration by uniting various disciplines on a single platform. It claims to operate with a high degree of sensitivity to academic ethics. Additionally, it differentiates itself by publishing thematic special issues (iScience, 2024). The journal aspires to enhance both deep specialization and interdisciplinary interaction.

Fundamental Research (Elsevier)

Fundamental Research is the product of a notable collaboration between Elsevier and the National Natural Science Foundation of China. It is another example of Elsevier's involvement in multidisciplinary publishing. The journal encompasses a broad scope that includes natural and engineering sciences. It began publishing in 2021 and is open-access. It claims to run high-quality editorial and peer-review processes (Elsevier, 2024). Fundamental Research is considered a strong platform in the realm of multidisciplinary publishing in the basic sciences.

Scientific Reports (Nature)

Scientific Reports is one of the most popular multidisciplinary journals. Published openly by Nature Portfolio since 2011, it covers a broad range of disciplines, including life sciences, natural sciences, medicine, and social sciences. Like other multidisciplinary journals, its primary focus is on methodological rigor in the articles, while originality is treated as a secondary criterion. It offers fast publication processes and claims transparency in editorial processes and high-quality peer review (Nature, 2024).

Scientific Reports was established with the intention of extending the high quality associated with the Nature brand to a broader audience of authors and readers. Therefore, it offers a strong and influential publication platform, especially for early-career researchers, multidisciplinary work, and emerging research topics.

PLOS ONE (Public Library of Science)

PLOS ONE has been published since 2006 by the Public Library of Science and is one of the pioneering journals in the multidisciplinary open-access field. It covers a wide range of subjects. The journal focuses on scientific validity and methodological soundness. Criteria such as originality and innovation, which are emphasized in other journals, are secondary here. This approach facilitates the free circulation of replicable scientific knowledge. The journal also claims to adhere strictly to academic ethical principles (PLOS, 2024).

Global Challenges (Wiley)

Global Challenges, published by Wiley since 2017, is a multidisciplinary journal that differs from others in that its central theme is global sustainability. The journal covers issues such as food security, health equity, and climate change. Based on these sub-themes, it includes disciplines such as social sciences, natural sciences, and policy studies. The journal emphasizes the societal impact of science and claims to uphold high ethical standards, supported by a fast peer-review process (Wiley, 2024). Global Challenges positions itself as a multidisciplinary open-access journal focused on the societal benefit of science.

Reasons Behind Publishers Launching Multidisciplinary Journals

Looking at publishers' discourses, it becomes clear that the rise of multidisciplinary journals is based on the understanding that today's complex scientific and societal problems require interdisciplinary approaches rather than isolated disciplinary efforts. For instance, Elsevier has stated in its rationale for *Heliyon* that "complex societal and scientific problems can now only be solved through interdisciplinary collaboration" (Elsevier, 2024). Similarly, Nature claims for Scientific Reports that "science no longer progresses within a single discipline but advances through multidisciplinary intersections."

PLOS ONE, as one of the first founders of the multidisciplinary journal concept, emphasized that "any article meeting methodological soundness criteria deserves to be published" and suggested moving beyond the obsession with scientific novelty or originality (PLOS, 2024).

Although such narratives are promoted, the underlying motivation of multidisciplinary journals may also relate to increasing publication volume and expanding readership and authorship through open-access publishing policies (Wagner et al., 2011).

Author Profiles and Global Participation

Some journals, particularly those that publish a large volume of articles, may offer more opportunities to early-career and less-experienced academics. However, some journals take a stricter stance, sometimes even rejecting articles derived from graduate theses. In multidisciplinary journals, characteristics such as open access, global interaction, and prioritization of methodological rigor are also reflected in the author profiles. For instance, PLOS ONE tends to give visibility to authors from high-population and developing countries (e.g., China, India, Brazil) and provides publication opportunities for young researchers (PLOS, 2024). Similarly, Scientific Reports offers opportunities to early-career academics, although its author base largely comes from developed countries (e.g., Europe, the US) (Nature Portfolio, 2024). Thus, multidisciplinary journals can act as catalysts for global knowledge exchange, especially for young scholars (SpringerNature, 2025).

Ethical Issues and Concerns

Although multidisciplinary journals appear to be a positive innovation in academic publishing and have secured places within prominent publishing houses, they are not immune to the ethical issues faced by other journals. The relatively inexperienced and ambitious author base—eager for academic advancement—can create additional ethical challenges. Publishers may be motivated to attract contributors who cannot publish in their most prestigious journals, thereby expanding their market share. Because these journals are indexed in major databases, they fulfill the academic promotion requirements for many authors.

Multidisciplinary journals, due to their immense publication volume, are often referred to as "mega journals." While publishers claim to uphold high ethical standards, the management of such mega journals can sometimes fall short. A notable case is Elsevier's journal *Heliyon*, which experienced a rapid increase in publication volume after being indexed in Web of Science (WoS) and Scopus. This visibility led to higher citation potential for authors. However, in 2024, Clarivate decided to issue an "unhold" status for *Heliyon*, temporarily removing it from the WoS index, citing a decline in quality standards. Although *Heliyon* remains indexed in Scopus—a database developed by Elsevier—Elsevier announced it would conduct a review regarding publication ethics violations. This decision marks a critical turning

point in academic publishing. That this ruling came from Clarivate, a competitor to Elsevier, has sparked further discussion.

Such examples raise questions about whether multidisciplinary journals truly comply with the ethical standards outlined by organizations like COPE. Ethical issues such as plagiarism, conflicts of interest, and data manipulation are of particular concern in these journals due to their rapid editorial processes, frequent publication cycles, and large article volumes. These characteristics increase the risk of ethical violations.

Another case is Springer Nature’s *Cureus*, which also received an “unhold” decision from Clarivate in 2024. That such a reputable publisher could face this situation underscores the seriousness of the issue. Declining content quality was cited as a key reason for removal (Parker-Finger & Wise, 2024).

Multidisciplinary journals are subject to criticism from many in academia. Their broad scope, streamlined editorial processes, and superficial reviews raise concerns. Additionally, the rapid indexing of these journals (e.g., *Heliyon* in Scopus) calls into question the neutrality and independence of major indexes, a topic debated across various platforms (scholarlycritic.com, 2025). Multidisciplinary journals face ethical risks due to their rapid workflows and high reviewer demands (Petersen, 2017; Liu et al., 2023). These risks are exacerbated by weak quality control mechanisms, accelerated review processes, and vulnerability to conflicts of interest.

The ethical concerns are also relevant in the context of article processing charge (APC) policies. In contrast to single-discipline journals that publish fewer articles, multidisciplinary journals’ high volume and speed make them potentially more profitable for publishers.

Table 1. Multidisciplinary Journals – APC Fees

Journal	APC Fee (USD)	Source
PLOS ONE	\$2,382	(web1)
Scientific Reports	£2,190 / \$2,690	(web2)
Heliyon	\$2,270	(web3, web5)
iScience	\$3,240	(web6, web3)
Global Challenges	\$3,300	(web7, web4)

These values may vary over time. While all of these journals operate under open-access models and justify their APCs with expenses such as peer review, archiving, and digital infrastructure, the costs are not considered low. These journals aim to include authors from a wide variety of countries and backgrounds, rather than just an elite group. For authors from developing countries, these APCs can be quite high; however, waiver options are sometimes provided.

Conclusion

This study examined the structure, publishing policies, author profiles, ethical challenges, and APC practices of multidisciplinary journals from a multidimensional perspective. While this publishing model contributes positively to the global circulation of knowledge (Jacobs & Frickel, 2009; Wagner et al., 2011), serious ethical concerns have also emerged. These concerns are driven by factors such as high demand, fast peer-review cycles, and the need for a large pool of reviewers, all of which increase risk exposure (Petersen, 2017; Liu, AlShebli & Rahwan, 2023). The case of *Heliyon* being delisted from WoS is a critical event worth further academic inquiry (Parker-Finger & Wise, 2024). The APCs of these journals are relatively high for the target audiences, prompting publishers to introduce waiver policies to retain contributors. Authors in these journals tend to come from either developing countries or are young, inexperienced academics in developed countries. Thus, the development of multidisciplinary journals must be evaluated through a comprehensive, multifaceted lens.

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