Risks and Preventive Measures for Scientific Journal Publishing in the New Media Era: Postprint

Authors: He Yongyan, Ding Ping

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Abstract

New media publishing represents a crucial pathway for scientific journals to broaden their dissemination channels and enhance journal influence. In the new media era, scientific journals confront ideological risks, academic integrity and ethical risks, and new media dissemination risks throughout the editorial and publishing process. During the new media era, risk issues pertaining to scientific journals can be infinitely amplified, undermining the long-term accumulated academic influence of journals and engendering novel dissemination risks. This article, drawing upon practical publishing experience, identifies risks in the editorial and publishing process of scientific journals and their characteristics within the new media environment, and proposes preventive measures including strengthening ideological construction of scientific journals to safeguard ideological security, reinforcing academic integrity and ethical review, establishing comprehensive supervision systems for journal new media publishing, and enhancing editorial team building through the cultivation of high-caliber editorial talent.

Full Text

Preamble

Publishing Risks and Preventive Measures for Scientific Journals in the New Media Era

He Yongyan[1], Ding Ping[2]
(1. Editorial Office of *Guihaia*, Guangxi Institute of Botany, Guangxi Zhuang Autonomous Region and Chinese Academy of Sciences, Guilin, Guangxi 541006, China;
2. Editorial Office of *Southern Horticulture*, Guangxi Academy of Specialty Crops, Guilin, Guangxi 541004, China)

Abstract: New media publishing represents a crucial pathway for scientific journals to broaden their dissemination channels and enhance their influence. In the new media era, scientific journals face ideological risks, academic integrity and ethical risks, and new media communication risks during the editorial and publishing process. These risks can be infinitely amplified in the new media environment, undermining the long-accumulated academic influence of journals and creating new communication hazards. Drawing on practical publishing experience, this paper examines the risks in scientific journal editorial processes and their characteristics in the new media context, and proposes preventive measures including strengthening ideological construction to safeguard ideological security, enhancing academic integrity and ethical review, establishing regulatory systems for journal new media publishing, and cultivating high-quality editorial talent.

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As carriers and disseminators of scientific discoveries, scientific journals serve as important platforms for promoting scientific and technological innovation. Various potential risks may emerge during publishing processes such as topic planning, manuscript solicitation, peer review, and editorial processing. Once quality control fails, these risks can cause serious adverse effects. In August 2019, the China Association for Science and Technology, the Publicity Department of the CPC Central Committee, the Ministry of Education, and the Ministry of Science and Technology jointly issued the *Opinions on Deepening Reform to Cultivate World-Class Scientific Journals*, which called for strengthening the Party' s overall leadership over scientific journal work to ensure correct public opinion orientation and publishing direction [1]. This sets higher requirements for risk prevention and public opinion guidance for journals in the new era. Currently, with the deepening of journal transformation and continuous development of new media technology, the publishing environment has undergone tremendous changes. Scientific journals face more complex and diverse risks, including ideological risks, academic integrity and ethical risks, and new media communication risks. New media publishing breaks traditional academic expression patterns and represents an important pathway for scientific journals to broaden dissemination channels and enhance influence. However, in the new media era, risk issues in scientific journals can be infinitely amplified, destroying long-accumulated academic influence and creating new communication hazards.

This paper summarizes the risks in scientific journal editorial processes and their characteristics in the new media environment, and proposes preventive measures based on practical publishing experience.

1. Risk Assessment in Scientific Journal Publishing

1.1 Ideological Characteristics and Potential Risks in Scientific Journals

Scientific journals possess dual attributes of political nature and academic character. Their ideological issues, like those in social science journals, generally stem from conflicts between "political nature" and "academic character" [2]. In the new media era, ideological issues in scientific journals exhibit characteristics of being difficult to review, editors' relatively insufficient political literacy, and diverse sources of ideological risks. Certain problems are highly likely to be infinitely amplified by new media, and these risks can trigger a series of issues that require special attention.

1.1.1 Hidden and Fragmented Nature of Ideological Issues in Scientific Journals First, scientific journals primarily publish research findings in natural sciences and technology. Some scientific journal editors believe that scientific journals cannot have political problems, leading to a lack of political risk awareness. Second, unlike humanities and social science journals where authors' viewpoints and ideas are directly expressed in the text, allowing editors to intuitively identify and eliminate political errors, scientific journal articles are supported by formulas, charts, and data analysis. Political errors are generally hidden in a single sentence, map illustrations, tables, or references, making them difficult to detect. Furthermore, because some scientific journal editors lack systematic backgrounds in liberal arts, their political sensitivity and discernment lag far behind those of social science journal editors, and they may not accurately identify hidden political errors.

In the new media environment, the lack of ideological risk awareness causes scientific journals to exhibit common political errors. Due to the timeliness pursued by new media communication, once problems occur, if not handled properly, they will cause varying degrees of harm to national ideological security [3]. For instance, in text and tables, Hong Kong, Macao, Taiwan, and other countries may be listed together, or geographical distribution maps may omit China' s Taiwan Island, Diaoyu Islands, Chiwei Island, Hainan Island, and South China Sea islands, violating the "One China" principle and jeopardizing China' s territorial sovereignty integrity. In manuscripts involving environmental protection or flora and fauna surveys in ethnic minority regions, issues of ethnicity and religion may arise, such as using terms like "Tibetan people," "Mongol ethnicity," or "Huihui" instead of the correct "Tibetan compatriots," "Mongolian ethnicity," or "Hui ethnicity."

1.1.2 Rapid Spread and High Hazard Potential of Ideological Security Issues In the new media era, scientific journals adopt novel digital publishing methods such as "priority digital publishing" and "online first publication," as well as knowledge content push via WeChat and Weibo. These new media methods all pursue timeliness, thereby shortening the time for manuscript editing, content and format review, while creating deficiencies in reviewing viewpoints, value orientations, and other aspects. Simultaneously, in an open and inclusive new media environment where authors and readers can share global scientific and technological achievements, special vigilance is required against Western countries' ideological infiltration through academia. When citing foreign literature, careful screening is necessary to identify potential ideological issues [4]. Scientific journals feature numerous charts and are knowledge- and technology-intensive. Once quality control fails and confidential content appears, it will cause significant losses to the country. Unidentified political errors that spread through new media will trigger serious ideological problems.

1.2 Academic Integrity and Ethical Risks

Scientific journals are important platforms for publishing research findings and vital windows for showcasing academic achievements, serving as components of national scientific research levels and cultural soft power. They play crucial roles in prospering scientific research, promoting scientific and technological innovation, and facilitating socio-economic development and scientific progress. Currently, scientific papers increasingly involve interdisciplinary subjects and expanding professional fields, and with continuous development of new media technology, greater attention should be paid to the academic integrity and ethical risks faced by editors, authors, and reviewers of scientific journals.

1.2.1 Risks of Excessive Publication and Academic Misconduct by Behavioral Actors Currently, China' s research evaluation and professional title assessment systems still heavily emphasize SCI impact factors, leading many research papers to be published in foreign journals. This has given rise to numerous journals that charge high processing fees. These journals, promoted through agencies or email marketing, mostly forego peer review and will publish papers upon receiving high publication fees [5]. In response, the Documentation and Information Center of the Chinese Academy of Sciences issued the *International Journal Warning List (Trial)* in December 2020 to help authors identify these low-quality journals [6]. Similarly, some domestic journals profit by publishing low-quality papers or publishing papers that do not conform to their scope and purpose, creating negative social impacts.

Academic misconduct by authors includes duplicate submission, plagiarism, data fabrication, and theft; improper behavior by reviewers during the review process includes coercive citation, delayed review, and invalid review; editors may also engage in academic misconduct during submission, plagiarism checking, review, and editing. In the new media era, such negative impacts ferment

rapidly, causing serious consequences. For example, in January 2020, major websites and self-media platforms heatedly discussed the "*Journal of Glaciology and Geocryology* Publication Incident," where the author devoted lengthy passages to discussing "the loftiness of the mentor" and "the gracefulness of the mentor' s wife," triggering a massive public outcry that led to the suspension of this Chinese core journal, which had won multiple national publishing awards, and sparked widespread criticism of scientific journals and academic research.

1.2.2 Confidentiality Risks Scientific papers must undergo peer review before publication, establishing relationships of mutual trust among authors, reviewers, and editors throughout the submission-review-publication process. If editors reveal reviewers' identities to authors, it may interfere with normal review activities and affect the fairness of peer review. Simultaneously, editors and reviewers must maintain confidentiality regarding manuscript content and must not prematurely disclose authors'unpublished research findings. In the new media era, journals must formulate more comprehensive confidentiality policies to prevent troubling reviewers and to avoid irreparable losses to authors caused by content leaks.

1.2.3 Inadequate Ethical Review Mechanisms Ethical review primarily involves biomedical research on human subjects, bioethics and biosafety, research on rare and endangered wild flora and fauna, and research on new clinical tools, drugs, or procedures. While research ethics has attracted widespread attention from scholars in the medical field, scientific research involving humans and animals in humanities, social sciences, and biology should also consider ethical issues. As platforms for publishing research findings, scientific journals need to strengthen ethical review. Research shows that among 190 surveyed journals, 78.38% of medical journals, 66.67% of social science journals, 43.64% of engineering journals, and 40% of natural science comprehensive journals have ethical review mechanisms, while the proportion is not high in other fields [7]. In the new media era, once ethical issues are exposed, their social impact is extremely adverse. Cases such as the "Hunan Golden Rice Incident" and "He Jiankui Gene-Edited Babies Incident" have drawn public criticism for breaking ethical bottom lines, and rapid fermentation through new media dissemination has caused significant damage to the social reputation of the academic community.

1.3 New Media Communication Risks

Scientific journals reprocess traditional journal content through digital technology and extend knowledge services through short videos, audio, and animation simulations, which is of great significance for improving user experience and enhancing journal influence [8]. When using new media to disseminate knowledge, employing popular and accessible language, vivid and interesting images or animations to transform rigorous scientific knowledge into popular science for general readers can increase journal influence. However, many journals have

been found to reprint original works from mass media or individual users on their WeChat public accounts without permission and without indicating sources, or to use images, videos, and other materials from the internet in their posts. Although they may indicate reference sources and image origins and state "if infringement occurs, please contact for removal," these practices actually constitute copyright infringement.

When scientific journals disseminate academic papers through new media to increase attention, they must not take quotes out of context or inaccurately express scientific content for the sake of high attention. This would not only mislead the public but also damage authors' academic reputations and affect the good reputation that scientific journals have worked hard to establish.

2. Preventive Measures

Scientific journals face many uncontrollable risk factors in the editorial and publishing process, especially in the new media era where some issues can be infinitely amplified. Only by enhancing risk awareness among journal supervisory and sponsoring units and editorial staff, establishing and improving various rules and regulations, scientifically preventing various publishing risks, and fully utilizing new media technology to improve risk prevention and control capabilities can journals effectively navigate these challenges.

2.1 Strengthening Ideological Construction and Safeguarding Ideological Security

2.1.1 Raising Political Stance and Strengthening Ideological Construction Scientific journals are important platforms for publishing research findings and vital windows for showcasing academic achievements. The publication of innovative research findings in scientific journals requires ideological construction from the strategic height of prospering scientific research, promoting scientific and technological innovation, and facilitating socio-economic development and scientific progress. First, scientific journals must firmly establish the "Four Consciousnesses," serve as providers of excellent content, adhere to the correct publishing direction, build cultural confidence, establish academic publishing positions with independent intellectual property rights, and enhance the influence and discourse power of Chinese scientific journals. Second, scientific journals must uphold the socialist direction, actively resist and oppose various erroneous ideas and viewpoints. Currently facing increasingly complex foreign ideologies, ideological work in scientific journals faces severe challenges. Journals must be vigilant against erroneous viewpoints and ideological trends from Western countries infiltrating through academic packaging, and must carefully screen foreign literature for ideological issues. Simultaneously, scientific journals must adhere to bottom-line thinking, implement a veto system for manuscripts involving errors in political principles and ideological understanding, and ensure the correct political direction.

2.1.2 Strengthening Institutional Construction to Control Publishing Orientation and Content Quality In scientific journal editorial work, it is essential to conscientiously implement the *Regulations on Journal Publishing Management*, clarify publishing purposes and characteristics, strictly adhere to the "three reviews and three proofreadings" system, and control publishing orientation and content quality. Institutional construction must be strengthened to clarify risk prevention and control priorities in review and publishing processes, ensuring ideological work checks are implemented at every stage of journal publishing. During the review process, journals must strictly examine article orientation, maintain high vigilance toward articles involving national political systems and major policies, and implement a veto system for articles with political or ethnic and religious issues. During editing and proofreading, editors must carefully identify sensitive text, verify whether maps are drawn to standard, and check whether scientific terminology is standardized, cautiously handling hidden issues in articles.

Under the context of media convergence development, scientific journals adopt novel digital publishing methods such as "priority digital publishing" and "online first publication," as well as knowledge content push via WeChat and Weibo. While new media technology greatly facilitates interaction and communication among authors, editors, and readers, it also increases potential risks in ideological prevention and control. Therefore, it is necessary to establish high-quality new media editorial teams with reasonable division of labor and collaboration to conduct multi-level review and control of ideological issues. Simultaneously, new media teams must be fast and efficient, capable of both adhering to bottom-line thinking and strictly controlling content, while also responding quickly to accurately and timely deliver professional research findings to readers.

2.2 Strengthening Academic Integrity and Ethical Review

2.2.1 Strengthening Self-Discipline Among Publishing Units and Relevant Actors to Jointly Resist Academic Misconduct Scientific journals should aim to publish high-quality content and disseminate innovative research findings, strengthen social responsibility and mission commitment, and continuously promote high-quality journal development. Therefore, journals should avoid publishing crude and hastily produced articles for profit, adhere to correct publishing orientation and high-quality content, uphold their original mission, and continuously improve quality and influence. Journals should conduct academic integrity statement reviews. During submission and before publication, authors must sign submission statements and copyright transfer agreements, adding formal review layers to prevent academic misconduct such as duplicate submission and duplicate publication. Journals should also pay close attention to research misconduct by supervisors and research teams, conducting strict academic integrity reviews of all articles published by the entire team. When academic misconduct occurs, journals should promptly issue corrections, retractions, and statements. Journals should establish alliances to

jointly resist violations of academic integrity and impose heavier penalties, creating a "blacklist" for journal submissions. Academic integrity construction is closely related to behavioral actors including authors, reviewers, and editors. In May 2019, the National Press and Publication Administration issued the first industry standard targeting academic misconduct in journals: CY/T 174–2019 *Academic Publishing Specification—Definition of Academic Misconduct in Journals* [9], which defines academic misconduct by journal article authors, peer review experts, and editors. By establishing ethical and behavioral guidelines for authors and editors at multiple levels, strictly implementing peer review systems, and effectively utilizing public opinion supervision, academic misconduct can be jointly resisted.

2.2.2 Strengthening Confidentiality System Construction Confidentiality is a principle that authors, reviewers, and editors must adhere to when fulfilling publishing ethics. In the new media publishing environment, confidentiality risks are gradually increasing with new technological developments. Therefore, scientific journals should introduce confidentiality-related rules and regulations. After manuscript submission, journals must stipulate that editors keep manuscript content confidential. During peer review, journals must stipulate that editors strictly maintain confidentiality regarding reviewers' identities and review comments, while also requiring reviewers to keep manuscript content confidential in review guidelines. Some journals set up two separate review comments from experts—one for authors and one for editors—allowing editors to make accurate judgments based on the comments provided.

2.2.3 Strengthening Ethical Review In their author guidelines, scientific journals should specify requirements regarding publishing purpose and scope, originality, and ethical policies. Journals should establish specialized ethical risk review teams to examine whether content in topics, viewpoints, and value orientations violates scientific and social ethics. Journals may require authors to provide original data and images and sign research integrity guarantees. For manuscripts involving ethical issues, journals should require authors to provide relevant review documents.

2.3 Establishing Regulatory Systems for Journal New Media Publishing

Scientific journal new media publishing and dissemination includes the release, reprinting, and citation of academic papers and related content on official websites and major new media platforms. Journals must formulate corresponding terms to prevent new problems and situations in new media publishing and dissemination. Journals should clearly define the scope of paper authorization and licensing in copyright transfer agreements, including whether electronic versions, WeChat, Weibo, and other new media platforms are covered. They should explicitly specify circumstances of inappropriate authorship and stipulate the extent to which editors can modify paper content for secondary publication or

excerpting. In new media publishing, knowledge dissemination should review content originality, avoid taking quotes out of context, eliminate the spread of "bizarre papers" that attract attention, and ensure the scientific, political, and professional nature of journal new media publishing.

When conducting enhanced publishing, for articles that are uncertain or beyond editors' comprehension, journals may invite experts and scholars to interpret the papers for new media dissemination in forms suitable for popular appreciation. Authors or experts in relevant fields may be invited to write popular science articles based on paper content and push them in the form of images, audio, or video. This can both improve the accuracy of popular science knowledge accepted by the public and prevent misinterpretation during secondary reprinting by other media or self-media. For example, during the COVID-19 outbreak, Academician Zhong Nanshan and Professor Zhang Wenhong timely spoke on news media or self-media platforms to clarify errors and scientifically guide the public in creating a favorable public opinion atmosphere.

2.4 Strengthening Editorial Team Building and Cultivating High-Quality Editorial Talent

As producers and quality inspectors of spiritual products, editors play important roles in building socialist culture with Chinese characteristics in the new era [10]. First, scientific journal editors must continuously enhance political awareness, improve discernment through learning and practice, and elevate political sensitivity and identification capabilities. They should thoroughly study Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, strengthen the "Four Consciousnesses," promote mainstream values, and actively guide people' s worldviews, values, and outlooks on life. Second, scientific journal editors should adhere to bottom-line thinking, prioritize quality, resist all academic publishing misconduct, serve as gatekeepers against academic misconduct, and jointly maintain a sound academic ecosystem. Third, emphasis should be placed on cultivating the craftsman spirit of scientific journal editors. Editors should not only thoroughly study various management regulations and proofreading standards but also actively participate in editorial publishing training and exchange activities to continuously enhance professional competence and meet societal development and scientific progress requirements. Only by emphasizing basic training and learning and cultivating craftsman spirit [11] can editors' capabilities and journal quality be improved to prevent risks of hidden content errors. Finally, scientific journal editors' new media literacy should be cultivated. In the media convergence environment, as journal dissemination channels and platforms change [12], editors should break traditional thinking, actively participate in and learn new media knowledge and technologies related to content processing, interaction methods, and precise push to avoid various risks caused by outdated ideological awareness and technical skills.

With the continuous development of new media technology, the publishing environment for scientific journals has undergone tremendous changes, facing more

complex and diverse risks such as ideological risks, academic integrity and ethical risks, and new media communication risks. Journal editorial staff should enhance publishing risk prevention awareness, improve relevant institutional construction, and establish collaborative risk prevention and control mechanisms for scientific journals. Only in this way can journals effectively lead disciplinary directions, enhance scientific and technological innovation, and promote academic exchange.

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Author Biographies:
He Yongyan (1983-), female, from Yuncheng, Shanxi, Master, Associate Editor, Research interests: Scientific journal editing and publishing.
Ding Ping (1983-), female, from Guilin, Guangxi, Master, Publishing Editor (Intermediate), Research interests: Scientific journal editing and publishing.

(Responsible Editor: Zhang Xiaojing)