

The State of Scholarly Journals Revisited by the Trend of Open Science

*Kazuhiro Hayashi¹

1. National Institute of Science and Technology Policy

When the means of sharing knowledge among researchers and with society are transformed, a new science and society are born. The open science trend first encouraged the digitization of scholarly journals, which were born in the 17th century, and then advanced their services, giving rise to the open access movement.

With the longer perspective, on the other hand, the open science trend is promoting the creative destruction of research media and research communities, and is likely to reconfigure universities and other research institutions. In fact, with COVID-19, the rigidity of universities and academic societies is once again being called into question, and the state of academic journals and peer review is being questioned again. On the other hand, more free and rapid exchange of information through academic SNS and preprints has begun. Further more, the fusion of AI (informatics) and existing science, and the fusion of the humanities and sciences has given rise to industries linked to new research, and the automation of research by robots is progressing, and the code is attracting attention as a potential research medium with high reproducibility.

Looking at transformations a bit closer to journals, AI is already being used in various ways in journal editing and publishing, supporting various functions such as "writing," "submission and checking," "publishing," and "discovery and publication," and also evolving daily. In addition, with the advent of generative AI, the level of engagement is dramatically increasing, and generative AI is beginning to replace the peer review function to some extent, bringing to light good/false papers, authors, and research institutions, not limited to peer review of papers. Furthermore, AI is already involved in various ways in the transformation of research activities themselves mentioned earlier, and the proactive use of AI in journal editing according to the circumstances of each community is required, and its use will ultimately question the nature of academic journals.

Keywords: Open Science, AI, Open Access, Preprint