Building a fairer system of academic authorship

By CHEN MIRONG

In recent years, as cross-border and interdisciplinary research collaborations have become increasingly frequent, the issue of academic authorship has evolved from a technical ethical issue into a central concern—one that touches on academic fairness, the distribution of power in knowledge production, and even the structural crisis of the global academic system.

Not long ago, Prabu Periyathambi, a postdoctoral researcher at the University of São Paulo in Brazil, experienced a clear case of authorship injustice. His role in a study on nanoparticle imaging was substantial, extending from culturing and maintaining tumor cells and drafting experimental protocols to assisting with imaging experiments. Yet in the final paper published in IEEE Access, his name appeared in the acknowledgments section rather than on the author list. Periyathambi's unfair treatment is far from isolated; it is merely the tip of the iceberg of misconduct and other problematic authorship practices in the international academic community.

Structural bias in academic authorship

Commenting on cases like Periyathambi's, Joseph Mellors, a researcher from the Business School of the University of Westminster in the United Kingdom, told CSST that such instances of individual injustice point to a broader structural problem in academia: Current systems of knowledge production tend to prioritize individual recognition while obscuring collective contributions.

In addition, researchers from low- and middle-income countries are often disadvantaged when seeking "first author" or "corresponding author" status. In collaborations between the Global North and the Global South, authorship order can reflect an implicit form of academic colonialism: Collaborators from developed countries typically control the funding, laboratory facilities, and manuscript submission process, while those from the Global South are often confined to "service" roles—such as data collection and sample processing—and consequently struggle to secure the authorship positions they deserve.

"At best, academic publishing neglects the Global South; at worst, academic publishing exploits the Global South," Stuart Macdonald said in a recent interview with CSST. "The single advantage of academics from the Global South is that they may be offered authorship so that Western authors may gain from the discounted article processing charges some Western publishers make available to authors from the Global South."

Mellors further noted that academia continues to harbor an implicit bias that associates academic quality and credibility with institutions in the Global North, rooted in historical colonial legacies and ongoing inequalities. This bias shapes perceptions of the importance of research, scientific rigor, and even citation practices—often resulting in the exclusion or marginalization of scholars from less prominent institutions or regions.

Significant "cultural differences" also exist across countries and disciplines. For example, in some cultural contexts, the principle that "supervision warrants authorship" is regarded as a tradition, while in others, it is viewed as appropriation.

"In academic life, 'culture' is a weasel word used to excuse behavior that would otherwise be inexcusable," Macdonald said. "It may be common practice in academic publishing for a supervisor to claim publication rights to their student's paper, and it may be that the student feels she has a better chance of being published with the supervisor's name on the paper. This is a consequence of the debased state of academic publishing and has nothing to do with culture."

Utilitarianism in academic publishing

Even as restrictive authorship practices persist, a seemingly opposite trend is also emerging: The number of authors on academic papers in certain disciplines is growing rapidly. In physics, for instance, Macdonald cited a striking set of figures: The average number of authors per physics paper was 78 in 1994, rose to 121 in 2004, and reached 952 by 2019. In such "hyper-authorship" scenarios, defining what constitutes a substantive contribution—both ethically and practically—becomes a thorny problem.

"I think this phenomenon highlights an important tension in contemporary academic authorship," Mellors said. "On the one hand, restrictive authorship practices unfairly exclude researchers who have genuinely contributed significant intellectual labor, perpetuating inequalities and marginalization. On the other hand, excessively long author lists can raise questions about the meaningfulness of authorship, particularly when authors are included primarily for strategic reasons, such as reciprocal citation practices or boosting visibility, rather than substantive intellectual input."

In Macdonald's view, authorship misconduct should be understood in the broader context of how the other major players in academic publishing—universities and publishers—operate. Universities around the world have come to measure academic performance in terms of publication indicators. "In a publish or perish regime, academics have not so much an incentive to publish as a disincentive not to publish. Basically, they must publish lots of papers which will be frequently cited. Authors game to achieve this outcome. In particular, they game by producing lots of papers with lots of authors, papers that avoid serious research, say what others are saying and are easily citable in consequence."

"Publishers match university misconduct with their own," Macdonald continued. "As long as the exercise is profitable, they are quite content to publish papers that make little contribution to knowledge and may never be read."

The oligopoly of large publishers that dominates academic publishing has become hugely profitable not by facilitating contributions to knowledge, but by supplying the publication metrics that universities and academics require. These publishers are complicit with universities and academics in discouraging the creation and dissemination of knowledge that contributes to a prosperous economy and a healthy society, he added.

Modern academic publishing has also given rise to the "hyper author," Macdonald said, referring to scholars who publish several papers a week, many of which they may never even have seen. "All academic authors game, producing papers to be counted and to be cited as much as to be read. The hyper author focuses on citation, being listed as a co-author on papers that will readily be cited because what little they say is obvious and can fit in anywhere—water-is-wet papers."

Macdonald noted that Clarivate's Highly Cited Researchers (HCRs) list has become a showcase for institutions seeking to "rent" hyper authors. By bringing a few highly cited mathematicians on board as affiliates, for example, obscure institutions—sometimes with no mathematics department at all—have risen to the top of rankings of the world's leading mathematics departments.

Co-authorship with these affiliated hyper authors also boosts the publication output of local academics. Between 2016 and 2022, Saudi Arabia expanded its cohort of highly cited authors from 6 to 69. As the number of staff listed among HCRs—whether formally affiliated or otherwise—is a major factor in influential university rankings, the cost of renting a few prolific authors can be recouped many times over through increased student recruitment and access to research grants and other funding.

Advocating for collaboration-based publishing practices

Academic publishing used to be a quaint system sustained by the goodwill and shared understanding of all parties: Academics published papers to advance knowledge, while universities facilitated its creation. University presses and learned society presses, including those willing to publish unprofitable work, once dominated the field.

"This system collapsed with the introduction of modern management methods and the replacement of collegiality with competition," Macdonald said. Universities became international businesses, while a few publishers grew into giants by acquiring smaller publishers, particularly university presses and learned society presses. What did not change was the free supply of papers from academics, who were still expected to provide editing and peer review services on a voluntary basis. Publishers then sold back to universities and academics the papers they had acquired for next to nothing.

"Large publishers became very rich indeed, their profits rivaling those of giant pharmaceutical and armament corporations. A sideline that was to become even more profitable than selling academic papers back to the academics who produced them came from gathering and analyzing publication data. These, too, were sold back to the universities and the academics who had produced the data," he noted.

"Some of the largest academic publishers now see themselves as information companies rather than publishers. All trace of collegiality has been stripped from academic publishing," Macdonald said. "There is no way out of this mess as long as competition rather than collegiality determines practice in academic publishing. The market allows the players in academic publishing to game the system beyond absurdity: becoming the best author, or department or university is just a matter of data manipulation."

Nonetheless, Macdonald has also seen signs of change. Prestigious research institutions such as France's CNRS (Centre National de la Recherche Scientifique) have begun replacing metric-based assessments of scientists' performance with qualitative evaluations of research, while universities including Sorbonne University in France, the University of Zurich in Switzerland, and Utrecht University in the Netherlands have opted out of rankings based on publishers' metrics.

These signs suggest that a reckoning with the existing system is quietly taking shape within the academic community.

To genuinely address the problem of authorship injustice, universities, publishers, funding agencies, and scholars must reflect together on two fundamental questions: What kind of academic evaluation system do we actually need? And what price are we willing to pay for a scholarly culture of fairness, transparency, and collaboration? Until these questions are answered in earnest, stories like Periyathambi's will continue to repeat themselves.

It is necessary to build a fairer system of academic authorship. Image generated by AI

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Gao Qiqi, a professor from the School of International Relations and Public Affairs at Fudan University, observed that as the capabilities of LLMs rapidly improve, academic evaluation should place greater emphasis on whether research questions are original, source materials are solid, methods are transparent, and conclusions can explain real-world phenomena.

Research methodology shifts toward human–machine collaboration

Turing Award laureate and American computer scientist Jim Gray categorized scientific discovery into four paradigms: the empirical paradigm, which identifies patterns through observation and experimentation; the theoretical paradigm, which explains the world through laws; the computational paradigm, which relies on computer simulation; and the data-intensive paradigm, which searches for patterns in massive datasets.

Zhou Aoying, founding dean of the School of Data Science and Engineering at East China Normal University, held that the data-intensive paradigm expands the boundaries of conventional reductionist research and increasingly blurs the boundaries between the natural and social sciences.

Liu Tieyan, president of Zhongguancun Academy and chairman of the Zhongguancun Institute of Artificial Intelligence, described AI for Science as the "fifth paradigm" of scientific discovery. Under this paradigm, AI progresses beyond data processing and pattern recognition to pose research questions, formulate candidate hypotheses, compare research pathways, and design verification protocols.

Changes in methodology also demand changes in research organization. Liu Wei, director of the Information Research Institute at the Shanghai Academy of Social Sciences, suggested that future research teams will increasingly be organized around major research questions, bringing disciplinary scholars, data engineers, model developers, and ethics and legal experts into the same research process.

According to Xiao Lisheng, a research fellow from the Institute of World Economics and Politics at CASS, seven modules operate simultaneously within the institute's Laboratory for Global Macroeconomic Forecasting and Policy Simulation. The "Ecopolis 2.0" knowledge repository has collected and parsed more than 1.2 million articles, reports, and policy documents from over 1,200 sources and tracks more than 300 think tanks worldwide each day.

Yu Jianxing, director of the Academy of Social Governance at Zhejiang University, characterized the bidirectional interplay between AI and philosophy and social science research as a relationship of "mutually defining frontiers": Engineering delineates what is technically possible, while philosophy and the social sciences address what is normatively acceptable.

Zhao Puguang, a professor from the College of Liberal Arts at Jinan University in Guangdong Province, warned that when documents are converted into data streams, some of the historical context, atmosphere, emotion, and situational information embedded in their original form may be diminished. "Distant reading" can enable macro-scale mapping, he noted, but it must remain grounded in "close reading" and immersive scholarly reflection.

Guo Taihui, a professor from the School of Ethnology and Sociology at Yunnan University, emphasized that for Chinese knowledge to explain reality and participate in global dialogue, genuine research questions must emerge from Chinese practice, reliable materials must provide the basis for evidence, and experience must be elevated into theory through indigenous concepts and rigorous argumentation.

Zha Jianguo, Zhu Gaolei, Chen Lian, Wang Guanglu, Li Yongjie, Chen Yajing, and Zhang Sai contributed to this story.