

## Panel 45. Reconfiguring Scientific Publishing: Promoting More Fairness and Equity by new Technologies and Pluriversal Practices

### Convenors:

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**Keywords: AI, biodiversity, digital technologies, knowledge production, publishing infrastructures**

This panel aims to discuss the epistemological and ethical framework of the scientific publishing ecosystem in an interdisciplinary and pluriversal perspective. It begins with a dialectical approach. On one side, the technoscientific developments and the open science movements are transforming the publishing landscape striving for greater accessibility. On the other hand, the global knowledge ecosystem is affected by ethnocentrism, and Western monopolies that have built hegemonic narratives, especially in academic publishing. As a consequence, the academic community is undergoing increasing uniformity and homogenisation in the forms and processes of knowledge production (writing, reviewing, evaluation, and publication), which are hindering pluralism.

This framework highlights that, while the forms of scientific publishing tend to adhere to traditional structures, with the traditional article still predominating, the cognitive revolution driven by the impact of digital technologies has transformed the ontologies in which knowledge is produced and organized, introducing a progressive granularity of research outputs and, at the same time, different publishing infrastructures (e.g. OpenAire, Open Research Europe) that have gained scientific recognition and reliability.

Two additional aspects are emerging: how evaluation processes can impact on publication diversity (debates on impact factors are driving a shift toward responsible evaluation, and peerreview models are advancing toward transparency and continuous assessment, all in order to promote a more pluriversal perspective); and how recent developments in AI (Artificial Intelligence) could influence the processes of scientific production and assessment, (the possibility of publishing content in a framework of multi-agencies authorship and contributorship).

The panel welcomes contributions (from traditional standard formats of scientific writing to innovative ones, fostering new "viscourses" -Bonsiepe, 2007- e.g. augmented, enriched, interactive, contributive and collectively authored as mixed media ecosystems of content) from diverse disciplinary perspectives, addressing the following questions:

- How can scholars (and especially socio-technical scientists) contribute to redesign our publishing landscape practices and technologies, promoting more fairness, equity, diversity, and justice?
- How can we reconfigure the Western orthodoxy of scientific publications, discussing disciplinary standards in academic validation (publication formats and procedures as review) in a more pluriverse perspective?
- How can we reshape open and emerging technologies in order to support knowledge biodiversity and promote a transition toward a distributed leadership in the publishing ecosystem?

### Potential subtopics and issues:

- The impact of standardization in publishing and evaluating on knowledge production, organization and dissemination Collaboration and distributed leadership in publishing ecosystem
- Innovative formats of publishing
- Open access and equity: technological and economical gaps
- Plural forms of review practices and processes for publication
- Critical perspective on AI for publishing



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## ID 355 - What is the purpose of Open Science and Responsible Research and Innovation tools? Limitations and possibilities of tools and toolkits for reforming research and innovation.

*Raúl Tabarés, TECNALIA Basque Research and Technology Alliance*

*Mika Nieminen, VTT Technical Research Centre of Finland*

**Keywords: RRI, STS, open science, ethics, tools**

Over the past decade the European Commission (EC) has carried out significant efforts for the promotion of Responsible Research and Innovation (RRI) and Open Science (OS) approaches into the European Research Area (ERA). The first one has been a common topic in different funding calls of the 8th Framework Programme for Research and Innovation (R&I), also known as "Horizon 2020", with the aim of promoting responsibility across ERA stakeholders, European innovation ecosystems and emerging technologies. The second one, in contrast, has been often promoted by the EC as a funding requisite closely associated to the availability (and reusability) of data produced by the funded research (open data) and the accessibility to the research findings (open access). Both philosophies, RRI and OS, constitute a reaction from diverse academic communities, as well as policy makers, to transform the way that R&I is produced.

First, by emphasizing the need of incorporating responsibility and critical reflection to these processes. And second, for promoting sharing and collaboration into R&I for accelerating the discovery process, improving research quality, and making science more impactful and central to human and societal development. Both concepts, RRI & OS, have been the subject of significant academic discussions, as well as critiques, for their development and advancement by many scholars and practitioners. Their implementation and operationalisation in different contexts still constitute a significant endeavor as both philosophies face a significant number of cultural and organisational barriers. In this regard, a significant number of tools and toolkits have been launched during the last decade for introducing and adopting RRI and OS into a variety of contexts, trying to promote ethical reflections about R&I processes, broadening the participation of stakeholders into these processes and/or improving the accessibility of research data, instruments and findings, among others. But tools and toolkits are also a common object of critique by scholars, as tools represent significant risks for a narrow conceptualisation of responsibility and openness into R&I processes, framing RRI and OS as tick-box exercises and promoting "ethics washing" through guides and manuals.

In this contribution, we aim to shed some light on the role that tools and toolkits can play for disseminating and promoting RRI and OS, as well as facilitating and adopting their principles into different contexts and settings. Through a narrative literature review and a comparative analysis, we take stock of significant contributions in the field, we sketch a taxonomy of tools, and we explore how notions of RRI and OS are deployed into existing tools and toolkits. To this aim we take stock of a recent taxonomy developed in an EU funded project and different tools grouped around it. In particular, we wonder about the shortcomings and potentialities that tools and toolkits can offer to the adoption of RRI and OS practices across different contexts.

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## ID 418 - Optimizing Peer Review with AI: An Intelligent Approach to Article-Reviewer Matching.

*Lorela Mehmeti, Università di Bologna*

*Martina Sollai, Frontiers Media SA*

**Keywords: peer-review, reviewer assignment, design methodology, academic publishing, AI**

The integration of artificial intelligence (AI) in academic publishing is no longer a matter of speculation but a factual development. The current debate focuses on the extent of opportunities and risks, on the key



beneficiaries and those potentially excluded, and on the contexts and timeframe over which these changes will occur within this sector. Based on a scenario model analysis, this research focuses on analyzing the potential impact of applying AI technology in a specific phase of the editorial workflow: the article-reviewer matching, a critical and labour-consuming component of the peer review process.

Nowadays, it is widely accepted that scholarly communication and dissemination are under strain. On the one hand, authors expect time-efficient and rigorous peer review processes, while on the other, finding appropriate reviewers for submissions has become a time-consuming task for editors and publishers. This trend appears as an undesirable side-product of the increasing volume of publications observed in the last decades. AI has already emerged as a transformative tool to be explored across various stages of the editorial process, as witnessed by the case studies of early AI adoption by publishers like Frontiers, where AI was utilised in pre-peer review quality checks since 2018 via the in-house developed tool Artificial Intelligence Review Assistant (AIRA). Hence, the research aims to examine how AI can optimize the process of reviewer matching by analysing manuscript content and align it with reviewer expertise. Using a speculative design approach, this research proposes an editorial model to examine the potential reduction of editorial workload during the reviewers-matching phase based on AI technology.

The research methodology includes a scenario analysis to evaluate the sustainability and implications of AI in reviewer identification, drawing attention on three main peer-review pitfalls: a) assessing reviewer qualifications and availability, b) mitigating biases and conflicts of interest in reviewer selection, and c) addressing the complexities of multidisciplinary expertise. Contextually, this investigation also describes the evolving role of AI in scientific publishing, acknowledging the ethical dimensions and implications of AI adoption concerning transparency, accountability and the potential risks of over-reliance. Future research directions explore these ethical considerations in depth, delving into broader applications of AI in research integrity checks and editorial board composition.

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## ID 659 - Towards a plural knowledge ecosystem. Decolonising scientific publication in Design

*Asja Aulisio, Politecnico di Torino*

*Cecilia Padula, Politecnico di Torino*

**Keywords: knowledge ecosystem, design, scientific production, academic pluriverse, research equity**

In recent years, the growing interest in decolonising knowledge production and validation has intensified debates around the Western orthodoxy of scientific publishing. This orthodoxy has long been dominated by fixed disciplinary standards, particularly regarding publication formats and procedures for peer review. These conventions, grounded in Anglo-Saxon norms, fall into the exclusion of knowledge and methodologies from non-Western perspectives and, consequently, limit the diversity of voices and the plurality that contributes to academic discourse. Though effective in certain contexts, these standards fail to account for the plurality of ways knowledge can be generated and communicated. They impose a form of homogeneity that disregards the value of culturally situated, intersectional, and transdisciplinary knowledge production, especially in design research.

The crucial aspect of this paper is that to foster a truly inclusive academic environment, we must challenge the existing norms of scientific publication by engaging in a more collaborative, participatory process that amplifies the voices of those often marginalised. In particular, design research offers a unique opportunity to facilitate this paradigm shift with its inherent flexibility and emphasis on cultural context.

As a discipline, Design has long embraced a systems thinking approach that allows for the integration of diverse perspectives, making it an ideal framework for reimagining academic validation processes.

To operationalise this vision, the abstract proposes to design a European participatory mapping initiative, aimed at creating a platform for collaboration between Southern and Eastern European design research



institutes, which can be the starting point to be scaled internationally, as embedded in the geopolitical and socio-economic challenges these regions face.

The mapping process would involve gathering information on predominant and minority local cultural practices, knowledge production methodologies (argumentative or narrative, written or oral), and the specific challenges faced by researchers in these regions to validate their knowledge contribution in design, with the goal of identifying ways in which these practices can be integrated into global academic discourse expanding its continuum.

This can lead to the recognition and acknowledgement of forms of writing scientific production that can be identifiable, developing writing models that align with local cultural practices.

Through this proposal, the research aims to create a more pluralistic academic ecosystem where scientific knowledge is no longer determined solely by a narrow set of Western-dominated standards but rather is shaped by a diverse range of cultural, political, and social contexts. This reconfiguration of academic validation will enrich the design field and pave the way for more equitable and culturally inclusive knowledge production in the global academic landscape. In conclusion, the approach offers a promising path towards reshaping the future of scientific publication and ensuring that all voices, overcoming and regardless of geographical or political constraints, have an equal opportunity to contribute to the global discourse on design.

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## **ID 748 - Fairness, equity, epistemic diversity? Exploring the role of editors in reconfiguring peer review towards pluriversality**

*Sarah Patricia Wendt, Humboldt-Universität zu Berlin*

**Keywords: Epistemic justice, peer review, editorial practice, medical publishing, diversity**

Despite academic publishers' recently growing commitment to fairness, equity and diversity, scholars from the Majority World continue to experience epistemic exclusion from the publishing landscape. Calls for epistemic justice have received increasing attention especially since the beginning of the COVID-19 pandemic, e.g. in the fields of global health and medical education. These voices highlight how Western hegemony shapes global academic knowledge production and dissemination in terms of privileging Western knowledge output over knowledges from the Majority World, even when it comes to knowledge about health issues that require localised expertise and sensitivity. From this perspective, the academic publishing system contributes to a monologic (health) knowledge ecosystem and inhibits pluriversality. These debates often identify the peer review process as key mechanism of potential exclusion or inclusion.

Peer review constitutes the primary procedure of research evaluation. In the case of publishers, peer review is decisive for which forms of knowledge are worth publishing, and which not. Science and technology studies (STS) scholars thus conceive the peer review process as key to understanding the dynamics of the academic publishing landscape. This gives a central role to the procedures, technologies and actors that form part of and shape peer review in publishing. Especially editors find themselves in a position of managing main parts of the process, e.g. through selecting suitable peer reviewers or defining disciplinary categories.

In this context, I explore how editors perceive their own role with regards to the implementation of fairness, equity and diversity policies in medical publishing. I draw on debates about epistemic justice in medical publishing and feminist decolonial scholarship on pluriversality in order to build a conceptual lens that can capture understandings and meanings of fairness, equity and diversity in editorial roles and practices. The conceptual framework will inform an ethnographic study of editorial work at two different publishers, including participant observation and in-depth interviews with editors. Through the ethnographic approach I seek to identify how editorial decisions and routine activities in the two cases might either perpetuate monologic knowledge systems or foster epistemic diversity.



At this stage, I present the conceptual lens which brings together perspectives from the sociology and philosophy of science, feminist decolonial scholarship, and STS. I aim to bridge existing research on the social configurations of peer review with scholarship on epistemic justice and diversity. This will provide the theoretical ground for the planned ethnographic fieldwork.

The overall aim of this project is to generate new insights about the aspects of peer review and editorial work in particular that can foster or hinder pluriversality in medical publishing. A deeper understanding of editors' engagement with concepts of fairness, equity and diversity can contribute to strategies of re-configuring the publishing landscape and may illuminate pathways towards more pluriversal editorial practice.

