

Open Peer Review

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Second Cycle Degree in Digital Humanities and Digital Knowledge

Alma Mater Studiorum - Università di Bologna



Research workflow

We discuss about one of the most important aspect related to scholarly research, i.e. the reviewing phase of scholarly publications



Peer review

Peer reviewing is the process by which research objects (such as manuscripts) are **vetted for validity**, **appraised for originality**, and **selected for publication** in academic venues

Contextualising the scenario in journals (but it holds also for other situations), an editor cannot be expert in every single area covered, thus manuscripts submitted for consideration are shown to external expert advisers (i.e. the *peers*) who deliver verdicts on the novelty of the work, criticisms or praise of the piece, and a judgement of whether or not to proceed to publication

Editors are then bound, with some caveats and to some extent, to respect these external judgements in their own decisions

Brief history of peer review: early times

Before 1600, scientists used to exchange experimental reports and findings through correspondence

Around 1660, the Royal Society of London was established and created its own in-house journal, *Philosophical Transactions* (it still exists!) and Denis de Sallo published the first issue of *Journal des Sçavans*

Early forms of peer evaluation (even if it was not called peer review yet) emerged as part of the social practices of learned societies, and were characterised by **civil and collegial discussions in the form of letters** between authors and the publication editors

The editors were the only ones to appraise manuscripts before printing, and the primary purpose was to **select information for publication to account for the limited distribution capacity**

Brief history of peer review: 19th century

During the 19th century, there was a proliferation of scientific journals, and the diversity, quantity, and specialization of the material presented to journal editors increased

Peer evaluations evolved to become more about judgements of scientific integrity, and research diversification made it necessary to seek assistance outside the immediate group of knowledgeable reviewers from the journals' sponsoring societies

The current system of formal peer review, and the use of the term itself, only emerged in the mid-20th century

Brief history of peer review: 20th century

After the World War II, we saw the development of a modern academic prestige economy based on the **perception of quality or excellence** surrounding journal-based publications

Peer review was considered as the process of **objective judgement and consensus**, and became formalised in the research workflow

The increasing professionalism of academies enabled **commercial publishers** to use peer review as a way of legitimizing their journals, and capitalized on the traditional perception of peer review as **voluntary duty** by academics

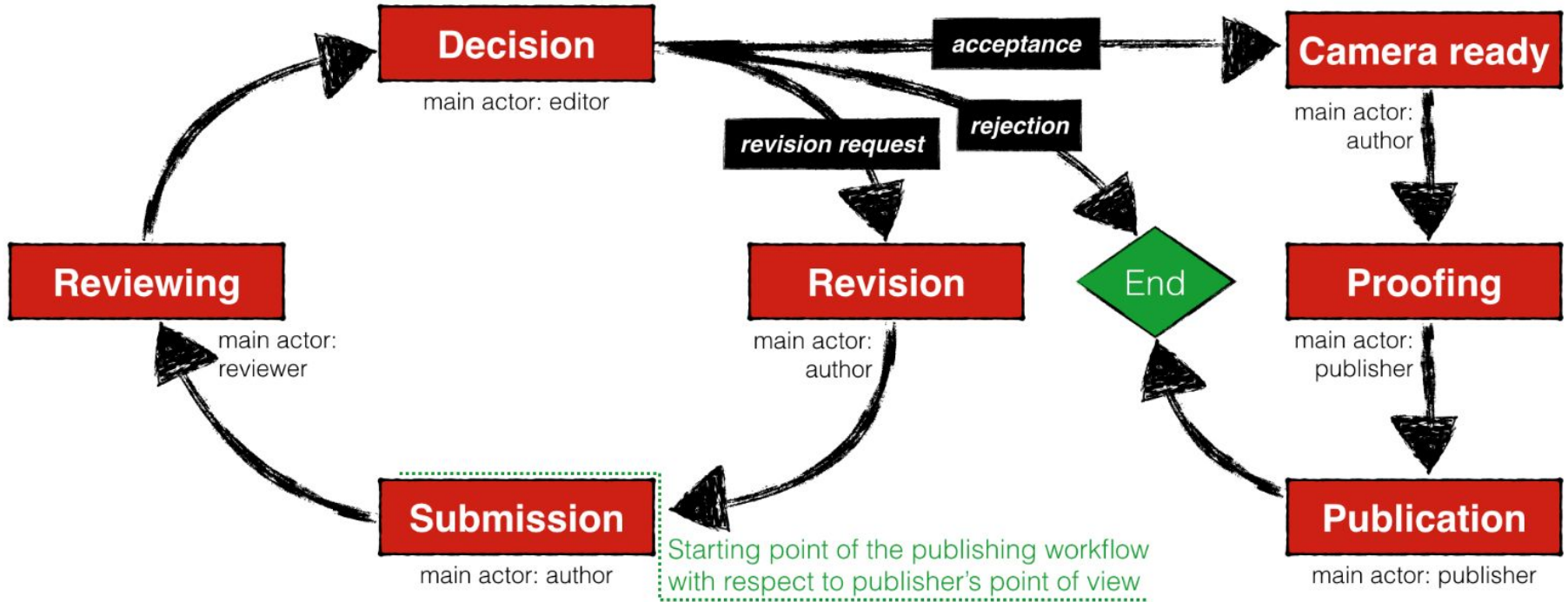
Brief history of peer review: modern times

Peer review became a more homogenized process that enabled private publishing companies to thrive, and eventually establish a dominant, oligopolistic marketplace position

It was a shift from peer review as a more synergistic activity among scholars to commercial entities **selling it as an added value service back to the same academic community** who was performing it freely for them

By allowing the process to become managed by a hyper-competitive publishing industry and **integrated with academic career progression**, developments in scholarly communication have become strongly coupled to the transforming nature of academic research institutes, that evolved into internationally competitive businesses that **strive for impact through journal publication**

A traditional peer review workflow



Most used forms of peer review

Single blind: the reviewers are anonymous but authors are not – it is probably the most used peer review process, since it is the less expensive in terms of effort

Double blind: both authors and reviewers are reciprocally anonymous, with the aim of addressing specific issues in single blind peer review, among which:

- **gender equity** – when reviewers know the identity of the author(s) of the submitted manuscript, gender bias is a possibility
- **fairness to unknown authors or institutions** – when the authors' names and affiliations are known, reviewers may be biased against papers from unknown authors or institutions

However, a substantial fraction of the blind papers **can be identified** by reviewers

Challenges of current peer review

Using the single- and double-blind processes, **review reports remain unpublished**, resulting in a loss of valuable contextual research-related information

Lack of rigorous evidence into the functionality of the different elements of peer review processes, including quality

The **length of time** taken for the peer review process

A **lack of adequate training and support** for researchers in best practices for how to perform peer review

Peer review revolution

In the last decade, the [San Francisco Declaration on Research Assessment \(DORA\)](#) had a crucial role in proposing systemic changes in the way that scientific research outputs are evaluated

Born-digital journals, such as the [PLOS series](#), introduced **commenting** on published papers

[Rapid Responses](#) by BMJ provided a platform for formalised comments

The journals [F1000 Research](#) and [The Winnower](#) proposed and used a post-publication peer review model

Services, e.g. [Publons](#), enable reviewers to claim recognition for their activities as referees

[PREreview](#) is an open source infrastructure to enable reviews to preprints

[Qeios](#) and [PeerRef](#) are platforms that allow anyone to post and/or organise a peer review as an open scholarly object, adding appropriate metadata of the reviewed resource, and to obtain a DOI to refer to the review itself

Traits of Open Peer Review

The term **Open Peer Review** is an umbrella term for a number of overlapping ways that peer review models can be adapted, according to the following traits:

- **open identities**, when authors and reviewers are aware of each other's identity
- **open reports**, when reviews are published alongside the relevant article
- **open participation**, when the community is able to contribute to the review process
- **open interaction**, when discussion between author(s) and reviewers is allowed
- **open pre-review manuscripts**, when manuscripts are made available before review
- **open final-version commenting**, when comments are possible after publication
- **decoupled review**, when it is facilitated by an entity external to the publication venue

What Open Peer Review wants to address

Open identities leads to better reviews – i.e. more accountability and transparency = more responsibility – even if it seems that invited reviewers are currently less inclined to review under such circumstances; in addition, the lack of anonymity might discourage reviewers from making strong criticisms (e.g. to higher-status colleagues)

Open reports and **open final-version commenting** add another layer of quality assurance: the community can scrutinize reviews to examine decision-making processes

Open participation struggles to attract reviewers and cannot replace invited peer review, but fine to supplement it

Open interaction between reviewers and authors could lead to improved reviewing accuracy, but may result in longer reviewing time

Open pre-review manuscripts reduces the time before research is available and may increase the quality of initial submissions

Decoupled review avoids that individual articles go through multiple cycles of review and rejection at different journals

Alternative approach: let the reviewer choose

Often due to discipline practices, setting up a full open review process is not possible but, at least, it should be permitted to let a reviewer choose how to act:

1. **Authorship** – to retain the copyright over the review and permit its free reproduction
2. **Responsibility** – to sign his/her review at any time of the review process
 - 2.1. **Precedence** – the right of signing guaranteed even if the review guidelines of a particular venue suggest otherwise
3. **Availability** – publish at any time his/her review by means of any platform
 - 3.1. **Licensing** – the license must be specified
 - 3.2. **Openness** – he/she can use an open license (as in the Open Definition)
 - 3.3. **Provenance** – the reviewed article must be referenced
4. **Inviolability** – the venue must not limit the aforementioned rights and duties

How to change the status quo

We need **policies** – **made by** the scholarly community for the scholarly community

There is “need for richer contextual information” to enable readers “to identify the most relevant or most trustworthy studies” (Waltman & Polka, 2022)

We need **incentives** – to **support** the scholarly community in the transition

“Recognise the diversity of research activities and practices [...] and reward early sharing and open collaboration [...] consider tasks like peer review” (Coalition for Advancing Research Assessment, 2022)

We need **infrastructures** – **managed by** the scholarly community

“Modern technology [...] presents an opportunity to restore peer review to its purer scholarly form, as a discourse in which researchers engage with one another” (Tennant et al., 2019)

Waltman, L., & Polka, J. (2022, July 7). Making sense of preprints by adding context – The Publish Your Reviews initiative [Blog]. LSE Impact Blog.

<https://blogs.lse.ac.uk/impactofsocialsciences/2022/07/07/making-sense-of-preprints-by-adding-context-the-publish-your-reviews-initiative/>

Coalition for Advancing Research Assessment. (2022). Agreement on Reforming Research Assessment [Policy]. European Science Foundation. <https://coara.eu/agreement/the-agreement-full-text/>

Tennant, J. P., Crane, H., Crick, et al. (2019). Ten Hot Topics around Scholarly Publishing. Publications, 7(2), 34. <https://doi.org/10.3390/publications7020034>

The way to go

Even if we have seen several discussions in the past years within the scholarly community, a crucial push towards the recognition of all research outputs and practices as first-class citizens (at the same level of books and articles) has started with the endorsement of UNESCO via the publication of its Recommendation on Open Science

Open Peer Review is explicitly mentioned as a **strong desiderata**

UNESCO Recommendation on Open Science

(vi) Promoting innovative approaches for open science at different stages of the scientific process

21. Open science requires relevant changes in scientific culture, methodologies, institutions and infrastructures, and its principles and practices extend to the entire research cycle, from formulation of hypothesis, development and testing of methodologies, data collection, analysis, management and storage, peer-review and other evaluation and verification methods, to analysis, reflection and interpretation, sharing and confrontation of ideas and results, communication, distribution and uptake, and use and re-use. Open science is continually evolving and new practices will emerge in the future. To promote innovative approaches for openness at different stages of the scientific process, Member States are encouraged to consider the following:
 - a. Promoting open science from the outset of the research process and extending the principles of openness in all stages of the scientific process to improve quality and reproducibility, including the encouragement of community-driven collaboration and other innovative models, for example preprints, clearly distinguished from final peer-reviewed publications, and respecting the diversity of scientific practices, in order to accelerate dissemination and encourage rapid growth in scientific knowledge.
 - b. Promoting, as appropriate, open peer review evaluation practices including possible disclosure of the identity of the reviewers, publicly available reviews and the possibility for a broader community to provide comments and participate in the assessment process.

The Publish Your Reviews initiative

Launched in 2022, [Publish Your Reviews](#) is an initiative encouraging reviewers to post their comments alongside the preprint versions of articles

Goal: to invite all researchers interested in promoting more open dialog around preprints

Why: it provides readers with additional context on preprints (pointing out strengths, weaknesses, and open questions), it enables reuse of reviews, it brings scientific discussions into the public domain, and it surfaces the work of reviewers to a broader audience, promoting greater recognition for this important work

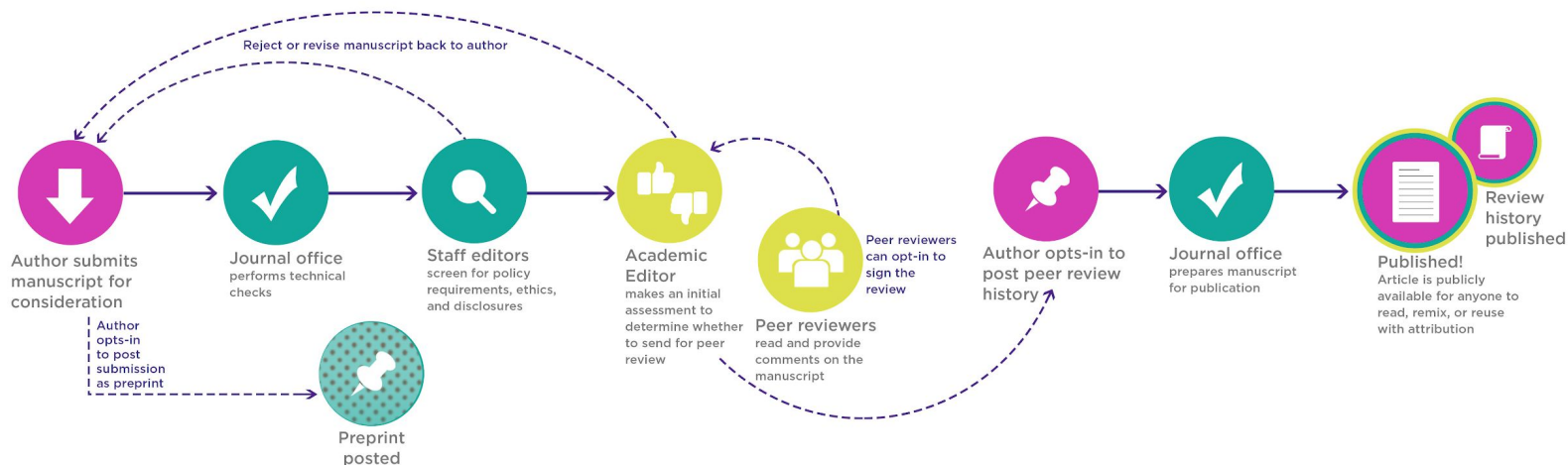


Some examples: PLOS ONE

[PLOS ONE](#), published by the Public Library of Science

The journal uses a single-blind peer review, leaving the possibility to the reviewer to sign the review

Authors may decide to publish their peer review history



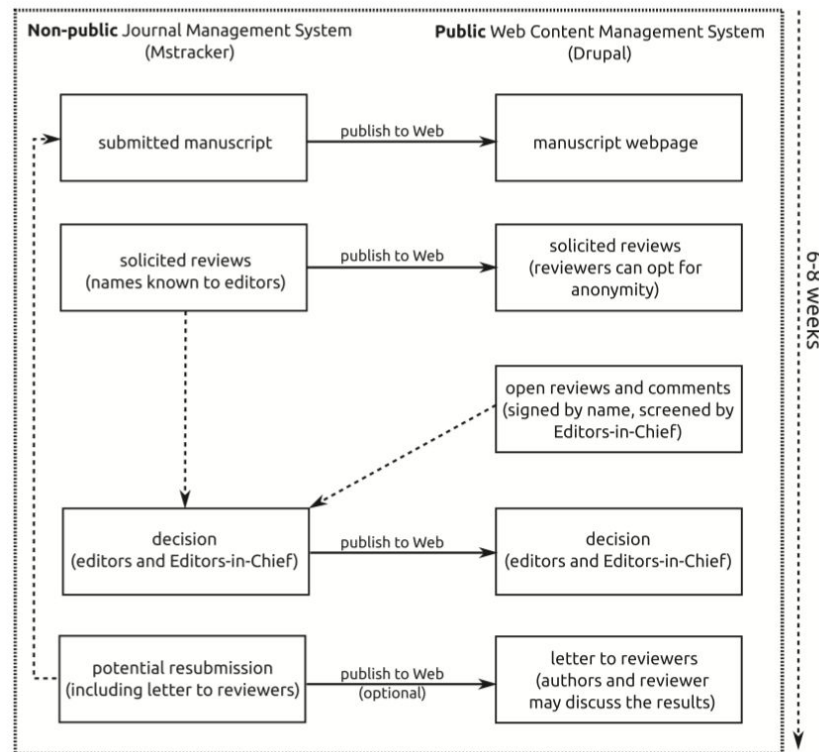
Some examples: Semantic Web Journal

[Semantic Web Journal](#), published by IOS Press

The journal relies on an open and transparent review process (allowing reviewer anonymity if explicitly requested), where submitted manuscripts are posted on the journal's website and are publicly available

Solicited reviewers are invited to serve and public reviews and comments are welcome by any researcher and can be uploaded using the journal website

All reviews and responses from the authors are posted on the journal homepage and all involved reviewers and editors will be acknowledged in the final printed version



Some examples: Quantitative Science Studies

[Quantitative Science Studies](#), published by MIT Press

In August 2020, the journal recently launched [a transparent peer review pilot](#)

Successful completion of the QSS transparent peer review pilot in March 2022

- Majority of the authors who submitted their work to QSS decided to participate in the pilot
- 90% of the articles submitted to QSS during the pilot and accepted for publication in the journal, the authors agreed to publish the review reports
- In a limited number of cases, reviewers decided to reveal their identity

The review reports, along with the responses of the authors and the decision letters of the editor, is published in [Publons](#) under a CC BY license

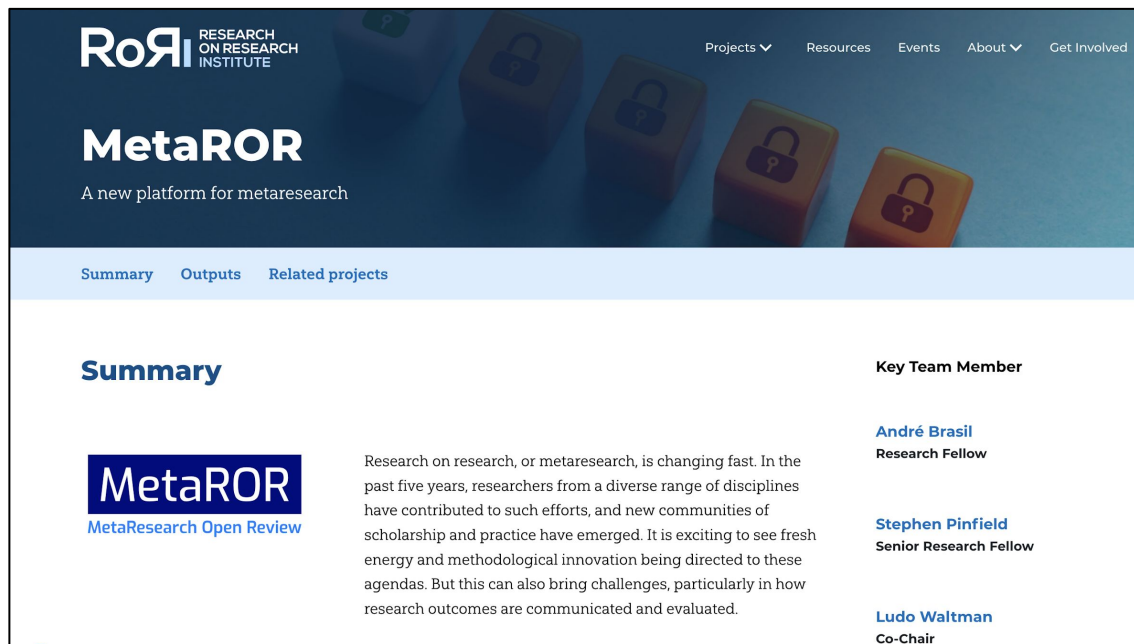
The QSS board agreed to adopt transparent peer review as the standard peer review model for QSS: review reports will be published for all new articles submitted to QSS and accepted for publication in the journal

Some examples: MetaROR

It is [a platform](#) that operates according to a publish-review-curate model

1. Publish a research work on a preprint server
2. MetaROR assigns reviewers who will submit a report
3. MetaROR publishes an editorial assessment

Partnership with journals for using MetaROR assessment as a seal of quality for the research – so as to publish it directly in interested journals without further review



What about incentives

One of the most effective ways to foster the publication of review reports to support them via incentives – e.g. reviewers can get credit for their work

Coalition for Advancing Research Assessment (CoARA) has the goal of recognising diverse outputs, practices and activities in the assessment of research, and published an Agreement to be signed by organisations

Currently, it counts 520 signatories (and includes also the University of Bologna)

Peer review is something that should be clearly recognised according to the Agreement

The Commitments

1. Recognise the diversity of contributions to, and careers in, research in accordance with the needs and nature of the research

Purpose: This commitment will broaden recognition of the diverse practices, activities and careers in research, considering the specific nature of research disciplines and other research endeavours.

Scope: Changes in assessment practices should enable recognition of the broad diversity of:

- valuable contributions that researchers make to science and for the benefit of society, including diverse outputs beyond journal publications and irrespective of the language in which they are communicated;
- practices that contribute to robustness, openness, transparency, and the inclusiveness of research and the research process including: peer review, teamwork and collaboration;
- activities including teaching, leadership, supervision, training and mentoring.

End

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