Open Peer Review

Silvio Peroni

silvio.peroni@unibo.it – https://orcid.org/0000-0003-0530-4305 – @essepuntato

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DIPARTIMENTO DI FILOLOGIA CLASSICA E ITALIANISTICA

Research workflow

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

Kramer, B., & Bosman, J. (2015, June 18). The good, the efficient and the open—Changing research workflows and the need to move from Open Access to Open Science. CERN Workshop on Innovations in Scholarly Communication (OAI9), University of Geneva, Geneva, Switzerland. https://www.slideshare.net/bmkramer/the-good-the-efficient-and-the-open-oai9

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

Eve, M. P., Neylon, C., O'Donnell, D. P., Moore, S., Gadie, R., Odeniyi, V., & Parvin, S. (2020). Reading Peer Review (1st ed.). Cambridge University Press. https://doi.org/10.1017/9781108783521

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

Tennant, J. P., Dugan, J. M., Graziotin, D., Jacques, D. C., Waldner, F., Mietchen, D., Elkhatib, Y., B. Collister, L., Pikas, C. K., Crick, T., Masuzzo, P., Caravaggi, A., Berg, D. R., Niemeyer, K. E., Ross-Hellauer, T., … Colomb, J. (2017). A multi-disciplinary perspective on emergent and future innovations in peer review. F1000Research, 6, 1151. https://doi.org/10.12688/f1000research.12037.3

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

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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

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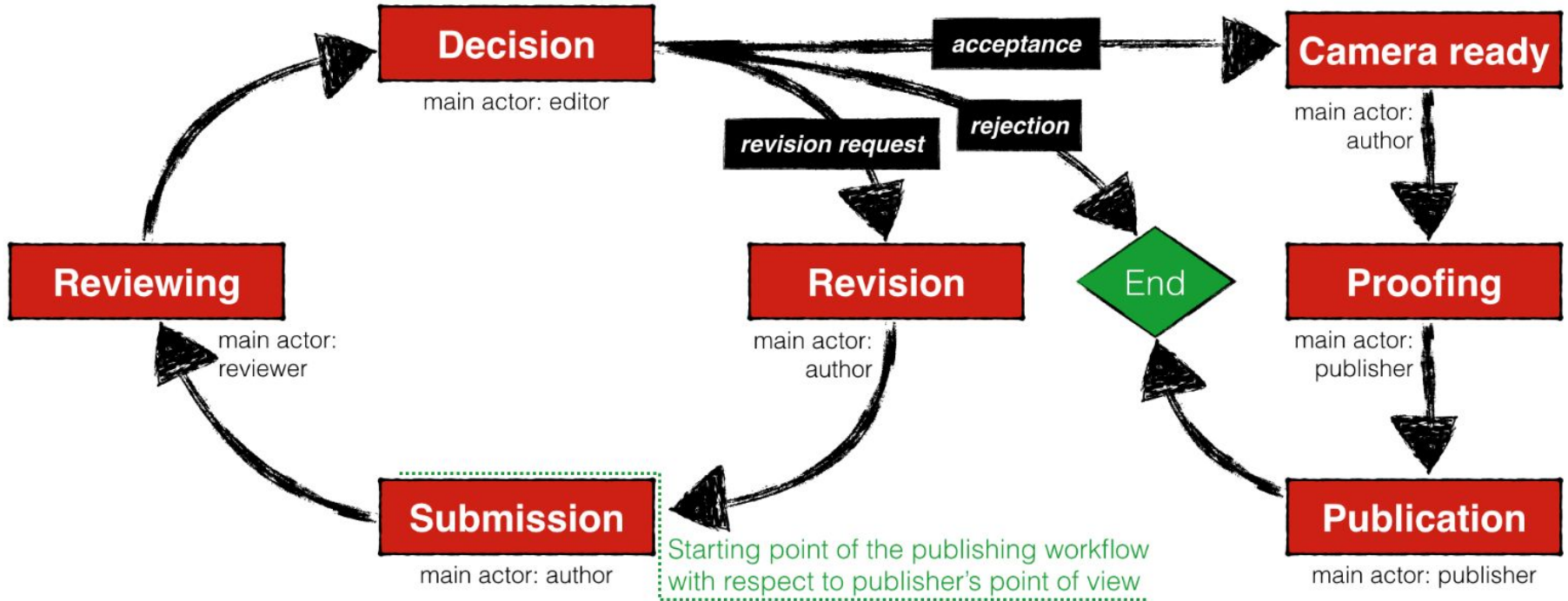
Brief history of peer review: modern times

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

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A traditional peer review workflow

Gangemi, A., Peroni, S., Shotton, D. M., & Vitali, F. (2017). The Publishing Workflow Ontology (PWO). Semantic Web, 8(5), 703–718. https://doi.org/10.3233/SW-160230, available in OA at http://www.semantic-web-journal.net/system/files/swj1301.pdf

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 if 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

Snodgrass, R. T. (2007). Editorial: Single- versus double-blind reviewing. ACM Transactions on Database Systems, 32(1), 1. https://doi.org/10.1145/1206049.1206050

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

Tennant, J. P. (2018). The state of the art in peer review. FEMS Microbiology Letters, 365(19). https://doi.org/10.1093/femsle/fny204

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 is a platform that allows anyone to post 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

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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

Ross-Hellauer, T. (2017). What is open peer review? A systematic review. F1000Research, 6, 588. https://doi.org/10.12688/f1000research.11369.2

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

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

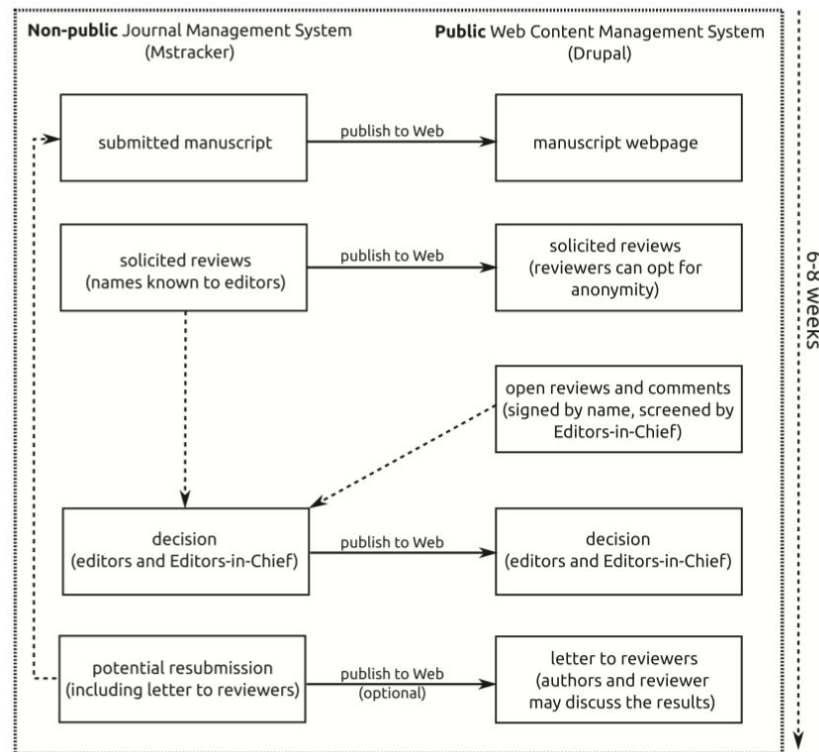Authors may decide to publish their peer review history
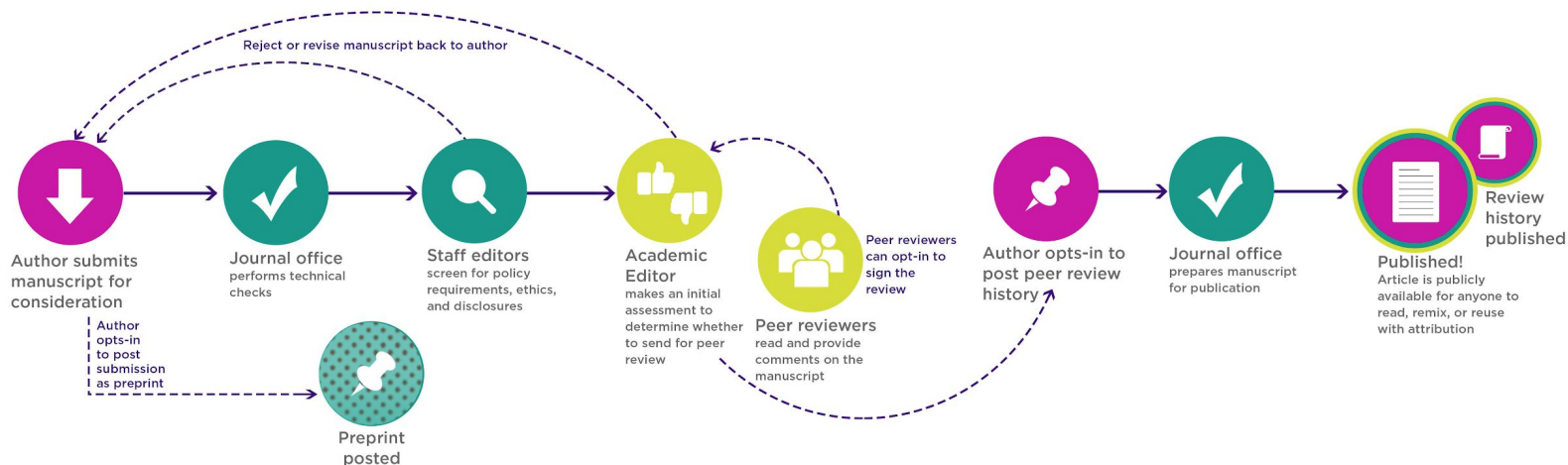
Some examples: Semantic Web Journal

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

Janowicz, K., & Hitzler, P. (2012). Open and transparent: The review process of the Semantic Web journal. Learned Publishing, 25(1), 48–55. https://doi.org/10.1087/20120107

Some examples: Quantitative Science Studies

Quantitative Science Studies, published by MIT Press

The journal recently launched a transparent peer review pilot

It focuses on making the content of review reports openly available for articles where authors have chosen to participate in the pilot and that are accepted for publication in QSS

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

Reviewers have the option of revealing their identity, but this is not required

Waltman, L., Larivière, V., Milojević, S., & Sugimoto, C. R. (2020, September 2). Quantitative Science Studies launches transparent peer review pilot. ISSI Blog.
https://www.issi-society.org/blog/posts/2020/september/quantitative-science-studies-launches-transparent-peer-review-pilot/

End

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