4.1: Peer review at the beginning of the 21st century

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Introduction

Peer review is currently a topic of vigorous debate, probably more so than at any time since its origins in the form we know it today nearly 300 years ago. Views are often polarized, with some people considering peer review to be ‘broken’ and wanting to abolish it completely, others still viewing it as an important part of the scholarly publishing process. Two large international surveys have found that although researchers value peer review considerably, there is a level of dissatisfaction: however, they generally want to see peer review improved, not replaced. Interestingly, the Taylor & Francis Open Access Survey (March 2013, with more than 14,000 respondents) found that rigorous peer review was the service authors rated the most important when asked about the importance of services they expect to receive when paying to have their papers published open access. This was rated as more important than either rapid publication or rapid peer review.

What do we mean by ‘peer review’? Put simply, ‘peer review in scholarly publishing is the process by which research output is subjected to scrutiny and critical assessment by individuals who are experts in those areas’, traditionally taking place before publication. This can be achieved in a number of ways, but the basis of all is ‘scrutiny and critical assessment by experts’. The scale of the scholarly publishing enterprise is enormous, with around 28,100 active peer-reviewed journals publishing around 1.7-1.8 million articles annually. For those published articles alone, there have probably been around 4 million reviews done. But as a certain proportion will have been submitted to and rejected from one or more other journals before being accepted for publication, the true number is likely to be considerably greater. It has been estimated that, considering just 12,000 of the active peer-reviewed journals, around 15 million hours annually are spent reviewing manuscripts that are rejected.

Scholarly publishing is going through a period of dramatic change and facing considerable challenges. New publication models are being introduced, and new players are entering the field. Peer review is, in parallel, experiencing similar issues, undergoing both disruption and innovation.

Support for open access journal publishing is growing, with many considering that it is no longer a question of ‘if’ but ‘when and how’. Despite its entry into the mainstream and adoption as a requirement by some research funders for the publication of work they have funded (e.g. the Wellcome Trust and the UK Research Councils, RCUK), a number of misconceptions remain, particularly that peer review in open access journals is in some way inferior to that in traditional subscription journals. Generalizations about peer-review quality and access/business models can’t be made. Publishing models with article processing charges (APCs) have, however, presented opportunities for exploitation for profit by questionable journals and publishers who offer very little, if anything, in the way of peer review. The widespread introduction of an indicator such as the Journal Transparency Index suggested by Marcus and Oransky would help bring much-needed transparency, and aid authors who are looking for reputable journals in which to publish. All journals should describe their editorial structure and peer-review processes, even if they don’t include all the things suggested by Marcus and Oransky.

Criticisms of peer review have been around for a long time. These range from grumbles by individual researchers when they have bad experiences (and all will, inevitably, at some stage of their careers) to more widespread general complaints, for example that peer review is inconsistent and prone to bias, slow and expensive, open to abuse, and largely a lottery. Peer review can at times ‘fail’ or get mired in a series of escalating problems in even the best-run journals, but it should be a prime aim of journals to have their communities basically happy with the services they provide.

Sometimes the criticism is made that reviewers are ‘working for free’. Peer review is, however, a reciprocal process, as authors and reviewers are mostly the same community, and so researchers benefit from expert reviews as well as provide them. Fairness in the system does, however, rely on everyone doing their fair share of reviewing. Editors can’t do much about this in the wider journal ecosystem, but they can ensure that at their own journals there is a good balance between submitting and reviewing manuscripts.

Realistic expectations of peer review

Being labelled as ‘peer reviewed’ doesn’t mean that the work reported can be considered the absolute ‘truth’ and free of all errors. It means that the report has been looked at and critically assessed by appropriate experts, i.e. people with the relevant expertise and without any conflicting interests that might bias their assessment, hopefully to the best of their ability, and considered suitable for publication. Before publication, authors have usually been asked to address deficiencies, explain discrepancies and clarify any ambiguities, so papers (and the work behind them) get improved as a result. Peer review is, however, only as good and effective as the people managing the process.
Experienced and knowledgeable editors and editorial staff bring subtlety and sophistication to the endeavour, coupled with impartiality and common sense. Bad or inexperienced editors and staff can cause distress and anger, and bring the system into disrepute. What, realistically, can we expect of peer review? Ideally it should provide the following (taken from Hames, 2012, p. 22), adapted, with permission, from Hames, 2007, pp. 23):

1. prevent the publication of bad work – filter out studies that have been poorly conceived, designed, or executed;
2. check (as far as possible from the submitted material) that the research has been carried out well and there are no flaws in the design or methodology;
3. ensure that the work is reported correctly and unambiguously, complying with reporting guidelines where appropriate, with acknowledgment to the existing body of work and due credit given to the findings and ideas of others;
4. ensure that the results presented have been interpreted correctly and all possible interpretations considered;
5. ensure that the results are not too preliminary or too speculative, but at the same time not block innovative new research and theories;
6. provide editors with evidence to make judgements as to whether articles meet the selection criteria for their particular publications, for example on the level of significance, general interest, and importance of the research;
7. provide authors with quality and constructive feedback;
8. generally improve the quality and readability of articles;
9. help maintain the integrity of the scholarly record.

It is not the role of journals to police research integrity or determine if misconduct has occurred, but editors do have a duty to look into all allegations or suspicions of misconduct. If they find grounds for these, they should refer cases to the individuals’ institutions for investigation. COPE has published a Flowchart for Journals, on its website (www.publicationethics.org) provides guidance and resources for handling cases of suspected misconduct, including a set of flowcharts that cover many of the common situations editors come across.

Critical role of the editor

Editors play a critical role in the peer-review process and it is in their hands that the satisfaction with that process. When they fall short of what is expected of a good editor, dissatisfaction results and complaints start to come in. Dissatisfaction may also be voiced on blogs and social media, along with specific details, perhaps even the reviewers’ reports and editorial correspondence.

The scale and extent of the criticism can grow quickly as a breakdown in that trust. All the parties involved in peer review – authors, reviewers and editors – are open to misbehaviour, along the whole spectrum, from questionable actions and bias through to what can be perceived as a gross and challenging conduct. New practices come along that can surprise even the most editorially experienced individuals. For example, the cases of ‘fake’ reviewers and ‘fake’ reviews that surfaced in 2012, and the faked experiments as a condition of acceptance. Whatever the model, there is a need to ensure that standards are high, editors (or those responsible for making decisions and managing the process) are trained and supported, and researchers are educated in research integrity and publication ethics. Peer review is also facing new challenges as large-scale new practices come along, and needing to be reviewed or viewed with research reports. New standards and workflows are needed. Where to put data during review for confidential access is an issue, but that passes (as organisations such as ResearchGate, or other similar sites) where data can be made securely and confidentially available for peer review.

References


