

Peer review: no end in sight, Yet

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Peer review (PR) is considered the gold standard of scholarly publishing. Peer-reviewed material is considered superior to non-peer-reviewed. Despite that we are witnessing an increased criticism on the peer review process in recent years. Some evidence has emerged in recent literature against peer review process. Manifold increase in scientific workload has created an increased demand for PR process and rapid advances in ICT are making the old system redundant.

Like any other system, peer review process has its inherent strengths and weaknesses. Stevan Harnad has defined peer review as “a quality-control and certification filter necessitated by the vast scale of learned research today; without it, no one would know where to start reading”¹. Peer review process constitutes “the concerted effort by large numbers of researchers and scholars who work to assure that valid and valuable works are published and conversely to assure that invalid or non-valuable works are not published”².

Weaknesses of peer review system were best summarized by Richard Smith, former editor of BMJ as: “peer review is slow, expensive, profligate of academic time, highly subjective, prone to bias, easily abused, poor at detecting gross defects, and almost useless in detecting fraud”³. Cochrane Review 2003 has concluded that “despite its widespread use and costs, little hard evidence exists that peer review improves the quality of published biomedical research”⁴.

Whether peer review is serving its role or not can only be determined by defining the exact purpose of peer review. Peer review is mostly perceived to serve three purposes i.e. filtration and dissemination of scientific writings, quality improvement of research publications and fraud detection. In its present form, it is only effective to filter research manuscripts fit for publication in a given journal. It is specifically poor tool for the detection of scientific fraud.

A debate is going on in contemporary literature about the future of peer review process. A group of scientists is suggesting various methods for improving peer review, while others want an entirely new alternative system of evaluation and dissemination of scientific literature.

Transparency of the peer review system can be improved by: i) publishing information about editorial decision-making and peer-review process, ii) disclosure of all competing interests, iii) sanctions for misconduct, and iv) adopting an open peer review process. Process of PR can be made fair by adopting appeal process, appointing ombudsman and ethic review boards. For facilitating the reviewers, a mechanism of trial registration and data audit should be in place. Journals should provide specific instructions and evaluation tools for reviewers. Some form of rewards for reviewers can also encourage them.

Many journals are adopting a policy of open peer review where identity of authors and reviewers is known to each other. As reviewers are accountable they are expected to write better reports and they comment in more civilized manner. There is less likelihood of bias. This practice also results in improved authors-reviewers communication. Reviewers, however, may become reluctant to criticize, especially the work of more senior researchers. Nature's peer review trial has shown that 'there is a marked reluctance among researchers to offer open comments'⁵.

Alternate methods to conventional peer review system may be on volunteer basis done by the readers. These include post-publication reviews, web based open reviews, or an open two stage peer-review system. Some automated methods using internet technology may also help and these include citation analysis, page ranking and calculation of impact factor.

In web based open PR, research papers are placed in the public domain with some pre-selection by the site editors and an electronic 'Comments Link' is provided inviting readers to send comments. In an open 2-stage PR, manuscripts after rapid screening (access review) are immediately published as 'discussion papers' on the web for interactive public discussion. Peer review and manuscript revision are completed in the same way as in traditional journals before publishing. This results in quick dissemination of knowledge and is cost efficient. As more reviewers are involved in the process, this method is expected to provide better assessment and relevant criticism. Moreover, identity of participant is known. The discussion that takes place during review process may be intellectually more stimulating for readers. Drawbacks include low incentives and inability to

determine the competence of participants. The system is also open to manipulation.

Some very elaborate systems are also in place in scientific publication. For example, a 'collaborative document evaluation' is part of the Scienstein Project⁶ that is basically a research paper recommender system. It evaluates scientific papers using internet. The system is based on collaborative ratings, annotations, linking and classifications performed by the scientific community. Such systems have the benefits of post-publishing quality assessment and may replace impact factor. Such academic recommendation engines can assist in interdisciplinary work analysis and help in trend analysis.

It is concluded that many scientists are recognizing the need for a better system than the conventional peer review. Many internet based methods are under investigation but no consensus has yet been achieved.

REFERENCES

1. Harnad S. Free at Last: The Future of Peer-Reviewed Journals. D-Lib Magazine Volume 5 Number 12 December 1999. Available at: <http://cogprints.org/1685/1/12harnad.html>
2. Weller AC. Editorial Peer Review: Its Strengths and Weaknesses. Medford, NJ: Information Today, Inc. (ASIST Monograph Series), 2001.
3. Smith R. Opening Up BMJ Peer Review. BMJ 1999; 318 (7175): 4-5.
4. White C. Little evidence for effectiveness of scientific peer review. BMJ 2003; 326(7383): 241.
5. Nature editors/publishers. Overview: Nature's peer review trial. Nature 2006; doi:10.1038/nature05535. Available at: <http://www.nature.com/nature/peerreview/debate/nature05535.html>
6. Beel J, Gipp B. Collaborative Document Evaluation: an alternative approach to classic peer review. World Academy of Science, Engineering and Technology 2008; 41:410-13.