

### **Optimizing Peer Review and Editorial Selection: Mary Waltham**

#### **Some observations and challenges to current and future peer review systems**

**Purpose** of peer review is to improve the quality of scientific/scholarly information published.

**Method** typically involves selecting 2 or 3 experts and asking them for anonymous detailed comments on the accuracy, validity and contribution to the field the article would make if published, and to make appropriate suggestions for strengthening and improving it. Some problems with the system which is imperfect but as yet irreplaceable:-

- a) **Timeliness:** Reviewers are pushed to review rapidly – 2 to 4 weeks is typical in science, some disciplines such as genetics faster than this – and yet good reviewing takes time, consideration and often further reading/research. Meanwhile all other publishing processes have speeded up – essential for the publisher to maintain competitive edge and so there is an inevitable conflict.
- b) **Volume of articles:** Good reviewers are over-used and as a result it is easy for any community to become cliquey. Where is the pay back to reviewers for reviewing well? As communities become larger and more disparate, their values are more dispersed and there is less of a feeling of commitment and contribution by reviewers.
- c) **Interdisciplinary research:** Scope of research has altered and journal Editors find themselves managing interdisciplinary articles through the peer review process more frequently. In general this is more challenging and often poorly implemented because:
  - Authors of interdisciplinary articles must make themselves understood by those in other fields – technical terms may need to be explained that are specific to a discipline, and as a result the article may need to be longer than is typical or even ‘permitted’ by the journal/publisher.
  - Some journals ask authors for summaries suitable for a lay readership; this practice could usefully be adopted more widely, because a scientist reading a paper outside her/his own field is essentially a lay reader.
  - Editors must obtain fair and informed review of papers spanning different fields, by enlisting referees whose expertise spans the articles’ content.
  - The more disparate the expertise of the referees, the more the editor needs to bear in mind exactly what aspects of the work each is qualified to assess.
  - The more interdisciplinary a paper is, the more the editor will need to inject her/himself into the decision-making process, instead of relying on the referees to decide whether publication is warranted.
- d) **Anonymous reviewer comments:** Most common and yet can lead to superficial or prejudiced review and evaluation and even to plagiarism.

#### **Alternative methods of peer-review**

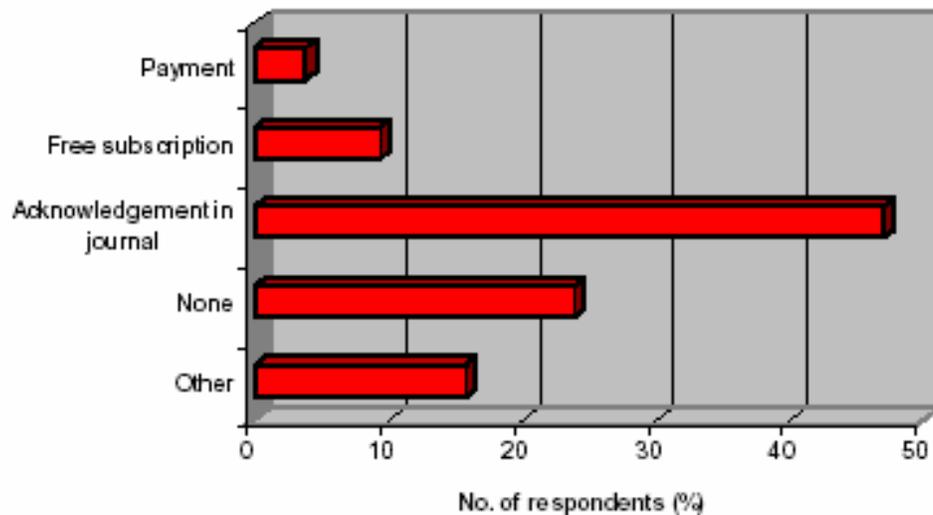
**Signed reviewers’** comments as in the BMJ since 1999 see:

<http://bmj.bmjournals.com/cgi/content/full/318/7175/4>

**Interactive peer review** and discussion, in part achieved through pre-print servers such as arXiv see: <http://arxiv.org/> and now journals such as *Atmospheric Chemistry and Physics*: see [http://www.copernicus.org/EGU/acp/publication\\_process.html](http://www.copernicus.org/EGU/acp/publication_process.html)

**Check-list on peer- review**

- How many reviewers do you use and does that vary according to the breadth of the article?
- Do you check to see that the reviewer can do the review before sending an article to them?
- Do you provide a check-list and guidelines for reviewers articulating what you expect from them?
- How long do you give reviewers to respond and what follow-up do you do, and when?
- Do you keep records about reviewers?
- Do you make sure the same reviewer is not asked to review multiple articles in any 12 month period?
- Do you provide feedback to reviewers- about publication outcome and quality of their report(s)?
- How do you reward referees?

**Fig: How do you reward referees? Results of ALPSP survey of 200 journals****References and Further information**

**ALPSP/EASE: current practice in peer review**

<http://www.alpsp.org/publications/peerev.pdf>

*Editorial peer-review for improving the quality of reports of biomedical studies (Cochrane Methodological Review) Jefferson T, Alderson P, Davidoff F and Wager E from Cochrane Library Issue 4 2004.*

<http://www.cochrane.org/cochrane/revabstr/am000016.htm>

Special issues of JAMA on Peer Review such as <http://jama.ama-assn.org/content/vol287/issue21/index.dtl>