How to review a manuscript

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October 27, 2010

The peer review of scientific publications is one of the key mechanisms for maintaining high standards of rigor in scientific research. Peer review is needed because journal editors, although generally expert in a field, cannot be expert in all sub-disciplines. The way peer review for scientific publications typically works is that when an editor receives a manuscript for publication, he or she then contacts 2-4 area experts from among the established scientific community. These experts are asked to provide their opinion on the *quality* and *importance* of the submitted work, and sometimes also for a recommendation about whether or not to publish. Very, very few papers are accepted at this point. Some papers are rejected outright. The rest are invited for resubmission following major revisions.

To assist in the revision process, reviewers typically separate their comments into two sections. The first section of “major issues” details items of significance that must be thoroughly addressed before the reviewer would find the changes to be satisfactory. The second section of “minor issues” details items that either should be changed but will be uncontroversial (typographical errors, points of small ambiguity, etc.) or which are merely additional items the authors may wish to consider but are not obligated to. These commonly also include issues of style.

The following guidelines may be kept in mind while writing reviews.

Guidelines for reading the manuscript

1. Make stylistic and typographical edits as they arise. However, remember that your primary job as an area specialist is to review the *intellectual claims* of the manuscript. Style and typography are mainly editorial responsibilities.
2. Whether or not a particular piece of work is *important* is a difficult issue. The leading journals aim to publish not only high quality work, but important work as well. Whether or not something is sufficiently important is a relative judgment. It depends on what else has been submitted to the journal. This suggests it should be an editorial (not reviewer) judgment. On the other hand, editors aren’t experts in all the various subject areas. Therefore, they need reviewer guidance as to how innovative or conclusive a particular piece of work is. My view is that it is an editorial decision in the end, but that the reviewer should provide the editor with any information that would help him/her make the best editorial decision.
3. What is the main point of the work? If you cannot articulate this after having read the ms then the authors have made a failure of *communication*.
4. Has the work been appropriately contextualized? Appropriate context means that there is some reasonable background. It is impossible, in modern science, to be

exhaustive--and exhausting to read authors who aim to be. Context is therefore indeterminate and (in my opinion) a matter of authorial prerogative. It is nonetheless crucial that an appropriate context has been provided and that once a context is decided that the background is established in a cogent and complete way.

5. Are the questions or hypotheses clear and answerable? If they are not then there is no way to evaluate the results because what counts as an acceptable answer was not established in the first place.
6. Are the methods adequately described?
7. What is the status of materials, data, and computer code? Are these described in sufficient detail to evaluate their appropriateness? Will they be made available to others on request?
8. Are the findings clearly asserted and reasonable?
9. Are the findings reasonably interpreted?
10. Are there alternative interpretations or explanations?

Writing the review

1. The review is a communication both to the editor and to the authors. Reviews can be anonymous or signed. Reviews typically may include privileged information seen only by the editors (and this last is true whether the review is signed or not). My preference is to submit anonymous reviews (although this is a delicate and tendentious issue) where the entire text of the review is to be seen by both editor and reviewers. I provide comments only for the editor in cases where I have special knowledge of the circumstances of the study relevant to the editorial decision and which if known to the authors would reveal my identity.
2. Formulate the review as a letter to the editor.
3. Clearly state which ms you are commenting on and what your recommendation is. (Some journals request that you not give a recommendation about publishing, but most prefer it).
4. It is conventional, but not required, to summarize the article. This displays to the authors that you have carefully read and understood their study. It builds credibility for the reviewer both in the eyes of the editor and the authors and diminishes the chance that the authors will cry foul and appeal.
5. Justify in a general way your recommendation. For instance, if your recommendation is to reject the manuscript outright without further consideration, then you should provide a statement strong enough to warrant this decision. For instance, rejected is justified if the methods were deeply flawed, if the conclusions do not follow from the study, or if the topic is inappropriate to the journal.
6. Separate your comments into major and minor issues. Often it is useful to list these issues as bullet points (referencing page and line numbers if possible). If there are “clusters” of issues the bullets in each section may be grouped. If you have suggestions about how to solve a particular problem, these are best inserted where the problem is identified.