

# Notes on peer review for scientific papers

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October 20, 2006

## 1 Beginning your review

Tips for doing your review:

- read fairly quickly first for the big picture. Some of us like to read the paper once and then let it sit for a few days before coming back and making detailed notes.
- read the manuscript critically and carefully, as you would any paper
- ask the standard questions:
  - what is the big picture? is it novel/important/exciting?
  - what are the methods used? are they appropriate, clearly described, etc.?
  - are the discussion and conclusions clear and appropriate? Do they really answer the big-picture question?
  - is the writing clear and engaging? Note grammar and style, but try also to see past any problems of writing — would the paper otherwise be acceptable? If the authors appear to be non-native English speakers, you may recommend that the paper be edited for grammar and style by a native speaker. Suggestions on grammar and style are OK, but remember that honest differences in style exist; try to focus on scientific issues.
- Take notes as you read the paper, possibly on the printed draft. If you think you might return the paper to the authors with your comments (see below), be careful how freely you express yourself in your notes.
- Write your review (see below)
- Some of us like to let reviews sit for a little while, reading them over and making changes before submitting them. Are all of your comments necessary? Especially if you disliked the paper, re-read to make sure your tone is appropriate and your criticisms are fair

## 2 Writing your review

- Be honest but constructive. Your purpose is both to evaluate the paper's quality for publication and to help the authors improve it, if possible.
  - put yourself on the other end; how would you feel reading the review?
  - put yourself in the shoes of a reader: “who let this \$%\$% get published?”
- your reviews should be divided into a section of confidential comments to the editor and comments for the authors. The editor will read both; don't duplicate your comments to the authors in your comments to the editor. Comments to the editor are sometimes short or nonexistent; only use these to communicate points with the editor that you don't want to share with the authors.
  - *do*: include a short summary of your assessment of the suitability of the paper for publication in the journal (e.g. accept with minor comments, with major comments, decline, better for another journal (which one)). Explain any possible conflicts of interest or other important background on your perspective on the paper.
  - *don't*: for the most part, don't make explicit statements about suitability in the comments to the authors (this allows the editor to be flexible if they need to modify your recommendation). Avoid disparities between your comments to the editor and to the authors
- Your comments to the authors should start with a (short) general summary and statement of what you gathered the paper was about; this lets the authors know whether they conveyed their approach effectively
- I often divide my review into general comments (with a paragraph for each general point, usually issues that occur throughout the paper) and minor points (technical or grammatical/stylistic points). Be specific: number your comments (this helps the authors respond) and provide at least page numbers — if the manuscript has line numbers, use them.
- if you have lots of comments, especially small grammatical/stylistic points, it may be efficient to return a marked-up copy of the paper to the editorial office. If you don't return the marked-up copy, you're supposed to destroy it.
- if the paper has problems, try to separate these from the rest of the paper: are they fundamental, or how could they be fixed? Could part of the paper stand alone?
- make suggestions for improving the paper, but remember that you're a reviewer and not a co-author
- is the paper appropriate for this journal, or would another venue be better?

- some journals have specific formats and ratings they want you to follow. In general, as long as you are careful and thorough in your review, you can get away with variation in format. Make sure to check the mission statement of the journal for evaluation criteria (these will often be included in your review instructions)

### 3 Why review?

Reviewing takes a lot of time and effort. Why bother?

- duty/responsibility to community
- reputation within community
- brownie points/credit with editors
- fun, interesting, see what's happening

### 4 Responsibilities

- confidentiality
- honesty, objectivity (report possible conflicts of interest)

### 5 The process

- paper sent to journal; editor-in-chief gets it and decides on a subject (handling, managing) editor
- subject editor reads the paper (quickly), decides whether it might be suitable for the journal (possibility of editorial rejection at this point); picks a list of reviewers. (Guided but not dictated by authors' requests.)
- subject editor or editorial office contacts possible reviewers, twists arms
- reviewers eventually return reviews
- subject editor assesses reviews, reads paper, makes a decision; makes recommendation to editor-in-chief
- reviews and recommendation returned to author; possibly also to reviewers
- authors may contest reviews — but have to have a very good reason. Otherwise, send it somewhere else, or make revisions (again, most reviewers' suggestions should be followed — otherwise need a good explanation why not)

- Authors resubmit. Possible time limit (after which paper is treated as a new submission); these time limits can often be negotiated. The revised version will go to the same editor, who may (1) make a decision on the spot; (2) return the paper to the same reviewers for assessment; (3) send the paper to other reviewers. Reviewers will get a copy of the authors' response to their reviews, and possibly of the other reviews
- Lather, rinse, repeat.

## 6 The system: pros (?) and cons

Compare Churchill's opinion of democracy: "it has been said that democracy is the worst form of Government except all those other forms that have been tried from time to time."

Criticisms:

- unblinded, single-, double-blind? PLoS experimenting with other forms of review
- should reviewers be paid?
- arbitrary
- editors, reviewers restrict innovation
- editorial control: can allow freedom of innovation, or be allow arbitrary/conservative/unfair/biased decisions
- are reviewers careful enough?
- is it possible to protect against fraud? or must we have faith in authors?