

Reviewing Journal Articles

If you are publishing, then your fellow scientists are reviewing your work. Therefore, it is very important for you to “return the favor” and to review manuscripts. Depending on your field, for every article which you publish, you should review at least 6 manuscripts. The reason: for every published article, 1-2 are rejected. For every article, 3 reviewers are contacted. This means that for your article, six of your colleagues were asked to perform reviews.

However, it is equally important that you provide thorough and well-balanced reviews. The following is a general overview of how to write a good review. Note that many journals will have additional questions.

Also, all journals will give you the option of providing confidential comments to the editor in addition to comments to the authors. It is not necessary to put comments in the editor’s box.

Good luck!

Big Picture

Before beginning to review a paper, review the journal guidelines. These will usually be provided to you in the original review request from the editor. Every journal is different, and a manuscript which should be published in one journal may not be suitable for another. As the referee, you need to point this out.

What not to do:

Re-write the whole paper. If something is really egregious, then comment on it. And if the entire paper is completely unintelligible due to a plethora of grammatical and typographical errors, then say that the authors should have someone read it over. But it isn’t your job to re-write their paper for them.

Use condescending or confrontational language which has an unclear meaning. For example: instead of “their interpretation of their data is wrong”, you could say “It is unclear how the authors came to X conclusion. More explanation in the text would help justify this conclusion.” If you feel that their interpretation is incorrect given previous work, then cite other papers which justify your argument, saying something like “It is unclear how the authors came to X conclusion given the work on XXX and YYY in this field. See the references below.”

What to do:

Comment on the scientific quality of the content.

- Is it novel? Depending on the journal (one metric is the impact factor), the “level” of novelty required will vary significantly. The specific journal also has to be considered when recommending publication.
- Are the conclusions supported by the experimental/theoretical work? Were appropriate controls performed?

Are the figures clear (ie they won’t print well in B/W, small font, etc)? Do the figures present the data in a clear manner? If not, comment on this.

Comment/ask questions on any areas which are confusing or which are poorly explained. (data analysis, scientific method, etc)

Comment on the references. Remember: the purpose of references is multi-faceted:

- To enable a reader to get more information on a subject that has been previously published. For example: "The device was fabricated using a standard method". You need to reference that method.
- To "back-up" statements that are not common knowledge or may be contentious. For example: "Previous work has shown that vanilla is better than chocolate." You need a reference here.
- To recognize others working in the field – those that came before you and laid the groundwork for your work.

The first type is usually pretty obvious – there is usually a foundational paper. The second type is usually pretty obvious, though there can be some gray area. The third type is typically where authors can show significant bias. Frequently, authors will cite papers from one or two groups (only) as well as themselves. References should include the entire scientific community, not just the author's friends.

Things to remember:

You, as the reviewer, are the "last line of defense" against things which are less than reliable or not significant contributions to the scientific community getting published. You should take this job seriously.

As you are writing, be very clear in your statements to avoid confusion. Avoid statements like "This is confusing." Instead say "The explanation of XXX data is confusing; particularly the author's explanation of XXX and YYY and its relation to Figure X."

Suggested Review Format:

The following are suggestions for a general structure of a review. Depending on the journal, there may be additional required components. However, if you include the following, your review will help the authors and the editor understand your thought process. Also, by breaking your changes into "significant issues" and "minor issues", it helps the authors understand which points are critical.

It is very important to always write a thorough review and explain your statements. A manuscript typically receives 2 or more reviews. If a positive review is 2 sentences and the negative review is 2 pages, the manuscript will be rejected. If the situation is reversed, the manuscript will most likely be accepted. Therefore, you need to defend your opinion.

Note that there are different levels of acceptance: accept without revision, accept with revision (minor), and accept with revision (major). All of these are "accept".

Beginning: start a review with a 1-2 sentence summary of the paper. This way the author knows that you did, indeed, read their paper and understand the point of the paper.

Main text of the review:

The review should have two parts: 1) Significant issues and 2) Minor issues.

Significant issues. Significant issues must be addressed in order for a manuscript to be publishable. Sometimes the significant issues are un-addressable in a simple revision (data being incorrectly interpreted or the research not being novel) and sometimes these issues are addressable (not including any experimental details). Excellent manuscripts do not have significant issues.

Minor issues. Usually the minor issues are things like 60% of the references being the authors own work, figure captions being unclear or minor text typos. In other words, easily addressable.

Occasionally, you might have suggestions for additional experiments which would strengthen a manuscript or which would simply be interesting to pursue (in the future). Sometimes these experiments are required in order to back up the authors' claims and sometimes they are optional. It is very important to make sure to specify which issues/concerns **must** be addressed in order for the manuscript to be published and which issues **are optional**.

End: close with a 1 sentence statement which explicitly says if you do or do not support the manuscript's acceptance or rejection and why.