



Reviewing papers

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Doing a good job takes some time



Accept or Decline the Invitation Quickly

- Are you sufficiently knowledgeable?
- Are you interested in the topic?
- Are you free of any conflict of interest?
- Do you have the time? Are you going to make the deadline?

First step in paper review – skim it

Form an initial impression of the paper. Take some notes. Try to bear in mind:

- What is the main question addressed?
- Is it relevant and interesting?
- How original is the topic? What does it add to the field compared with previously published material?
- Are the conclusions consistent with the evidence and arguments presented? Do they address the main question posed?
- Do the figures and tables each add to the paper? Do they all aid understanding or are they superfluous?
- Are there major flaws or, is there nothing of significance wrong with the paper as it is?

After the paper has sunk in a bit, read again

• WE HAVE CONCERNS •

- Write concerns as you go, separated into major and minor. Also write up things you really like about the paper for later use in your second paragraph.
- Major concerns include factual errors, invalid arguments, title not correctly matching the conclusions, extraneous figures so that the paper is not the right length, major flaws
- Minor concerns include typos, unclear or ambiguous writing, incorrect figure labeling, text and figure not matching, keywords not accurately reflecting content, etc. If this is pervasive, it becomes a major concern.

Examples of Major Flaws

- Drawing a conclusion that is contradicted by the evidence
- The use of a discredited method
- Ignoring a process that is known to have a strong influence on the area under study
- Insufficient data
- Statistically non-significant variations
- Unclear data tables
- Contradictory data
- Confirmatory data that adds little, if anything, to current understanding



FIND THE FLAW



After the second read and initial written critique, read each section thoroughly and continue editing

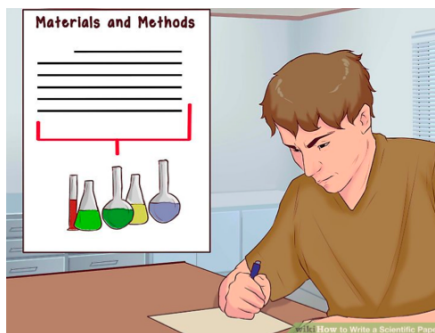
- Introduction
- Materials and methods
- Results including figures and figure legends
- Discussion
- References
- Acknowledgements and author contributions

Consider the introduction; does it:

- Accurately summarize recent research related to the topic?
- Highlight gaps in current understanding or conflicts in current knowledge?
- Has similar work been published and not acknowledged?
- Establish the originality of the research aims by demonstrating the need for investigations in the topic area?
- Will the report provide new information or is it just confirmatory?
- Commonly, the introduction ends by stating the research aims and how they will be undertaken. If these are a surprise, then the introduction needs improvement.

Consider the methods:

- Academic research should be replicable, repeatable and robust.
 - ❖ The experiments should include appropriate controls, repeated analyses, repeated experiments and sampling, appropriate statistical analyses.
 - ❖ Determine if the methods provide enough detail that others can carry out the same research.



Consider the results:

- Does the experiment match the question posed in the text?
- Do the data in the figures support the interpretations stated in the text?
- Are there other interpretations of the results that have not been considered?
- Are figures labeled correctly and fully? If not, ask for improvements in presentation.
- Are there sufficient data? Enough time points? Controls presented?
- Has there been obvious manipulation of the data?
- Tangential figures that do not address the storyline?
- Here is the place to suggest additional experiments if warranted.

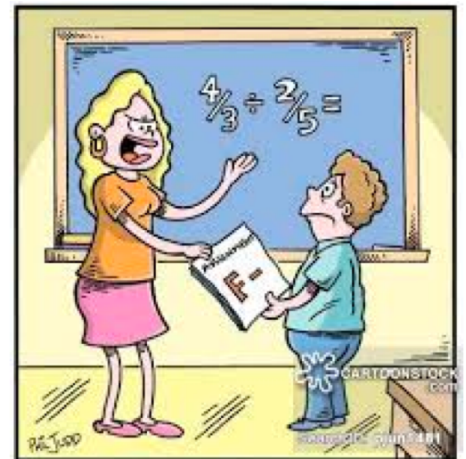


Consider the discussion:

- Is it a re-hash of the results section?
- Does the discussion gather all the information together into a single whole or new model?
- Are the conclusions placed in the context of the field?
- If there are inconsistencies in the story, are these addressed?
- Has similar work been published and not acknowledged?
- Is the significance made clear and lead to wider understanding?
- Some speculation is fine, over-interpretation is not.

Consider the references:

- References should be relevant, recent and readily retrievable.
- References should be accurate, adequate, and balanced.



"No Jimmy! You can't cite Wikipedia as the main source for your assignment!"

- *Are they accurate? Do they support point made in the text?*
- *Are they adequate? Do they support fully the point made in the text?*
- *Are they balanced? Have they cited only one lab or a range of labs? Overly reliant on self-citation? Are they new or old? Reviews or primary literature?*

Now back to the start of your review

- Paragraph 1: summarize the research performed
 - ❖ Help the editor properly contextualize the research and add weight to your judgement by demonstrating that you understand the paper

I just need
the main ideas



- ❖ Show the author what key messages are conveyed to the reader, so they can be sure they are achieving what they set out to do
- ❖ Focus on successful aspects of the paper so the authors get a sense of what they've done well

Next step in writing your review

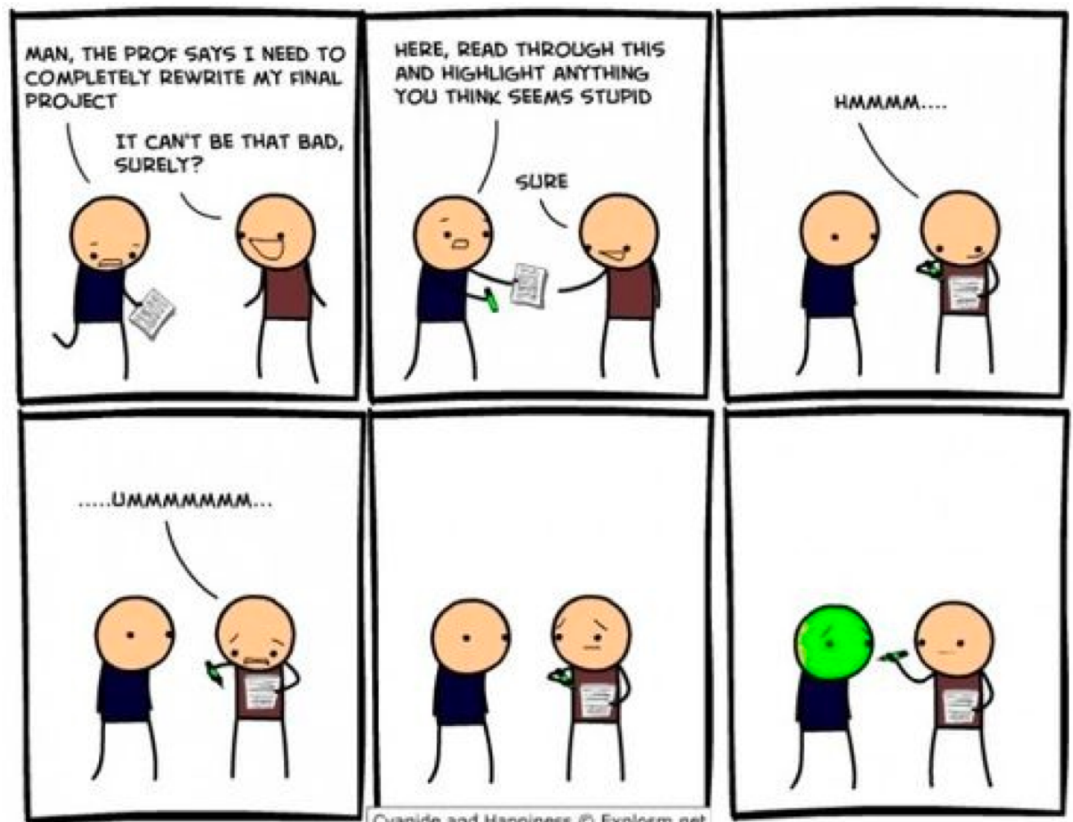
- Paragraph 2: address the contribution of the work
 - ❖ Is the paper's premise interesting and important?
 - ❖ Are the methods used appropriate, innovative?
 - ❖ Do the data support the conclusions?
 - ❖ Indicate the work's strengths, its quality and completeness.
 - ❖ Indicate the significance of the work and if it is novel or mainly confirmatory.
 - ❖ Are there major flaws or weaknesses? Summarize them here.
 - ❖ Do not provide a recommendation for acceptance or rejection in your critique because you could be over-ruled and this puts the editor in a bind. State only your overall opinion as to the quality and significance. State whether or not you have major or minor concerns and that they are listed below.

Other steps in the process

- Polish your review. It takes some time so start on your review as soon as you receive the paper.
- Confidential comments to editors are generally allowed:
 - Suspected plagiarism, fraud, unattributed work, bias, overall recommendation
- Recommendation section (invisible to authors):
 - Acceptance, Revision (Major or Minor),
 - Rejection: clearly articulate reasons in your review that support your recommendation

Tips to start your effective and fair review

Don't.....



Tips to start your effective and fair review

- Be professional – reviewing is core part of the job so try to do it well.
- Understand your role – you are a consultant to the monitoring editor. Your job is to evaluate the rigor and originality of the science and clarity of the writing.
- Be helpful – make suggestions for overcoming any shortcomings. It is easy to criticize a paper or grant, much harder to craft one.
- Be scientific – the paper is not about style but substance. And, your role is to assess scientific quality, not potential impact.

Tips to start your effective and fair review

- Be timely – meet the review deadline
- Be realistic about suggesting additional work. Think critically about your suggestions – will they really improve the paper?
- Be a champion for your field.
- Be empathetic – put yourself in the shoes of the author whose paper you are reviewing. What goes around, comes around.
- Be organized - your review requires structure and logical flow just like the paper.

ATTENTION

FROM NOW ON, ALL PAPER REVIEWS WILL BE DONE WITH FACEBOOK EMOTICONS



Cham, et al. submitted a New Paper
Oct. 24 at 6:07am










3 people reviewed this

LIKE

"I LIKED YOUR PAPER BUT I'M NOT EXCITED ABOUT IT. IT'S GOOD WORK BUT NOT GROUNDBREAKING."

HEART

"I LOVED YOUR PAPER AND WANT TO SEE IT PUBLISHED RIGHT AWAY."

LOL

"DID YOU SERIOUSLY THINK THIS CRAPPY PAPER WOULD GET ACCEPTED IN THIS FANCY CONFERENCE/ JOURNAL?? LOL."

SAD FACE

"THIS PAPER IS SO BAD, I'M LOSING MY FAITH IN ACADEMIA."

ANGRY FACE

"GRRR, I WISH I HAD WRITTEN THIS PAPER."

SURPRISE

"WHOA. YOU GOT FUNDING TO DO THIS??"

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Back to writing: the style of your review

- Be clear. Make sure your comments can be understood. Number your points and refer to page and line numbers when making specific comments.
- Treat the author's work the way you would like your own to be treated. Always try to say something positive and limit the negatives.
- Don't use value judgments or value-laden adjectives.

Resources:

- Almost all journals provide guidelines for reviewers
- There are a number of perspectives written about this, just cruise the internet

- <http://www.sciencemag.org/authors/peer-review-science-publications>
- <http://www.imedpub.com/conducting-the-review.php>