



Comments on the review process

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The following comments on the review process emerge out of many years of experience on both sides of the process, as reviewer and as author. They are idiosyncratic, indelibly colored by a world view that values expression and communication, and appreciates the penetration of the personal and emotional into science. The writing of science, in the author's view, needs humanization. The latter opinion puts the writer at odds with much tradition in the trade, and I know can be viewed as some mixture of naïve and prejudiced. And perceived as made from a privileged position.

This is my personal opinion:

1. The classic Hippocratic oath includes these words: "With regard to healing the sick, I will devise and order for them the best diet, according to my judgment and means; and I will take care that they suffer no hurt or damage. Nor shall any man's entreaty prevail upon me to administer poison to anyone; neither will I counsel any man to do so." The modern statement of the oath says "First, do no harm". On that principle, all nastiness and intemperate expression of condemnation shall be excluded from reviews or responses to them. Poison has many guises. Just say that you think the author (or reviewer) is wrong, and why.
2. The principle of doing no harm should be interpreted generously, in a permissive way, to allow different, unconventional, even strange views to be published. Even if the community thinks otherwise, even if the reviewer thinks otherwise, one should allow publication of them. On the claim in a paper that certain facts are true, if the reviewer claims otherwise, the editor should insert a note saying just this: "A reviewer disagrees with this claimed fact or conclusion."
3. In general, for reviewers and editors: On papers that propose interpretation or ideas: if in doubt, publish. Apply stricter criteria to papers that claim chemical or physical properties. See also point 13 below.
4. If the author does not take into account substantial aspects of a field, leaving out what a reviewer sees as important work, allow the publication in the paper of a statement that says so. Along the lines of...: "A reviewer has noted that the large body of work on ... anionic receptors... is not discussed by the authors."
5. The communication of science is afflicted with a heritage of dry, neutered, third person expression. The gatekeepers feel they should prevent expressions of emotion. Authors fall into step. Lest the audience, namely readers, be "misled" by it. The history of this has been traced [1]. In my opinion, the effect of implementing unexpressive writing styles has damaged the public's and other scientists' understanding of science. What is needed is more expression, more emotion, taking lessons from writing elsewhere. Science needs to be humanized.
6. Davide Proserpio and the author, with coworkers, have written at length about citation practice [2]. Cite we must, cite we do. The reasons for citation are multi-form, detailed in a lively way in the article cited. To summarize them via catchwords:
 - A. The tradition of scholarship.
 - B. Everything has a history.
 - C. We use the work of others.
 - D. Avoidance of duplication.
 - E. Establishing professionalism and credentials.
 - F. We wish to claim priority!
 - G. To connect up the world.
 - H. We want to be fair.
7. Editorial practices, at times a surrender to the demands of technical editors, that push for a separation of text from captions from drawings in submissions (or in publication) are a gross violation of the lesson of

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humanity – that telling stories is human [3]. The chemical paper reached a high positive point in the nineteen sixties, when the advances of computers and layout programs allowed the creation of a *Gesamtkunstwerk*, with three-dimensionally effective structures intercalated in a text wherever called out. A chemical story could be crafted and understood.

Contemporary policies of the “prestige” journals, of clumping all illustrations into an omnibus figure, are a particular travesty of the story-telling impulse – just when integrating text and pictures can be done more easily, the capability is vitiating.

8. Large language models, like Chat GPT, have a place in improving the language of papers by authors for whom English is not their first language. The use of such models must be stated clearly in the paper. It's obvious that any mistakes made by large language models are the direct responsibility of the authors.
9. If a paper has coauthors, every coauthor is responsible for any material in the paper, even if their role was quite specific (such as providing a certain type of measurement). To assure this, I would require a signing off by every coauthor, saying that they have read the paper and approve of submission. The sign-off probably should occur just before final acceptance of a work, and should be communicated not via the lead author, but directly to the journal.
10. Illustrations: From perusing many deposited, but not necessarily published papers, my conclusion is that (sadly) one of the prime functions of reviewers is to spot deficient illustration. The sadness comes from the realization that the poor illustrations one sees (in the age of superb computer graphic capabilities) derive from laziness, and a failure to realize the importance of the visual and geometric in teaching and learning. So easy to spot, these defective graphics.
11. Abstracts: These are routinely abused. An abstract is a succinct summary of what was done, allowing others to see the essence of the accomplishment. It is not the place to give history, or an argument for validity of a line of reasoning.
12. Humility is a human virtue. And excessive feelings of self-importance, a typical human failing. It is the place of reviewers to indicate general and specific over-advertising, undue use of enhancers of value of the work done, and -- more generally -- hype in a paper. There should be a question to reviewers to allow them to indicate whether the hype level is excessive, with a positive answer (yes, too much hype) seen prominently by author. If the author makes no change in response, the text should be published as the author has it – our personal hypemeters are well-tuned; no harm will be done by publication, except to the reputation of the writer.
13. Some of the papers that reach us for review are not “normal” scientific papers, but in the nature of introductions, prefaces, opinion papers, perspectives. They may be idiosyncratic, colorful or unconventional in expression, even prejudiced. How to review these? I would opt for liberal reviewing, generally allowing such papers to be published. The community can take it.

The above are personal, subjective opinions. People may disagree with the author, of course. And no doubt will think of further problems they see. And suggest resolutions. Keep writing!

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