

Why manuscripts fail, according to 12 experts

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Since this column began, only my views, opinions, harangues, and suggestions on technical writing have been emphasized. As wonderful as they are, this month I've broadened the scope to include the opinions and harangues of a gaggle of experts. Recently, I emailed two questions to the Associate Editors of *GEOPHYSICS*: (1) What are the most common errors, shortcomings, or pitfalls you find in your reviewing and editing? (2) What are the most difficult or most profound errors, shortcomings, or pitfalls you find in your reviewing and editing? I received 12 replies. I think you'll find the variations in answers very enlightening. I certainly did.

Expert 1. (1) English. Maybe more papers are being written by non-English speakers than in other fields, but I can barely read more than half of the papers I get to review. (2) The most profound shortcomings are lack of enough information to be able to reproduce the results or algorithms. This is often not apparent during the editorial process but only shows up when I try to use what is published. I can list at least four examples in the last two years where I have tried to program an algorithm from a published paper only to find that critical details were missing or contradictory. Somehow, we should have a criteria like "could a working algorithm be generated from the information in this paper?"

Expert 2. (1) Incorrect English and incoherent organization are common problems; this is not necessarily limited to those who are not native English speakers. The language and sometimes the style require additional work—in addition to passing on the merits of the science—by editors and referees; if the scientific content deserves it, I consider that a part of the reviewing process. For worthwhile contributions from scientists whose native language is not English, it is not always easy to find somebody with language proficiency who can help polish the manuscript. I believe it ... inexcusable when something deficient comes from a native English speaker at a professional level. (2) No answer.

Expert 3. (1) Grammar. (2) Grammar.

Expert 4. (1) The world is mostly too complicated to model directly, so we used simplified models based upon a lot of assumptions. Most authors do not explain the assumptions that they've made, justify them, discuss the limitations they impose on the model, or discuss the consequences, if they're violated. The latter is especially needed to warn people about lifting a model from the literature that was developed for a particular purpose, and then using it for another purpose. (2) People misusing data and models. The most egregious examples are people who chain together a series of models with different sets of assumptions. They're usually not consistent in the assumptions between the models and may be contradictory.

Expert 5. (1) Poor abstracts, introductions and/or summaries. (2) Boring presentations ... they are technically correct ... but their presentation is a real burden to the reader.

Expert 6. (1) It's hard to attribute poor writing to any one cause. But I think *GEOPHYSICS* authors commonly write for themselves and not for the audience. I often find myself urging authors to have an English-fluent nonspe-

cialist read their revisions. Of course, this almost never happens; I can always tell when it does. (2) See my response to (1).

Expert 7. (1) Inappropriate abstracts. It took me a long time to understand what an abstract was supposed to be, and even now I don't write them as well as I would like. My experience is that most authors are even worse. (2) Authors not making clear the principal point(s)—why the reader should care about this paper—in combination with the inclusion of marginally relevant material. This is particularly important when the paper is very mathematical.

Expert 8. (1) Too much detailed math or algorithms. I tend to agree with (Frank) Levin's commentary. Math is often essential but put only the salient results in the body of the paper and carefully discuss their meaning. How often have you read a long section of technospeak and wondered how it relates to the paper? There is often insufficient bridging and motivating material. I think any subsection of a paper should begin with a short summary of what is to be discussed and why. Another common shortcoming is failure to concisely summarize a paper's most important points. (2) Usually, I have the most trouble with disorganized or grammatically confused writing. Such stuff can be so far from acceptable that the best editing seems to be a complete rewrite.

Expert 9. (1) Papers are sent in too fast after the first draft is written. Authors should learn to avoid the temptation to send it in immediately. They should put the paper away for at least a week, come back to it later, and see if it still seems well written, logical, etc. I recommend giving the paper to a knowledgeable friend to find the obvious problems and fix them before wasting the reviewers' time. (2) Is there enough good, original material in this paper to occupy a place in *GEOPHYSICS*; i.e., are other geophysicists going to be glad they read the paper or was the paper written to boost the author's number of publications, self-image, or boss's image of the author? Could the material in this paper be included with material from another paper to make a more substantial and worthwhile publication?

Expert 10. (1) I am most annoyed by authors assuming that everybody is familiar with their earlier work or with the background literature. In my opinion, "it can be shown" is an inadmissible statement; either "show" (perhaps in an appendix) or give a reference, page number included (e.g., what good does it do to refer to a tome like Morse and Feshbach, if the poor reader must sift through two thick volumes to find what the author meant to say?) (2) Careless derivations, leaving too much to the readers' imagination. It is completely inadmissible to use lines like "this work is proprietary, and thus I cannot disclose the details." Authors who cannot disclose in full detail should not be allowed to publish.

Expert 11. (1) Bad English; papers that are poorly organized or don't maintain a coherent thought stream. (2) Revised papers that really don't take into account the reviewer's comments or state that something is important so they left the paper as is. Also, papers that have a lot to offer but are impossible to read [or edit] because the author is such a poor communicator.

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Expert 12. (1) Vague or broad reference, especially using the word “it.” For example: “Our method uses only the interval velocity, and it doesn’t ...” Writing like this means you have to get to the end of the sentence (or sometimes a few sentences later) to realize to what “it doesn’t” refers—the authors’ method or the interval velocity. I get this very frequently and in a variety of forms. (2) Authors who don’t know what their papers are about, so they do a memory-dump presenting readers with a grab bag of loosely related material. Such papers could easily be titled “A potpourri of ... methods” instead of a more descriptive title. Beyond this, I think the error I encounter most often is lack of clarity from lengthy sentences.

Adding my experience, Expert 13. (1) Failure to explicitly define the problem to be solved; failure to write with any element of persuasion; failure to understand the needs, interests, and reading expectations of readers; failure to discuss the benefits of the work; assuming a captive audience. (2) Lack of understanding or adherence to the principles and guidelines of sound technical writing from micro- through macroscale; irrecoverably incorrect grammar and syntax; disjointed or disconnected structure; camouflaged organization and flow; and self-inflated value.

It is very interesting to note that poor English is the most common complaint, but not the only complaint. Many failings can be traced simply to poor writing, which is not a function of the writer’s native language. This is very important and very significant to prospective authors whose native language is not English. It is very easy for an author who is not a native English speaker to hide behind the excuse of writing in a foreign language. This does, of course, make writing manuscripts doubly difficult. But, as substantiated by the experts, unfamiliarity with English is not the only reason for failed manuscripts. Many manuscripts, from native English speakers and from nonnative English speakers, are simply poorly written. **E**