Science Writing Checklist

by Daniel M. Zuckerman (Oregon Health & Science University) with helpful edits from E. Lyman and A. Mamonov, Jan 2010 at University of Pittsburgh; minor revision made Sep 2021 with input from L. Chong

General

- ☐ Does each paragraph focus on a single idea or point which is introduced/summarized in the paragraph's first sentence? A paragraph is like a mini-essay.
- ☐ Is the flow of logic clear from paragraph to paragraph? From your draft, you should be able to (re)write the outline of the paper – in fact, just from the first sentences of the paragraphs. Check this.
- ☐ Did you repeat key points in several sections to emphasize them?
- ☐ Did you spend a lot more time on logic and clarity than grammar and sentence structure? Nevertheless, avoid complicated sentences.

Abstract

- ☐ Does the abstract avoid distracting technical details?
- ☐ Is it clear from the abstract why the work is new and worthy of publication?

Introduction

- ☐ Did you clearly explain the reason why the work was done – the existing problem?
- ☐ Did you clearly and briefly explain what you did to make progress – what's new?
- ☐ Did you cite pertinent work done before? Is your list inclusive – demographically? of people you may not like? Citations affect careers, and we all have our biases.
- ☐ Did you read the introductions of several related papers to be sure you explained the ideas properly and cited the important work?

Methods

- ☐ Did you remind your readers why a new/old method was used? You can write a mini-introduction for the Methods section.
- ☐ Did you provide enough information so a reader could exactly reproduce your results? The whole procedure should be outlined, even if some details must be found in other work or Supplemental Information.

Results

- ☐ Did you make sure the main results are not buried? Again, use mini-introductions.
- ☐ Did you save commentary and speculation for the Discussion section?

Discussion

- ☐ Did you clearly explain what's new, as compared to previous work?
- ☐ Did you avoid repeating details from the Results section? Re-presenting the gist is a good idea.
- ☐ Did you admit the limitations of your work?
- ☐ Did you describe future applications, improvements, and generalizations?

Conclusions

- ☐ Could a reader in a rush read just the Conclusions and learn just about everything (including acronyms)?
- ☐ Did you avoid exaggeration and let the data speak for itself?
- ☐ Did you acknowledge everyone who helped, including funding agencies?

Figures

- ☐ Do figure titles describe the main point of each figure?
- ☐ Have you put labels/arrows in the graphic to minimize effort for the reader?

Wait!

- ☐ Did you go back to the 'General' section above and double-check those paragraphs and logic – even in the Results section? And is every paragraph in the right section?
- ☐ Did you make several revisions of the entire manuscript (after completing a first draft)?
- ☐ Did you check journal-specific formatting – section order; figures; references?