

Read This

I love to read books; suspenseful novels make me turn pages till the wee hours. That is true, but that sentence cannot appear in technical writing. The first person “I” would be inappropriate and “till the wee hours” is too informal. Technical writing, and academic writing for engineers, aims at explaining data, methods, and results. The rules for doing so are different from creative writing. Some rules are subjective, and some are easy to break, but please be conscious of them. Good technical writing is rare. Unfortunately, in contrast to my passion for novels, I do not love to read reports, theses, journal papers, conference papers, and term project reports. Only rarely do I find technical writing that captures my attention, succinctly explaining something well. That said, several papers written by my PhD supervisor Armen Der Kiureghian are in the category of great technical writing. An advice he gave me was: try to mimic writing styles you enjoy reading. The Economist, a weekly newspaper, serves that purpose for me. Their writing is outstanding and their analysis of data approaches academic standards. They have published a Style Guide for their writing, which contains useful advice (The Economist 2018).

Other books give further advice on technical writing. A book written by Joli Jensen is good for seasoned researchers and professors (Jensen 2017). Paraphrasing the title of that book, write often, but when you write, write little, i.e., be succinct. For younger researchers the book by Paul Silvia might be good (Silvia 2019). Several other books on technical writing can be recommended (Leggett et al. 1970; Swales and Feak 2004). Regardless of how you write now, keep working on it. We all do, every day. Also, remember the quote from John Joseph O’Neill, former Science Editor of the New York Herald Tribune:

“There is a high order of correlation between beauty and clarity of expression. A slovenly designed and constructed sentence is an unsafe container of knowledge.”

Steps

1. Rigorously assess the usefulness of what you want to explain, and why it is of interest to the target reader. Much writing and many submitted journal manuscripts should have been terminated at this step.
2. Create the outline. Use the next section as a guide.
3. Careful: Write the abstract, introduction, and conclusions dead last.
4. Do not write any text until the visual elements are developed, i.e., figures, tables, equations, references, lists, etc.
5. Review and discuss the outline and the visual elements. When done, do it again.
6. Write the text.
7. Sleep on it.
8. Review. Remove paragraphs. Remove words. Shorten and rewrite.
9. Repeat from Step 7, *ad nauseum*.

References

Jensen, J. (2017). *Write No Matter What*. The University of Chicago Press.

Leggett, G., Mead, D. C., and Charvat, W. (1970). *Handbook for Writers*. Prentice-Hall, Inc.

Silvia, P. J. (2019). *How to Write a Lot*. American Psychological Association.

Swales, J. M., and Feak, C. B. (2004). *Academic Writing for Graduate Students*. The University of Michigan Press.

The Economist. (2018). *Style Guide*. Public Affairs, Perseus Books.