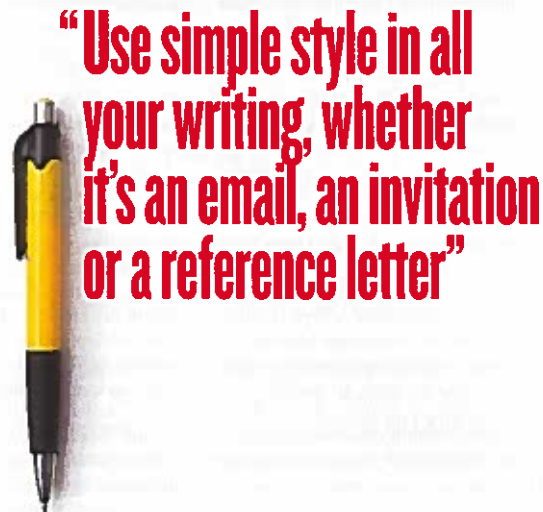




## The case for better scientific writing

# How junior researchers can write effectively and simply

by Jano Klimas



I AM SO TIRED of reading poorly written science. Often, I can barely finish reading an article that runs longer than one page. None of my friends read my articles. The feeling of failure spreads in me like cancer. First, I'm worried that we have failed everyday people who need our answers the most. Second, I fear that I, my colleagues and my mentors have failed future scientists by passing our bad writing habits on to them. How can junior researchers write effectively and simply?

Scientific writing is lengthy. It is full of long words, sentences and passages discoloured by vague and pretentious phrases that make paragraphs muddy like mountain creeks in the spring. When you ask a scientist, "Why do you write this way?" chances are they won't know. Perhaps because this is how they learned to write. This is how everybody writes, based on habits, logmas, preconceptions – but no direct teaching.

Early career researchers have many competing responsibilities. They're trying to please superiors, be available to colleagues and at the same time be perfect mentors, scholars and parents. They should not be blamed if they don't omit the needless words which make their writing long and hard to read. But who is thinking of the readers' time?

Many universities have writing centres that advise scientists on their writing. While they help researchers write better, they aren't the ultimate solution for a number of reasons. First, very few scholars access them and, if they do, it's only once or twice as graduate students. Good writing requires

years of sustained practice. Second, course-based education can only take you so far. Learning by doing is the best way to learn simple writing.

Trendsetting is another issue. The famous imperative "to become the change that you want to see in others" can be applied to the field of clear writing as: "Write as if you were your only reader." Many fear the loss of credibility if they write in a way that everybody understands.

Anne Greene, in her book *Writing Science in Plain English*, blames the French. When the Norman invaders won the Battle of Hastings in 1066 and left the way open for the Norman occupation of England, new French words invaded the good old English vocabulary. Similar to aspiring academic researchers, the English peasants wanted to speak like the middle class which emulated the French-influenced English of the Hastings conquerors. If you wanted to be like them, you spoke their tongue.

For emerging scientists, there's a lot at stake: future grants, prestige, tenure and, most importantly, the goodwill of their principal investigators. This is how bad writing is passed on from generation to generation and how it inhabits the very nature of the scientific training itself, the apprenticeship model. The apprentice is at the mercy of their mentor because they are the only source of feedback on writing that most apprentices yearn for, but very few get.

Lack of well-trained writers as role models and traditionalism in science contribute to the poor quality of most scientific writing. Although the apprenticeship model of doctoral training is

probably the best we have when it comes to science training, and although it served well for decades, the overproduction of PhDs pushes this model out from graduate school to make more room for training armies of PhDs in the "soft" skills required by non-academic industries. They may as well learn to write better.

Good writing requires a lot of self-discipline, but most people like themselves too much to be disciplined about writing. They yield to the trends and traditions that they see in research articles. They yield to the revisions from their principal investigators. They yield to the urge for big words.

Writing centres can provide tools to improve someone's writing and that's why they need more funding, but they won't crack the whip over a submissive writer; the centres won't choose the words for the author. The writer must be strong in their style. They must know when to be open to feedback from others and when to stop listening to it.

How to resist the urge for big words? Buy a simple writing guide such as William Zinsser's classic *On Writing Well*, or Strunk and White's *The Elements of Style*, or the aforementioned *Writing Science in Plain English*. Make simple writing your goal. Teach it to others. Do what you say and be consistent. Use simple style in all your writing, whether it's an email, an invitation, a reference letter, a report, or a question for a multi-choice questionnaire. Find writers who write simply and ask them for help. Nothing is too simple. **UM**