

Jargonitis and acronymitis hamper broader communication (or J&A impede SciCom)

Modern science education includes some really helpful skill courses for graduate students, for example, on advanced statistical issues, data presentation, how to write scientific papers and others. I happen to teach one of the advanced writing courses of our graduate school. People typically enjoy this course; it gives them a week off from daily laboratory (and family) life to stay at a remote location with full board. So, no more worries about doing the groceries, cooking, washing the dishes and tidying up the apartment; instead, full focus on writing a manuscript with the additional benefit of getting immediate feedback from peers and course instructors. People will usually return from such a week's course with a decent draft of a manuscript, which they can present to and discuss with their supervisors. I really like this course because it is a lot of fun (albeit there are certain rebound effects of the full board resulting in compensatory measures in the weeks to follow, at least for the supervisor...), but there are times when—as an instructor—I risk falling into some despair. For example, in one of the courses, a final-year Ph.D. candidate wrote a manuscript on quantitative genetics: really exciting data and a scholarly written manuscript! Sounds perfect..., or maybe not? I do not know how you feel, but as somebody not acquainted with quantitative genetics, I often have a hard time grabbing the essence of quantitative geneticists' work; lots of gibberish if you ask me... (and no offense, I would say the same of my own research fields). Hence, I made some friendly suggestions as to how the manuscript could be changed to become more accessible also for the non-specialist. The student's sensible reply was: 'Look, it took me years to understand the jargon of this research field, and NOW, that I finally got it, I WANT to write a paper exactly in the way they are written in the field!' I frowned and argued that she could make all the difference by writing in a manner that even ordinary biologists, such as me, could follow the topic more easily, but it was in vain. She was so proud of finally mastering the research field's jargon, and that obviously displaced any effort to be comprehensible for a broader audience.

In behavioural endocrinology, one of my own research fields, acronyms for hormones are very popular: publications on steroid hormones, for example, are full of T's and E's, GC's, C's and CORT's, etc., because obviously words such as testosterone, estradiol, glucocorticoids or corticosterone/cortisol seem just too complicated to be spelled out. Even worse, during the heydays of endocrinology in the 1960s and 1970s, corticosterone used to be even abbreviated as B (while cortisol would be F), following a steroid nomenclature based

on the order of their discovery (see also Raff, 2016). The insiders do not seem to mind, and I guess most behavioural endocrinologists do not even notice. But in the end, the excessive use of acronyms in this and other fields may be one of many tiny steps that hamper effective communication across research fields. In my view, 'testosterone' or 'corticosterone' are relatively simple words and I wonder, what is the problem with just spelling them out? It may be justified to abbreviate hormones with long and complicated names, such as 'dehydroepiandrosterone' (DHEA), but why something as short and succinct as 'estradiol'?

So why is the use of jargon and redundant acronyms so popular in science? I think this has mainly three reasons, and only the first one is really a good one: some words are just too long and complicated to be spelled out all the time, *deoxyribonucleic acid* being a good example, and its acronym *DNA* has made its way even into lay peoples' language. Often, though, acronyms and jargon function as sort of identifiers for being part of an exclusive club, the *in-group*. But why give away the chance to be inclusive to scientists from other fields? Third, jargon in particular may indicate a lack of clarity of one's own thinking—at least this is what I have been experiencing from my own writing. It is a bit like going to a consumer electronics store, where some sellers overwhelm the ordinary customer with their specialist blurb. Either these guys are true freaks who do not care to come down to the level of the ordinary user (see reason 2) or they just dodge behind the jargon to cover their own ignorance (reason 3). Both not very helpful, neither for the customer in the electronics store nor for readers of scientific papers—at least if the writer's intention is to take the reader along. One of my heroes in science communication, Steven Pinker, says, to remember the reader over your shoulder is a start for more effective communication (Pinker, 2014, p. 63). This is very different from the advice a distinguished German professor gave his students: 'Be incomprehensible at a high level!' If the sole aim is to make your audience feel dumb, ok! The excessive use of acronyms and jargon may be effective steps to reach this goal.

The art of writing a scientific paper is to write in an engaging manner; ideally, the reader should not want to stop reading it. To be as complicated as necessary, and as comprehensive and entertaining as possible, is the gold standard of science communication. The books by Helen Sword (2012) and Steven Pinker (2014) provide good advice on more stylish academic writing. Having the reader in mind and trying to avoid acronyms and jargon, where they are not

necessary, certainly are good first steps. This is why the instructions for authors of *Ethology* say 'In general, terms should not be abbreviated unless they are used repeatedly and the abbreviation is helpful to the reader'.

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