



The style files

Omit redundant words

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‘Vigorous writing is concise. A sentence should contain no unnecessary words, a paragraph no unnecessary sentences, for the same reason that a drawing should have no unnecessary lines and a machine no unnecessary parts. This requires not that the writer make all his sentences short, or that he avoid all detail and treat his subjects only in outline, but that every word tell.’

Strunk 1918 [2, Section 13]

Redundancy occurs in so many forms that a smooth discourse is almost impossible to write. In a rather piecemeal fashion, let us look at just some ways to tighten your writing. Why? So that each word you write serves a definite useful purpose in communicating concepts, actions and results.

Two words that proliferate like weeds in academic writing are ‘have’ and ‘has’. They occur unnecessarily in many ‘have/has *verbed*’ combinations. For example, not ‘we have observed’ but simply ‘we observed’, and not ‘his colleagues have compared’ but simply ‘his colleagues compared’. As in the later examples, such padding seems to have crept in to scientific writing without notice. Omit such padding. After you have drafted an article, do a global search for ‘have/has’ and ask yourself whether each occurrence is necessary.

Remember that I do not advocate that shorter is better. Good writing experts just recommend that every word tell. Consequently, do not be tempted to use abbreviations and contractions [1, Sections 4.2 and 4.13] as they tend to make sentences stilted. For example, the most common abbreviations are probably ‘e.g.’ and ‘i.e.’, but many authorities contend that ‘for example’ and ‘that is’ make for smoother flowing sentences. Certainly avoid TLAs, three-letter acronyms, unless you invoke the acronym many times.

Instead I advocate that we simplify long-winded ways of writing. See how the following two examples cut out unnecessary waffle.

Long winded: We initially reproduce . . . , and very good agreement is confirmed.

Concise: We reproduced accurately . . .

Long winded: The computed inviscid and viscid solutions were presented, and were shown to compare very well with . . .

Concise: The computed inviscid and viscid solutions compare very well with . . .

You may think: easy, I do not write like that. Yet almost all the examples I use in these articles come from infelicities encountered in editing research articles (my apologies to those who recognise their sentence fragments). Ask a colleague to read your draft articles with a mandate to improve long winded exposition.

In especial the expression ‘the fact that’ should be revised out of every sentence in which it occurs. [2, Section 13]

Other words to almost always omit are ‘actually’, ‘very’, ‘really’, ‘currently’, ‘in fact’, ‘thing’, ‘without doubt’ [1, Section 4.21]. Such words typically pad sentences to no advantage. Also cull ‘given by’, ‘expressed by’, and ‘the following equation’. These usually occur as a prelude to an equation. Omit them. For example, and also culling a useless ‘in this paper’,

Long winded: In this paper, let us consider the fractional-order transfer function given by the following expression $G_n(s) = \dots$

Concise: Now consider the fractional order transfer function $G_n(s) = \dots$

Writing cysts such as ‘It is noted here that blah’ should be mercilessly excised to ‘Note: blah’ or even just ‘blah’. Search for passive sentences beginning ‘It is’ and rewrite actively.

Active writing aids conciseness. The following example shows the simplification in writing actively:

Passive: The two different representations of the manifold are clearly displayed in Figure 2

Active: Figure 2 displays the two different representations of the manifold

As positive statement is more concise than negative, and the active voice more concise than the passive [2, Section 13]

Summary. Describing science accurately is a difficult task: it is so easy to be misunderstood. We need to write from many different angles to cater for a wide variety of readers. Make each view of your discourse as concise as possible so that your reader’s attention is not exhausted. Expunge useless padding.

References

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Tony Roberts is the world leader in using and further developing a branch of modern dynamical systems theory, in conjunction with new computer algebra algorithms, to derive mathematical models of complex systems. After a couple of decades of writing poorly, both Higham’s sensible book on writing and Roberts’ role as electronic editor for the Australian Mathematical Society impelled him to not only incorporate writing skills into both undergraduate and postgraduate programs, but to encourage colleagues to use simple rules to improve their own writing.