

Principles of Scientific Writing

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Preface

This book will present my perspective on scientific writing, in particular focusing on writing about statistical data analysis, but also scientific writing generally (and informative prose generally). I intend to give it to academic mentees as a style guide reference, and also use it as a notebook for myself.

1 Introduction

2 Word choice

I recommend trying to replace Latin-derived words and phrases with Old English-derived equivalents (“[English](#)” words) where possible; it generally makes writing simpler and easier to read. Latin words create artificial barriers to understanding. Many Latin-derived words commonly used in scientific writing are composed from roots and affixes which are not commonly used in their basic forms; hence, readers cannot determine the meanings of these words by decomposing them. Instead, they need to memorize the meanings of these words directly. In contrast, the components of composite English words are typically also used individually, so the meanings of the composites can be derived directly. Table 2.1 lists some common Latinate words and phrases and English alternatives.

Table 2.1: Commonly used Latin words and phrases and English alternatives

Latin	English
prior to	before
necessary	needed

See also <https://bark-fa.github.io/English-Translator/>

I am aware that this book, and even this chapter, contains many Latin word choices where there are English alternatives. It is a work in progress, and also, I am not advocating 100% English purity. Use whichever words and phrases you think your readers are most likely to understand easily. Preferring English is merely a useful heuristic to help achieve our ultimate goal of producing clear, easy-to-read writing.

Just to be clear, although I prefer English words, I have no particular preference for English people or culture; it is only a practical consideration, based on the realities of English as the current default language of science and the relatively-recent hybridization of the English language.

3 Conciseness

Julius Caesar was renowned not only as a military commander but also as a writer. His *Commentarii de Bello Gallico* (Commentaries on the Gallic War) exemplifies clear, direct prose. Caesar wrote in a straightforward style, avoiding unnecessary embellishment and focusing on conveying information efficiently. His famous phrase “Veni, vidi, vici” (I came, I saw, I conquered) demonstrates the power of brevity (Wikipedia contributors 2026).

Scientific writing should emulate Caesar’s conciseness. Every word should serve a purpose. Eliminate redundancy and verbosity. When you can express an idea in fewer words without losing meaning, do so.

3.1 Common ways to improve conciseness

- Remove redundant phrases
 - “in order to” → “to”
 - “due to the fact that” → “because”
 - “at this point in time” → “now”
 - “a large number of” → “many”
- Use active voice instead of passive where appropriate
 - “The experiment was conducted by the researchers” → “The researchers conducted the experiment”
- Eliminate unnecessary qualifiers
 - “very”, “really”, “quite” often add little meaning
- Replace wordy phrases with single words
 - “make a decision” → “decide”
 - “give consideration to” → “consider”
 - “is able to” → “can”

Remember: concise writing is not about making every sentence as short as possible, but about removing words that do not contribute to meaning or clarity.

4 Summary

In summary, this book has no content whatsoever.

References

Wikipedia contributors. 2026. “Julius Caesar — Wikipedia, the Free Encyclopedia.” https://en.wikipedia.org/wiki/Julius_Caesar#Literary_works.