

WORD USAGE IN SCIENTIFIC WRITING

This listing includes some of the most frequently troublesome words, terms, and expressions found in journal papers and manuscripts. Any glossary of word usage assumes that what is acceptable for some uses may not be for others. Some terms and expressions are worn-out clichés and have outlived their usefulness; other expressions and terms, though not incorrect, are not precise because their meanings are ambiguous or clouded. In reporting and recording research, try to be as accurate and precise in describing it as in doing it. Wherever possible choose the more precise words with unmistakable meanings. Avoid the ambiguous and “faddish”; the latter may not be in years hence. For the benefit of foreign readers, especially, use standard words in their established meanings.

Above ("the above method," "mentioned above," etc.) -- Often, you are referring to something preceding, but not necessarily *above*; a loose reference, convenient for writers, but not for readers. Be specific. You know exactly what and where, but your readers may have to search (sometimes through much preceding material).

Affect, effect -- Affect is a verb and means to *influence*. Effect, as a verb, means to *bring about*; as a noun, effect means *result*.

All of, both of -- Just "all" or "both" will serve in most instances.

Alternate, alternative -- Be sure which you mean.

And (to begin a sentence) -- Quite proper. You may have been told not to do this in grade school. But teacher's purpose was to keep you from using fragmentary sentences; either "and" or "but" may be used to begin complete sentences. And both are useful transitional words between related or contrasting statements.

Apparently (apparent) -- means *obviously, clearly, plainly evident*, but also means *seemingly* or *ostensibly* as well as *observably*. You know the meaning that you intend, but readers may not. Ambiguity results. Use *obvious(ly)*, *clear(ly)*, *seeming(ly)*, *evident(ly)*, *observable* or *observably*, to remove all doubt.

Appear, appears -- Seem(s)? "He always *appears* on the scene, but never *seems* to know what to do." "Marley's ghost *appeared* but *seemed* harmless."

As -- Dialectal when used in place of *that* or *whether*; do **not** use “*as*” to mean *because* or *inasmuch as*.

At the present time, at this point in time -- Say "at present" or "now" if necessary at all.

Below -- See comment about “*above*”.

But (to begin a sentence) -- Go right ahead (see "And" and "However").

By means of -- Most often, just "by" will serve and save words.

Case -- Can be ambiguous, misleading, or ludicrous because of different connotations; e.g., "In the case of Scotch whiskey,..." *Case* also is a frequent offender in padded, drawn-out sentences. For "in this case," try "in this instance."

Commas and punctuation – Not precisely a word-usage matter except in relation to how words are put together. The trend was toward less punctuation (particularly fewer commas), but that demands careful writing, without misplaced or dangling elements. Do not omit commas before the conjunctions in compound sentences. Most journals, but not all, use final commas before ‘and’ or ‘or’ in series; check the journal.

Compare with, compare to -- Compare *with* means to examine differences and similarities; compare *to* means to represent as similar. One may conclude that the music of Brahms compares *to* that of Beethoven, but to do that, one must first compare the music of Brahms *with* that of Beethoven. (See also: Ian A. Greaves. On making comparisons: Reminded again. *Science* 226(4672):242. 1984.)

Comprise -- Before misuse, comprise meant to contain, include, or encompass (not to constitute or compose) and still does, despite two now opposite meanings. Use and meanings now are so confused and mixed that "comprise" is best avoided altogether!

Correlated with, correlated to -- Although things may be *related to* one another, things are *correlated with* one another.

Different from, different than -- Different from! Also, one thing *differs from* another, although you may *differ with* your colleagues.

Due to -- Make sure that you don't mean *because of*. Due is an adjective modifier and must be directly related to a noun, **not** to a concept or series of ideas gleaned from the rest of a statement. "Due to the fact that..." is an attempt to weasel out.

During the course of, in the course of -- Just use "during" or "in."

Either....or, neither...nor -- Apply to no more than two items or categories. Similarly, *former* and *latter* refer only to the first and second of only two items or categories.

Etc. – Use at least two items or illustrations before “and so forth” or “etc.”

Experience(d) -- To experience something is sensory; inanimate, unsensing things (lakes, soils, enzymes, streambeds, farm fields, etc.) do not experience anything.

Following -- "After" is more precise if "after" is the meaning intended. "After [not *following*] the procession, the leader announced that the ceremony was over."

High(er), low(er) -- Much too often used, frequently ambiguously or imprecisely, for other words such as *greater, lesser, larger, smaller, more, fewer*; e.g., "Occurrences of higher concentrations were lower at higher levels of effluent outflow." One interpretation is that greater concentrations were fewer or less frequent as effluent volume(s) increased, but others also are possible.

However -- Place it more often within a sentence or major element rather than at the beginning or end. "But" serves better at the beginning.

Hyphening of compound or unit modifiers -- Often needed to clarify what is modifying what; e.g., a small-grain harvest (harvest of small grain) is different from a small grain harvest (small harvest of *all* grain), a fast *acting* dean isn't necessarily as effective as a fast-acting dean, a batch of (say, 20) 10-liter containers is different from a batch of 10 [1-] liter containers, *and a man eating fish is very different from a man-eating fish!* Grammatically, adjectives are noun modifiers, and the problem is when adjectives and nouns are used to modify **other** adjectives and nouns. **Adverbs** (usually with "ly" endings), however, **are** adjective modifiers.

In order to -- For brevity, just use "to", the full phrase may be used, however [in order] to achieve useless padding.

Irregardless -- No, *regardless*. But *irrespective* might do.

It should be mentioned, noted, pointed out, emphasized, etc. -- Such preambles often add nothing but words. Just go ahead and say what is to be said.

It was found, determined, decided, felt, etc. -- Are you being evasive? Why not put it frankly and directly? (And how about that subjective "felt"?)

Less(er), few(er) -- "Less" refers to quantity; "fewer" to number.

Majority, vast majority -- See if *most* will do as well or better. Look up "vast."

Myself -- Not a substitute for *me*. "This paper has been reviewed by Dr. Smith and myself" and "The report enclosed was prepared by Dr. Jones and myself" are incorrect as is "Don't hesitate to call Dr. Doe or myself"; *me* would have been correct in all instances. (Use of *I* also would have been wrong in those examples.) Some **correct** uses of *myself*: I found the error myself. I myself saw it happen. I am not myself today. I cannot convince myself. I locked myself out of the car.

Nonparallel construction --

Partially, partly -- Compare the meanings (see also *impartially*). *Partly* is the better, simpler, and more precise word when partly is meant.

Percent, percentage -- Not the same; use percent only with a number.

Predominate, predominant -- *Predominate* is a verb. *Predominant* is the adjective; as an adverb, *predominantly* (not "predominately").

Prefixes -- (mid, non, pre, pro, re, semi, un, etc.) -- Usually not hyphenated in U.S. usage except before a proper name (pro-Iowa) or numerals (mid-60s) or when lack of a hyphen makes a word ambiguous or awkward. *Recover* a fumble, but perhaps *re-cover* a sofa. *Preengineered* is better hyphenated as *pre-engineered*, one of the few exceptions so hyphenated. Breaking pairs such as *predoctoral* and *postdoctoral* into *pre-* and *post-doctoral* "forces" hyphenating of both otherwise unhyphenated words.

Principle, principal -- They're different; make sure which you mean.

Prior to, previous to -- Use *before*, *preceding*, or *ahead of*. There are *prior* and *subsequent* events that occur before or after something else, but *prior to* is the same kind of atrocious use that attempts to substitute "subsequent to" for "after."

Proven -- Although a *proven* adjective, stick to *proved* for the past participle.

Provided, providing -- *Provided* (usually followed by "that") is the conjunction; *providing* is the participle.

Reason why -- Omit *why* if reason is used as a noun. The reason is...; or, the reason is that... (i.e., the reason is the why).

Similar...as -- No! If things are similar, they are *similar to* one another

Since -- has a time connotation; use "because" or "inasmuch as" when either is the intended meaning.

Small in size, rectangular in shape, blue in color, tenuous in nature, etc. -- Redundant.

Spellings --

Subject and verb disagreement --

That and which -- Two words that can help, when needed, to make intended meanings and relationships unmistakable, which is important in reporting scientific information. If the clause can be omitted without leaving the modified noun incomplete, use *which* and enclose the clause within commas or parentheses; otherwise, use *that*.

To be -- Frequently unnecessary. "The differences were [found] [to be] significant."

Varying -- Be careful to distinguish from *various* or *differing*. In saying that you used varying amounts or varying conditions, you are implying **individually changing** amounts or conditions rather than a selection of various or different ones.

Under way – two words except as adjective (e.g., “Further work on development is *under way*, but the problem of *underway* repair has not be solved.”).

Where -- Use when you mean *where*, but not for "in which," "for which," etc.

Which is, that were, who are, etc. -- Often not needed. For example, "the data that were related to age were analyzed first" means that the *data related to age* were analyzed first. Similarly, for "the site, which is located near Ames," try "the site, located near Ames" or "the site, near Ames." Rather than "all persons who were present voted," just say that "all persons present voted." Rephrasing sometimes can help. Instead of "a survey, which was conducted in 1974" or "a survey conducted in 1974," try "a 1974 survey."

While -- Preferably not if, *while* writing, you mean and, but, although, or whereas.

Remember that a research report should communicate and record information as accurately and concisely as possible. The purpose is to report, not to impress with elegance. Excess wordage, tortuous construction, unnecessary detail, duplication, repetition, third-person passive pseudo-objectivism, etc., obstruct rather than facilitate communication. It's the message that is important, not sheer numbers of words. Use precise words and expressions of unmistakable meaning; avoid the clouded, ambiguous, vague, and needlessly complex.

BEWARE OF MISPLACED or DANGLING MODIFIERS and PRONOUN-ANTECEDENT PROBLEMS! The difficulty here is that you, as the author, know exactly to which each has reference even through not explicitly stated. Your reader, however, doesn't have this advantage, and the result may be confusing, misleading, or funny.

EXAMPLES:

“Using multiple-regression techniques, the animals in Experiment I were.....”

“Based only on this doubtful inference, we find the conclusions not supported.”

“The determinations were made on samples using gas chromatography.”

“In assessing the damage, the plants exhibited numerous lesions.”

“The spiders were inadvertently discovered while repairing a faulty growth chamber.”

“Settling in the collected effluent, we observed what was determined to be....”

“The flavor was evaluated by an experienced taste panel, and it was deemed obnoxious.”

“All samples in Lot II were discarded when the authors found that they were contaminated with alcohol, rendering them unstable.” [and unable to think clearly?]

“The guidelines were submitted to the deans, but they subsequently were ignored.”

“The contents were placed in 50-ml flasks, which after evaporating....” [let the contents run all over?]