Word Usage in Scientific Writing

http://www.ag.iastate.edu/aginfo/word_usage.php

This listing includes some of the troublesome words, terms, and expressions most frequently found in Experiment Station journal paper and bulletin 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 cliches and have outlived their usefulness; other expressions and terms, though not incorrect, are not precise. In reporting and recording research, try to be as accurate and precise in describing it as in doing it. Avoid the ambiguous and “faddish.” For the benefit of international readers, especially, use standard words in their established meanings.

1. **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).

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

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

4. **Alternate, alternative** -- Be sure which you mean.

5. **And** (to begin a sentence) -- Quite proper. You 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.

6. **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 obviously, clearly, seeming, evidently, observable or observably, etc., as needed to remove doubt.

7. **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."

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

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

10. **Below** -- See comment about above.

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

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

13. **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."

14. **Commas and punctuation** -- Not precisely a word-usage matter except in relation to how words are put together. The trend is 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.

15. **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.
16. **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.

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

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

19. **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.

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

21. **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.

22. **Etc.** -- Use at least two items or illustrations before "and so forth" or "etc."

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

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

25. **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.

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

27. **Hyphenation 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.

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

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

30. **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.

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

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

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

34. **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.

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

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

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

38. 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" hyphenation of both otherwise unhyphenated words.

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

40. 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."

41. Proven -- Although a proven adjective, stick to proved for the past participle. "A proven guilty person must first have been proved guilty in court."

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

43. 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).

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

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

46. 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. Example: "The lawn mower, which is broken, is in the garage." But, "The lawn mower that is broken is in the garage; so is the lawn mower that works."...That is broken specifies the particular mower being discussed, whereas which is broken merely adds additional information to the sentence.

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

48. 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.

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

50. 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."

51. 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 though not explicitly stated. Your reader, however, doesn't have this advantage, and the result may be confusing, misleading, or funny. EXAMPLES:

**Modifier problems**

1. "Using multiple-regression techniques, the animals in Experiment I were...
2. "Based only on this doubtful inference, we find the conclusions not supported."
3. "The determinations were made on samples using gas chromatography."
4. "In assessing the damage, the plants exhibited numerous lesions."
5. "The spiders were inadvertently discovered while repairing a faulty growth chamber."
6. "Settling in the collected effluent, we observed what was determined to be..."

**Ambiguous pronoun antecedents**

1. "The flavor was evaluated by an experienced taste panel, and it was deemed obnoxious."
2. "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?]"
3. "The guidelines were submitted to the deans, but they subsequently were ignored.

**Misplaced and Dangling Modifiers**

The Writing Centre HyperGrammar – U Ottawa

[http://www.uottawa.ca/academic/arts/writcent/hypergrammar/msplmod.html](http://www.uottawa.ca/academic/arts/writcent/hypergrammar/msplmod.html)

You have a certain amount of freedom in deciding where to place your modifiers in a sentence:

We rowed the boat **vigorously**.
We **vigorously** rowed the boat.
**Vigorously** we rowed the boat.

However, you must be careful to avoid **misplaced modifiers** -- modifiers that are positioned so that they appear to modify the wrong thing.

In fact, you can improve your writing quite a bit by paying attention to basic problems like misplaced modifiers and dangling modifiers.

**Misplaced Words**

In general, you should place single-word modifiers near the word or words they modify, especially when a reader might think that they modify something different in the sentence. Consider the following sentence:

[WRONG] After our conversation lessons, we could understand the Spanish spoken by our visitors from Madrid **easily**.

Do we understand the Spanish easily, or do the visitors **speak** it easily? This revision eliminates the confusion:

[RIGHT] We could **easily** understand the Spanish spoken by our visitors from Madrid.
It is particularly important to be careful about where you put limiting modifiers. These are words like "almost," "hardly," "nearly," "just," "only," "merely," and so on. Many writers regularly misplace these modifiers. You can accidentally change the entire meaning of a sentence if you place these modifiers next to the wrong word:

- [WRONG] Randy has nearly annoyed every professor he has had. (he hasn't "nearly annoyed" them)
- [WRONG] We almost ate all of the Thanksgiving turkey. (we didn't "almost eat" it)
- [RIGHT] Randy has annoyed nearly every professor he has had.
- [RIGHT] We ate almost all of the Thanksgiving turkey.

**Misplaced Phrases andClauses**

It is important that you place the modifying phrase or clause as close as possible to the word or words it modifies:

- [WRONG] By accident, he poked the little girl with his finger in the eye.
- [WRONG] I heard that my roommate intended to throw a surprise party for me while I was outside her bedroom window.
- [WRONG] After the wedding, Ian told us at his stag party that he would start behaving like a responsible adult.
- [RIGHT] By accident, he poked the little girl in the eye with his finger.
- [RIGHT] While I was outside her bedroom window, I heard that my roommate intended to throw a surprise party for me.
- [RIGHT] Ian told us at his stag party that he would start behaving like a responsible adult after the wedding.

**Squinting Modifiers**

A squinting modifier is an ambiguously placed modifier that can modify either the word before it or the word after it. In other words, it is “squinting” in both directions at the same time:

- [WRONG] Defining your terms clearly strengthens your argument. (does defining "clearly strengthen" or does "defining clearly" strengthen?)
- [RIGHT] Defining your terms will clearly strengthen your argument. OR A clear definition of your terms strengthens your argument.

**Split Infinitives**

The infinitive form of the verb consists of the word "to" followed by the base form of the verb: "to be," "to serve," "to chop," etc. Inserting a word or words between the "to" and the verb of an infinitive creates what is known as a split infinitive. Prescriptive grammarians, who knew Latin grammar better than English, once decreed that a split infinitive was an error, but now it is growing increasingly acceptable even in formal writing. Nevertheless, some careful writers still prefer to avoid splitting infinitives altogether.

In general, you should avoid placing long, disruptive modifiers between the "to" and the verb of an infinitive. However, you must use your judgement when it comes to single-word modifiers. Sometimes a sentence becomes awkward if a single-word modifier is placed anywhere but between the elements of the infinitive:

- [WRONG] The marketing team voted to, before they launched the new software, run an anticipatory ad campaign. (disruptive -- the infinitive should not be split)
- [RIGHT] The marketing team voted to run an anticipatory ad campaign before they launched the new software.

**Dangling Modifiers**

The dangling modifier, a persistent and frequent grammatical problem in writing, is often (though not always) located at the beginning of a sentence. A dangling modifier is usually a phrase or an elliptical clause -- a dependent clause whose subject and verb are implied rather than expressed -- that functions as an adjective but does not modify any specific word in the sentence, or (worse) modifies the wrong word. Consider the following example:

Raised in Nova Scotia, it is natural to miss the smell of the sea.

The introductory phrase in the above sentence looks as if it is meant to modify a person or persons, but no one is mentioned in the sentence. Such introductory adjective phrases, because of their position, automatically modify the
first noun or pronoun that follows the phrase -- in this case, "it." The connection in this case is illogical because "it" was not raised in Nova Scotia. You could revise the sentence in a number of ways:

For a person raised in Nova Scotia, it is natural to miss the smell of the sea. (the phrase no longer functions as an adjective)
Raised in Nova Scotia, I often miss the smell of the sea. (the phrase functions as an adjective but now automatically modifies "I," a logical connection)

A dangling modifier can also appear when you place an elliptical clause improperly:

Although nearly finished, we left the play early because we were worried about our sick cat.

The way this sentence is structured, the clause "Although nearly finished" illogically modifies "we," the pronoun directly following the clause. An easy way to rectify the problem is to re-insert the subject and verb that are understood in the elliptical clause:

Although the play was nearly finished, we left early because we were worried about our sick cat.

Written by Frances Peck

Other Resources:

Common Errors in English (Paul Brians, WSU Dept of English)
http://www.wsu.edu/~brians/errors/
<table>
<thead>
<tr>
<th>Jargon</th>
<th>Preferred Usage</th>
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<tbody>
<tr>
<td>a considerable amount of</td>
<td>much</td>
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<tr>
<td>a considerable number of</td>
<td>many</td>
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<tr>
<td>a decreased amount of</td>
<td>less</td>
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<tr>
<td>a decreased number of</td>
<td>fewer</td>
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<tr>
<td>a majority of</td>
<td>most</td>
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<tr>
<td>a number of</td>
<td>many</td>
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<td>a small number of</td>
<td>a few</td>
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<td>absolutely essential</td>
<td>essential</td>
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<td>accounted for by the fact</td>
<td>because</td>
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<td>adjacent to</td>
<td>near</td>
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<td>along the lines of</td>
<td>like</td>
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<tr>
<td>an adequate amount of</td>
<td>enough</td>
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<td>an example of this is the fact that</td>
<td>for example</td>
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<tr>
<td>an order of magnitude faster</td>
<td>10 times faster</td>
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<td>apprise</td>
<td>inform</td>
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<td>are of the same opinion</td>
<td>agree</td>
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<td>as a consequence of</td>
<td>because</td>
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<td>as a matter of fact</td>
<td>in fact (or leave out)</td>
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<td>as a result of</td>
<td>because</td>
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<td>as is the case</td>
<td>as happens</td>
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<td>as of this date</td>
<td>today</td>
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<td>as to</td>
<td>about (or leave out)</td>
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<td>at a rapid rate</td>
<td>rapidly</td>
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<td>at an earlier date</td>
<td>previously</td>
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<td>at an early date</td>
<td>soon</td>
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<td>at no time</td>
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<td>at some future time</td>
<td>later</td>
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<td>at the conclusion of</td>
<td>after</td>
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<td>at the present time</td>
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<td>at this point in time</td>
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<td>cause</td>
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<td>cognizant of</td>
<td>aware of</td>
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<td>completely full</td>
<td>full</td>
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<td>consensus of opinion</td>
<td>consensus</td>
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<td>considerable amount of</td>
<td>much</td>
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<td>contingent upon</td>
<td>dependent on</td>
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<td>definitely proved</td>
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<td>end result</td>
<td>result</td>
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<td>endeavor</td>
<td>try</td>
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<td>entirely eliminate</td>
<td>eliminate</td>
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</table>
it is clear that much additional work will be required before a complete understanding of it is crucial that must
doubtful that possibly
evident that a produced b a produced b
generally believed many think
my understanding that I understand that
of interest to note that (leave out)
often
suggested that I think
worth pointing out in this note that
context that
may be that I think
may, however, be noted that but
should be noted that note that (or leave out)
observed in the course of we observed
experiments that
join together join
lacked the ability to couldn't
large in size large
let me make one thing perfectly clear
majority of most
make reference to refer to
met met
militate against prohibit
more often than not usually
needless to say (leave out, and consider leaving out whatever follows it)
new initiatives initiatives
no later than by
of great theoretical and practical importance useful
of long standing old
of the opinion that think that
don a daily basis daily
on account of because
on behalf of for
on no occasion never
on the basis of by
on the grounds that since, because
on the part of by, among, for
on those occasions in which when
attention has been called to we belatedly discovered
that fact that
owing to the fact that since, because
perform do
place a major emphasis on stress
pooled together pooled
presents a picture similar to resembles
previous to before
prior to before
protein determinations were performed proteins were determined
quantify measure
quite a large quantity of much
quite unique unique
rather interesting               interesting
red in color                   red
referred to as                 called
regardless of the fact that    even though
relative to                   about
resultant effect              result
root cause                    cause
serious crisis                 crisis
should it prove the case that  if
smaller in size                smaller
do as to                      to
subject matter                subject
subsequent to                  after
sufficient                    enough
take into consideration       consider
terminate                     end
the great majority of         most
the opinion is advanced that   I think
the predominate number of     most
the question as to whether    whether
the reason is because         because
the vast majority of          most
there is reason to believe    I think
they are the investigators who  they
this result would seem to indicate  this result indicates
through the use of             by, with
to the fullest possible extent  fully
transpire                      happen
ultimate                      last
unanimity of opinion          agreement
until such time                until
utilization                   use
utilize                       use
very unique                   unique
was of the opinion that       believed
ways and means                ways, means (not both)
we have insufficient knowledge  we don't know
we wish to thank              we thank
what is the explanation of     why
with a view to                 to
with reference to              about (or leave out)
with regard to                 concerning, about (or leave out)
with respect to               about
with the possible exception of  except
with the result that           so that
within the realm of possibility  possible