

Advice for Young (and Old) Authors on How to Write *Good*

Compiled from numerous responses to a request placed on ECN-I listserv, November 2015. Many thanks to those who contributed.

Books:

- *How to Write and Publish a Scientific Paper*. Robert A. Day.
- *The Elements of Style*. William Strunk and E. B. White. [For my money, the best book out there. Get an early edition and revel in the terse, gruff writing. –MLF]
- *Writing in the Biological Sciences: A Comprehensive Resource for Scientific Communication*. Angelika H. Hofmann.
- *The Scott, Foresman Handbook for Writers*. John J. Ruszkiewicz, Christy E. Friend, Daniel E. Seward, Maxine E. Hairston Emerita.
- *The Deluxe Transitive Vampire: The Ultimate Handbook of Grammar for the Innocent, the Eager, and the Doomed*. Karen Elizabeth Gordon.
- *Harbrace College Handbook*. John Hodges.
- *Composition of Scientific Words*. Roland Wilbur Brown.
- *International Code of Zoological Nomenclature*. www.iczn.org/
- *The Torre-Bueno Glossary of Entomology*. Stephen W. Nichols.
- *Source Book of Biological Terms*. Axel Leonard Melander.
- *CBE Style Manual* [needs to be updated –MLF].

Published Articles: [seems like there should be more of these out there]

- Ratcliffe, B. C. 2013. Best writing and curatorial practices for describing a new species of beetle: a primer. *The Coleopterists Bulletin* 67(2): 107–113.
- Stearns, S. C. 1987. Some modest advice for graduate students. *Bulletin of the Ecological Society of America* 68: 145–150. <http://stearnslab.yale.edu/some-modest-advice-graduate-students> [see also: Huey, R. B. 1987. Reply to Stearns: Some acynical advice for graduate students. *Bulletin of the Ecological Society of America* 68: 150–153.]

Online:

The UF/IFAS Entomology & Nematology K.I.S.S. Pages (keep it short & straightforward). <http://entnemdept.ufl.edu/frank/kiss/>

Departmental Advice:

I suspect many Advisors/Professors/Departments have advice sheets on writing. Attached are two from LSU and Clemson, respectively. I'd like to see more of these.

Comments from individuals:

Paul Skelley: "As for writing styles, minutia, etc., There are MANY. But I've whittled it down to three words that do take time to learn how to do. **Always be : Clear, Concise and Consistent.** Writing clear and concise takes practice and guidance. Being consistent is a major problem with

presentations and is simply a tedious task that everyone needs to buckle down and look at their papers. Practice makes perfect."

James Cokendolpher: "My temperature rises when authors (even old timers) forget to make sure all cited works are listed in the bibliography and there are no extra citations given." Make sure internal comments or side notes are removed before submitting to journal. Read it all including addresses and footnotes. Have a friend read it just for typos of common words that your eye will skip over time and time again.

A smidgen of advice from MLF:

1. Submitted manuscripts should be as "perfect" as possible—while reviewers may disagree with conclusions, etc. a responsibly written manuscript should leave reviewers powerless to criticize the grammar, punctuation, and general mechanics of the manuscript. Papers that are well written and correctly formatted are more likely to get the benefit of the doubt if other flaws exist. Editors may be more likely to work with you rather than reject the manuscript outright.
2. Follow the manuscript guidelines of the journal to the letter. Obsess and worry about whether or not the rules were appropriately followed.
3. **Advisors:** Look over your student's papers! Be critical to the point of cruelty. Make the students labor to correct their manuscripts. Just before they crack, do a full Track Changes edit (or several) of the manuscript so the student eventually receives a high-quality manuscript ready for submission.
4. **Students:** Make your advisors critically review your manuscript. Blackmail them if need be. Point out that they will be associated (as co-author or in acknowledgments) with the paper. Casually comment that, if they don't help edit your manuscript, you are going to let a mutually despised faculty member review it. If they don't find enough wrong with it the first time, send it back. If Track Changes are used, Accept or Reject each change individually, so you can learn what you did wrong, or disagree with your advisor.
5. A lot of writing conventions are based on fads (active vs. passive voice, can or can't end a sentence with a preposition) and have little to do with accuracy, precision, understandability, or readability. Other writing conventions are incredibly important to maintain accuracy, precision, understandability, and readability. Most people can't tell the two apart. Good luck.
6. Once you've followed people's advice and learned how to write good papers, then you can ignore their advice and write better ones.

Helpful Hints for Improving Scientific Writing

- 1) Always start with an outline.
- 2) Topic sentences - Structure each paragraph around a topic sentence that more or less states the main point of the paragraph.
- 3) Short sentences - Avoid long, complex sentences.
- 4) "In order to" - should be eliminated entirely as it conveys no additional information.
- 5) Semi-colons - try to avoid them, they are for lazy writers.
- 6) "The" - is an unnecessary word much of the time.
- 7) "Effect" vs. "affect" - effect is a noun, affect is a verb.
- 8) "While" - should only be used to convey time ("while I was waiting" not "while this may be true, that is not"), whereas is a good substitute.
- 9) Prepositions - don't end sentences with them.
- 10) "Then" vs. "than" - use then for sequential phrases such as time or order, use than for comparative phrases.
- 11) "That" vs. "which" - that is used when the phrase following it is essential to the meaning of the sentence (and is not preceded by a comma), which is used for tagged on phrases that are not essential (and is preceded by a comma).
- 12) Always refer to tables and figures in the order they appear in the text (i.e., don't refer to table 2 in the text before you have referenced table 1).
- 13) Avoid wasting a sentence to call out a figure or table (e.g., not "data appear in Table 1", but instead, "initial experiments suggest that the sky is blue (Table 1)").
- 14) Assume - should rarely be used because it conveys too much uncertainty.
- 15) Likewise, "very" conveys little information because it lacks a comparative context.
- 16) Don't start a sentence with "It" unless the antecedent in a preceding sentence is obvious. Never say "It appears that..." or "It has been documented..."
- 17) Put the subject and verb as close to the beginning of the sentence as possible.
- 18) References - cite only those that are relevant to your message and state briefly what their contributions were. Avoid long strings of indicative citations without explanation or context.
- 19) Split infinitives - Don't.
- 20) Southerner's slang - don't write as some speak.
- 21) Avoid using nouns to modify other nouns.
- 22) Use direct instead of indirect voice.

Suggested Reading:

- Hairston, M. and J. Ruskiewicz. 1988. "The Scott, Foresman Handbook for Writers", Scott, Foresman & Co., Boston. (cheap at the Union Bookstore annual sale).
- Day, R.A. 1983. "How to Write and Publish a Scientific Paper" ISI Press, Philadelphia, PA (good for oral presentations too).

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EDITORIAL SUGGESTIONS

(Some common abuses of the English language rarely mentioned in English Composition or Speech classes or texts and some suggestions for taxonomic/morphological writing.)

- 1. Avoid split infinitives.** (E.g., write, "He wants to eat immediately," rather than, "He wants to immediately eat.") The word that you want to emphasize usually will be better highlighted if it is not positioned between the "to" and the verb. Even if there is little or no difference in the emphasis, there usually is a euphonious way of saying what you want to say that does not split the infinitive. This rule is broken often: e.g., ". . . to boldly go where no man has gone before!" (Star Trek mission) [Note how the word "boldly" would get greater, more-appropriate emphasis if stated, ". . . to go boldly where no man has gone before!"]
- 2. Avoid dangling prepositions.** Prepositional phrases in English begin with a preposition and end with its object. Placing a preposition at the end of a sentence or at the end of an unrelated phrase can lead to other grammatical errors. (Example: Write, "Spell the word completely," rather than, "Spell out the word completely." An isolated preposition, without an object, usually is redundant or extraneous.)
- 3. The word "data" is plural.** (E.g., write, "These data are interesting," rather than, "This data is interesting.") The singular form of the word, "datum," is rarely used (and was never seen on Star Trek).
- 4. Authors are people, not publications.** (E.g., write, "The topic was discussed by Smith (1998)," rather than, "The topic was discussed in Smith (1998).") Do not perpetuate the colloquialism, which originated because the speaker/writer was thinking about something "in" the work on his/her shelf rather than the person "by" whom it was written.
- 5. Mention of a published work should be in the past tense.** This is a corollary of #4; wherever an author is treated as though he or she is a publication, there is a tendency to extend the colloquialism even further, including the verb tense. [E.g., write, "Smith (1980) said the topic is complex," rather than, "Smith (1980) says the topic is complex."] Notice that, besides being more logical, this protocol leaves the referenced author free to change his or her opinion at a later date.
- 6. Bilaterally symmetrical objects should be discussed in the plural form** and further clarification should be provided wherever there is possibility for confusion, especially when dependent words or phrases include a noun. (Example #1: Write, "Each antenna has a black pedicel," rather than, "The antenna has a black pedicel." In the second case, a novice may think there is only one antenna.) (Example #2: Write, "Antennae each with four apical setae," rather than, "Antennae with four apical setae." It is not clear in the second case whether each antenna has two setae or four setae.) (Example #3: The sentences, "Antennae brown," or, "Antennae as long as head," are sufficiently clear without further clarification.)
- 7. Never leave a hyphen at the end of a line** in a manuscript submitted for publication. If the hyphenated word is to appear in the typeset version somewhere other than at the end of a line, the typesetter may not know whether you want the hyphen to be printed.
- 8. The simple objective form of "I" is "me," NOT "myself."** (E.g., write, "The paper was published by Dr. Jones and me," rather than, "The paper was published by Dr. Jones and myself.") The word "myself" should be reserved for reflexive or emphatic uses, as in, "I consider myself a professional biologist," or "I myself made the observation."
- 9. Use an adjective with a suffix "-al" or "-ic" to describe position and an adverb with a suffix "-ad" to indicate direction.** For example, the Torre-Bueno Glossary of Entomology (Nichols & Schuh 1989) references these contrasting suffixes:

caudad – toward or in the direction of the tail

caudal – of or pertaining to the cauda or to the anal end of the insect body

cephalad – toward or in the direction of the head end of the insect
cephalic – belonging or attached to the head

laterad – toward the side and away from the median line
lateral – relating, pertaining, or attached, to the side

mesad – toward or in the direction of the meson of the insect body
mesal – pertaining to, situated on, or in the meson

In contrast to the entries by Nichols & Schuh (1989), "anterad" or "posterad" are preferred over "anteriad" or "posteriad" (without the "i"), as indicated in the International Code of Zoological Nomenclature, 3rd edition, 1985, Appendix D, VII, Table 1 (p. 203, item (3)).

(E.g., write, "Hairs on dorsal surface pointing caudad," rather than, "Hairs on dorsad surface pointing caudal." Write, "Cephalic portion of notum covered with setae directed anterad," rather than, "Cephalad portion of notum covered with setae directed anterad.") Although the adverbial suffix "-ally" is not mentioned by Nichols & Schuh (1989), adverbs ending in "-ally" may be used to discuss either position or direction (E.g., "Smooth dorsally except for dorsally directed spine."), although indiscriminant use of "-ally" may sometimes cause confusion.

10. Use "its" to show possession and "it's" only as a contraction for "it is." (E.g., Say, "Its title is concise," and, "It's highly probable," but do not say, "It's title is concise," or, "Its highly probable.")

11. Use the adverb "only" as close as possible before the word it is intended to modify. (E.g., write, "She sees only one specimen," not, "She only sees one specimen." In the latter case, it is not apparent whether she does not hear, feel, taste, or smell the one specimen [she just sees it] or, instead, she hears, feels, tastes, and smells all the specimens while being able to see no more than one; of course, neither interpretation is correct if the intention is as in the first example.)

12. Follow the Principle of Binominal Nomenclature. According to this Principle (in the International Code of Zoological Nomenclature), a species epithet must always be used in combination with a generic name. (E.g., "Upright posture is a characteristic of *Homo sapiens* L.," not "Upright posture is a characteristic of *sapiens*." Also, "The *Musca domestica* Group of species is cosmopolitan," not "The *domestica* Group of species is cosmopolitan.")

13. Be cautious when abbreviating generic names. The generic name may be abbreviated after it is spelled completely once in the text, but it should be abbreviated consistently. Remember that no sentence should begin with an abbreviation.

14. Spell "Acknowledgements" with 2 "e"s. Both spellings, "Acknowledgements" and "Acknowledgments" are shown in dictionaries and, at least in the Webster's New World Dictionary, without attribution to American or British origin. However, "Acknowledgements" is preferred over "Acknowledgments" for the reason that, in most cases in the English language, the insertion of an "e" renders a "soft g" pronunciation whereas the absence of that letter usually renders a "hard g" pronunciation.

15. Lateral views should be labeled either "left" or "right." This will reduce the likelihood for confusion, especially for readers of your work who are not as familiar with your subject.

16. The word "exuviae" is always plural. Cassell's New Latin Dictionary (1959) provides the following details:

"**exuviae** –arum, f. pl. (exuo), *that which is taken off*. . . (2) of animals: a, *the skin or slough which is laid aside* (naturally) . . . b, *the skin taken off, the hide* . . ."

As you can see, this word is always plural, like the English word "clothes." There is no such word as "exuvia" in nominative singular Latin or in English.

FINALLY:

The standard reference produced by the Council of Biological Editors (CBE) and used by most biological journal editors is the following; **buy a copy, study it thoroughly, and use it often!**

Scientific style and format: the CBE manual for authors, editors, and publishers, 6TH edition / Style Manual Committee, Council of Biology Editors. Cambridge ; New York : Cambridge University Press, 1994.

Two other useful references besides the CBE include the following:

Scientific Writing for Graduate Students: A Manual on the Teaching of Scientific Writing.

Council of Biology Editors, Inc., Bethesda, Maryland.
ISBN: 0-914340-01-8

Illustrating Science: Standards for Publication.

Council of Biology Editors, Inc., Bethesda, Maryland.
ISBN: 0-914340-05-0

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