

NOTE: The following was recently sent to me by Dr. Ron Keasler, at the University of Kansas. The guidelines at the end, in terms of science writing and grammar, may be of particular interest/utility. JWG 11/2002

Paleontology

Geology 521, Spring 2002

Preparing Essays

The program of writing essays in this course has three purposes. First, writing any essay improves your communication skills. In writing more than in any other endeavor, practice makes perfect—especially when the practice is accompanied by an editorial and scientific critique as will always be so in this course. Second, by assigning an essay topic, I can stimulate you to review your notes, the textbook, or some of the outside reading. Third, in preparing a well-thought-out essay you have an opportunity to hone your thoughts on the aspect of paleontology that is covered in the essay.

Sometimes I shall assign specific essay topics. At other times I shall ask you to summarize the important points or, if you prefer, one such major point from a lecture presented since you submitted your previous essay. Essays that are not directed to the topic assigned will be returned with no grade. Essays are to be typed or printed by computer in a 12-point, serif font. They should be double spaced and should be from one to one and a half pages long. Because these essays are so short, you need not cite references within the body of the essay nor list references at the end of the essay. Be sure to give your essay a succinct title and to put your name onto it. Above all, be sure to write your essays in your own words. A great many essays are available from various sources on the Internet. Finding and copying an essay somewhere that is on a similar topic to the one assigned is plagiarism. Doing so contributes nothing to your learning, is dishonest, and will be dealt with harshly.

Honing your skills in the clear and careful presentation of ideas is a major part of your education. For this reason among others, you should ascertain that your essays are well organized and written in good English with proper attention paid to grammar, punctuation, syntax, style, and spelling. Of course, they should also present sound paleontology, and I shall be especially interested in the precision of the ideas you present. I shall consider both English and paleontology in assigning your grade. I urge you to use a dictionary or the spelling checker on your computer to expunge incorrect spelling, to read each completed essay carefully at least two times to make sure it says precisely what you want it to say, and to have a friend or loved one read it aloud to you when you have it in penultimate form. If it does not sound like Tom Brokaw or Dan Rather, you ought to consider rewriting it, especially to smooth rough spots or instances of imprecision in your prose.

Expect me to hold you to a very high standard of writing. A graduate student once told me that any writing he could grunt out was all right so long as people could figure out what he meant. No view could be farther from acceptable. The English language is rapidly becoming the *lingua franca*, not only of science but of all aspects of human culture. All over the world people are struggling to learn English as a key to their professional success. If you are a native Anglophone, you have a tremendous advantage and are in an excellent position to hone your skills at writing and actually master the English language, which is a marvelous tool for communicating ideas. If you are not a native Anglophone, here is your chance to develop further your skills. For these reasons, I urge you to participate in the essay-writing program.

I shall grade the essays and return them in a timely manner. In some instances, especially early in the course, I may ask you to rewrite an essay to improve it. If so, the grade I record for the essay will be the average of the two scores it receives. I am happy to talk with you about the contents of an essay either before or after you have submitted it and about my marking and grading of any essay. I prefer, however, not to grade informally an essay in advance of your submitting it. If you have questions about any aspect of the policy governing essays, please raise them either in class or in private.

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Hints for Improving Your Essays

1. Avoid using the **virgule** or **solidus**. It has no place in formal, expository English. It means different things to different people and is likely to lead the reader to misinterpret what you have written. Especially do not write **and/or**; a silly pseudolegalism. **Or** or **and** will always suffice.

[Avoid the virgule/solidus.]

2. Do not use **contractions**.

[Don't use contractions.]

3. Starting a sentence with "**There is ...**" or "**There are ...**" diminishes the strength of the sentence. Use this construction only for that specific purpose.

[There is little justification for starting a sentence this way.]

4. Write in the **active voice** whenever it is possible to do so.

[Writing should be done in the active voice.]

5. Make progress in your writing. **Take into consideration the marks I make on your paper**. If you do not understand my marks or the reasons for them, be sure to ask.

6. **Faulty pronoun reference** detracts from writing and is the most common error in students' essays. "The fossils are the remains of organisms that lived in a lagoon. **It** tells paleontologists" **It** is a pronoun that stands in for some noun, but just which noun is not clear in this sentence. Such usage can sometimes be terribly misleading and is easily avoided.

7. Avoid such vague usage as **certain features**, **particular fossils**, and the like. Try **some fossils** instead.

[Certain usage is imprecise and should be avoided in particular circumstances.]

8. Avoid **nouning your verbs**. Calvin said, "Verbing weirds language," but so does the opposite—making nouns out of the action word in your sentences. Consider these three phrases: **experience decay**, **make a correlation**, and **produce disarticulation**, all drawn from previous students' essays. In all three instances the action word—the word that should be the verb—has been turned into a noun. Write, instead, **decay**, **correlate**, and **disarticulate**.

[When doing writing, utilize proper verb employment. That is, write verbs properly.]

9. **Would** is subjunctive. Using it to denote future events is a sloppy misuse that has crept detrimentally into modern spoken English. Use **would** to indicate uncertainty, contingency, or conditionality. Here is an example from a previous student's essay: "An example **would** be a brachiopod" To write this implies that more is coming. It **would** be a brachiopod **if** something else happened—but what? Instead, write simply "**An example is a brachiopod**" or, better, "**A brachiopod is an example**." In no instance should you ever write "**would of**" instead of "**would have**."

[Improper use of the subjunctive would be an example of something that would weaken writing.]

10. Inanimate objects do not suffer. Fossils do not suffer from erosion or diagenesis. Mountains do not suffer uplift. People, however, suffer—especially those people who have to read about fossils and mountains that suffer.

11. Do not begin a sentence with **however**." *However* is a postpositive conjunction and is always improper at the start of a sentence. For most good editors your placing *however* at the start of a sentence is simply a red flag, and you never want to wave a red flag before an editor (or a professor)!

12. Learn about the verb **to lie** (**lie, lay, lain**) and how it differs from the verb **to lay** (**lay, laid, laid**). For example, one does not **lay out** in the sun to get a tan; one **lies out** to get a tan and, perhaps, malignant melanoma as a nasty by-product. In superposition, one bed does not **lay** on another. It **lies** on the other.

13. Do not split infinitives. It is simply bad form. Instead of **to boldly go** write **to go boldly**. If it seems awkward to write in this manner, it is because you have been splitting infinitives for too long. Get over it.

[It is improper to ever split an infinitive.]

14. Be wary of **which** and **that**, and use them properly. Make sure you understand that **which** introduces a nonrestrictive phrase (with commas) and **that** introduces a restrictive clause (without commas). “**The rock, which was fossiliferous, ...**” tells us a little more about a rock, but it does not restrict our attention to a specific rock because we already know the rock to which the writer is referring. “**The rock that was fossiliferous ...**” tells us specifically the rock to which reference is being made. It is the fossiliferous one, not the barren one. This is an important distinction to which you should pay special attention.

15. **Do not** use contractions in formal, expository writing.

[Don't do it. Just say no.]

16. Avoid writing about **proof** and **proving**. Mathematicians prove theorems, but scientists do not seek to prove their ideas. Scientists test ideas and **disprove** or **reject** them if possible. Voltaire said it best: “I affirm nothing. God keep me from doing so. I only doubt.”

17. Avoid using **cases** when you mean **instances**. Use of cases is not necessarily wrong, but it can lead to funny sounding syntax when you write **in the case of fossil brachiopods**—which is ambiguous because every paleontological museum has **cases and cases of fossils**. There are other reasons, too. A brachiopod is not a case unless you build a case around it. Otherwise, it is an instance or an example.

18. Pay attention to detail. Make sure that your paragraphs contain one idea and that your words and sentences say what you want them to say.

19. Avoid writing **may or may not** and **whether or not**. Since both **may** and **whether** express conditionality, the **may not** and **or not** are implied and, therefore, unnecessary.

20. Do not write **utilize** when **use** will suffice—and **use** will *always* suffice.

[Do not use utilize; instead, utilize use.]

21. Avoid writing strings of nouns. [Some people call them **noun strings**, but **noun strings** is, itself, a string of nouns, is it not?] Sometimes the judicious use of **hyphens** will help in this regard, but often what one needs really is to employ (not to utilize but to employ) a **prepositional phrase**. Do not be afraid to rewrite a sentence to simplify it for added clarity.

22. Do not put a hyphen between an adjective and the adverb that modifies it. [The adverb **well** is an exception. (See 24 below.)] For example, do not write, “The rock was a firmly-cemented sandstone.” Instead, write “The rocks was a firmly cemented sandstone.”

23. Be sure to use hyphens to indicate what is modifying what. There is a difference between a *broken fossil deposit* and a *broken-fossil deposit*. The judicious use of prepositions and prepositional phrases helps clear this up, just as they help you avoid strings of nouns.

24. Both these sentences are correctly hyphenated. “The rock was a **well-cemented sandstone**.” “The sandstone was **well cemented**.” Make sure you understand the difference and follow this example.

25. For clarity of meaning, be sure to put a comma between all items in series and before the conjunction. Write “**fossils, rocks, and minerals**,” not “**fossils, rocks and minerals**.” Journalists typically omit the comma before the conjunction **and**. If nothing else, the fact that journalists do it should suggest your doing otherwise.

26. Avoid writing “**for example ... etc.**” or “**such as ... etc.**” This usage often conveys no meaning and is likely to confuse your readers.

[Be sure to consider, for example, things such as horses, clay minerals, postmodernism, ballet, the calculus, etc.]

27. If you ever have to give a definition, either in an essay or on a test (and trust me, you will), do not say such things as, “A fossil is when ...” or “A benthic organisms is when” A fossil is never when, and neither is anything else you are likely to be asked to define.

28. Do not write *secondly* or *lastly* unless you have begun the discussion with *firstly*, which will be quite difficult to justify in any instance. Note that the *-ly* on the end of the word turns it into an adverb. In the sentence “**Secondly, the articulated brachiopods secrete a low-magnesium calcite shell,**” the adverb *secondly* does not modify anything. Avoid this awkward and pedantic usage.

29. Of late, many people have begun to misuse *hopefully*. “**Hopefully, the test will cover topics I have studied.**” Note that the adverb *hopefully* does not modify anything in this sentence and is, thus, used improperly. The only word in the sentence it could possibly modify is the verb *to cover*. Clearly, the job of covering by the test is not done hopefully. Instead, write “**I hope that ...**” or “**With luck,**”

30. Students, especially those who are not avid readers, sometimes write “*could of*” instead of “*could have*.” Make sure you understand that *could of* and similar usage (*had of?*) is not proper English.

[If she had of understood this rule, she could of written a good essay, but she did not.]

31. A curious usage that is creeping in to our language is misuse of the word *couple*. One should write “**a couple of fossils**” and not “**a couple fossils.**” *Couple* is not an adjective modifying *fossils*. It is a noun that is modified by the prepositional phrase *of fossils*.

[He made a couple errors, one of which was to misuse the word couple.]

32. The English language is a remarkably flexible medium of communication. You can say, for example, that your paleontology professor is an old fossil without running the risk of anyone’s thinking that he is the remains of past life preserved in the rock from a previous geological time. (Other risks of making such a statement we need not consider at this time.) Because of the flexibility of our language, you should never call attention to such colorful or imprecise terminology by putting it into quotation marks. Instead of writing, “**My paleontology professor is an ‘old fossil,’**” write “**My paleontology professor is an old fossil.**” (Better still, write, “**My paleontology professor is a magnanimous liberal humanitarian.**”) Use quotation marks only when you are quoting, and when quoting be sure to give a date and page number from which the quotation was taken. Notice, by the way, that in standard American usage we put a terminal punctuation mark within the quotation marks, not outside them as the British sometimes do.

[Standard American usage: Dick cried, “See the squid! The squid is swimming toward us.”]

[Sometime British usage: Jane cried, “The squid has ten tentacles. The squid is eating Spot.”]

[Weak construction: The “vicious” squid swam off “gleefully” with Spot clutched firmly in its “arms.”]

33. Avoid **dangling participles** and other such **dangling modifiers**. The best way to avoid them is to check and recheck your writing. In the example below, the writer implies that the outcrop is an avid collector of fossils.

[Being an avid fossil collector, the outcrop fascinated her a great deal.]

34. I have a colleague in another department with whom I sometimes serve on university committees. He always writes verbs and adjectives in pairs. Instead of writing, “The fossils were cleaned,” he might write “The fossils were cleaned and washed.” Instead of writing “The intricate fossils were an important source of data,” he might write “The intricate and beautiful fossils were a valuable and important source of data and insight.” Such writing, sometimes hideously comical, is indicative of lack of experience and poor expository technique.

[Strive and endeavor to avoid and eliminate such awkward and distracting usage from your prose and writing.]

35. You should avoid ending a sentence with a preposition. You can do this usually by employing a “**with which ...**” phrase. Important exceptions are such idioms as the verb structure **to put up with**. You would not want to write, “**Ending a sentence with a preposition is something up with which my professor will not put,**” because **to put up with** is an idiomatic verb structure and the **with** is not actually a preposition at all in the idiom. It is all part of the richness of the English language.

[A preposition is improper to end a sentence with. A preposition is improper with which to end an sentence.

Best of all, try “Ending a sentence with a preposition is improper.”]

36. Paleontologist and geologist are singular nouns. The plural forms, of course, are **paleontologists** and **geologists**. Especially when writing examinations, students sometimes write such abominations as, “Paleontologist have discovered fossils in the formation,” when they mean to say “Paleontologists have discovered fossils in the formation.” Always reread what you have written to expunge such syntactical errors.

37. Adverbs should follow the verbs they modify. Write, “**The fossils weathered quickly from the shale.**” Avoid writing, “**The fossils quickly weathered from the shale.**” This is a hard rule to follow, but you should violate it only when absolutely necessary. Just as with split infinitives, most instances in which the proper usage seems awkward stem from the fact that we have been doing things incorrectly for so long.

38. Be careful about the placement of **only** in sentences. Many people misplace **only**, including a lot of very good writers who should know better. There is a difference between “**John loves only Marsha**” and “**John only loves Marsha.**” If the difference in meaning is unclear to you, just ask Marsha! The first tells whom John loves. The second describes John’s only activity.

39. Two colloquialisms you should avoid are **most likely** and **more than likely**. While not actually incorrect, they do not fit comfortably into sound expository prose. [I sometimes refer, perhaps unfairly, to such usage as **Missouriisms** because I first heard both expressions while in the army at Fort Leonard Wood in Missouri.]

40. Few biologists, even the most ardently proadaptationist Neo-Darwinists, would, when backed to the wall, adhere to the idea that all organisms are perfectly adapted to their environments. Instead, this is a kind of mental shorthand on which too many people fall back. There are a lot of these sorts of abbreviations of thought processes in science, and you need to practice avoiding them.

41. When you intend to refer to something that is happening to a species, be sure not to refer, instead, to an organism. An organism is an individual. In speech we often refer to the evolution or extinction of organisms, but it is sloppy shorthand to do so, and we should avoid writing such things at all costs.

42. Do not write **allow for** when you mean to write **allow**. **To allow for** is the same as **to make allowances for**. [Because field camp is expensive, you should **allow for** the possibility of running short of funds by saving your money now. Doing so may **allow** you to survive the summer.]

43. The expression **in that**, as in the usage, “The fossil record of brachiopods is excellent **in that** their skeletons comprise low-magnesium calcite,” is reminiscent of high-school themes. This expression never appears in the best writing, and by now you should have left it behind you.

44. Be sure you know the difference between **its**, a possessive pronoun, and **it’s**, a contraction of **it is**.

45. Never have a strange number of items in a list. Always have seven, ten, twelve, or some multiple of five. To do otherwise grates on one’s sense of order in the universe.

Study these simple rules.

Make sure you understand the grammar that underlies them.

Work on your writing, which will be an important tool for the rest of your life.

Clear writing stems from clear thinking.

(At least I think I heard somewhere that it may sometimes stem from clear thinking, or something like that maybe.)