

# How to write a review paper and How to do peer review

470 Advanced Ecology  
Skills Tutorial  
Monday, March 16<sup>th</sup> 2015

# Upcoming due dates

- **Wed. March 18<sup>th</sup> Class:** email me a copy (by 10:30am) and hand in a hard copy of your draft review paper in class. We will exchange the hard copies amongst class mates for peer review
- **Mon. March 23<sup>rd</sup> Tutorial:** bring originals and a photocopy of each of: i) the essay you reviewed, ii) the completed rubric, iii) your written comments
- **Wed. March 25<sup>th</sup> Class:** 2<sup>nd</sup> R assignment due (instead of Monday!). Email a copy to James by 10:30am
- **Wed. April 1 by 4pm:** Final review papers due in Petch 116

# Review Paper Assignment

You will write a review paper, critically evaluating a topic in ecology of interest.

**Learning objectives:** 1) to hone your critical thinking skills,  
2) to read deeply in one area in order to develop your understanding of the topic, and how a field progresses,  
3) to improve your writing skills.

**Details:** Max. 10 pages double spaced (12 pt. TNR, not including references);  
Print double sided if possible, no cover page. Number your pages;  
Include an engaging title, along with your name, student number, date;  
Final paper worth 20% of final grade. Marked out of 30 points, based on posted rubric. Draft 4%. Peer review 6%.

# Review Paper Assignment

What to write?

You should define the topic, including the main question(s) and hypotheses.

Then, as you move through the themes and the papers you are reviewing, focus on the following types of questions:

- **Major Achievements:** What has been discovered so far in the field? How has this area of research advanced? What is the main approach to research on this topic? What are the strengths and weaknesses of the empirical papers you are reviewing?
- **Main Areas of Debate:** What are ecologists still trying to resolve in this area? What are the main barriers to doing so?
- **The Future:** How do you foresee the field advancing?
- At some point in the essay, you should also comment on how your topic relates to the broader field of ecology.

\*\*A successful critical review is well organized, concise, analytic and evaluative, rather than merely a summary of what you have read.

# Review Paper Assignment

Depth and Quality of the Review	15 pts.
Overall Clarity and Organization	5 pts.
Grammar and Writing Style	4 pts.
Reference Citations	3 pts.
Overall Impact	3 pts.

# Review Paper Assignment

## Depth and Quality of the Review

15 pts.

### **Clear Overview and Demonstrated Understanding of the Topic**

Essay begins with a description of the review topic.

Writer provides an excellent overview of the review topic, addressing the questions outlined above.

Writer demonstrates an excellent grasp of the scientific material.

### **Critique**

An insightful and compelling critique of the topic, providing insightful examples of strengths and weaknesses of the topic

### **Related to Ecology Concepts from the Course**

Writer does an excellent job of relating the review to concepts in Ecology.

### **Completeness**

The paper is the correct length and effectively covers the topic.

# Writing is Hard!

“Writing in English is the most ingenious torture ever devised for sins committed in previous lives”- James Joyce



“THERE IS NOTHING TO WRITING. ALL YOU DO IS SIT DOWN AT A TYPEWRITER AND **BLEED.**”

—HEMINGWAY



“The first draft of anything is shit.”

Ernest Hemingway

#StuffWritersLike



# General Writing Advice

- **Writing is an amazingly long learning curve.** Many authors say that they're still getting better as a writer after several decades.
- **Notice the writing when you read papers.** Save ones you find especially well-written, and refer to them for inspiration and motivation when you are stuck with your own writing. Find a writer whose work you enjoy reading and emulate them. Rachel Carson, Steven J. Gould, and Richard Dawkins are good role models.
- **Introductions and conclusions are the hardest parts -- plan on spending a lot of time on them.**

Many technical writers prefer to write their introductions last because it is so difficult to craft that balance of general context and specific focus which a good introduction requires. Often it is easier to achieve this after you have already worked through writing the entire paper or thesis.

If you need to write the introduction first to set the stage for your own thinking, resist the temptation to perfect it. By the time you have finished the rest of the paper it will likely need substantial modification.



# Review Paper Assignment

## Overall Clarity and Organization

5 pts.

### **Cohesive**

The paper is completely cohesive.

There is a logical, compelling progression of ideas in paper; a clear structure which enhances and demonstrates the central idea or theme and moves the reader through the text.

Organization flows so smoothly the reader hardly thinks about it.

Essay has clear introduction.

Powerful conclusion wraps up the main point of the paper.

### **Paragraphs**

Carefully constructed paragraphs exist with topic sentences.

The paragraphs have flow, and are easy to understand.

### **Transitions**

Effective, mature, and appropriate transitions exist throughout the paper.

Has smooth, clever transitions which are succinct but not choppy.

# Overall Clarity and Organization

- **Use an outline to organize your ideas and writing.** Before writing, first make an outline of the major headings. List the key ideas to be covered under each heading. Organize your thinking and the logic of your arguments at this level, not when you are trying to write complete, grammatical, and elegant sentences. Separate out the three tasks of: 1) figure out what you want to say, 2) plan the order and logic of your arguments, and 3) craft the exact language in which you will express your ideas.
- **Structure your paragraphs carefully.** A paragraph begins with a topic sentence that sets the stage clearly for what will follow. Make topic sentences short and direct. Build the paragraph from the ideas introduced in your topic sentence and make the flow of individual sentences follow a logical sequence. Paragraphs containing 1-2 only sentences can't develop ideas adequately, and usually represent either misplaced pieces of other paragraphs or fragments of ideas which should be removed or expanded.

# Overall Clarity and Organization

- **Strive for parallelism in structure at all times.** When you present a list of ideas that you will then explore further (“Three hypotheses may account for these results: hypothesis 1, hypothesis 2, hypothesis 3.”), make sure that you then address the ideas in the same sequence and format in which you have presented them initially. It is both confusing and frustrating to read a list presented as “1, 2, 3, 4” and then find the topics dealt with “1, 4, 3, 2.”
- **Organize your paragraphs. Logical flow is critical.** Think about how the structure of your paragraphs will appear to the reader. The reader should not have to read the text more than once to understand it. Carefully lead the reader along so that the structure of your argument as a whole is clear, as well as where the current text fits in it.
- **Don’t repeat. Be succinct.**

# Review Paper Assignment

## Grammar and Writing Style

4 pts.

### Grammar

Grammar, punctuation, capitalization, and spelling are correct. Paper is virtually error-free.

### Sentence Structure

Sentence structure is smooth, skillful, coherent, and mature throughout paper. Sentences are well built with strong and varied structure that invites expressive oral reading. No editing would be required to polish the text.

### Word Choice

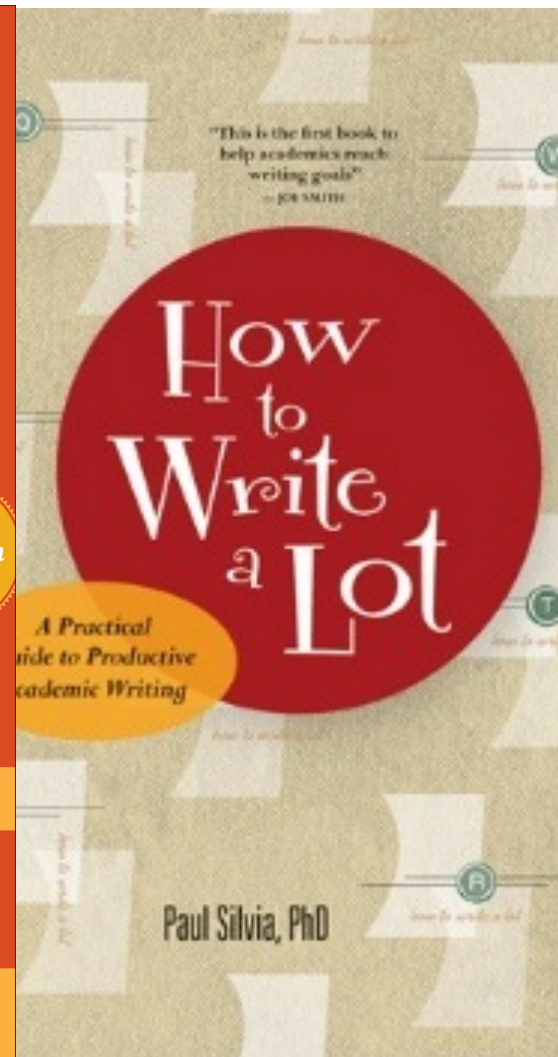
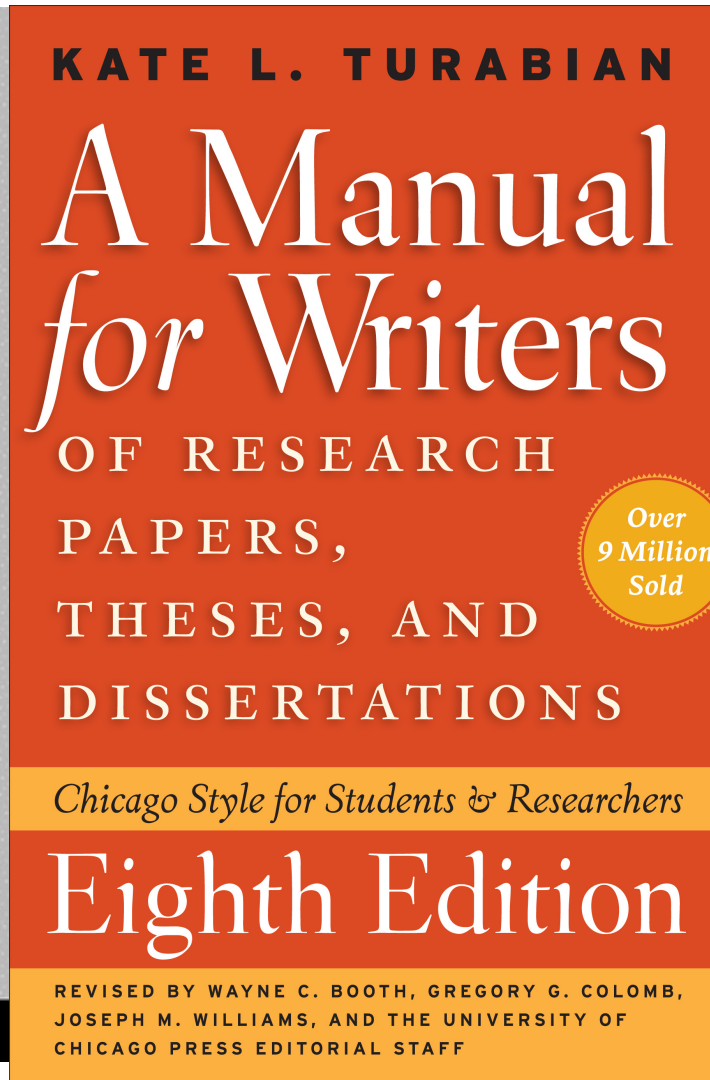
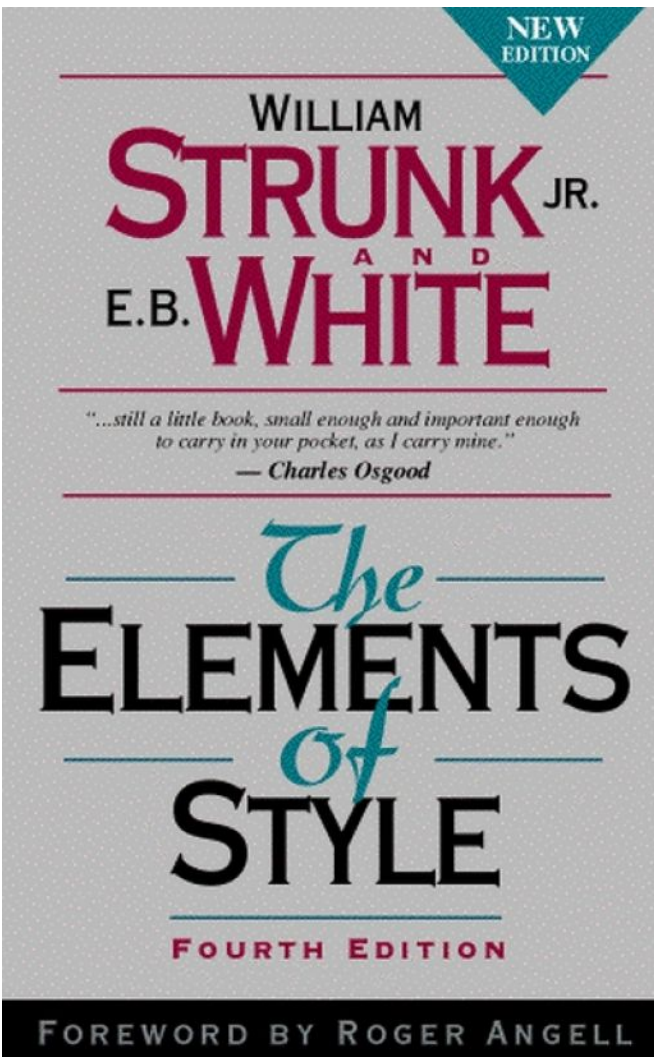
Precise, skillful word choice; words convey the intended message in an interesting and natural way.

The words are powerful and engaging. The words bring the paper to life. Has smooth, clever transitions which are succinct but not choppy.

### Voice

Distinctive, appropriate, and consistent voice; strong, honest personality in writing engages reader

# Get and use style and writing books



# Grammar and Writing Style

- **Do not use “this” as a pronoun.** “This” is an adjective. When ‘this’ stands alone it is likely that the author has replaced an opportunity for clarify with opacity, because the noun to which ‘this’ refers to is missing. Avoid sentences such as “This is...”, “This showed....”. Example:
  - “The cells divided in the modified medium and formed clumps that were visible to the naked eye. This showed.....” There are four observations in the first sentence to what does ‘this’ refer to?
  - The solution to this problem is to change “this” to an adjective by inserting a suitable noun. For example, use “This result is...” “This difficulty is due to...” and so forth.
- **Use verbs more than nouns.** Do not bury the main action of your sentences in nouns or adjectives. Instead, let the verbs carry the action. Consider these examples:
  - **Example:** “The annual report produced a *disappointed* reaction from the sponsor.”  
**Revision:** “The annual report *disappointed* the sponsor.
  - **Example:** “It is our *expectation* that we will see *radiation* pattern improvement when the antenna is elevated.”  
**Revision:** “We *expect* to *improve* the radiation pattern by elevating the antenna.”
- Check your entire document for **grammatical mistakes**. We are not talking here about elementary problems. Presumably you do not write egregious sentences such as “He don’t got no potatoes.” Rather, the idea is to watch out for more subtle problems.

# Grammar and Writing Style

- **Avoid the passive voice wherever possible.**
- **Do not use more words than are necessary.** Use short, direct words, rather than long flowery ones. Keep sentences short (mean sentence length < 20 words). Keep jargon to a minimum.
- **Word choice.** For each sentence ask yourself: is each word and phrase really necessary, relevant to the point you are making, in the right place, and does each word and phrase mean exactly what you want it to mean? Ask the same questions for each sentence in a paragraph, each point you are trying to make, and for each paragraph.
- **Pay attention to tenses.**
- Avoid empty phrases (e.g. "but for the fact that"), and never use more than one hedging word ( "we suggest that"... rather than "we consider it possible that this tentative result might suggest that..." ) per sentence.

# Review Paper Assignment

## References

3 pts.

**In-text Citation** In-text citation format is correct and corresponds directly with an entry on the references cited page.

### References Cited

#### Types of References

References are from trustworthy, professional sources.

Adequate number of references are included in the review (~10-20).

## Overall Impact

3 pts.

Overall an excellent essay



# Good writing is rewriting....

*“Most people’s first drafts are terrible.... I’ve read early drafts of papers by eminent ecologists whose final products are jewels of English construction. Their first drafts are terrible too. Good writing is rewriting.”*  
-Lertzman 1995

Proofread on a hard copy.

**Junk is junk, no matter how long you labored to produce it. Don’t hesitate to throw junk away.**

“I write one page of masterpiece to ninety one pages of shit,” Hemingway confided to F. Scott Fitzgerald in 1934. “I try to put the shit in the wastebasket.” It’s painful to realize that the paragraph that you spent a half day writing simply doesn’t work. But, that happens. Delete it (or put it in your “outtakes” file) and move on. Oh the other hand, a well-written sentence or paragraph is a treasure – use it as often as you can. –*Mittlebach, Writing and publishing a scientific paper*

**Polish and polish.** Check that the sentence rhythm and timing are pleasing, and that the ideas flow clearly and simply. If some section does not quite sound right, work on it some more. Eventually you will get the right wording. You are looking for subtle changes that will improve the way the paper “flows.”

You should make a serious effort at editing, rewriting, and fine-tuning before you submit your final paper.

# ....hence the need for Peer Review

## *Why do peer review?*

- An effective way to see that writing is fundamentally a form of communication between real people & writing is a process, to improve your writing, and to learn to read your own and others work more critically

## *What should the writer get out of the peer review process?*

- Constructive written and oral feedback on the strengths and weakness of the essay, and ways to improve it
- Should help to clarify what points are being effectively communicated and which aren't

## *What should the reviewer get out of the peer review process?*

- Teaches you to be a critical reader. You can then begin to apply your 'critical eye' to your own drafts
- As peer reviewers, you can give each other encouragement and share new ideas and strategies for writing.

# How to do the peer review

1. Read the essay draft carefully thinking about its strengths and weakness
2. Complete the marking rubric – i.e. try to assign a grade for each of the components. Don't get too hung up on the exact numbers. The intention here is to provide your classmate with indication of the strengths of the essays and areas they can focus on to improve the essay
3. Provide written comments (maximum 2 pages) to your classmate about his/her essay. Begin by briefly stating the topic and main points of the essay. Then move on to describe the strengths and weaknesses of each aspect of the rubric. In particular, point out any parts of the review that are unclear, or areas where more detail is needed. You may also wish to write detailed comments on the essay itself.

*Focus on providing constructive advice. Be honest but professional!*

# Marking

## *Draft (4% of final grade):*

- 2% for handing in a complete draft of your essay
- 2% for the draft essay rubric mark

## *Peer-review (6% of final grade):*

- 3% for providing constructive feedback (i.e. utility of the comments to your peer) – written hand-out, within the essay and communicated in class next Monday
- 1.5% professionalism
- 1.5% effort (demonstrated that you have taken the review seriously, put in the required effort to provide useful comments, and communicated these to your peer in writing and in tutorial next Monday).