# PhD Seminar

## Hints on Writing

## With thanks to Robert Geist

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# General Hints

- A paper should have 3 parts:
    1. Tell 'em what you're gonna say.
    2. Say it.
    3. Tell 'em what you said.
- If you make a mistake, it should be on something you <u>don't</u> know
- Outline at the "detailed design" level

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# General Hints

- Tense in experimental papers is hard!
  - End of paper is <u>future</u> ("in summary, we <u>will</u> …")
  - Study is in the <u>past</u> ("the programs <u>were</u> written …")
  - Conclusions is the <u>present</u> ("my ideas <u>are</u> great!")
- MS Word: Turn off the stupid <u>hyperlinks</u>
- Edit the last version before submitting
- Edit, edit, edit …

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# Rule 1

| Participial phrases and adjunctive phrases at the beginning of sentences must refer to the grammatical subject |
| --- |

- Plunging 1000 feet into the gorge, we saw Yosemite falls
- Locked in a vault for 50 years, the owner of the jewels decided to sell them
- Calf born to farmer with two heads
- As a baboon who grew up wild in the jungle, I realized that Wiki had special nutritional needs

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# Rule 2

## Use active voice

- My first trip to Skövde shall always be remembered by me.
- I shall always remember my first trip to Skövde.

- There were a great number of dead leaves lying on the ground.
- Dead leaves covered the ground.

- It was not long before he was very sorry that he had said what he had.
- He soon repented his words.

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# Rule 3

## Use the positive form

- He was not very often on time.
- He usually came late.

- The Taming Of The Shrew is rather weak in spots. Shakespeare does not portray Katharine as a very admirable character, nor does Bianca remain long in memory as an important character in Shakespeare's works.
- The women in The Taming Of The Shrew are unattractive. Katharine is disagreeable, Bianca insignificant.

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# Rule 4

| Use definite, specific, concrete language |
|:---:|

- A period of unfavorable weather set in.
- It rained every day for a week.

- He showed satisfaction as he took possession of his well-earned reward.
- He grinned as he pocketed the coin.

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# Rule 5

| Omit needless words |
|:---:|

- He is a man who …
- He …

- This is a subject that …
- This subject …

- I was stung so many times that I couldn't think straight.
- I was stung senseless.

- We say this in order to be more concise.

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# Rule 6

Keep related words together

- He noticed a large stain in the rug that was right in the center of the rug.

- Commuter tax on New Yorkers killed in New Jersey.

- Squad helps dog bite victim.

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# Rule 7

Place emphatic words of a
sentence at the end

- This steel is principally used for making razors, because of its hardness.

- Because of its hardness, this steel is principally used in making razors.

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# Rule 8

### Express coordinate ideas in similar form

- Formerly, science was taught by the textbook method, while now the laboratory method is employed.

- Formerly, science was taught by the textbook method; now it is taught by the laboratory method.

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# Rule 9

### Take care in translation

- Ich Bin Ein Berliner.
- Come alive with the Pepsi generation!
  - China: Pepsi will bring your ancestors back from the dead!
- Hotel Signs:
  - Japan: You are invited to take advantage of the chambermaid.
  - Bucharest: The lift is being fixed for the next day. During that time we regret that you will be unbearable.
  - Mexico: The manager has personally passed all the water served here.
  - Bangkok (cleaners): Drop your trousers here for best results.

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# Rule 10

Watch out for:

- and / or
- as to whether
- at
- but
- compare
- comprise
- different
- disinterested

- effect / affect
- ensure / insure
- farther
- further
- however
- less
- like
- loan

- paradigm
- respectively
- shall
- that / which
- transpire
- unique
- while
- use / utilize

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# Which Hunting

- Van Leunen, "A Handbook for Scholars", pg 135
- US English: Use "that" for restrictive clauses, "which for "non-restrictive
- British: They are interchangeable
- Non-restrictive clauses are set off by commas
- Restrictive clauses are essential – removing them changes the meaning of the sentence

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# Which Hunting (2)

- This rule, which few people follow anyway, is part of grammar
- The grammar rules that you follow help people form their opinions of your writing skills
- The advice that you get today is free

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# Citation Notes

Your Citations Must Help Readers
Understand the Paper

## Citation Notes

- One of the unique aspects of academic writing is citations
- Citations carry crucially important information:
  – What the paper is based on
  – What the author knows
  – What the reader should know
- They are considered a measure of the care the author takes with his or her research

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## Citation Notes

- <u>Reference</u>: Direction to a source of information, the words cited in the text

- <u>Citation</u>: To mention in support of proof or argument, mentioning work in the text

- <u>Bibliography</u>: An exhaustive list of publications on a subject

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## Rules for Citations

- Never reference something you have not read
  - This is not style, but <u>ethics</u>
  - Use "secondary citations" only when necessary
- List all authors in reference list
  - (never use "et al." in reference list)
- Write authors names as they appear in the paper
- Give enough information to find the reference
- Citations are parenthetical elements, not nouns
  - "… as said in [Gomaa98]." is grammatically <u>wrong</u>
  - "… as said by Gomaa [Gomaa98]." is <u>correct</u>
- Citation keys should appear in reference list

## "Oops" List

### Common Mistakes Among Graduate Students

# I. Semantic Notes

- Lack of precise definitions … assuming the reader already understands the subject
- Undefined terms. <u>Define</u> terms, don't just <u>describe</u> them.
- Subjective and imprecise evaluations
  - ("A is <u>worse</u> than B", rather than "A is <u>slower</u> than B")
- Vagueness, superficial discussions
  - How? Why?
- Lazy, vague, unspecific terms
  - "in the Unix world" … "among users of Unix"
- Discussing solutions without mentioning problems
- Pronouns without clear antecedents … too many pronouns

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# I. Semantic Notes (2)

- Mismatched phrases
  - "Although this freedom is expected to be a benefit because it mimics the way humans process information ..." How does "freedom" mimic "processing"?
  - "Any inconsistencies detected require expedient resolution and implementation ..." Do we really want to "implement " the "inconsistencies "?
- Objectives are verbs, not nouns
  - "Objective is a test document" ...  "Objective is to generate a test document"
- Imprecise, or dramatic discussion (non-technical, sales oriented)
  - "Unix world", "Super VGA", "according to industry experts", "up-teen operations"
- Too much quotation / Quotation without proper reference
- Conclusions that just summarize, no tying together
- Literary style in technical paper
  - "fall at the side of the road", "arcane commands"
- "some" used when "a" is more appropriate

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# I. Semantic Notes (3)

- Useless adjectives
  - several nice advantages
- "Utilize" means "to use profitably"
- Guesswork based on <u>personal experience</u>.  Opinions versus facts and measurements.
  - In large classes, students <u>think</u> they learn less.  Standardized tests indicate class size has no difference.
  - Differences?
    - Speed of grading
    - Amount of feedback
- Low-level details in abstract
- Popularity
  - Popularity is not important in science

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# I. Semantic Notes (4)

- Use of slang – do not use slang.
  - hurdles
  - where research is going
  - state of the art / state of the practice
  - stepping foot into one
  - research will be driven by
  - sleeper application
  - up and coming
  - vanguard
  - falls short
  - coined
  - promises of VR
  - armed with
  - taken hold
  - give birth to
  - scratch
  - cloned
  - look and feel

Easier said than done!

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# I. Semantic Notes (5)

- Comparative adjectives with only one subject:
  - "higher" – than what?
  - "less" – than what?
  - "more" – than what?
  - "better" – than what?
- Comparing nouns and verbs:
  - "between the interface and ... what they do ..."
  - Compare nouns with nouns, verbs with verbs.
- Value judgments
  - (good, bad, ...) Why good or bad?
- Emotional phrases
  - exploded (increased)
  - embrace (use)

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# II. Grammatical Notes

- Mentioning one item and calling it several
  - "A is limited by <u>X</u> ... we need to break away from <u>these</u> constraints"
- Plurality mismatch
  - "<u>basics</u> of X <u>is</u> described", "<u>advances</u> ... <u>has</u> been"
- Plurality mismatch to avoid gender
  - "...the <u>user</u> where <u>they</u> are..."
- which and that
  - "which" is for independent phrases, "that" is for dependent phrases. (which almost always requires a preceding comma)
- Random use of commas. Too many commas.
- No spell checking

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# II. Grammatical Notes (2)

- et al. – "et. al." or putting et al. in the references
- i.e. – e.g.: "i.e." is "id est", or "that is", "e.g." is "exampli gratia", or "for example".
- "ensure" – "insure"
  - insure is to procure insurance, ensure is to make sure it happens
- article misuse: "the" – "a"
  - "the object" means there is only one, "a object" means one of many

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# III. Citation Notes

- No citations on specific or quantifiable points
- Using citations as nouns
- Page numbers in references
- Inconsistently putting periods before and after citations
- Incomplete bibliography reference

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# IV. Stylistic Notes

- Inconsistent italics / bolding
- Embedded lists (in paragraphs instead of separated)
- Noise words and phrases
  - "Means by which" – "way"
  - "The method by which" – "how"
- Too many "ing" words
  - "Make an attempt at increasing ..." – "Make an attempt to increase ..."
- Contractions.  Do not contract in a technical paper.
- Single dash for separator (use double dash)
- Run-on sentences
- viz

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# IV. Stylistic Notes (2)

- Unnecessary colons

- Capitalizing all Important Words

- Binders: This makes it very difficult to make comments, especially in drafts

- First names and titles are customarily omitted

- Use <u>sections</u>, not <u>chapters</u>

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# V. Organizational Notes

- Internal, incomplete references ... saying that something is discussed elsewhere in the paper, but not saying where

- Improper figure placement ... before discussion of figure

- Not discussing/explaining a figure

- Sections with no introduction/overview/roadmap

- Section heading followed by a subsection with no intervening text

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# Editing is Hard!

**"There are no good writers: Only good editors"**

**– Chris Offutt**

# General Comments

- If you make a mistake, it should be on something you <u>don't</u> know
  - In 2003, spelling mistakes are a sign of disrespect – your time is more important than your readers'
- Don't forget to leave a few hours for the last minute edits – read the entire paper through once without making major changes
- The "green line" in Word 2000 is correct about 75% of the time
  - It's helpful for knowledgeable users
  - It can be deadly for people still learning English

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# First Drafts

- When writing your first draft:
  - Focus on content
  - Don't worry about spelling
  - Don't worry about formatting
  - Don't worry about grammar
- Get the organization right early, like software
  - Late changes to the "design" are very messy
- Fancy word processors interfere with creative and organizational thinking
  - I believe that first drafts are better when written with pencil or a simple text editor
  - I am a better writer with vim / latex than with Word

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# Outlining

- Writing outlines really does work
  - But it's no fun
- Compromise strategy:
  - Outline the major sections
  - Write ugly first drafts of sections
  - Reverse engineer the outlines …

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# Reverse Engineering Outlines

- For each section:
  - Write one-phrase summary of each subsection or paragraph
  - Many problems will be obvious
  - Reorder, delete, insert as necessary
- Repeat for each subsection
- Repeat for each paragraph

> This technique has greatly improved my writing – and I've gotten faster!

## Personal Process Improvement

- Start a list of personal "oops"
- Get your list from various sources
  - Mistakes you find
  - Comments from your readers
  - Mistakes you see in others that look "familiar"
- After writing, look for each "oops" in turn
- Over time some items will fall off the list, others will creep on

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## Get Help

- <u>Never</u> let your professor or reviewers be the first to read your paper
  - Classmates
  - Fellow faculty
  - Children
- The first time I sent a paper in unread (except by me) was in 1999 … 11 years after I graduated

- It was rejected ….

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