

# Scholarship Skills

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## Lecture 5: Mechanics of Writing — Concise Version

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# Spelling

- Use a spell checker
  - But be careful of the corrections
- If you are writing for a US conference or journal, use American (rather than British) spelling
  - “color” vs “colour”
  - Conversely for a European venue?
- Be consistent
  - don’t use “modeling” and “modelling” in the same paper. (Core rule: use a consistent lexical set.)
- Avoid contractions in technical writing
  - doesn’t → does not

# Latin

- Avoid Latin.
  - e.g. → for example, for instance
  - i.e. → that is  
(but both of these are ok in parenthetical remarks.)
  - etc. → and so forth (but it's better to explicate examples).
- Black uses Latin if there is no English equivalent.
  - For example, *sic*, [literally “thus, so”] used to mean that the preceding obvious error was indeed part of the the original in a quoted passage.  
e.g., The House of Representatives shall chuse [*sic*] their Speaker and other Officers; and shall have the sole Power of Impeachment.
- The only Latin phrase that Maier uses regularly is “et al.” in citations.
  - However Dupré (Segment 65) suggests that you should not use “et al” at all! Instead, she suggests you use “and colleagues”, or “and associates”.

# Numbers

- Dupré segments 24 (Number Spelling) and 34 (Number Styles)
- Generally, spell out whole numbers less than 10
  - We have three choices for each trial.
- Exceptions
  - units of measure, time, dates, page numbers, chapter numbers, percentages, money, proportions, part of a series of larger numbers
    - The algorithm failed to converge for n equal to 7, 14 and 21.
    - Point A is 3 inches from point B.
  - when two numbers are together, if confusing
    - eleven 1000-ohm resistors
  - Time
    - He arrived at 8:30pm.
- Use a leading zero on a fraction
  - 0.5 second, but:
  - one-half second, if not accurate to a tenth

## Numbers, Cont.

- Use a hyphen for part of an adjective:
  - 5-inch ruler
- Ordinals:
  - 0<sup>th</sup>, 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>
- Tables: keep a constant number of significant figures in a column.

## 2 Is Not 3

- Comparatives and Superlatives

- **-er**, more for comparing 2 things
- **-est**, most for comparing 3 or more things

Algorithm A is the **better** of the two.

Of the ten algorithms we analyzed, Mergesort is the **fastest**

- Between (2) and Among (3)

- The procedure places a space \_\_\_\_\_ each pair of words.
- The procedure must choose \_\_\_\_\_ the empty buffer slots.

- But: “Between” is *also* used for distinct, individual items, even if there are more than two:

The differences between English, Chinese, and Arabic are significant.

- See more at: <http://tinyurl.com/hgoeqnd>

## Try these!

- Gloria had to choose [between/among/either] band practice and writing for the newspaper.
- The conversation [between/among/either] the teachers, the parents, and the students lasted for two hours.
- James was [between/among/either] the winners.

## Try these!

- Gail and Dave are [between/among/either] the vacationers enjoying ice cream.
- Herbert is notorious [between/among/either] the locals.
- The members of the orchestra talked [between/among/either] themselves.



## Citations

- Don't use citations as nouns
  - In [15], the authors extend the method to lists.
- Instead, treat them as parenthetical remarks
  - McDonnell and Slington [15] extend the method to lists
- Don't use citations in titles and section headings (or abstracts?)
  - 2.4 Dijkstra's Algorithm [17] for Shortest Path

In case you missed it:

Do not use  
citations as  
nouns

## Other Words

- Above and below
  - should appear *after* the noun
  - ... in the formula above
  - ... in the formula below
- “Like” ≠ “Such as”
  - “Such as”: possibly the same, or as an example
  - “Like”: similar, but *not* equal
  - To order the result, we can use a sorting routine \_\_\_\_\_ Quicksort.
  - There is no result \_\_\_\_ the pumping lemma for recursive languages.
    - Think of: “that is like”, “who are like”
- See Dupré Segment 27: “Like Versus Such as”

# Grammar

- Singular and Plural

- Subject and verb agreement—know what the subject is

These problems arise ...

This problem arises ...

A subset of these problems arises in the deterministic case.

- Referent of a pronoun should agree in number

- Footnotes are a means to convey incidental information to the reader. Use them sparingly.

The footnote is a means to convey incidental information to the reader. Use \_\_\_\_\_ sparingly.

- Articles: A, An, The

- Do it by sound. Use “an” before a vowel *sound*, “a” before a consonant *sound*.

An honorable mention, but a unique house

- See the [Useful Links](#) page for a resource on using articles

## Avoid Non-referential “This”

- Reducing the number of service queues increases average delay and reduces the number of idle periods. This affects the recovery subsystem.
- Almost always clearer if you put a noun after “this”
  - This **reduction** affects the recovery subsystem.
- Use the *same* term (Consistent Lexical Set)
  - The first option uses data compression. This approach also reduces the bandwidth required ...

## Keep Parallel Clauses Parallel

- We can solve the problem by making the input file name the default, or select the previous output file when none is specified.
- If in doubt, make two sentences in your head:
  - We can solve the problem by making the input file name the default.
  - We can solve the problem by selecting the previous output file ...
- Also use parallel construction in adjacent sentences when they express related (or contrasting) ideas.

## Placement of “Only”

- Moving the “only” changes the meaning!
  - Negative edge weights affect only Dijkstra’s algorithm.
  - Only negative edge weights affect Dijkstra’s algorithm.
  - Yesterday I hit the man in the eye
  
- See Dupré Segment 5

## Lists of Examples

- Generally, use “and” as the conjunction
  - Examples of computational chemistry codes are GAMESS, Gaussian, and MELDF.
- Don’t use “for example” (or e.g.), or “including”, together with “etc.”
  - Mosaic supports multiple image formats including JPEG, PICT, GIF, etc.
  - Mosaic supports multiple image formats including JPEG, PICT and GIF.



# Split Infinitives

- An infinitive is the “to” form of a verb. For example: “to shoot”, “to drive”
- A *split infinitive* occurs when you place text between the “to” and the verb:
  - This event is sure to **quickly** degrade performance of the kernel.
  - The parser must be re-entrant in order to **correctly** handle macros.
- Dupré argues strongly against splitting infinitives. Some argue that it is OK.
  - If you’re tempted to do it, make sure that a different construction doesn’t flow better.
- See Dupré Segment 38, and Fowler “Out of the frying pan”

# Capitalization

- Capitalization
  - Capitalize section, chapter, figure when used as proper names.
    - “in Section 3.2”
    - “from Chapter 4”
  - but
    - “the previous figure”
    - “the next chapter”

## Capitalization Cont.

- Recast a sentence so it does not begin with a lower case letter (including Greek letters).
  - $a$  and  $b$  must be palindromes.
  - Both  $a$  and  $b$  must be palindromes
  - *ackermann* is a recursive function.
  - The function *ackermann* is recursive.

# Punctuation

## Parentheses

- See Dupré Segment 37.
  - Enclose stuff in parentheses that the reader can skip the first time through. Parenthetical remarks provide secondary information (stuff that is less important than the main text).
- When words inside parentheses constitute a full sentence, the period goes *inside* the parentheses.
  - The waveform will be aperiodic (except when the voltage is zero).
  - The waveform will be aperiodic. (The case where the voltage is zero is an exception.)

# Quotes

- See Dupré Segment 41.
- By a printers' convention, punctuation at the end of a sentence moves inside quote marks.
  - Conventional  
The manual states that the meaning of error messages “should be obvious from the context.”
  - Pedantic  
The manual states that the meaning of error messages “should be obvious from the context”.
- Exceptions:
  - One or two words in quotes  
After running the garbage collector, we may still have values that have “spoiled”.
  - The quoted material is for a computer  
After the prompt, type “mv a.out myfile”.
  - Quotes that are used to signify that the word is the object  
It's best not to use adjectives like “very”.

## Colon

- See Dupré Segment 15
- “A colon signifies that what follows it expands on or explains what precedes it: this sentence is an example.”
  - (Note that the construct following the colon can be a sentence fragment rather than a complete sentence.)
- You might use a colon instead of a period when the following sentence explains the first. An em-dash also works.
  - Using a period is grammatically correct, but the colon (or the em-dash) makes the connection between the sentences explicit.

## EM-dashes —

- See Dupré Segment 77
  - “An em dash — the punctuation-mark dash — delineates a thought that is not a critical part of your sentence.” (A pair function like parentheses.)
  - “... can function as a strong comma, or as a semicolon; it is, in essence, a loosely defined break or pause in a sentence that calls attention to the material that it sets off.”
- Learn how to use your tools!

Symbol	name	Typewriter & LaTeX	Macintosh	Windows	Linux	HTML
-	hyphen	-	-	-	-	-
–	en-dash	--	⌘ -	Alt+0150	Compose+ --	&ndash;
—	em-dash	---	⌘ ⏏ -	Alt+0151	Compose+ ---	&mdash;

Windows character codes must be typed on the numeric keypad with Num Lock on



## em-dashes —

- Examples from Dupré:

Minsky, Simon, Newell, and McCarthy — all grand men  
— decided to play a genuinely intelligent game.

– or

Minsky, Simon, Newell, and McCarthy (all grand men)  
decided to play a genuinely intelligent game.

– The em-dashes emphasize the parenthetical remark, the  
brackets de-emphasize it.

Shannon — the founder of information theory — gave an  
interesting statistical account of information content in  
written English.

# Colon

- Example

The second and third examples are not passive voice. “Anna made” and “Josephson obtained” are, grammatically, active constructions.

– or

The second and third examples are not passive voice: “Anna made” and “Josephson obtained” are, grammatically, active constructions.

- Optionally capitalize after a colon if and only if what comes after could be a complete sentence

Which of the following is wrong?

The result is always the same: reduction  
in the number of queues increases running time.

The result is always the same: Increased running time.

He could see the improvement: The subject now completed the  
tasks easily.

## Semicolon

- See Dupré Segment 93
- “The semicolon connects two sentences that are closely related to each other.”
- What follows *must* be a *complete sentence*, not a sentence fragment (string of words that don’t constitute a sentence).
  - When what follows is a sentence fragment, use a comma, or an em-dash, or a colon.

- Examples from Dupré:
  - This machine is difficult to use; it crashes whenever you change windows.
  - Holly and Misha cooked yet another humongous meal — and refused to let anyone help clean up.
  - Max’s heart was throbbing; Lyn’s head was swimming.

# Hyphen

- A hyphen is used to glue two words together to form a compound *adjective*.
- Adjectives (including nouns as adjectives) are right associative unless overridden by a hyphen.
  - large object repository (large repository for objects)
  - large-object repository (repository for large objects)
- Except if the modifier is a commonly known phrase
  - operating systems tutorial
- Words that describe *activities* don't need hyphens
  - Decision making under uncertainty is difficult  
*decision making* is an activity
  - Decision-making algorithms are hard to formalize  
*decision-making* is a compound adjective
- See Dupré Segment 29

## En-Dashes –

- Dupré Segment 49
- Used to indicate ranges; pronounced as “to”
  - Read pages 5–23
- But it is better to spell things out
  - Read pages 5 to 23.
- in text, and use the en-dash to indicate ranges in tables (and their titles), figures (and their captions), and page ranges given in references.
  - In LaTeX, use -- in input to get – in output.

## en-dashes –

- Also use the en-dash to join an equal-weighted pair used as an adjective
  - Have you attended a life–work planning seminar?
  - This requires a device  specific driver.
  - This is the on–off switch
  - Theirs was an on-again–off-again relationship.
  - The New York–London flight arrived late
    - Does this mean that the flight from New York to London arrived late, or that the new flight from York to London arrived late?

## if ... then

- Always put a comma before then.
  - If the speaker pauses, then the word might not be recognized.
- Even if there is no then: dependent clauses end with a comma.
  - If we close the application at this point, the changes will be lost
  - Some authorities warn not to omit the “then” after the dependent clause.



## Past vs. Present Tense

- Use the *same* tense throughout a discussion.
- Past Tense
  - Use past tense to indicate that results apply only to the particular study or experiment.

The survey showed that this population believes ...
  - Use past tense to say what you did (for example, in an experiment).

We removed all personal information from the data
  - Use past tense to point to a result earlier in your paper  
In Section 2 we showed that ...

## Past vs. Present Tense

- Present Tense
  - Use present tense to indicate that results generalize:  
The experiments show that loops degrade the performance of Matlab programs significantly.
  - Use present (or future) tense to say what you are going to discuss later in a paper.  
In the next section, we show ... or  
In Section 4, we will show
  - Hypotheses, theorems, and facts are expressed in present tense.
- These rules also work if you're discussing the work of other authors.

## Subject-Verb

- Put no comma between subject and verb
  - All of the students in the class arrived in time
- Unless it is there to set off a clause:
  - All of the students in the class, along with many who were not registered, arrived to eat pizza
- This rule means that there will be either 0 or 2 commas between subject and verb!

# Fonts

- Fonts can help or confuse the reader
- Font is important when a name or term is a ordinary word
  - The next token will be an, and or or, but not not.
- Decide what fonts mean and be consistent
  - variables
  - code
  - algorithms, systems, operators
  - When factor is on iteration  $i$  of the main loop, the statement  $x := f(x)$  will have executed at least  $i - 2$  times

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- Typewriter font is ugly and hard to read: there are better choices.
- Create a style sheet
  - Define styles or macros in your document tool