

Notes on

Writing papers, dissertations, and proposals

Writing and presenting

- Your ability to communicate (both writing and speaking) is important to your career
 - No matter what you do!
- People will evaluate what you communicate
 - Not your ideas and accomplishments, but how you explain your ideas and accomplishments
- You will be judged by your ability to communicate
 - If they didn't "get it," it's not their fault (usually).
- The point is not to *write the information* or *present the slides* – the point is to **communicate the ideas** (via written or oral means).
 - From your mind to your reader's/listener's mind

Details, details

Which communicates the idea better?

$$\mathfrak{I} \xrightarrow{\alpha \notin \Lambda} \iint_x \sum_{\kappa} \nabla \hbar'^n \left(\frac{\partial x}{\partial \eta} \right)_{\sigma} dx$$



Here's a good analogy...



Well, it depends on the context. (The audience, the allocated time, etc.)

Maybe some of each is best.

Writing: Style guides

- The Chicago Manual of Style
 - <http://www.chicagomanualofstyle.org/>
- AP Stylebook
 - <http://www.apstylebook.com/>
- APA Style
 - <http://www.apastyle.org/>
- Strunk & White's The Elements of Style
- Scientific Style and Format: The CSE Manual for Authors, Editors, and Publishers
- Etc.

Writing

- Writing is not the same as speaking
 - It's more formal
 - There are specific rules to help clarity
 - Like dysfluencies in speaking (*um, uh, er, ...*) errors in writing can make it more difficult to communicate your message
- The less you draw attention to your grammar and punctuation, the better
 - I.e., obey the norms
 - Though occasionally you can use unconventional grammar or punctuation to highlight something

For example:



danah boyd

Writing

- Grammar errors/issues are like speed bumps: not a huge deal, but they do slow the reader down and make the reading more difficult. Enough of them can make a reader give up.
- Rules vs. conventions (style preferences)
 - Not always a question of right vs. wrong

Following are several common areas of mistakes:
(though certainly not an exhaustive list!)

Note: Green text means “correct” or “better.” Red text means “wrong” or “not preferable.”

Commas

- A pause in speaking does not necessarily require a comma.

The method we used, did not work out.

→ The method we used did not work out.

These camera rigs provide excellent immersion for viewers, but cost tens of thousands of dollars making them infeasible for every-day consumers.

→ These camera rigs provide excellent immersion for viewers but cost tens of thousands of dollars, making them infeasible for every-day consumers.

Commas

I traveled to Dallas, and then Houston.

→ I traveled to Dallas and then Houston.

I traveled to Dallas and I continued on to Houston

→ I traveled to Dallas, and I continued on to Houston

→ I traveled to Dallas and continued on to Houston

In one-class classification, novel or abnormal samples are considered instances from the negative class, and are unknown during the training stage.

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Commas

- S1 conjunction phrase
 - I want to go home and eat dinner.
- S1, conjunction S2
 - I want to go home, and I want to eat dinner.

These camera rigs provide excellent immersion for viewers, but cost tens of thousands of dollars making them infeasible for every-day consumers.

- These camera rigs provide excellent immersion for viewers but cost tens of thousands of dollars, making them infeasible for every-day consumers.
- These camera rigs provide excellent immersion for viewers, but they cost tens of thousands of dollars, making them infeasible for every-day consumers.

Comma vs. semicolon

- S1, conjunction S2
- S1, {and, or, but, for, so, yet, nor} S2
- S1; S2
- S1; {however, moreover, therefore, consequently, otherwise, nevertheless, thus}, S2

I am going home and I intend to stay there.

→ I am going home, and I intend to stay there.

→ I am going home; I intend to stay there.

He couldn't make it to class, however she took notes for him.

→ He couldn't make it to class; however, she took notes for him.

That vs. which

- “That” begins a *restrictive clause*. Deleting the clause would change the meaning of the sentence. It needs to be there.
 - Don’t use a comma
- “Which” begins a *nonrestrictive clause*. It’s adding additional, but not critical, information. It is optional.
 - Use a comma

Cupcakes, which are tasty, are quite fattening.

Not different in meaning from “Cupcakes are quite fattening.”

Cupcakes that have blue frosting are especially good.

Different in meaning from “Cupcakes are especially good.”

That vs. which

A tautology is a proposition which is always true.

→ A tautology is a proposition, which is always true.

Wrong

→ A tautology is a proposition, that is always true.

Wrong

→ A tautology is a proposition that is always true.

Cars which are electric are better for the environment.

→ Cars, which are electric, are better for the environment.

Wrong

→ Cars that are electric are better for the environment.

That vs. who

- Use “who” to refer to people

Researchers that write great papers receive awards.

→ Researchers, who write great papers, receive awards.

Wrong

→ Researchers who write great papers receive awards.

I enjoy people that laugh a lot.

→ I enjoy people who laugh a lot.

Its vs. it's

- This one is easy: “it’s” always means “it is” or “it has” (two words)
- “Its” is the possessive of “it”
- This is often confusing because we usually associate the possessive with an apostrophe
 - Mike’s car, the school’s mascot, the computer’s memory...
- “Its” is like {*my, your, his, her*} – possessive, but no apostrophe

Its funding came from the government.

In its place was a package.

Education was among its core values.

Its vs. it's

Its really bad idea was revealed.

It's a really bad idea to reveal this.

Apple showed its new product

Apple showed it's a powerful company.

E.g. and i.e.

- These mean different things:
 - “E.g.” means “for example” (*exempli gratia* in Latin)
 - “I.e.” means “that is” or “in other words” (*id est* in Latin)
- A comma should always* follow:
 - “E.g., like this.”
 - “For example, like this.”
 - “I.e., don’t neglect the comma.”
 - “That is, don’t neglect the comma.”
 - “In other words, don’t neglect the comma.”

I like watching old cartoons (e.g., Mickey Mouse).

I like Mickey’s dog (i.e., Goofy).

Active vs. passive tense

- In formal writing – e.g., academic papers and dissertations – avoid using the passive tense if possible.

A new method was proposed by Smith and Jones...

→ Smith and Jones proposed a new method...

Experiments were conducted on...

→ We conducted experiments on...

“And” vs. “as well as”

- These do not mean the same thing; they are not substitutes for one another (i.e., they are not *synonyms*).
- “As well as” places unequal emphasis on the two expressions. The expression preceding “as well as” carries a stronger emphasis than the expression following it.

John and Mary came to the party. (Equal emphasis)

John, as well as Mary, came to the party. (Emphasis on John)

The program aims to recruit international students and local students. (Equal emphasis)

The program aims to recruit international students as well as local students. (Emphasis on international students)

“And” vs. “as well as”

Swedish is spoken in Sweden, as well as in parts of Finland.

(This may be okay, but technically it emphasizes the common case and deemphasizes the more surprising case.)

→ Swedish is spoken in Sweden and in parts of Finland.

→ Swedish is spoken in Sweden but in parts of Finland as well.

The results were encouraging for the Llama database as well as the Alpaca database.

→ The results were encouraging for the Llama database and the Alpaca database.

→ The results were encouraging for both the Llama database and the Alpaca database.

Progressive tense vs. present tense

- Progressive tense is the *-ing* form of a verb
 - Running, eating, directing, etc.
- It emphasizes continuing action, something going on now.

I work on computer vision.

(This is what I do, in general.)

I am working on computer vision.

(This is what I am doing *right now*.)

I am co-directing the lab with Matthew.

→ I co-direct the lab with Matthew.

Citations in the text

- Don't use a citation as a noun if you can avoid it.

[7] used a neural network classifier to...

→ Smith and Jones [7] used a neural network classifier to...

Cf.

- “Cf.” means “compare” – *confer* in Latin
 - Or “see, by way of comparison”
- It instructs the reader to compare one thing with another.
- It does not mean “see”! (Though this is not uncommon.)

While cars are required by law to stop at all stop signs (Vehicle Code, Section 12.3), pedestrians are not (cf. Vehicle code, Section 12.5).

We found the relationship to be logarithmic (cf. Figure 4).

→ We found the relationship to be logarithmic (see Figure 4).

The data (cf. Table 1) show otherwise.

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Miscellaneous (from recent paper editing)

Perspective effects cause problems when trying to render such 2D annotations from a new viewpoint in 3D.

→ Perspective effects cause problems when trying to render such 2D annotations from new viewpoints in 3D.

These allow users to save the annotations on screenshots which are displayed as 3D planes.

→ These allow users to save the annotations on screenshots that are displayed as 3D planes.

→ These allow users to save the annotations on screenshots, which are displayed as 3D planes.

→ These allow users to save the annotations on screenshots, which are then displayed as 3D planes.

Miscellaneous

Without accurate camera intrinsics the accuracy of global SfM methods suffer dramatically, limiting the usability of such methods on internet photo collections where camera intrinsic information may be inaccurate or unavailable.

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Miscellaneous

Regarding the other methods mentioned, we want to re-emphasize that our method is designed to support dynamic scenes, and therefore requires per-frame depth maps.

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The disparity estimates in [3] were from offline structure-from-motion and multi-view stereo. This is too slow for a real-time application, and unusable with dynamic scenes.

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Miscellaneous

This feature did not exist in [1], the new approach adds intra-frame coherency, which uses pose tracking to help propagate depth information across frames.

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This is because the classifier is trained with only positive examples from the target class. Yet, it must be able to detect novel samples or abnormal states (negative class).

→ This is because the classifier is trained with only positive examples from the target class, yet it must be able to detect novel samples or abnormal states (negative class).

Miscellaneous

PSO holds merits of simplicity and high efficiency, however, it's liable to trap local optimization and cause premature convergence.

→ PSO holds merits of simplicity and high efficiency; however, it is liable to trap local optimization and cause premature convergence.