

Common Difficulties Encountered by Non-Native English Speakers

Lecture 2

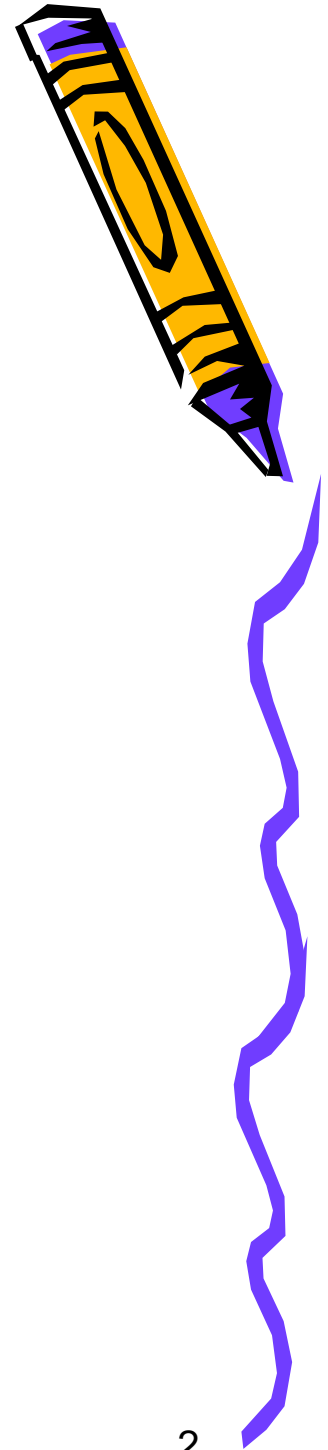
Georgia Cancer Center

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Georgia Cancer Center
Professional Skills Development
Writing Program

Rhea-Beth Markowitz, PhD
Director, Grant Development
Georgia Cancer Center
Augusta University
CN 1179C 1-7916
rbmarkowitz@augusta.edu



Outline

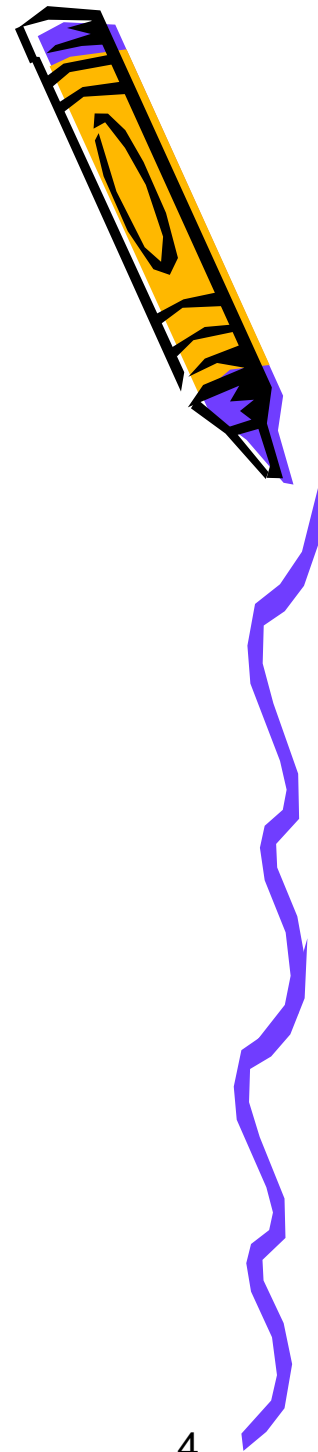


- Session 1: Elements of Scientific Writing
- Session 2: Common Difficulties Encountered by Non-Native English Speakers
- Sessions 3-4: How to Write a Scientific Paper
- Session 5: Bibliographic Reference

Fall Semester: Grant Writing presentations



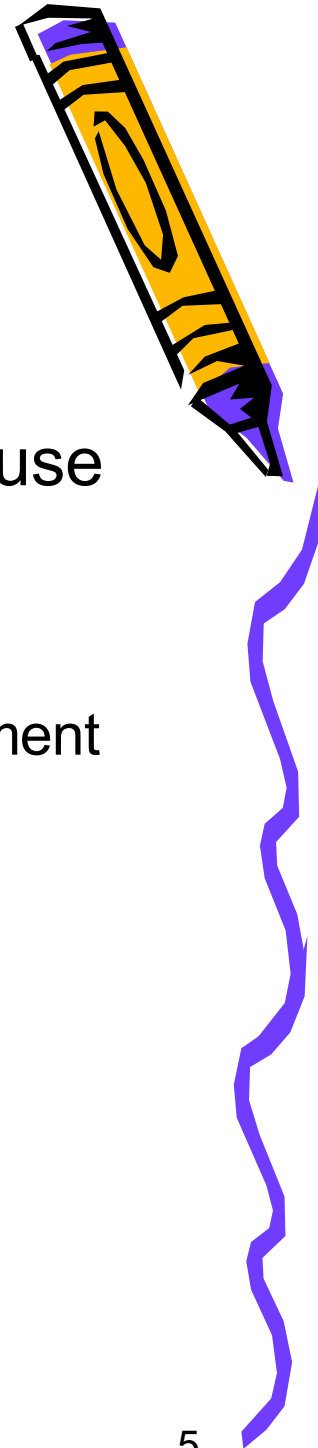
Lecture 2: Topics



- Tenses
- Subject-verb agreement
- Singular vs plural
- Commonly used terms in scientific writing
- Articles: A/an/the
- Which/that
- And more.....



Tense



- Problem particularly with Chinese scholars because Chinese language does not have tenses
- In a scientific paper:
 - Abstract: usually **past** tense, except introductory statement may be present tense
 - Introduction: usually **present** tense
 - Methods: **past** tense
 - Results: **past** tense
 - Discussion: **present** tense



Subject-Verb Agreement



- For complicated sentences, remember to look for the subject, wherever it may be, and make the verb agree with the subject.
- Read the sentence without all the modifiers and clauses to help you.
- Mentally diagram the sentence to help you.



Plural Nouns Used as Adjective

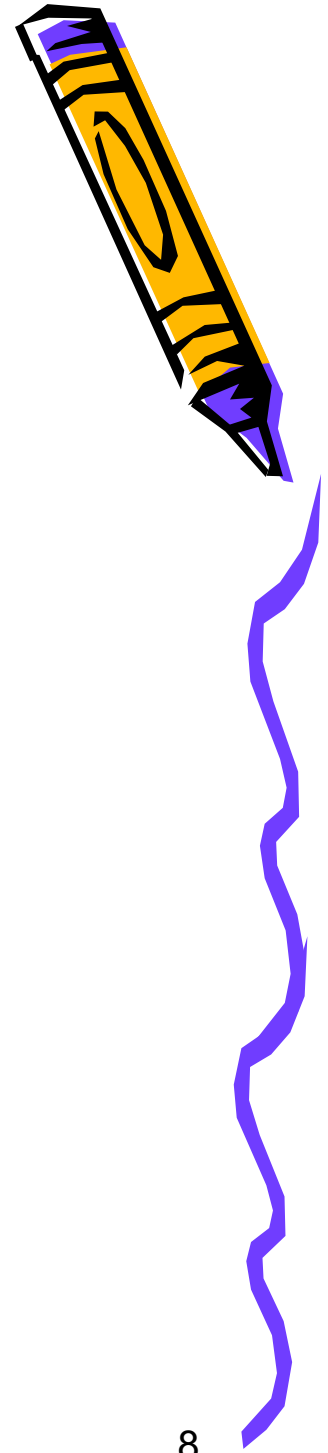
(which we often do in scientific writing!)

When a plural noun is used as an adjective, it becomes singular:

- *Phenotype of dendritic cells*
 - *cells* is a plural noun
- *Dendritic cell phenotype*
 - *phenotype* is the noun and *cells* is the adjective
 - But *cells* becomes singular as the adjective
 - Not dendritic *cells* phenotype
- *Dendritic cell population*
 - But: *population of dendritic cells*



Adjective with a Plural Noun



In English, if a noun is plural, the adjective does not become plural, as in European languages

- *We own three confocal microscopes.*
 - *Not: three confocal^s microscopes*



Abbreviations: Singular or Plural?

If a word or term will be used in both the singular and plural, then it is better to derive the abbreviation from the singular form and add an **s** to make it plural (and don't add an apostrophe before the **s**).

- *An important effector cell in an immune response is the dendritic cell (**DC**).*
- *Islet infiltrates consist mainly of T cells but also include macrophages, **DCs**, and B cells.*
- *Dendritic cells (**DCs**) are important effector cells.*



Commonly Used Terms in Scientific Writing: Which Word Should I Use?



- **Suggest:** to cause you to think about something
 - Use when your results point to that direction, but you haven't totally proven it
 - *The genetic results **suggest** that CD103 is a candidate gene for the development of type 1 diabetes.*
- **Assess:** to evaluate, but in common speech usually refers to estimating a value for something.
 - Not a great word to use in science. Use **determine** instead.



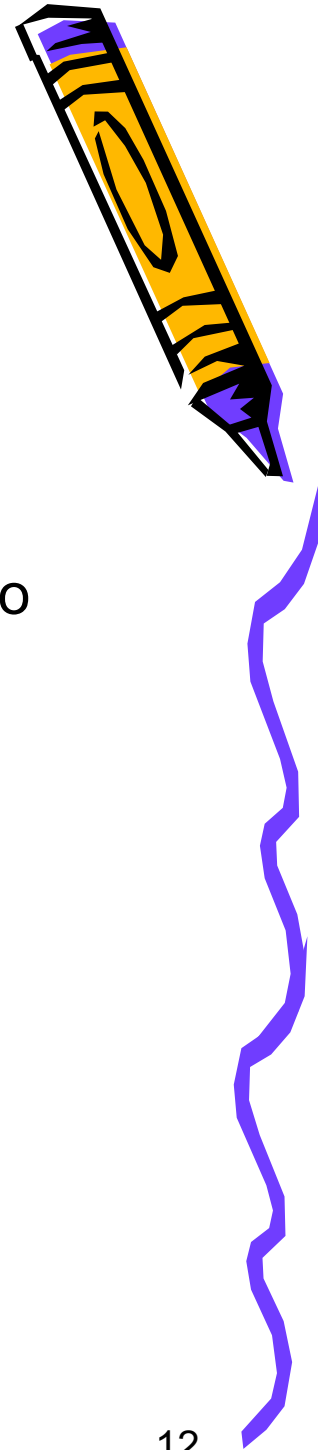
Commonly Used Terms



- **Determine**: to decide or settle, to reach a conclusion
 - We wanted to **determine**.....
 - For experiments that have not yet been done: *The actual binding constant remains to be **determined**.*
- **Investigate** vs **Examine**
 - **Investigate**: to observe or determine in detail
 - **Examine**: to analyze or carefully observe
 - **Investigate** is a little stronger and shows more action so is a better verb to use.



Commonly Used Terms in Scientific Writing



- Demonstrate vs Show
 - **Demonstrate**: to prove or make evident by reasoning, to describe by experiment
 - **Show**: to make visible, to present
 - Demonstrate is stronger for scientific writing
- But use **show** for:
 - As **shown** in Fig. 14
 - Not: As **showed** in Fig. 14



Commonly Used Terms in Scientific Writing



- **Imply** vs **Implicate**: frequently misused
 - **Implicate**: to connect or involve
 - *Our results **implicate** glucocorticoids as a cause for...*
 - **Imply**: to say or express indirectly
 - *The surgeon **implied** that the disease was fatal.*
- **Elucidate**: to make clear
 - Usually used with respect to something very complicated
 - *Our long-term goal is to **elucidate** the role of PPAR γ 2 in the development of type I diabetes.*



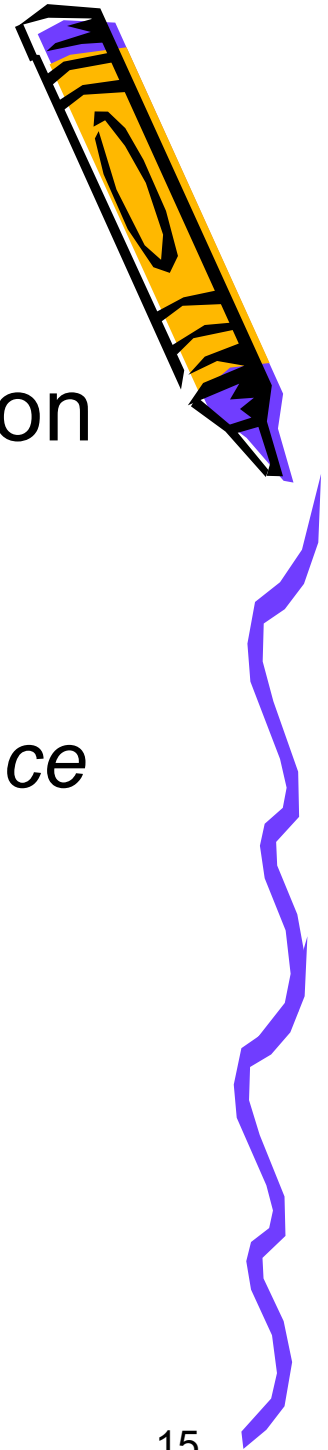
Commonly Used Terms in Scientific Writing



- Evidence
 - A body of facts or information
 - Always singular
 - There may be 3 pieces of evidence, but not 3 evidences.
- Similarly vs Similar
 - Use *similarly* if you mean in a similar way
 - *Similarly, the treated cells showed high levels of apoptosis.....*
 - *Both control and experimental cells behaved similarly.*
 - *The treated cells responded in a similar manner....*
 - But: *The treated cells were similar to the control cells.*



Slang/Spoken Language



- Be careful not to use slang or common terms in scientific writing.
 - ~~get~~ *the DNA sequence*
 - Change to: *determine the DNA sequence*
- See the list in Lecture 1 for more examples.



| <u>Not</u> | <u>Use instead</u> |
|---|--|
| We got the following results | We obtained the following results |
| We got to | We will have to |
| We can't conclude | We can not conclude |
| It's still questionable | It is still questionable |
| Many organisms use sugars like trehalose | Many organisms use sugars such as trehalose |
| We observed a lot of (great deal of) cell death | We observed much cell death |
| We plan to confirm our results | We will confirm our results |
| We used a different antibody as we were unable to distinguish between... | We used a different antibody since we were unable to distinguish between... |



There is/There are



- Try not to begin sentences with **There are**....
 - Sounds weak.
 - Too wordy.
- Examples:
 - *There are three areas that need to be changed.*
 - Change to: *Three areas need to be changed.*
 - *In rare cases, there can be a perforation of the colon.*
 - Change to: *In rare cases, the colon can be perforated.*
 - Or: *In rare cases, the surgeon can perforate the colon.*



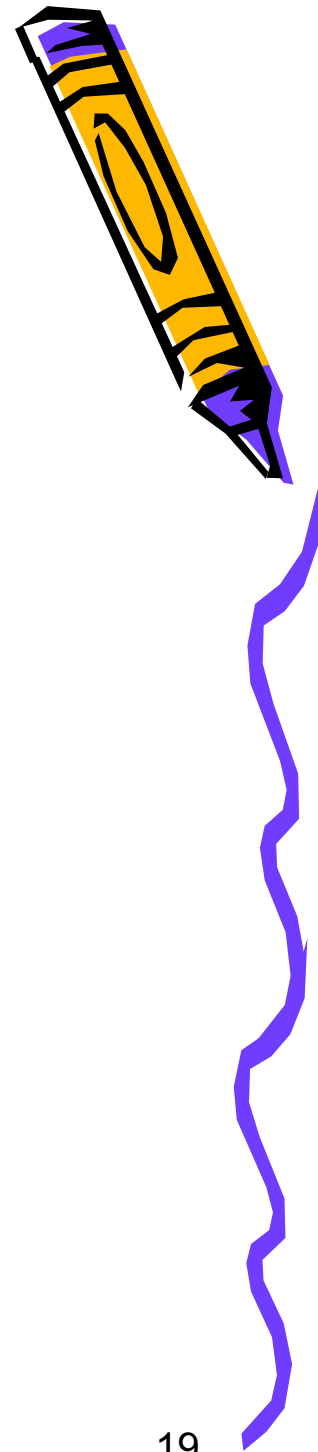
Articles: A/An/The



- Which to use: *a/an* or *the*?
- When to use them, when not to.
 - Often it takes an “ear” for the language, which takes time to develop.
- One of the most difficult concepts in writing for non-native English speakers, both European and Asian.



Articles: A/An/The



- A/An/The are “articles”
 - Articles are not adjectives
- Identify nouns as nouns
- Identify nouns as general (**a/an**) or specific (**the**)
- **A/An**: indefinite, evolved from the word one
 - Used only in singular
 - If a noun is plural, the *a/an* is usually omitted
- **The**: specifies the noun
 - *The picture* means a specific picture.
 - *A picture* could refer to any picture.



Rules

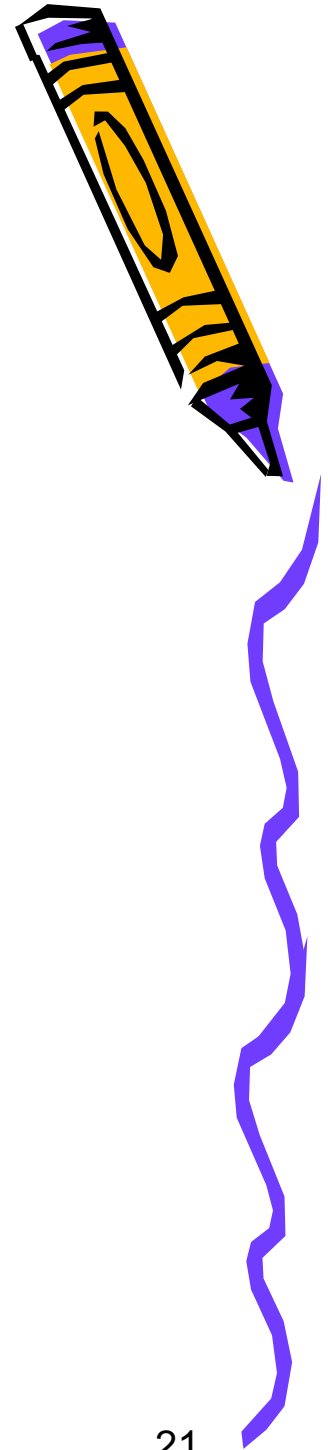


- Use **a** or **an** with singular nouns that name things that can be counted but whose specific identity is not known.
 - **A** paper, **an** experiment
 - **NOT**: *The nurse gave **a** water to the patient.*
 - Water cannot be counted. So it should read: *The nurse gave water to the patient.*
 - But, *The nurse gave **a** glass of water to the patient.* Glass can be counted.
- Use **the** with most nouns whose identity is known to the reader.
 - **The** professor teaching this class...
 - **The** experiment that I just described...

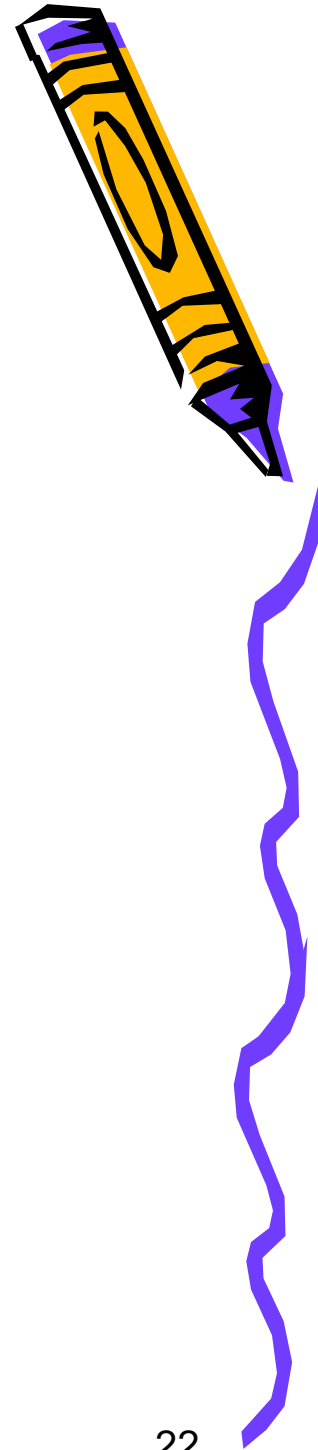


Rules

- Do not use **the** with most singular proper nouns.
 - NOT: **the** Professor Smith
 - NOT: **the** China
- But there are many exceptions:
 - *The United States of America*
 - *The People's Republic of China*
 - *The Georgia Cancer Center*



Articles: A/An/The



- British and American writing differ somewhat.
- British omit the article before singular nouns that refer to places or times
 - British: *He attends university.*
 - American: *He attends **a** university.*
- But there are some nouns in American English where the article is also omitted.
 - *On Sunday, she always goes to church.*



A or An?

Rule

- Use **a** before a word that starts with a consonant.
- Use **an** before a word that starts with a vowel (a, e, i, o, u).

But

- It is the **sound** at the beginning of the word, not necessarily the letter
 - **A** university/**an** umbrella
 - **A** hero/**an** honest person
- With acronyms, it is how the first letter sounds:
 - f, h, l, m, n, r, s, x: they sound like vowels, so take **an**
 - **An** MRI; **a** CAT scan



A/An/The

**Yes, it is confusing....but don't worry.
You will get the hang of it
with practice!!**



Whether



- Conjunction used in **indirect** questions to introduce an alternative
 - Sentence does **not** take a **?** because the question is indirect
 - *These experiments will tell us **whether** GLZ inhibits marker gene expression indirectly through down-regulation of PPAR γ 2.*



Whether



- Do not use *whether or not*. Or not is redundant.
 - **NO:** *These experiments will tell us **whether or not** GLZ inhibits marker gene expression indirectly through down-regulation of PPAR γ 2.*
- Do not use *as to whether*. Change to *whether*.



Which/That: A Pair of Words with Many Functions

And two words that cause a lot
of problems!

Which/That are Pronouns



Which/That: Can Introduce Adjectival Clauses



- Pronouns that introduce adjectival clauses (clauses that modify nouns in the sentence)
- **Restrictive** clauses define the noun
 - Use *that*
 - No commas
- **Non-restrictive** clauses are extra and the sentence is meaningful without them
 - Use *which*
 - Set the phrase off by commas



Which/That: Examples



- *Regulatory CD4+ T cells in non-obese diabetic mice may include Th2 cells (which/that) secrete Il-4, Il-5, Il-6, Il-10, and Il-30.*
- **Answer:** *Regulatory CD4+ T cells in non-obese diabetic mice may include Th2 cells, which secrete Il-4, Il-5, Il-6, Il-10, and Il-30.*
- The clause about the cytokines is **non-restrictive**, because it is extra information. The sentence has meaning without the final clause: *Regulatory CD4+ T cells in non-obese diabetic mice may include Th2 cells.*
 - Which
 - Use commas



Which/That: Examples



- *Effector CD4⁺ T cells in non-obese diabetic mice may include cells (**which/that**) secrete Il-2, Il-3, Il-12, IFN- γ and TNF- γ .*
- **Answer:** *Effector CD4⁺ T cells in non-obese diabetic mice may include cells **that** secrete Il-2, Il-3, Il-12, IFN- γ and TNF- γ .*
- The clause is restrictive, defines the cells, is needed for the meaning of the sentence.
 - **That**
 - No commas



Which/That

Note

The “**which/that**” problem is probably one of the most common mistakes that I find among all scientists, including native English speakers!



This/That: Demonstrative Pronouns or Adjectives

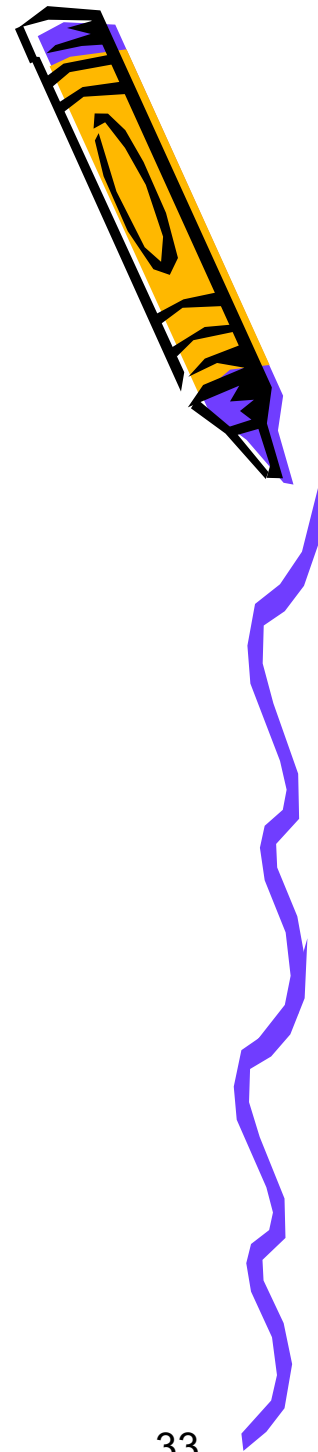


- **This/That** can be a pronoun or an adjective.
 - Pronoun acting as a subject:
 - ***That** is the reason why you can't go out tonight.*
 - ***This** is a good place to eat.*
 - Pronoun acting as an adjective:
 - ***That** dog bit me.*
 - Pronoun acting as the subject (or object) of a clause.
 - The dog **that** bit me was mean.

NEVER USE COMMAS with Demonstrative Pronouns or Adjectives!



Some improper uses of That





That can introduce a noun clause that is the subject or object of a verb, but make sure **it** has a verb!

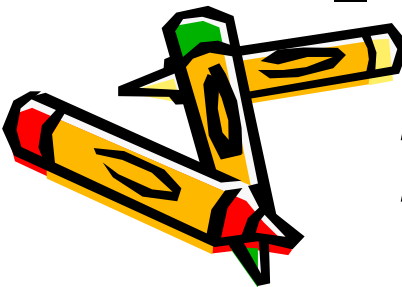
- *The observation of disease protection in these NOD congenic mice demonstrates **that** the existence of over 20 individual MHC and non-MHC-associated Idd loci on 12 chromosomes.*
 - But there is no verb in that clause!!!! Needs a verb. Or does it?

Should it be (?):

- *The observation of disease protection in these NOD congenic mice demonstrates the existence of over 20 individual MHC and non-MHC-associated Idd loci on 12 chromosomes. (no **that** needed)*

Or (?):

- *The observation of disease protection in these NOD congenic mice demonstrates **that** the existence of over 20 individual MHC and non-MHC-associated Idd loci must be involved in disease pathogenesis.*



Another example



- We found *that* lower expression of CCR6/CCR7 in bone marrow dendritic cells from NOD mice using GE Chemokine cDNA arrays.
 - not a dependent clause, there is not another verb
- **Change to:** We found lower expression of CCR6/CCR7 in bone marrow dendritic cells from NOD mice using GE Chemokine cDNA arrays.
 - expression is object of verb found; all the rest are adjectival, prepositional phrases. *That* does not belong in the sentence!



Different from....



- Always use **different from**, not different than
 - *Zebrafish embryos are **different from** mouse embryos because they are fertilized externally and are transparent.*
- **Exception: different than** is acceptable when followed by a clause
 - *The experiment that she actually did was **different than** the one she planned to do.*



Misplaced Modifiers



The early focus of these studies was chemoprevention of chemical or photo carcinogen-induced in rodent tumorigenesis.

- *Carcinogen-induced* modifies *tumorigenesis* (acts as an adjective)
 - What kind of tumorigenesis? Carcinogen-induced.
 - Put it next to tumorigenesis.
- *In rodent* modifies *tumorigenesis* (a prepositional, adjectival phrase)
 - Answers where
 - Put it after tumorigenesis (because it is a phrase)



Misplaced Modifiers



- **Original:** *The early focus of these studies was chemoprevention of chemical or photo carcinogen-induced **in rodent** tumorigenesis.*
- **Change to:** *The early focus of these studies was chemoprevention of chemical or photo carcinogen-induced tumorigenesis **in rodents**.*



Misplaced Modifiers



- *Gastroesophageal reflux disease is a very common complaint that may be complicated by the development of Barrett's esophagus and esophageal adenocarcinoma.*
- What does the phrase *that may be complicated* describe?
 - In this sentence, it describes complaint. But it is meant to describe the disease.



Misplaced Modifiers



- **Original:** *Gastroesophageal reflux disease is a very common complaint that may be complicated by the development of Barrett's esophagus and esophageal adenocarcinoma.*
- **Change to:** *Gastroesophageal reflux disease, which may be complicated by the development of Barrett's esophagus and esophageal adenocarcinoma, is a very common complaint.*



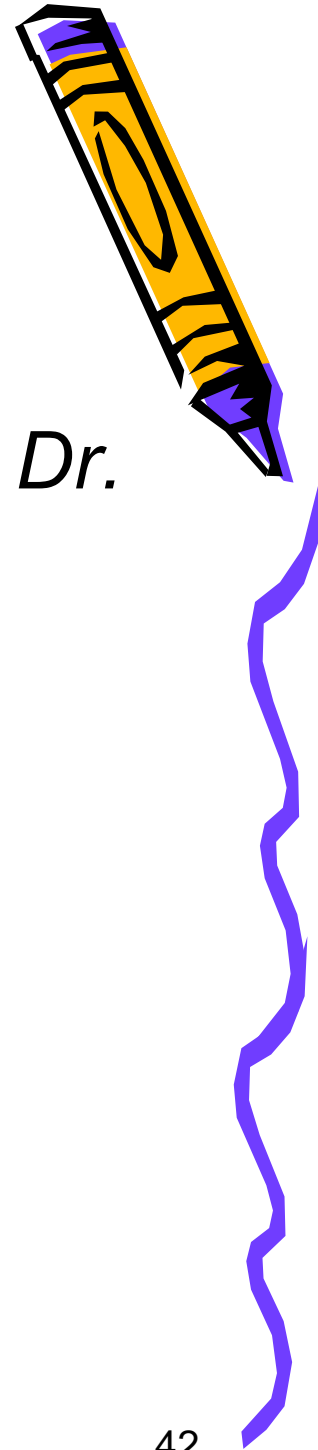
Order of Adjectives



| Determiner | Quality | Size | Age | Color | Origin | Material | Noun |
|------------|--------------------|-------|-------|-------|---------|----------|--------------|
| 21 | | large | | green | | | tables |
| A | pretty | | new | | | silk | scarf |
| An | energetic | | young | | Chinese | | post- doc |
| A | smart, exciting | | | | | | professor |



Be careful of Spellcheck!



- *Dr. Michael Shrout presented a **plague** to Dr. Lloyd Cook as Past Chair of the MCG Faculty Senate..... Drs. Campbell and Potter were presented a **plague** in appreciation of their service.....*
- Spellcheck did not catch the gross error here.....should be **plaque**, not **plague**.
 - **Big difference!!!**



Parallel Construction



All components of a list should be in the **same grammatical form**.

- *Mutations in RLF2 are associated with severe mycobacterial, staphylococcal infection and leprosy.*
 - 3 items in the series but nonparallel
 - mycobacterial
 - staphylococcal infection
 - leprosy
- **Change to:** *Mutations in RLF2 are associated with severe mycobacterial and staphylococcal infections and leprosy.*
 - 2 items in the series: infections (2 types) and leprosy, in parallel



Use of Hyphens

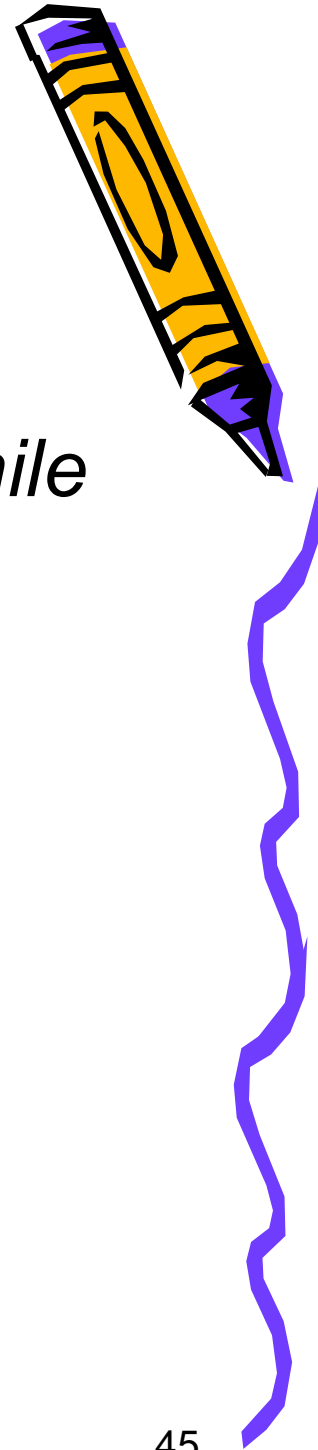


- Compound nouns do not take a hyphen (dash)
 - *What was the **dose response** of glucocorticoids in bone marrow cells?*
- Compound adjectives take a hyphen
 - *We carried out glucocorticoid **dose-response** experiments in bone marrow.*

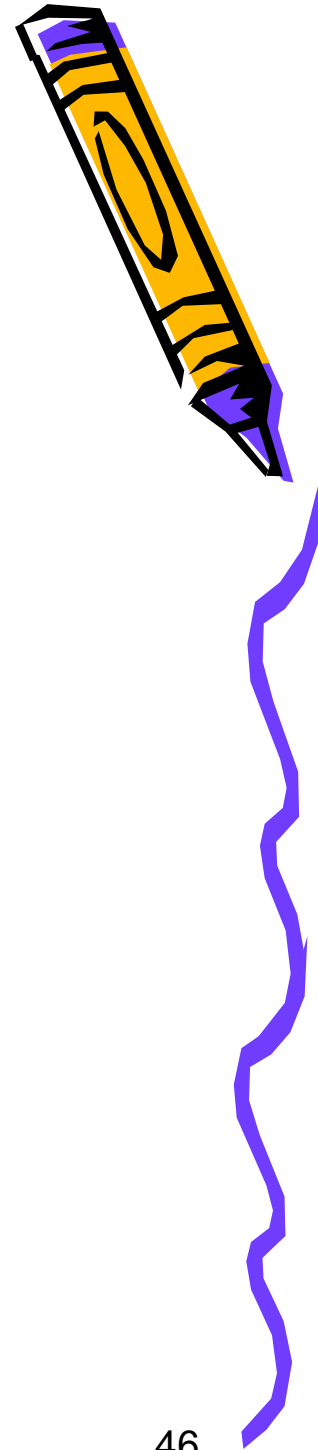


Other examples.....

- DNA is a *double-stranded* molecule while RNA is usually a *single-stranded* molecule.
- DNA consists of *double strands* of the sugar- phosphate backbone.
- DNA is a *double helix*.



Use hyphens in the following common adjectival phrases



- *Insulin-mediated effect*
- *DNA-binding protein*
- *Antibody-specific reaction*
- *Heat-induced effects*
- *12-week-old mice*
 - Not 12 week-old mice (unless you are talking about a dozen mice that are one week old!)
- *Well-known markers*



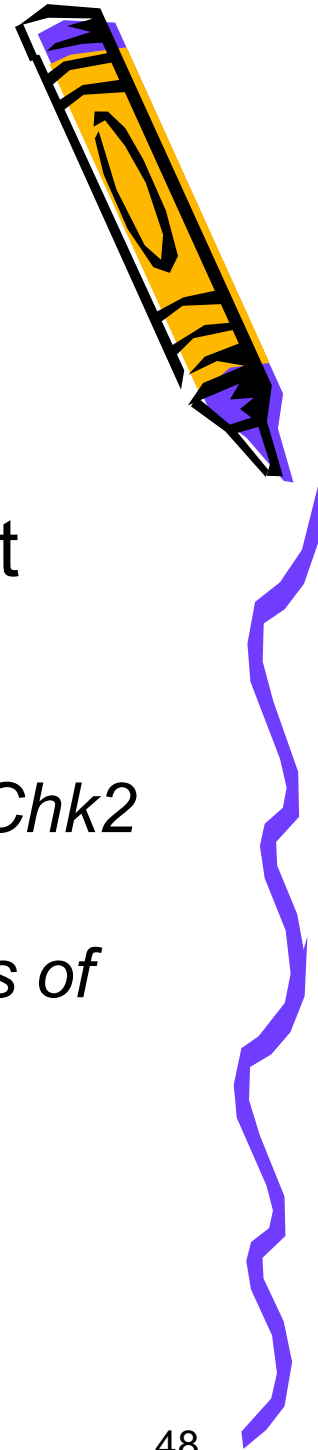
Upper Case (Capital) Letters



- Chinese language does not have upper and lower case letters.
- General rule is to use upper case for the first letter in all words of a title except for articles (a/an/the), prepositions, and other minor words.
- However.....things are a little different in science.



Upper Case (Capital) Letters



- Some journals use upper and lower case letters in the title of a paper, but some just upper case the first word
 - *Apoptosis Associated with Deregulated E2F Activity is Dependent on E2F1 and Atm/Nbs/Chk2* (Molecular & Cell Biology)
 - *A draft genome of Yersinia pestis from victims of the Black Plague* (Nature)



Words in a Series



- *The use of animals is justified by the importance of the disease under study, osteoporosis, and the impossibility of performing a comparable study in humans.*
 - How many reasons are there? Looks like 3?
 - importance of disease
 - osteoporosis
 - impossibility

But that is not what was meant!!



In a Series



- **Change to:** *The use of animals is justified by the importance of osteoporosis and the impossibility of performing a comparable study in humans.*
 - Removed *the disease under study*. It is redundant, anyway.
- An alternative might be to leave the sentence as it was but to put *osteoporosis* in parentheses.
 - *The use of animals is justified by the importance of the disease under study (osteoporosis) and the impossibility of performing a comparable study in humans.*



Serial (Oxford) Comma Rule

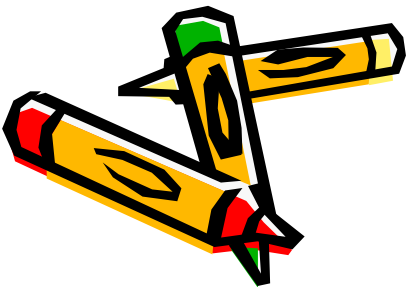


- In a series consisting of 3 or more elements, separate **all** the elements with commas. Use a comma before the conjunction that joins the last two elements.
- Prevents confusion.
- However, American newspapers and the British usually do not use that final comma!



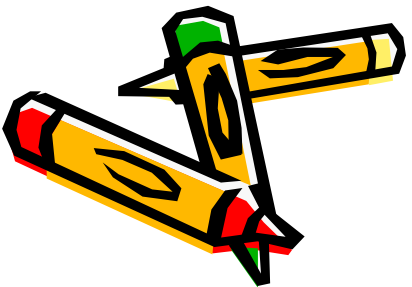
Example

The lecture series will cover essentials of grammar, how to write a manuscript, and problems common to non-native speakers of English.



Commas & Semi-colons

- If the items in the series are long and contain commas within them, then use a semi-colon to separate the items instead of commas.



Example

The cellular restitutive response of the liver to different injuries and to different hepatocarcinogenic regimens involves cells at different levels in the liver cell lineage. These cell types are: the 'mature' hepatocyte; the mature bile duct cell; the *in situ* tissue-determined stem cell, represented in the adult organ by cells in the terminal bile ductules (canals of Hering); and multipotent stem cells in the liver derived from circulating bone marrow stem cells.



Commas



- I believe in using commas because they usually help to clarify and avoid confusion.
- However, I do find a lot of commas put where they do not belong.
 - *Just because you may pause when reading (perhaps because you need to take a breath), does not mean that a comma is needed.*
 - That comma does not belong there!!!
 - *Just because you may pause when reading* is the subject and should not be separated from the verb by a comma.



Commas



- *We show high titers of anti-GM3, GD-3, and GT-3 antibodies, in the plasma exchange solution of these patients.*
 - Comma does not belong there!!
- Sometimes I find a comma incorrectly inserted after words such as
 - That
 - Whether
 - Because



Finally.....

Why commas matter...

A panda walks into a café. He orders a sandwich, eats it, then draws a gun and fires two shots into the air.

“Why?” asks the confused waiter, as the panda walks through the door.

The panda tosses him a badly punctuated wildlife manual.

“I’m a panda,” he says. “Look it up.”

*The waiter looks up **panda** and finds the following:*

“Panda. Large black-and-white bear-like mammal, native to China. Eats, shoots and leaves.”



Why commas matter...

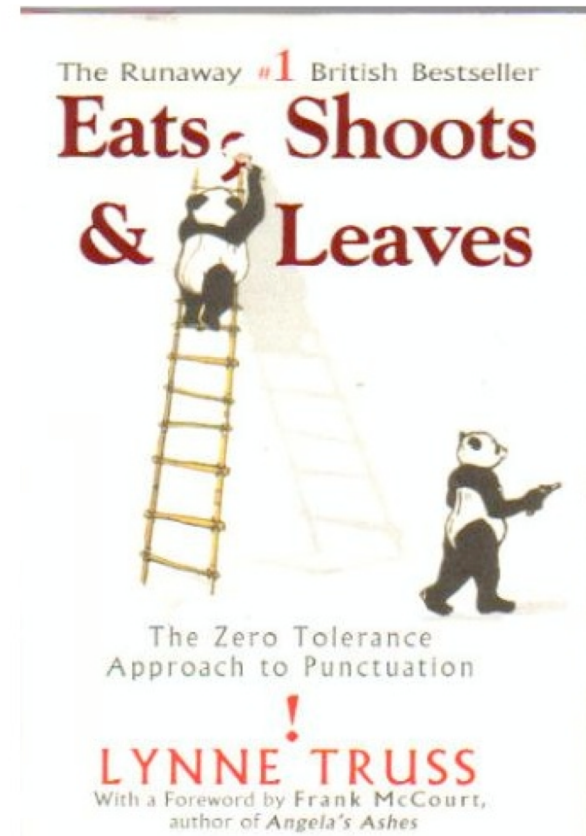


The correct definition of panda, of course, is:

“Panda. Large black-and-white bear-like mammal, native to China. Eats shoots and leaves.”

But the panda thought he needed to get a gun and shoot it!!!

Title of a British grammar book!



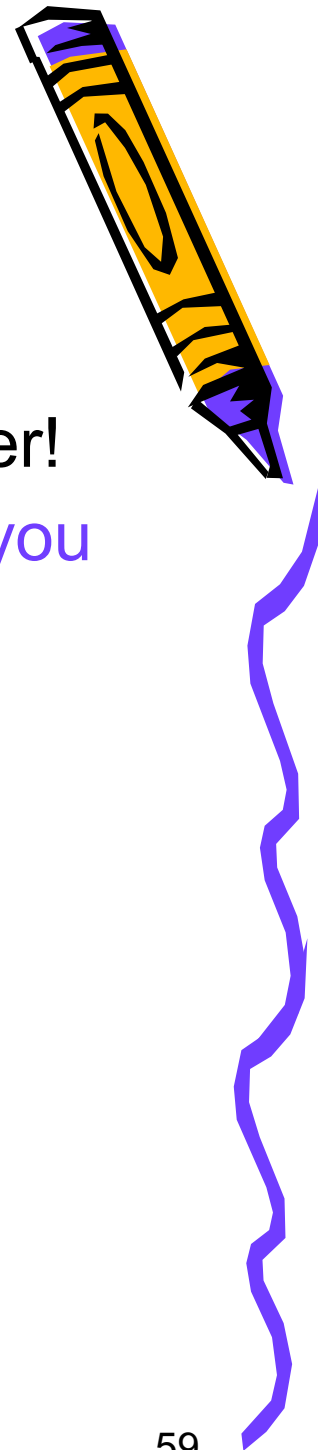
Handout

Emails that editors and writers send to each other!
Why you should proofread and think about what you write

These are (supposedly)

- real signs
- real newspaper headlines
- real notices in church bulletins

Enjoy and have a good laugh!



Any Questions
?

