#5
Effective Writing

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Effective writing

Largely based on:

- http://www.nature.com/scitable/topicpage/effective-writing-13815989
- https://cgi.duke.edu/web/sciwriting/index.php
- https://www.coursera.org/learn/sciwrite

What makes good writing?

1. Communicate an idea **clearly** and **effectively**.

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2. Good writing is beautiful, elegant and stylish

What makes good writing?

1. Communicate an idea **clearly** and **effectively**.

   Takes having something to say and clear thinking

2. Good writing is beautiful, elegant and stylish

   Takes times, revision, and a lot of practice

A few examples (of what not to do)

Example (bad,) – from section II.A of A. Vieira's paper:

- *As it is widely known, nowadays, mankind problems keep on being, as it was in ancient years, to find new energy sources that may attend to its needs. Traditional fuels, besides being pollutant, are limited in their reserves. In this context, natural gas may be seen as one of the most promising forms of energy* (pompous and verbose)

A few examples (of what not to do)

Example (bad, then better) – from section II.A of A. Vieira's paper:

- *As it is widely known, nowadays, mankind problems keep on being, as it was in ancient years, to find new energy sources that may attend to its needs. Traditional fuels, besides being pollutant, are limited in their reserves. In this context, natural gas may be seen as one of the most promising forms of energy* (pompous and verbose)
- *Given its available reserves, its low price and small amount of pollution, natural gas is nowadays one of the main energy sources that can be considered as an alternative to oil* (clear and accurate)

A few examples (of what not to do)

The assumptions that all sites evolve at one of two evolutionary rates (conserved and nonconserved), that these rates are uniform across the genome, that sites evolve independently conditional on whether they are in conserved or nonconserved regions, and that the phylogenetic models for conserved and nonconserved regions have the same branch- length proportions, base compositions, and substitution patterns, all represent oversimplications of the complex process of sequence evolution in eukaryotic genomes.

A few examples (of what not to do)

Distance between subject and verb:

The assumptions that all sites evolve at one of two evolutionary rates (conserved and nonconserved), that these rates are uniform across the genome, that sites evolve independently conditional on whether they are in conserved or nonconserved regions, and that the phylogenetic models for conserved and nonconserved regions have the same branch- length proportions, base compositions, and substitution patterns, **all represent** oversimplications of the complex process of sequence evolution in eukaryotic genomes.

A few examples (of what not to do)

Complex subject

The assumptions that all sites evolve at one of two evolutionary rates (conserved and nonconserved), that these rates are uniform across the genome, that sites evolve independently conditional on whether they are in conserved or nonconserved regions, and that the phylogenetic models for conserved and nonconserved regions have the same branch- length proportions, base compositions, and substitution patterns, all represent oversimplications of the complex process of sequence evolution in eukaryotic genomes.

A few examples (of what not to do)

Implied actions (nominalizations) vs. verbs

The assumptions that all sites evolve at one of two evolutionary rates (conserved and nonconserved), that these rates are uniform across the genome, that sites evolve independently conditional on whether they are in conserved or nonconserved regions, and that the phylogenetic models for conserved and nonconserved regions have the same branch- length proportions, base compositions, and substitution patterns, all represent oversimplications of the complex process of sequence evolution in eukaryotic genomes.

A few examples (of what not to do)

Context comes after the list

The assumptions that all sites evolve at one of two evolutionary rates (conserved and nonconserved), that these rates are uniform across the genome, that sites evolve independently conditional on whether they are in conserved or nonconserved regions, and that the phylogenetic models for conserved and nonconserved regions have the same branch- length proportions, base compositions, and substitution patterns, all represent oversimplications of the complex process of sequence evolution in eukaryotic genomes.

Effective writing

Problems:

1. Subjects and verbs too far apart

2. Overabundance of nominalizations

3. Poor flow (misplacement of old and new information)

4. Excessive/unnecessary use of passive voice

Effective writing

I. Subjects and Actions

II. Cohesion and Coherence

III. Concision and Simplicity

I. Subjects and Actions

Sentences usually communicate 2 main pieces of information:

- 1) **who** is the sentence about?
- 2) **what** did they do?

You can help readers find this information using cues in your sentence *structure*.

For example, characters in your sentences are most likely to be interpreted correctly when placed in the grammatical subject.

Similarly, your intended action is best placed in the sentence's verb.

You can use these structural decisions **to minimize the amount of energy your readers require to understand your writing.**

I. Subjects and Actions

Principles:

- Put actions in verbs (#1)
- Put characters in subjects (#2)
- Keep subjects near verbs (#3)
- Place the main idea in the main clause (#4)

I. Subjects and Actions

Principle 1: Put actions in verbs

Verbs are *action words*: they describe motion, like to *explore*, to *examine*, or to *observe*.

Verbs can be turned into nouns, which changes the word from an *action* to a *thing*. For example, the verb *to analyze* can be changed into its noun form *analysis*.

A noun that is formed from a verb is called a ***nominalization***. Nominalizations are nouns that contain a hidden action.

I. Subjects and Actions

Principle 1: Put actions in verbs

Examples of nominalizations:

Action	Nominalization
to regulate	
to analyze	
to occur	
to understand	
to investigate	
to delineate	
to perform	

I. Subjects and Actions

Principle 1: Put actions in verbs

Examples of nominalizations:

Action	Nominalization
to regulate	regulation
to analyze	analysis
to occur	occurrence
to understand	understanding
to investigate	investigation
to delineate	delineation
to perform	performance

I. Subjects and Actions

Principle 1: Put actions in verbs

There is nothing inherently wrong with nominalizations, but many scientific writers misuse them by using abstract nouns to convey action.

This creates a disconnect between *structure* and *meaning* — the intended action is no longer found in the verb. **Most readers expect the main action of a clause to be found in a verb**.

This is because verbs inherently convey action, and nouns do not. If you fail to put your intended action in a verb, your reader must work to determine where the action is.

I. Subjects and Actions

Principle 1: Put actions in verbs

Example:

Sentence	Action
We performed an **analysis** on the data	nominalization
We **analyzed** the data	verb

I. Subjects and Actions

Principle 1: Put actions in verbs

Sentence	Action
We performed an **analysis** on the data	nominalization
We **analyzed** the data	verb

In the first example, the verb is *to perform*, but the intended action is *to analyze* (and has nothing to do with *performance)*. A reader of the first example has to consider this possibility (if subconsciously), while the reader of the second clearly understands the action.

This is a trivial example, but the point is more important in complex sentences.

I. Subjects and Actions

Principle 1: Put actions in verbs

Instead of	*Write*
Perform an analysis of . . .	
Make an examination of . . .	
Present a comparison of . . .	
Be in agreement . . .	
Produce an improvement in . . .	

I. Subjects and Actions

Principle 1: Put actions in verbs

Instead of	*Write*
Perform an analysis of . . .	analyze
Make an examination of . . .	examine
Present a comparison of . . .	compare
Be in agreement . . .	agree
Produce an improvement in . . .	Improve

I. Subjects and Actions

Principle 1: Put actions in verbs

Scientific writing regularly disguises the main actions in nouns, costing reader energy.

Improve your writing by restructuring your sentences to capture actions in verbs.

Revision Technique:
Go through your manuscript and underline all nominalizations. Take a closer look at these words to see if they should be changed to verbs.

Or, it may be easier to do the opposite: Go through the manuscript and underline all the verbs. For each verb, ask yourself this question: Does this verb capture the action in the sentence?

I. Subjects and Actions

Principle 1: Put actions in verbs

Nominalizations are sometimes useful; for example, when they *summarize the action of the previous sentence*. In such a case, a nominalization is a good way to form a backwards link to something already familiar to the reader.

For example:

We analyzed the data. This **analysis** demonstrated the need for additional experiments.

I. Subjects and Actions

Principle 2: Put characters in subjects

The character is the actor (the entity performing the action).

Readers expect the main character in a clause to be found in the subject.

The grammatical subject of the sentence should be the answer to the question: *What is this sentence about?* This principle goes hand-in-hand with the actions/verbs principle.

I. Subjects and Actions

Principle 2: Put characters in subjects

Example:

The **movement in the liquid medium** of the bacteria was accomplished by microflagella.	
The **bacteria** move themselves in the liquid medium with microflagella.	

In the first sentence, the grammatical subject is an abstract noun (movement), which is really describing the action of the main character.

The second example is clearer because the intended actor (what's the sentence about?) is the same as the grammatical subject (bacteria).

I. Subjects and Actions

Principle 2: Put characters in subjects

Science writing often has the problem of ***subject shifting*** — when subjects change erratically throughout a paragraph.

Often, writers intend to discuss a particular topic for several sentences (the *topic* doesn't change), but change the grammatical subjects.

Writing is easier to follow when the string of subjects in a paragraph reflects the topics. You can fulfill reader expectations by maintaining a *logical flow* of grammatical subjects in a paragraph:

- Maintain a common subject throughout a one-topic paragraph
- Shift the subject appropriately according to the story

I. Subjects and Actions

Principle 2: Put characters in subjects

Example:

> To understand human evolution, genomes from related primates are necessary. For example, identification of features common among primates or unique to humans will require several primate genomes. Fortunately, scientists can now do such genome-wide exploration; in the past 5 years, the community has released several nonhuman primate genome sequences.

I. Subjects and Actions

Principle 2: Put characters in subjects

Example:

To understand human evolution, **genomes from related primates** are necessary. For example, **identification of features** common among primates or unique to humans will require several primate genomes. Fortunately, **scientists** can now do such genome-wide exploration; in the past 5 years, **the community** has released several nonhuman primate genome sequences.

- In this example, the grammatical subjects shift, while the topic of the paragraph (genomes) stays the same:

  genomes from related primates...identification of features...scientists...the community

I. Subjects and Actions

Principle 2: Put characters in subjects

Example:

✗	To understand human evolution, **genomes from related primates** are necessary. For example, **identification of features** common among primates or unique to humans will require several primate genomes. Fortunately, **scientists** can now do such genome-wide exploration; in the past 5 years, **the community** has released several nonhuman primate genome sequences.
✓	To understand human evolution, **genomes from related primates** are necessary. For example, several **primate genomes** are needed to identify features common to primates or unique to humans. Fortunately, such **genome-wide exploration** is now a reality; in the past 5 years, **genome sequences** of several nonhuman primates have been released.

I. Subjects and Actions

Principle 2: Put characters in subjects

- In the first example, the grammatical subjects shift, while the topic of the paragraph stays the same:

  genomes from related primates...identification of features...scientists...the community

- In the second example, the topic and the main character stays the same:

  genomes from related primates...primate genomes...genome-wide exploration...genome sequences

The second example is easier for a reader to understand because the subject (while not exactly the same words) is consistent and familiar throughout the paragraph. The second example shifts the subject twice, disconnecting it from the topic of the paragraph.

I. Subjects and Actions

Principle 2: Put characters in subjects

Sometimes it's necessary to write paragraphs that build from one thing to the next. In this case, the subjects can shift as the topics shift. This is a common construction in scientific writing:

Technology often drives science. Among the most impressive recent technological advances is **DNA sequencing**. **More efficient sequencing** has reduced the cost of generating sequence data significantly. **Cheaper data** in turn enables more researchers to do data-intensive experiments, which results in **a huge amount of data** being released into the public domain. **Dealing with data** in such large quantity will require a new generation of scientists.

Subjects are shifting in an intended, logical flow. Each subject connects to the previous subject.

I. Subjects and Actions

Principle 2: Put characters in subjects

Be aware of what your subjects are, and if they match the structure of the idea you intend to communicate.

Revision Technique:

Highlight the subject of each sentence. Does the structure of your subjects match the information you intend to convey?

In other words, are the subjects of the sentences jumping from one thing to another, or do they shift only when you intend to shift the topic under discussion?

I. Subjects and Actions

Principle 3: Keep subjects near verbs

The two primary pieces of information a reader looks for are:

- *who* is the sentence about?
- *what* are they doing?

When these two pieces of information are far apart, this confuses readers, because they can't piece together the whole picture without answers to these questions.

I. Subjects and Actions

Principle 3: Keep subjects near verbs

Example:

✗	Farmers that understand the difference between the soil requirements of plants when they are seedlings and their requirements when they are mature are in high demand.
✓	

I. Subjects and Actions

Principle 3: Keep subjects near verbs

Example:

✗	**Farmers** that understand the difference between the soil requirements of plants when they are seedlings and their requirements when they are mature **are in high demand**.
✓	

I. Subjects and Actions

Principle 3: Keep subjects near verbs

Example:

✗	**Farmers** that understand the difference between the soil requirements of plants when they are seedlings and their requirements when they are mature **are in high demand**.
✓	Farmers are in high demand if they can understand the difference between the soil requirements of plants when they are seedlings and their requirements when they are mature.

I. Subjects and Actions

Principle 3: Keep subjects near verbs

Example:

	Peanuts, shrimp, almonds, milk or anything else with lactose, and wheat or anything with gluten all represent things that people are commonly allergic to.
	

I. Subjects and Actions

Principle 3: Keep subjects near verbs

Example:

	Peanuts, shrimp, almonds, milk or anything else with lactose, and wheat or anything with gluten all represent things that people are commonly allergic to.
	People are commonly allergic to things like peanuts, shrimp....

You have no idea what you're reading until the end. When you find out, you must re-read the sentence to comprehend what these things have in common.

I. Subjects and Actions

Principle 3: Keep subjects near verbs

Make sure your sentences do not tax readers' short-term memory by obliging these readers to remember long pieces of text before knowing what to do with them.

In other words, *keep together what goes together.*

Revision Technique:

Identify the main subject and its verb in your sentence. If they are far apart, rephrase the sentence to bring them closer together.

I. Subjects and Actions

Principle 4: Place the main idea in the main clause

When writing a complex sentence (a sentence that includes several clauses), place the main idea in the main clause rather than a subordinate clause.

In particular, focus on the phenomenon at hand, not on the fact that you observed it.

✗	**Figure 5a shows** that the translocation time t scales linearly with polymer length L.
✓	The translocation time t scales linearly with polymer length (Fig. 5a)

I. Subjects and Actions

Principle 4: Place the main idea in the main clause

Revision Technique:

Identify the main idea of your sentence. Start by stating your main idea as a single clause, then add complementary ideas in subordinate clauses (or another sentence).

I. Subjects and Actions

Examples:

✗ The ABC database has been subject to different improvements, modifications, and extensions in structure and content over the years by the curators.

✓

I. Subjects and Actions

Examples:

✗ The ABC database has been subject to different improvements, modifications, and extensions in structure and content over the years by the curators.

✓ The curators have improved the structure and content of the ABC database.

I. Subjects and Actions

Examples:

✗	Mapping of open chromatin regions, post-translational histone modifications and DNA methylation across a whole genome is now feasible, and new non-coding RNAs can be sensitively identified via RNA sequencing.
✓	

I. Subjects and Actions

Examples:

✗ Mapping of open chromatin regions, post-translational histone modifications and DNA methylation across a whole genome is now feasible, and new non-coding RNAs can be sensitively identified via RNA sequencing.

✓ It is now feasible to map open chromatin regions, post-translational histone modifications and DNA methylation across a whole genome, and to sensitively identify new non-coding RNAs via RNA sequencing.

I. Subjects and Actions

Examples:

We first plotted on figures 15 and 16 the mean anomalies of Freshwater Content at two different depths : 100m and 2000m. At first sight, at 100m, the six plots seem very consistent with each others.

I. Subjects and Actions

Examples:

We first plotted on figures 15 and 16 the mean anomalies of Freshwater Content at two different depths : 100m and 2000m. At first sight, at 100m, the six plots seem very consistent with each others.

The mean anomalies of Freshwater Content at 100 m and 2000 m are consistent between datasets (Figs. 15 and 16).

I. Subjects and Actions

Examples:

✗ Significant positive correlations were evident between the substitution rate and a nucleosome score from resting human T-cells.

✓

I. Subjects and Actions

Examples:

✗ Significant positive correlations were evident between the substitution rate and a nucleosome score from resting human T-cells.

✓ In resting human T-cells, the substitution rate correlated with a nucleosome score.

I. Subjects and Actions

Examples:

✗	The possibility that some termini have a base composition different from that of DNA simply because they are the nearest neighbors of termini specifically recognized by the enzymes can be checked by comparing the experimental results with those expected from the nearest neighbor data.
✓	

I. Subjects and Actions

Examples:

✗	The possibility that some termini have a base composition different from that of DNA simply because they are the nearest neighbors of termini specifically recognized by the enzymes can be checked by comparing the experimental results with those expected from the nearest neighbor data.
✓	If we compare the experimental results with those expected from the nearest neighbor data, we can **check** the **possibility** that some termini have a base composition different from that of DNA simply because they are the nearest neighbors of termini specifically recognized by the enzymes.

I. Subjects and Actions

Examples:

✗	This implies that it may be the presence of the ridge-flank canyons on the western flank of the Mid-Atlantic Ridge in the South Atlantic, and not just processes associated with random topographic variance or roughness (Polzin et al. 1997; Jayne and St. Laurent 2001), that is responsible for the high rates of mixing observed there.
✓	

I. Subjects and Actions

Examples:

✗	This implies that it may be the presence of the ridge-flank canyons on the western flank of the Mid-Atlantic Ridge in the South Atlantic, and not just processes associated with random topographic variance or roughness (Polzin et al. 1997; Jayne and St. Laurent 2001), that is responsible for the high rates of mixing observed there.
✓	This implies that the observed high rates of mixing may be explained by the presence of ridge-flank canyons on the western flank of the Mid-Atlantic Ridge in the South Atlantic, and not just by processes associated with random topographic variance or roughness (Polzin et al. 1997; Jayne and St. Laurent 2001).

I. Subjects and Actions

Examples:

- ✗ The estimated mean free path in these systems was l>2.5 m, which establishes that the samples studied were well within the quasi-ballistic regime

- ✓

I. Subjects and Actions

Examples:

✗ The estimated mean free path in these systems was l>2.5 m, which establishes that the samples studied were well within the quasi-ballistic regime

✓ With a mean free path estimated at l>2.5 m, the samples studied were well within the quasi-ballistic regime.

I. Subjects and Actions

Examples:

✗	However, in clear contrast to the observations at lower excitation, no oscillations of the diffraction signal occurred. Instead, it was observed that after reaching the maximum the diffraction signal decreased monotonically and reached a quasi-stationary level of 40% in approximately 10 ps.
✓	

I. Subjects and Actions

Examples:

✗	However, in clear contrast to the observations at lower excitation, no oscillations of the diffraction signal occurred. Instead, it was observed that after reaching the maximum the diffraction signal decreased monotonically and reached a quasi-stationary level of 40% in approximately 10 ps.
✓	In clear contrast to what it did at lower excitation, the diffraction signal did not oscillate: after reaching the maximum, it decreased monotonically and reached a quasi-stationary level of 40% in approximately 10 ps.

Effective writing

I. Subjects and Actions

II. Cohesion and Coherence

III. Concision and Simplicity

II. Cohesion and Coherence

Principles:

- Put new information last (#1)
- Use passive voice judiciously (#2)
- Make sure the first and last sentences of a paragraph match (#3)

II. Cohesion and Coherence

Principle 1: Put new information last

Ideas or characters that have not yet appeared in your manuscript are called ***New information***. *New* means *unfamiliar*.

Something familiar to the reader, because it's background knowledge or because you've already introduced it, is ***Old information***

Most readers will find your writing clearer if you consistently begin sentences with familiar (old) information and conclude sentences with unfamiliar (new) information.

II. Cohesion and Coherence

Principle 1: Put new information last

What happens when you begin a sentence with new information?

Your reader gets a new idea without any context. He may try (incorrectly) to link this information to the previous sentence. After reading the rest of the sentence, the reader have to revise his understanding. It makes your writing confusing because it lacks cohesion.

Beginning sentences with old information makes writing cohesive. It also allows you to put new, important information in the position of emphasis at the end of the sentence.

II. Cohesion and Coherence

Principle 1: Put new information last

Example:

✖ Farmers try to provide optimal growing conditions for crops by using soil additives to adjust soil pH. Garden lime, or agricultural limestone, is made from pulverized chalk, and can be used to raise the pH of the soil. Clay soil, which is naturally acidic, often requires addition of agricultural lime.

II. Cohesion and Coherence

Principle 1: Put new information last

Example:

> Farmers try to provide optimal growing conditions for crops by using soil additives to adjust soil pH.
>
> Garden lime, or agricultural limestone, is made from pulverized chalk, and can be used to raise the pH of the soil.
>
> Clay soil, which is naturally acidic, often requires addition of agricultural lime.

If we separate the sentences and color the old information and the new information.

II. Cohesion and Coherence

Principle 1: Put new information last

Example:

Farmers try to provide optimal growing conditions for crops by using soil additives to adjust soil pH. One way to raise the pH of the soil is an additive made from pulverized chalk called garden lime or agricultural limestone. Agricultural limestone is often added to naturally acidic soils, such as clay soil.

Now each sentence *leans forward* to new information at the end, instead of tying backward at the end. This makes the sentences easier to read, because the reader doesn't need to jump around in thought process.

II. Cohesion and Coherence

Principle 1: Put new information last

When your sentences "glue", your writing is said to be *cohesive*.

If your sentences are regularly beginning with unfamiliar concepts, your writing won't be very cohesive.

Putting the new, important information at the end will help inform the readers of what you intend to emphasize.

Revision Technique:
Read through your manuscript carefully. In each sentence, underline any pieces of new information (unfamiliar to the reader at this point in the manuscript). Make sure your sentences begin with an appropriate backwards link, and not with an unfamiliar concept.

II. Cohesion and Coherence

Principle 2: Use passive voice judiciously

Sentences are in passive voice when the subject in the sentence is the object of the action.

The dog chased the ball.	Active

II. Cohesion and Coherence

Principle 2: Use passive voice judiciously

Sentences are in passive voice when the subject in the sentence is the object of the action.

The dog chased the ball.	Active
The ball was chased by the dog. The ball was chased.	Passive

Consequences:

- The order of the subject and verb are switched.
- The doer of the action can be omitted.

II. Cohesion and Coherence

Principle 2: Use passive voice judiciously

Passive voice isn't inherently bad. It can actually be quite useful. The problem is that some writers incorrectly think *passive voice is inherently scientific* and rely on passive voice excessively.

Journal recommendations:

- *Nature journals like authors to write in the active voice...-Nature*
- *Choose the active voice more often than you choose the passive... -Science*

II. Cohesion and Coherence

Principle 2: Use passive voice judiciously

1. Passive voice brings ambiguous characters :

- A consequence of passive voice is that the actor can be omitted. Sometimes this makes sense (e.g. focus the reader on the method), other times it causes confusion.
- It is not OK to omit the actor if there are multiple possibilities, leaving your reader to guess.
- Example:

The DNA was sequenced using the n-terminus method (Smith et al. 2004).

II. Cohesion and Coherence

Principle 2: Use passive voice judiciously

2. Active voice emphasize author responsability:

passive	No attempt was made to contact non-responders because they were deemed unimportant to the analysis
active	We did not attempt to contact non-responders because we deemed them unimportant to the analysis

II. Cohesion and Coherence

Principle 2: Use passive voice judiciously

3. Active voice is more direct, easier to read

passive	Additionally, **it was found that** pre-treatment with antibiotics increased the number of super-shedders, while immunosuppression did not.
active	Pre-treating the mice with antibiotics increased the number of super-shedders while immunosuppression did not

II. Cohesion and Coherence

Principle 2: Use passive voice judiciously

4. Wordiness

All else being equal, shorter writing is better: it takes less time to read and it uses less space.

Passive voice tends to increase length, and active voice can help keep writing concise.

II. Cohesion and Coherence

Principle 2: Use passive voice judiciously

Advantage of passive voice

The key use of passive voice is that it switches the order of a sentence. **Use passive voice when it moves the old information to the front and new information to the back**.

Use the passive as needed to keep the flow, and *always provide the actors if there is a possibility of confusion*.

II. Cohesion and Coherence

Principle 3: Make sure the first and last sentences of a paragraph match

This principle is called *coherence*. When writing is *coherent*, it stays on topic in expected units.

Readers usually expect thoughts to be expressed in paragraph units.

A single paragraph corresponds to a single thought. Each sentence in the paragraph should support that main point.

So paragraphs should be short and focused.

II. Cohesion and Coherence

Principle 3: Make sure the first and last sentences of a paragraph match

Example with great **cohesion** (one sentence leads to another) but **no coherence:**

> My favorite animal is the domestic cat. Cats were domesticated almost 10,000 years ago in ancient Mesopotamia. Mesopotamia is a name that literally means "the land between two rivers," taken from Greek. The Greek language is one of the oldest written languages, and its alphabet forms the basis of many other writing systems, including Latin. Latin ...

II. Cohesion and Coherence

Principle 3: Make sure the first and last sentences of a paragraph match

Revision Technique:

Test for coherence: Read the first and last parts of each paragraph. Do the topics match? To be more thorough, make sure each sentence in a paragraph supports the main point of that paragraph.

II. Cohesion and Coherence

Principle 4: Do not abuse transition words

If your writing follows a logical flow, you don't need to start each sentence by a transition word (Therefore, Thus, Furthermore, However, etc.)

You can be more direct in english than in french.

II. Cohesion and Coherence

Examples:

- ✗ Improvements are expected by our method in the predictive power of all the scores being computed on multispecies alignments

- ✓

II. Cohesion and Coherence

Examples:

✗	Improvements are expected by our method in the predictive power of all the scores being computed on multispecies alignments.
✓	Our method will improve the predictive power of all multispecies alignment scores.

II. Cohesion and Coherence

Examples:

A survey is given of differential expression analyses using the linear modeling features of the package.

II. Cohesion and Coherence

Examples:

✗	A survey is given of differential expression analyses using the linear modeling features of the package.
✓	We use the linear modeling features of the package to survey differential expression analyses.

II. Cohesion and Coherence

Examples:

✗	Using sarkosyl to induce nuclear run-on, the transcriptionally inactive b-globin gene in mature erythrocytes was demonstrated to harbor high levels of Pol II at 5' proximal regulatory regions (Smith et al.).
✓	

II. Cohesion and Coherence

Examples:

✗	Using sarkosyl to induce nuclear run-on, the transcriptionally inactive b-globin gene in mature erythrocytes was demonstrated to harbor high levels of Pol II at 5' proximal regulatory regions (Smith et al.)
✓	Using sarkosyl to induce nuclear run-on, Smith et al. showed that the transcriptionally inactive b-globin gene in mature erythrocytes harbors high levels of Pol II at 5' proximal regulatory regions.

II. Cohesion and Coherence

Examples:

✗	We identified genes that are differentially expressed between species. A phylogenetic tree based on the number of differentially expressed genes between species recapitulates their known phylogeny.
✓	

II. Cohesion and Coherence

Examples:

✗	We identified genes that are differentially expressed between species. A phylogenetic tree based on the number of differentially expressed genes between species recapitulates their known phylogeny.
✓	We identified genes that are differentially expressed between species. The number of differentially expressed genes can be used to build a phylogenetic tree that recapitulates the known phylogeny.

II. Cohesion and Coherence

Examples:

✗ By applying a high resolution, 90 degree bending magnet downstream of the laser electron interaction region, the spectrum of the electron beams could be observed.

✓

II. Cohesion and Coherence

Examples:

✗ By applying a high resolution, 90 degree bending magnet downstream of the laser electron interaction region, the spectrum of the electron beams **could be observed**.

✓ We could observe the spectrum of the electron beams by applying a high resolution, 90 degree bending magnet downstream of the laser electron interaction region

II. Cohesion and Coherence

Examples:

✖ The activation of calcium channels is induced by the depletion of endoplasmic reticulum calcium stores

✔

II. Cohesion and Coherence

Examples:

✗	The activation of calcium channels is induced by the depletion of endoplasmic reticulum calcium stores
✓	Depleting calcium from endoplasmic reticulum activates calcium channels.