

Scientific Writing Cheat Sheet + Exercises

Name: _____

Exercise #1

Discuss the following rules with a partner. Do you agree or disagree? Are there additional important rules?

Rule #1 Proofreading

Ask **as many peers and more senior colleagues as you can find** to read your text, ideally *before* submission. Every reader will detect additional potential sources for misunderstandings. Don't wait for the reviews.

Rule #2 Feedback

During feedback on your writing, **listen and learn** how your readers read the text. You will learn much more about your own writing than if you start to defend your writing early. After your proofreaders have finished their feedback, discuss potential improvements.

Rule #3 Sentence Length

Read out your text aloud. If you cannot read a sentence in a single breath, split it up.

Rule #4 Scientific Writing \neq Detective Fiction

Always **guide your reader**: the first sentence(s) of a chapter / section / paragraph should make clear what will happen in that chapter / section / paragraph!

Rule #5 ...

➔ Temporal vs. Causal *since*

Since can be used to indicate a **reason (cause)**:

- ❑ *Since I forgot to buy milk, we cannot make porridge today.*
- ❑ *I am participating in this workshop since I want to join the social event in the evening.* (no comma!)
- ❑ *Mary cannot join today, since she is sick.* (comma needed as the first part of the sentence contains a negation!)

🕒 *Since* can also be used when talking about **time**, indicating that something holds from a particular point in time up to the present (or time of reference). This form of *since* usually does not require adding a comma.

- ❑ *I have been working at Bosch since 2019.*
- ❑ *I have been working at Bosch **for** three years.* (duration!)

If you want to talk about a reason, but the sentence is ambiguous between temporal and causal meaning, **use a different connective!**

📝 Exercise #3 Rewrite the sentence (assuming a causal sense).

Since I started my PhD, I am learning new things every day.

➔ The Other Hand Needs a One Hand

👍 In English, *on the other hand* can only be used if preceded by *on the one hand*! 👍

Similarly, use *first* before *second* (this is more of a style issue, though).

➔ Informality Alarm

Don't start a sentence with *So, ..., it's* too informal.

Verb Tenses and What They Signal

Exercise #4

Correct the sentences where necessary. *Work in small groups of two or three.*

The **research gap** or **problem** is normally stated in the Simple Present.

1. *We examine why these models had difficulties with ...*
2. *The main problem with this approach, however, is that ...*

When you describe **what the paper/thesis itself does** in the introduction or motivation section, use the Simple Present. (Except in the conclusion, see below.)

1. *In this paper, we applied a new method to...*
2. *In this paper, we have suggested a new model for ...*
3. *In this paper, we will discuss ..*

When you describe your **methodology**, it may differ per scientific area which tenses are commonly used. Which tenses are used below, and would you rather choose a different tense for these sentences?

1. *We collected the responses of 21 participants ...*
2. *The model consisted of five linear layers, each with ReLU activation.*
3. *We have evaluated the models using accuracy.*

To describe your **results**, you can use the Simple Present, Simple Past, or the Present Perfect. Which tenses are preferred in your community for what type of results?

1. *Model X has outperformed model Y.*
2. *Model X outperformed model Y.*
3. *System A was preferred over system B by most participants.*

Express **Achievements** (in particular in the Discussion and Conclusion sections!) in Present Perfect: this focuses on the resultant state! (The Present Simple, in contrast, focuses on the event itself. This sounds weaker.)

1. In this paper, we revealed that ...
2. We have demonstrated that method X leads to optimal results for ...
3. In this paper, we show that ...

Exercise #5

When Should I Use Which Verb Tense?

Summarize your findings.

Function	Tenses
Gap / Problem	
What the paper does	
Methodology	
Results	
Achievements	

Relative Clauses



Descriptive vs. Restrictive Relative Clauses

Relative clauses provide additional information for a noun (or noun phrase).

- **Nonrestrictive** (descriptive) relative clauses simply add more information:

Her blouse, which was red, looked really nice on her.

★ Use **commas**!

- **Restrictive** relative clauses have identifying or restricting functions. They cannot be omitted without changing the sentence's meaning.

The man that first stepped on the moon was called Neil Armstrong.

★ Do not use **commas**!

In American English, *that* is used in restrictive relative clauses (even with groups of people) and *which/who* is used in nonrestrictive relative clauses. This is less strict in British English (though *that* in nonrestrictive relative clauses sounds informal).

For a more detailed explanation, see (Traffis, 2019).



Exercise #6

Rewrite the following statements into relative clauses. In each case, decide first whether you should compose a restrictive or a nonrestrictive relative clause.

1. *In this paper, we will focus on neural methods. Neural methods are considered state of the art these days.*

2. *The method was further evaluated on four additional datasets. The method performed best.*

 **Exercise #7**

Check your own papers or writings for relative clauses. Select one sentence with a restrictive and one sentence with a nonrestrictive relative clause. *Discuss the sentences in a group of two or three.*

Title Case

In some journals / venues, it is considered (or even required) to use *title case*.

 **Exercise #8**

Check out <https://titlecaseconverter.com> and come up with a definition of and/or some rules for *title case*. How does this relate to orthography in your own native language? *Work in small groups of two or three.*

Common Mistakes

Exercise #9

Extend the list of common mistakes below. Interview your peers and see if you learn anything new.

- Avoid **contractions** in scientific writing (they are too informal). *can't* → *cannot*, *don't* → *do not*, etc.
- In a three-word *noun compound*, i.e., nouns that are composed of several words, add a dash between the first two words. Example: *neural-network based method*, *gradient-based method*, etc.
- Dashes? *state-of-the-art method* (if used as an adjective) vs. *our paper sets the new state of the art* (if used as a noun).

References

(Glasman-Deal, 2009) Glasman-Deal, H. (2009). *Science Research Writing for Non-Native Speakers of English*. Imperial College Press.

(Traffis, 2019) Traffis, C. (2019). Restrictive and nonrestrictive clauses-what's the difference? <https://www.grammarly.com/blog/using-that-and-which-is-all-about-restrictive-and-non-restrictive-clauses>.