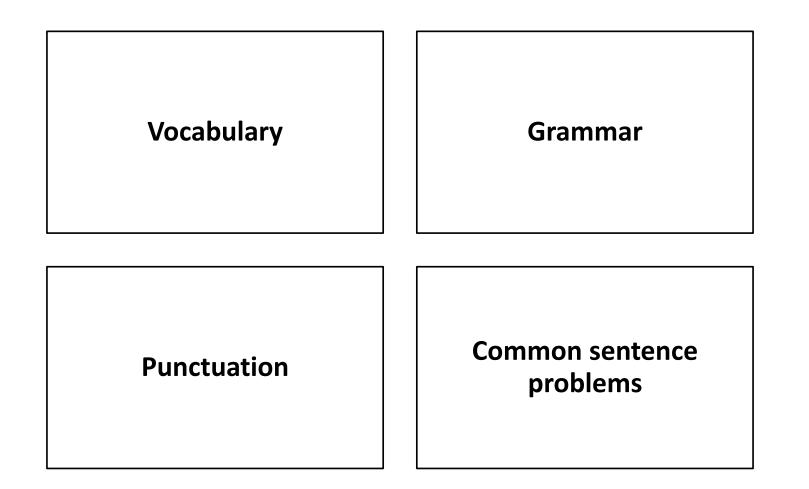# Common Mistakes in Scientific Writing

RWTH Aachen University
WRITING CENTER

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Selected categories

Vocabulary	**Grammar**
Punctuation	**Common sentence problems**

Common mistakes

Vocabulary

- confusables
- miscollocations
- pronouns

Grammar

- adverbs vs adjectives
- infinitives vs gerunds
- countables vs uncountables
- dangling modifier and infinitive

Punctuation

- apostrophes
- hyphens
- commas

Common sentence problems

- choppy sentences
- stringy sentences
- run-on sentences and comma splices

General recommendations

- tips
- editing toolbox

Avoid confusables!

"False friends"

✗ <u>Actual</u> studies show that nearly half of these investments will have to be made in developing countries.

✓ <u>Current</u> studies show that nearly half of these investments will have to be made in developing countries.

aktuell (GER) ≠ actual (ENG)

See https://www.smart-words.org/english-german/false-friends.html

Avoid confusables!

Identically pronounced words

✗ Discreet manufacturing is often characterized by individual or separate unit production.

✓ Discrete manufacturing is often characterized by individual or separate unit production.

discreet (diskret, dezent) ≠ discrete (eigenständig, getrennt)

See https://www.merriam-webster.com/words-at-play/discreet-discrete-definitions-examples

..... Vocabulary

Avoid confusables!

Similarly spelled words

X Flash floods strongly <u>effected</u> some communities but had no <u>affect</u> on others.

✓ Flash floods strongly <u>affected</u> some communities but had no <u>effect</u> on others.

affect (v.) ≠ effect (v.) ≠ effect (n.) ≠ affect (n.)

1. **affect (v.) = to have an influence on someone or something**
2. **effect (n.) = the result of a particular influence (effect on something)**
3. **effect (v.) = to cause something to happen (to effect a change; collocation)**
4. **affect (n.) = to refer to a display of emotion**

See https://www.merriam-webster.com/words-at-play/affect-vs-effect-usage-difference

Tag der wissenschaftlichen Arbeiten

Avoid miscollocations!

Some words occur together; others do not.

✗ It is questionable whether the lockdown has <u>realized</u> its <u>purpose</u>.

✓ It is questionable whether the lockdown has <u>achieved</u> its <u>purpose</u>.

~~**realize a purpose**~~ ▷ ▷ **achieve a purpose; fulfill a purpose**

Use a collocation dictionary! See https://ozdic.com

Avoid empty pronouns!

Avoid beginning sentences with pronouns such as it, they, and this without modification.

✗ Oxygen reacts with hydrogen to produce water. It helps us to survive.

✓ Oxygen reacts with hydrogen to produce water. Water helps us to survive.

~~it~~ ▷ ▷ **oxygen, hydrogen, or water? Be specific!**

See https://dictionary.cambridge.org/grammar/british-grammar/dummy-subjects

Tag der wissenschaftlichen Arbeiten

Adverbs vs adjectives

Adjectives modify nouns; adverbs modify verbs, adjectives, and other adverbs.

✗ A bridge crane lowers steel plates onto a production line that is positioned <u>diagonal</u> to the crane path.

✓ A bridge crane lowers steel plates onto a production line that is positioned <u>diagonally</u> to the crane path .

diagonal (adj.) ≠ diagonally (adv.)

See: <u>https://owl.purdue.edu/owl/general_writing/grammar/how_to_use_adjectives_and_adverbs/adjective_or_adverb.html</u>

Tag der wissenschaftlichen Arbeiten

Infinitives vs gerunds

Be mindful of verb patterns!

✗ The company finally <u>managed integrating</u> sustainability in its value chain.

✓ The company finally <u>managed to integrate</u> sustainability in its value chain.

~~**manage integrating**~~ ▷ ▷ **manage to integrate**

Check your dictionary for examples of correct usage! See https://www.merriam-webster.com/dictionary/manage

Countables vs uncountables

Countable nouns take plural forms; uncountable ones do not.

✗ Empirical <u>evidences</u> show that cooperation between public and private providers is on the rise.

✓ Empirical <u>evidence</u> shows that cooperation between public and private providers is on the rise.

"Evidence" is uncountable → Subject-verb (dis)agreement!

Use a dictionary that differentiates between countables (C) and uncountables (U). See, for example, https://dictionary.cambridge.org/dictionary/english/evidence

Tag der wissenschaftlichen Arbeiten

..... Grammar

Dangling modifier and infinitive

✗ **Flawed:** 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.

✓ **Better:** Using sarkosyl to induce nuclear run-on, we demonstrated that…

✓ **Better:** Using sarkosyl to induce nuclear run-on, it was possible to demonstrate that…

✗ **Flawed:** To prepare an NMR sample, the crystals were dissolved in CDCl3.

✓ **Better:** To prepare an NMR sample, we dissolved the crystals in CDCl3 .

✓ **Better:** With the goal of preparing an NMR sample, the crystals were dissolved in CDCl3 t.

See: https://www.hamilton.edu/academics/centers/writing/style/essentials/dangling-element

Apostrophes

Use an apostrophe with the possessive -s; do not use one with the possessive pronoun *its*.

✗ <u>Chinas</u> landscapes vary significantly across <u>it's</u> vast territory.

✓ <u>China's</u> landscapes vary significantly across <u>its</u> vast territory.

***Its* is a possessive pronoun. *It's* is the contracted form of *It is*. (FYI: avoid contractions in scientific writing!)**

See http://www.sussex.ac.uk/informatics/punctuation/apostrophe

Hyphen rules in English are different from those in German.

✗ <u>MIT-students</u> benefit from <u>state of the art</u> educational approaches.

✓ <u>MIT students</u> benefit from <u>state-of-the-art</u> educational approaches.

Hyphenate compound adjectives that precede nouns.

See http://www.sussex.ac.uk/informatics/punctuation/hyphenanddash/hyphen

Check your text for missing commas!

✗ Economists <u>on the other hand</u> emphasize incentives and organizations.

✓ Economists, <u>on the other hand</u>, emphasize incentives and organizations.

Use commas before and after any element inserted into an independent clause.

See http://www.sussex.ac.uk/informatics/punctuation/comma

..... Punctuation

Commas

- **The Irish, who depend on fishing, are angry.**

  commas = nonrestrictive relative clause = *All Irish are angry, and they all depend on fishing.*

- **The Irish who depend on fishing are angry.**

  no commas = restrictive relative clause = *Only the Irish who depend on fishing are angry.*

  The relative pronoun THAT is used in restrictive relative clauses only!

  What do you want to say?

See https://www.grammarly.com/blog/using-that-and-which-is-all-about-restrictive-and-non-restrictive-clauses/

..... Common sentence problems
Choppy sentences

Avoid writing too many short sentences in a row: choppy sentences create a choppy rhythm.

✗ The boy asked his father a question. The boy is five years old. The question was about death.

✓ The five-year-old boy asked his father a question about death.

Make sure your sentences vary in length!

See:https://owl.purdue.edu/owl/general_writing/academic_writing/sentence_variety/for_short_choppy_sentences.html

Stringy sentences

Overloaded sentences are difficult to read.

✗   The young male rats that were from the same colony as the rats with symptoms of the disease, but which do not show sign of the disease at this stage of their development were used as the control group.

✓   The symptom-free young male rats were used as the control group. These rats were from the same colony as the rats showing symptoms of the disease.

**Avoid overloading your sentences with too many "which" clauses, with too much information in parentheses, and with heavy beginnings (subjects).
One sentence, one main thought!**

See https://www.archives.gov/open/plain-writing/tips/breaking-up.html

Run-on sentences and comma splices

Punctuate compound sentences correctly!

✗ Run-on: We first set up the equipment then we measured the room temperature.
✗ Comma splice: We first set up the equipment, then we measured the room temperature.

✓ Add a period: We first set up the equipment. Then we measured the room temperature.
✓ Add a semicolon: We first set up the equipment; then we measured the room temperature.
✓ Add a coordinator: We first set up the equipment, and then we measured the room temperature.
✓ Add a subordinator: We set up the experiment before we measure the room temperature.

These mistakes interfere with efficient transmission of thought from writer to reader.

See http://www.butte.edu/departments/cas/tipsheets/grammar/run_ons.html

General recommendations …

- **Your paper must have a focus and a purpose.**

- **Use the active voice whenever appropriate. Write dynamically.**

- **You are allowed to use the first-person voice (we → we conducted an experiment); BUT confer with your advisor!**

- **Avoid long and convoluted sentences; a sentence should contain one main thought.**

- **Use precise and concise language without unnecessary embellishments.**

- **Make sure your paper flows smoothly and is easy to read and comprehend.**

- **Avoid using too many abbreviations. Don't be cryptic.**

- **Analyze and be confident in your scholarship.**

- **Make sure that your writing displays the necessary steps of reasoning.**

- **Add implications where appropriate, but do NOT generalize.**

- **Familiarize yourself with the appropriate style guide for your field.**

- **Include graphics (e.g., figures, tables) → Formatting! Style guides!**

- **Be sure to include a properly formatted reference list.**

Editing toolbox

- Dictionaries

    Cambridge Dictionary: www.dictionary.cambridge.org

    Merriam-Webster Online Dictionary and Thesaurus: www.merriam-webster.com

    Oxford Collocation Dictionary: www.ozdic.com

- Misc.

    Academic Phrasebank: www.manchester.phrasebank.ac.uk

    Guide to Punctuation: www.sussex.ac.uk/informatics/punctuation

    The Purdue Online Writing Lab: https://owl.purdue.edu

Contact details

- Writing Center

  https://www.sz.rwth-aachen.de/cms/SZ/~tvcrr/Schreibzentrum/

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