

Scientific Writing

APSU Writing Center Handout

Clear Sentence Structure in Scientific Writing

Scientific writing is technical communication between scientists.

Your audience is usually other researchers reading quickly and critically.

Clear sentence structure helps readers understand your ideas with less effort.

Principle 1: Put Actions in Verbs

Readers expect the main action of a sentence to appear in the verb.

Scientific writing often hides actions inside nouns called nominalizations.

A **nominalization** is a noun formed from a verb.

Action Verb

- to regulate
- regulation
- to analyze

Nominalization

- analysis
- to perform
- performance

Nominalizations are not always wrong, but overusing them can make sentences harder to read.

They are sometimes useful when summarizing previous ideas.

- **Unclear:** We performed an analysis of the data.
- **Clearer:** We analyzed the data.

- Here, the real action (analyze) is hidden in the noun analysis in the first sentence.
- **Useful nominalization:** We analyzed the data. This analysis revealed the need for additional experiments.

Principle 2: Put Characters in Subjects

Readers expect the main character (**actor**) in a clause to be found in the subject.

- **Unclear Example:** The **movement in the liquid medium** of the bacteria was accomplished by micro flagella.
- **Clear Example:** The **bacteria** move themselves in the liquid medium with micro flagella.

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

In the second sentence, the intended actor (**bacteria**) is the grammatical subject, which makes the sentence clearer and easier to read.

You can help readers follow your ideas by maintaining a logical flow of subjects in a paragraph.

Two ways to do this:

- Keep a common subject throughout a paragraph that focuses on a single topic.
- Shift subjects intentionally when the topic or focus changes.

Principle 3: Keep Subjects Near Verbs

Readers want to know two things quickly:

- Who is the sentence about?
- What are they doing?

When the subject and verb are far apart, readers must work harder to understand the sentence.

This often happens with long, complex subjects or long lists.

- **Example (long distance between subject and verb):** **Students** who completed the laboratory experiments, analyzed the data carefully, and compared the results to previous studies **demonstrated** a clear understanding of the methods.
 - The main subject (**Students**) is far away from the main verb (**demonstrated**), which can confuse readers.
- **Example (subject and verb closer):** **Students demonstrated** a clear understanding of the methods after completing the laboratory experiments, analyzing the data carefully, and comparing the results to previous studies.
 - Keep the subject and main verb close together, even if additional information comes later in the sentence.