Aalto University

Common pitfalls in (academic) writing

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Many are the pitfalls that await inexperienced and weary writers

- Organisation
- Language fluency
- Pre-planning
- Flow/ cohesion
- Grammatical accuracy
- Readability
- Research skills
- Correct register (style)

We'll only concentrate on the most common ones in the time allowed

Organisation

Flow/ cohesion

Readability

Organisation of the text is often the most common problem

When writing we need to be aware of two levels of text:

macro and micro

Macro: how the text is organised and connected at the **paragraph and sentence level**

Micro: how the text is organised and connected at the **sentence and word level**

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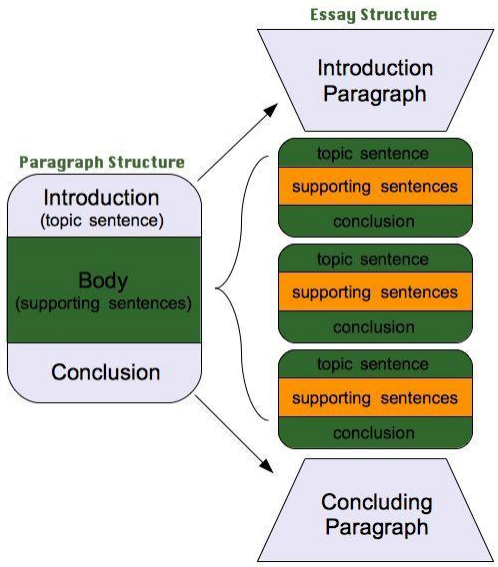
Macro organisational problems can mean the paragraphs don't function as they should



The typical five-paragraph essay

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Image source: http://scholarshape.com/blog/2013/8/28/the-paragraph-more-than-a-collection-of-sentences

A paragraph should contain the following elements:

- **Unity:** each paragraph has one single focus
- **Coherence:** ideas are easy to follow
  - logical bridges:
    - *The **same idea of a topic** is carried over from sentence to sentence*
    - *Successive sentences can be constructed in **parallel form***
  - verbal bridges:
    - ***Key words** can be repeated in several sentences*
    - ***Synonymous words or phrases** can be repeated in several sentences*
    - ***Pronouns** can refer to nouns in previous sentences*
    - ***Transition/ connecting words** can be used to link ideas from different sentences*
- **Topic sentences:** at the beginning of each paragraph, signals what main idea is discussed in the paragraph AND creates cohesion with previous
- **Adequate development:** topic should be fully and adequately discussed

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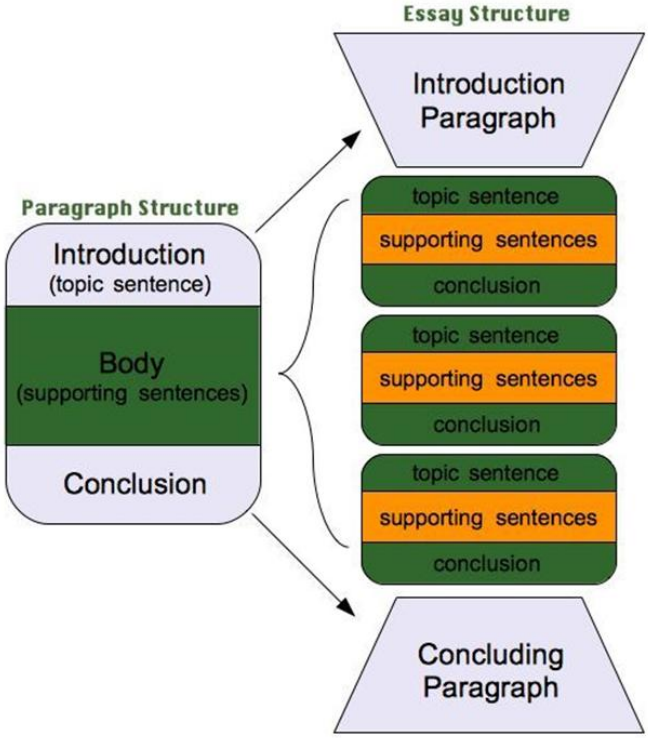
Source: https://owl.english.purdue.edu/owl/resource/606/01/



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At the micro level of organisation, writers might neglect the order of information

- **The optimal order of information in the form of noun phrases**
- For example, introducing **unknown information** before **familiar and known** information often causes confusion (è Given-New pattern)
- If a noun phrase is in 'Subject' position, it is often assumed it is the 'topical subject'

è These are often referred to as **principles of readability**

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Four key principles of readability

1. Put Familiar before New Information
2. Put 'Topical' Information in Subject Position (topic sentences)
3. Put "Light" NPs before "Heavy" NPs
4. Put Action into the Verb

Principle 1 & 2: Given-New & Topical info in subject position

[1]Commercial, space, and military markets are increasingly relying on sensors to monitor and improve system performance. [2]A growing subset of the sensor market is for systems that must operate at high temperatures to improve efficiency, reduce pollution, and control operation cost. [3]For example, engine pollution is reduced and brake wear and slippage are monitored using automobile engine and brake sensors [1]. [4]For oil drilling and mining, monitoring the drill wear requires temperature and position sensors on bits [2]. [5]Increasing efficiency and reducing pollution requires aircraft engine sensors [3]. [6]The detection of spacecraft damage requires spacecraft health monitoring sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

What is the topic?

[1]Commercial, space, and military **markets** are increasingly relying on sensors to **monitor** and improve system performance. [2]A growing subset of the sensor **market** is for systems that must operate at high temperatures to improve efficiency, reduce pollution, and control operation cost. [3]For example, engine pollution is reduced and brake wear and slippage **are monitored** using automobile engine and brake sensors [1]. [4]For oil drilling and mining, **monitoring** the drill wear requires temperature and position sensors on bits [2]. [5]Increasing efficiency and reducing pollution requires aircraft engine sensors [3]. [6]The detection of spacecraft damage requires spacecraft health **monitoring** sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

What is the topic?

markets? **monitoring?**

[1]Commercial, space, and military **markets** are increasingly relying on sensors to **monitor** and improve system performance. [2]A growing subset of the sensor **market** is for systems that must operate at high temperatures to **improve efficiency**, reduce pollution, and control operation cost. [3]For example, engine pollution is reduced and brake wear and slippage **are monitored** using automobile engine and brake sensors [1]. [4]For oil drilling and mining, **monitoring** the drill wear requires temperature and position sensors on bits [2]. [5]**Increasing efficiency** and reducing pollution requires aircraft engine sensors [3]. [6]The detection of spacecraft damage requires spacecraft health **monitoring** sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

What is the topic?

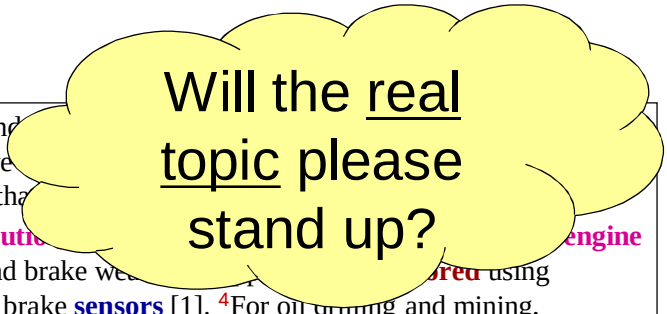
markets? **monitoring?** **improving efficiency?**

[1]Commercial, space, and military **markets** are increasingly relying on sensors to **monitor** and improve system performance. [2]A growing subset of the sensor **market** is for systems that must operate at high temperatures to **improve efficiency**, **reduce pollution**, and control operation cost. [3]For example, **engine pollution** is reduced and brake wear and slippage **are monitored** using automobile engine and brake sensors [1]. [4]For oil drilling and mining, **monitoring** the drill wear requires temperature and position sensors on bits [2]. [5]**Increasing efficiency** and **reducing pollution** requires aircraft engine sensors [3]. [6]The detection of spacecraft damage requires spacecraft health **monitoring** sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

What is the topic?

markets? **monitoring?** **improving efficiency?**

reducing pollution?



[1]Commercial, space, and military **markets** are increasingly relying on sensors to **monitor** and improve system performance. [2]A growing subset of the sensor **market** is for systems that must operate at high temperatures to **improve efficiency**, **reduce pollution**, and control operation cost. [3]For example, **engine pollution** is reduced and brake wear and slippage **are monitored** using automobile engine and brake **sensors** [1]. [4]For oil drilling and mining, **monitoring** the drill wear requires temperature and position **sensors** on bits [2]. [5]**Increasing efficiency** and **reducing pollution** requires aircraft engine **sensors** [3]. [6]The detection of spacecraft damage requires spacecraft health **monitoring sensors** [3]. [7]In each of these applications, hardwired **sensors** are currently used, but radio frequency (RF) communication with **the sensor** would greatly reduce the system weight and complexity.

What is the topic?

markets? **monitoring?** **improving efficiency?**

reducing pollution? **sensors?**

Which is the topical information?

[1]Commercial, space, and military **markets** are increasingly relying on **sensors** to **monitor** and improve system performance. [2]A growing subset of the **sensor market** is for systems that must operate at high temperatures to **improve efficiency**, **reduce pollution**, and control operation cost. [3]For example, **engine pollution** is reduced and brake wear and slippage **are monitored** using automobile engine and brake **sensors** [1]. [4]For oil drilling and mining, **monitoring** the drill wear requires temperature and position **sensors** on bits [2]. [5]**Increasing efficiency** and **reducing pollution** requires aircraft engine **sensors** [3]. [6]The detection of spacecraft damage requires spacecraft health **monitoring sensors** [3]. [7]In each of these applications, hardwired **sensors** are currently used, but radio frequency (RF) communication with **the sensor** would greatly reduce the system weight and complexity.

Which is the topical information?

[1]Commercial, space, and military **markets** are increasingly relying on sensors to monitor and improve system performance. [2]A growing subset of the sensor market is for systems that must operate at high temperatures to improve efficiency, reduce pollution, and control operation cost. [3]For example, engine pollution is reduced and brake wear and slippage are monitored using automobile engine and brake sensors [1]. [4]For oil drilling and mining, monitoring the drill wear requires temperature and position sensors on bits [2]. [5]Increasing efficiency and reducing pollution requires aircraft engine sensors [3]. [6]The detection of spacecraft damage requires spacecraft health monitoring sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

[1]…**markets** are increasingly relying on **sensors**…

GIVEN **NEW**

Which is the topical information?

[1]Commercial, space, and military **markets** are increasingly relying on **sensors** to monitor and improve system performance. [2]A growing subset of the sensor **market** is for systems that must operate at high temperatures to improve efficiency, reduce pollution, and control operation cost. [3]For example, engine pollution is reduced and brake wear and slippage are monitored using automobile engine and brake sensors [1]. [4]For oil drilling and mining, mo…ires temperature and position sensors on bits [2]. [5]In…ucing pollution requires aircraft engine sensors [3]. [6]The detection of spacecraft damage requires spacecraft health monitoring sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

subject

[1]…**markets** are increasingly relying on **sensors**…

[2]A growing subset of the **sensor market** ...

GIVEN

Which is the topical information?

[1]Commercial, space, and military **markets** are increasingly relying on **sensors** to monitor and improve system performance. [2]A growing subset of the sensor **market** is for systems that must operate at high temperatures to improve efficiency, …example, engine pollut… automob… monitorin… [5]Increasing… …sensors [3]. [6]The detection of spacecraft dam… …pacecraft health monitoring sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

The topic 'sensors' is hidden and in wrong position!

[1]…**markets** are increasingly relying on **sensors**…

[2]A growing subset of the **sensor market** ...

[3]For example, engine pollution… using automobile engine and brake **sensors**.

NEW **GIVEN**

Which is the topical information?

[1]Commercial, sp… …sors to monitor and… sensor m… improv… engine po… automobi… monitoring… …n bits [2]. [5]Increasing efficien… …ngine sensors [3]. [6]The detection of spacecraft dama… …pacecraft health monitoring sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication wit… …sensor would greatly reduce the system weight and complexity.

The topic 'sensors' is hidden and in wrong position!

Put topical info into "subject" position before the verb!

[1]…**markets** are increasingly relying on **sensors**…

[2]A growing subset of the **sensor market** ...

[3]For example, engine pollution… using automobile engine and brake **sensors**.

NEW **GIVEN**

…formation?

What changes would you make to sentences 3 - 6 to get topical info into "subject" position before the verb?

…increasingly relying on …f… …r…e. [2]A growing subset of …must operate at high temperatures to …, and control operation cost. [3]For example, engine pollution…ed and brake wear and slippage are monitored using automobile engine and brake sensors [1]. [4]For oil drilling and mining, monitoring the drill wear requires temperature and position sensors on bits [2]. [5]Increasing efficiency and reducing pollution requires aircraft engine sensors [3]. [6]The detection of spacecraft damage requires spacecraft health monitoring sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

NEW **GIVEN**

[4]… monitoring the drill wear … temperature and position sensors …

[5]Increasing efficiency …aircraft engine sensors

[6]The detection of spacecraft damage… spacecraft health monitoring sensors

Which is the topical information?

[3]For example, engine pollution is reduced and brake wear and slippage are monitored using automobile engine and brake sensors [1]. [4]For oil drilling and mining, monitoring the drill wear requires temperature and position sensors on bits [2]. [5]Increasing efficiency and reducing pollution requires aircraft engine sensors [3]. [6]The detection of spacecraft damage requires spacecraft health monitoring sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

[3]…engine pollution… using automobile engine and brake sensors.

NEW **GIVEN**

BETTER VERSION:

[3]For example, automobile engine and brake **sensors** are required to reduce engine pollution and to monitor brake wear and slippage.

Which is the topical information?

[3]For example, automobile engine and brake sensors are required to reduce engine pollution and to monitor brake wear and slippage [1]. [4]For oil drilling and mining, monitoring the drill wear requires **temperature and position** sensors on bits [2]. [5]Increasing efficiency and reducing pollution requires aircraft engine sensors [3]. [6]The detection of spacecraft damage requires spacecraft health monitoring sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

[4]… monitoring the drill wear … temperature and position sensors … [2].

NEW **GIVEN**

BETTER VERSION:

[4]Temperature and position **sensors** on bits for oil drilling and mining **are required** to monitor the drill wear [2].

Which is the topical information?

[3]For example, automobile engine and brake sensors **are required** to reduce engine pollution and to monitor brake wear and slippage [1]. [4]Temperature and position sensors on bits for oil drilling and mining **are required** to monitor the drill wear [5]Increasing efficiency and reducing pollution requires **aircraft engine** sensors [3]. [6]The detection of spacecraft damage requires spacecraft health monitoring sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

[5]Increasing efficiency … aircraft engine sensors [3].

NEW **GIVEN**

BETTER VERSION:

[5]Aircraft engine **sensors** **are required** to increase efficiency and reduce pollution [3].

Which is the topical information?

[3]For example, automobile engine and brake sensors **are required** to reduce engine pollution and to monitor brake wear and slippage [1]. [4]Temperature and position sensors on bits for oil drilling and mining **are required** to monitor the drill wear [5]Aircraft engine sensors **are required** to increase efficiency and reduce pollution [3]. [6]The detection of spacecraft damage requires spacecraft health monitoring sensors [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

[6]The detection of spacecraft damage… spacecraft health monitoring sensors [3].

NEW **GIVEN**

BETTER VERSION:

[6]Spacecraft health monitoring **sensors** are required to detect spacecraft damage [3].

Which is the topical information?

[3]For example, automobile engine and brake sensors **are required** to reduce engine pollution and to monitor brake wear and slippage [1]. [4]Temperature and position sensors on bits for oil drilling and mining **are required** to monitor the drill wear [5]Aircraft engine sensors **are required** to increase efficiency and reduce pollution [3]. [6]Spacecraft health monitoring sensors **are required** to detect spacecraft damage [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

[7]…hardwired sensors …, but … communication with the sensor...

GIVEN **GIVEN**

Which is the topical information?

[3]For example, automobile engine and brake sensors **are required** to reduce engine pollution and to monitor brake wear and slippage [1]. [4]Temperature and position sensors on bits for oil drilling and mining **are required** to monitor the drill wear [5]Aircraft engine sensors **are required** to increase efficiency and reduce pollution [3]. [6]Spacecraft health monitoring sensors **are required** to detect spacecraft damage [3]. [7]In each of these applications, hardwired sensors are currently used, but radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

Which version do you prefer? A or B? Why?

A [7]Although each of these applications currently uses hardwired sensors, radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

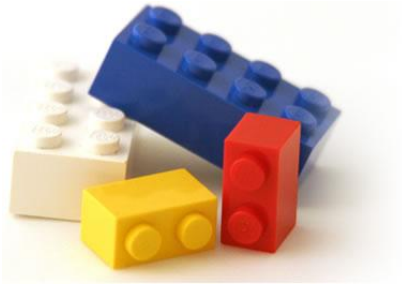
B [7]Although hardwired sensors are currently used for each of these applications, radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

Is this a better version?

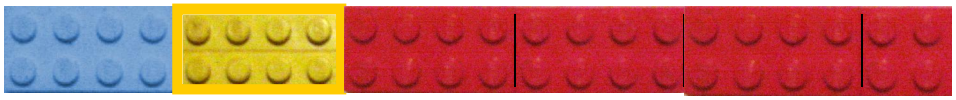
[3]For example, automobile engine and brake sensors **are required** to reduce engine pollution and to monitor brake wear and slippage [1]. [4]Temperature and position sensors on bits for oil drilling and mining **are required** to monitor the drill wear [5]Aircraft engine sensors **are required** to increase efficiency and reduce pollution [3]. [6]Spacecraft health monitoring sensors **are required** to detect spacecraft damage [3]. [7]Although hardwired sensors are currently used for each of these applications, radio frequency (RF) communication with the sensor would greatly reduce the system weight and complexity.

- Keeps the **focus** on the topic of the paragraph
- Creates paragraph **unity**.

Principle 3



Put "Light" NPs Before "Heavy" NPs



Put "Light" before "Heavy"

[1]We have received and acted upon requests for equipment from several branch offices. [2]**We have sent the research, development, and testing office in Chicago a gas analyzer**.

W
e **have sent** **the research, development, and testing office in Chicago**
Indirect object
a gas analyzer.
Direct object

We have sent **a gas analyzer**
Direct object

to **the research, development, and testing office in Chicago**
Object of Preposition

There are limits to Human Info Processing: 7 ± 2 items

1 2 3 4 5 6 7 8 9 10 11

We have sent **the research, development, and testing office in Chicago**
12 13 14 **Indirect object**

a gas analyzer.

BETTER:

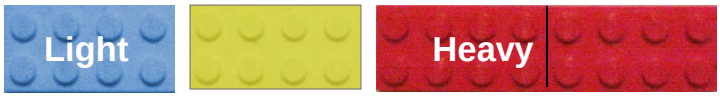
1 2 3 4 5 6 7 8 9 10
We have sent **a gas analyzer** **to the research, development,**
Direct object **Object of Preposition**
11 12 13 14 15
and testing office in Chicago

Avoid top-heavy subjects & ending with a verb!

The idea of designing an economical AM/FM receiver that is both affordable for the average consumer and profitable for the company was presented.

SUBJECT (= 23 words)

BETTER:



1 2 3 4 5 6 7 8

This study presents the design of an economical AM/FM receiver

9 10 11 12 13 14 15 16 17 18

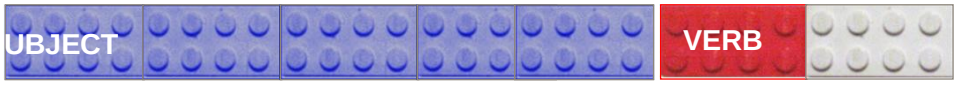
that is both affordable for the average consumer and profitable for the company

Balancing Information Elements

BEST!

ACCEPTABLE ***(if subject not too long)***

BAD!

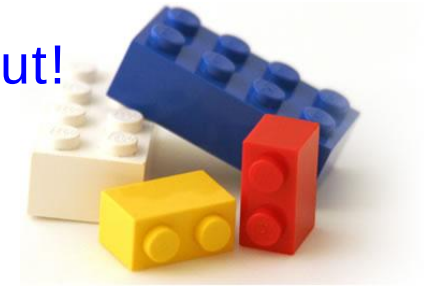


WORST!!

Quick check of a peer's text

Has *your neighbour* created any top-heavy sentences with more than 5-7 words before the main verb? Or have any sentences needlessly ending in a verb?

5 min to check and point them out!

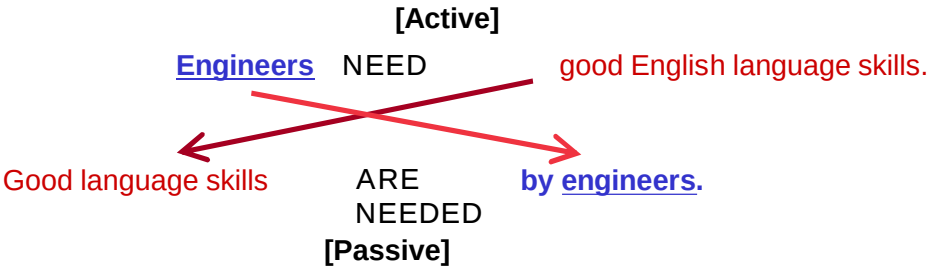


Strategies to reorder information

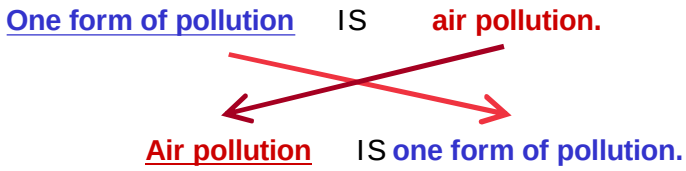
1. **Passive-Active Shift**
2. **Equative Shift**
3. **Animate-Inanimate Shift**
4. **Personal-Impersonal Shift**
5. **Means-Purpose Shift**
6. **Introductory *"It"***
7. **Existential *"There"***
8. **Resultative –ing clause**
9. **Purpose clause**
10. **Split relative clause**
11. **Nominalization**
12. **When + -ing**
13. **Reorder clauses**
14. **Default subject**

We will look at only a few selected ones in the next few slides

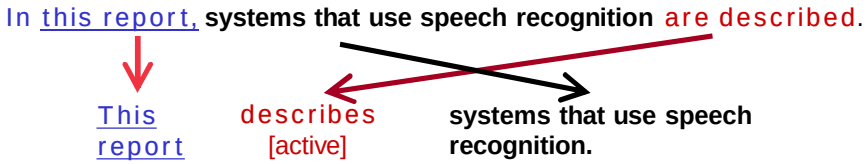
1. Passive-Active Alternation



2. Equative Shift

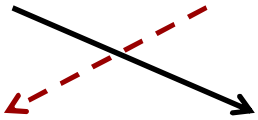


3. Animate-Inanimate Shift



8. Resultative –ing (*so that* à *thus* + -ing)

… forms an EM field, so that the vibration of the atoms is slowed.



The laser light forms an EM field, thus slowing the vibration of the atoms.

9. Purpose clause (*so that* ---> *to* infinitive)

… algorithm clones a procedure, so that the code can be optimized.

...algorithm selectively clones a procedure to optimize the code.

10. Split relative clause (*that / which*)

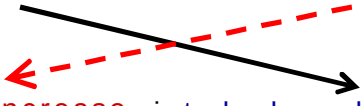
An algorithm that can facilitate fast image browsing is proposed.

An algorithm is proposed that can facilitate fast image browsing.

11. Nominalization (verb è noun)

Putting the **ACTION into the VERB**

Health experts fear that technology addiction will increase.

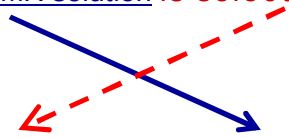


Health experts fear an increase in technology addiction.

[noun]

12. *When / before / after* + -ing

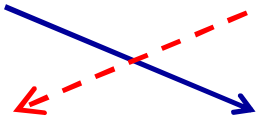
… is an important factor when a PMR solution is selected.



… is an important factor when selecting a PMR solution.

13. Reorder clauses

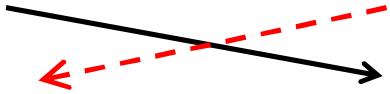
Various algorithms to generate testing automata have been developed.



Various algorithms have been developed to generate testing automata.

14. Find a Default Subject

Many gesture measuring devices for computer input have been devised.



Many researchers have devised gesture measuring devices for...

Interested in seeing the rest of the strategies? Go to http://sana.aalto.fi/awe/cohesion/infostrux/light/strategies/index.html

Principle 4: Put ACTION into the verb!

Putting action into the verb means…

- avoiding unnecessary **nominalisations** (using noun forms)
- avoiding over-use of **'weak' verbs**

Take a look at the sentences. What's the verb? What action is the sentence describing?

1. An analysis of the data was done by the team.
2. Ecosystem destabilization can be the consequence of species invasion.
3. The indication of the results was that pH controlled the rate.

1. An **analysis** of the data **was done** by the team.
2. Ecosystem **destabilization** **can be** the consequence of species invasion.
3. The **indication** of the results **was** that pH controlled the rate.

Unnecessary nominalizations!

The action is "hiding" in a noun (also known as a "nominalization")

So, how would you improve these sentences?

…by avoiding nominalisations

- An analysis was done by the team.
  - The team **analysed** the data
- Ecosystem destabilization can be the consequence of species invasion.
  - Species invasion **can destabilize** ecosystems.
- The indication of the results was that pH controlled the rate.
  - The results **indicated** that pH controlled the rate.

What's wrong with nominalisations?

Unnecessary / over-used nominalizations can…

- make sentences **less concise**
- make actions **less precise**
- make sentences **difficult to understand**
- make **reading boring**!

…by avoiding weak verbs

- "**to be" verbs** (and verbs like "to have", "to do", "to make") are often over-used even though more active verbs may be more appropriate
- **writers use the passive voice more than necessary**
- the verb "to be" suggests passivity because it connects two entities that are essentially **equal.** The phrase "A is B" essentially means "A equals B." The relationship between A and B is **static**.

Source: http://webaim.org/techniques/writing/#weak

Weak verbs: example

Weak verb ("is"):

One way to improve your writing *is* to use strong verbs.

A = B

One way to improve your writing = to use strong verbs

è The equal relationship between the two parts of the sentence implies no action.

Strong verb ("improve"):

Using stronger verbs can *improve* your writing.

A **improves** B

è The subject of the sentence ("using stronger verbs") performs the action of improving the object of the sentence ("your writing").

Source: http://webaim.org/techniques/writing/#weak

Quick check of own text

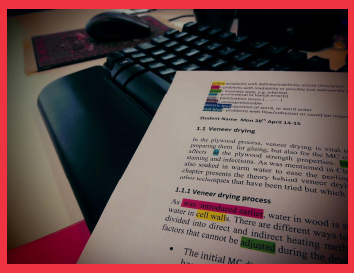
Look at your own text: Have you used **'weak' verbs or structures,** such as

- verbs: forms of be, have, do, make…
- Structures: there is/are, it is/are

Or unnecessary nominalisation?

5 min to check and highlight them for later!

Any other questions about writing?



Make use of the Writing Clinic services!

- Consultation with an experienced tutor via MyCourses/ Writing Clinic booking (https://mycourses.aalto.fi/course/view.php?id=405)
- Quick questions via email: writingclinic@aalto.fi