

Clear Scientific Writing: Tools for the Writing Process

PART 2

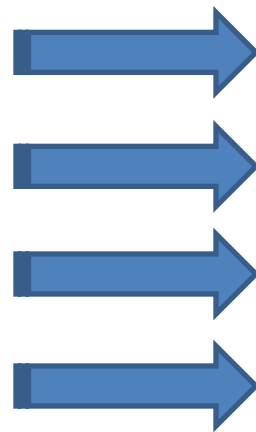
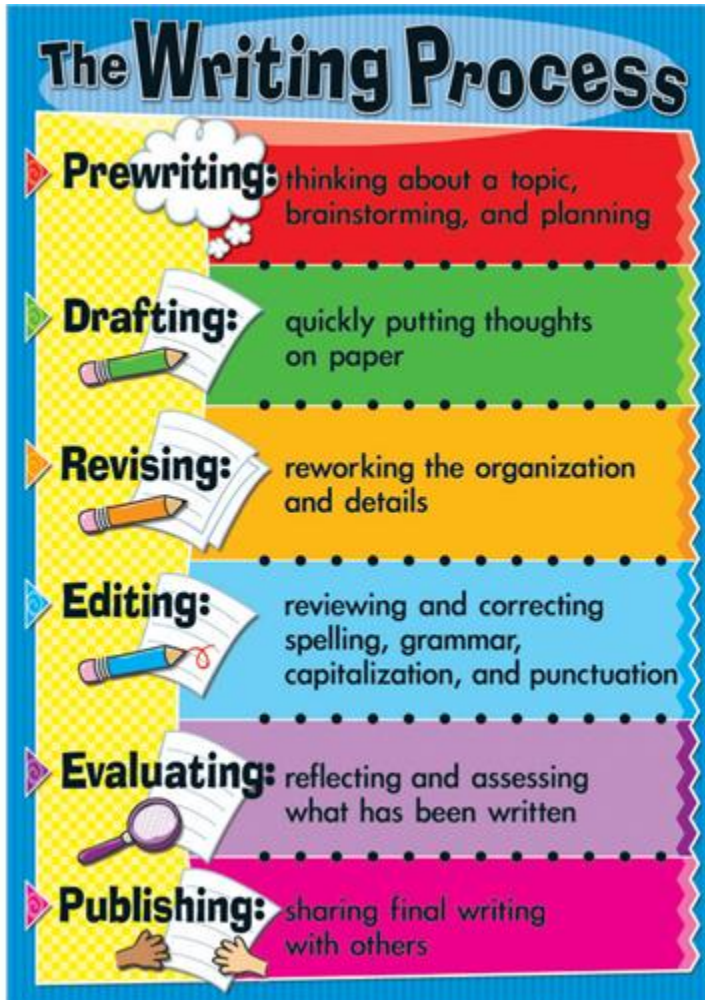
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Writing is a Process

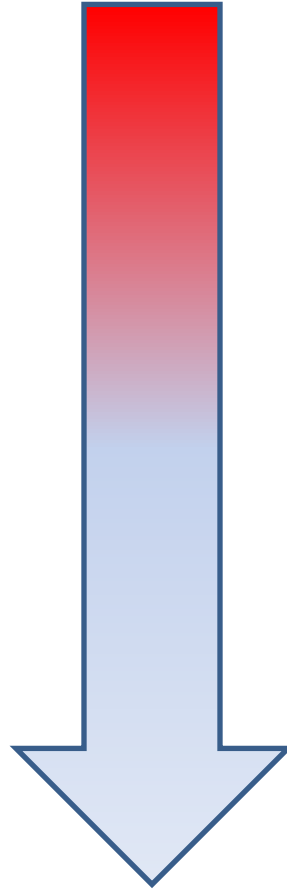


Editing & Proofreading are important parts of the process

Game Plan: Two Lectures

Last Time:
Higher order
writing
concerns

Today:
Lower order
writing
concerns



- Audience/Purpose
- Thesis
- Paragraph Development
- Organization
- **Transitions**
- Clarity/Conciseness
- Punctuation
- Word choice
- Spelling

Transitions Signal Connections

between paragraphs, sentences, and words

- Explicit
 - Tells you “go this way” through specific words and phrases
- Implicit
 - Direction is inferred through less direct ways of signaling relationships

TOOL #1: Transitions

Explicit

(modified from Diana Hacker, *A Writer's Reference*)

To show addition: again, and, also, besides, equally important, first (second, etc.), further, furthermore, in addition, in the first place, moreover, next, too

To give examples: for example, for instance, in fact, specifically, that is, to illustrate, even, namely, specifically,

To compare: also, in the same manner, likewise, similarly

To contrast: although, and yet, at the same time, but, despite, even though, however, in contrast, in spite of, nevertheless, on the contrary, on the other hand, still, though, yet

To concede: granted, naturally, of course

To generalize: as a rule, as usual, for the most part, generally, generally speaking, ordinarily, usually

To emphasize: certainly, indeed, in fact, of course

To summarize or conclude: all in all, in conclusion, in other words, in short, in summary, on the whole, that is, therefore, to sum up

To show time: after, afterward, as, as long as, as soon as, at last, before, during, earlier, finally, formerly, immediately, later, meanwhile, next, since, shortly, subsequently, then, thereafter, until, when, while, once

To show place or direction: above, below, beyond, close, elsewhere, farther on, here, nearby, opposite, to the left (north, etc.)

To indicate logical relationship (cause and effect, etc.): accordingly, as a result, because, consequently, for this reason, hence, if, otherwise, since, so, then, therefore, thus

<http://www.longleaf.net/ggrows/transitionchart.html>

TOOL #1: Transitions

Implicit

INFERRED RELATIONSHIPS CREATED BY:

- Using topic sentences
- Repeating key words and phrases
- Creating parallel structure
 - Use same grammatical structure
 - Use same parts of speech (noun, verb, conjunction, etc.)
- Being consistent in POV, tense, and number
- Moving from old to new information

Exercise 1: Identifying Transitions

- Examine the paragraph below. Identify the occasions when the writer uses
 - Parallel structure
 - Repetition of key words/phrases
 - Transitional words



The ancient Egyptians were masters of preserving dead people's bodies by making mummies of them. In short, mummification consisted of removing the internal organs, applying natural preservatives inside and out, and then wrapping the body in layers of bandages. And the process was remarkably effective. Indeed, mummies several thousand years old have been discovered nearly intact. Their skin, hair, teeth, fingernails and toenails, and facial features are still evident. Their diseases in life, such as smallpox, arthritis, and nutritional deficiencies, are still diagnosable. Even their fatal afflictions are still apparent: a middle-aged king died from a blow on the head; a child king died from polio.

Exercise 1: Identifying Transitions

- Parallel structure
- *Repetition of key words/phrases*
- **Transitional words**

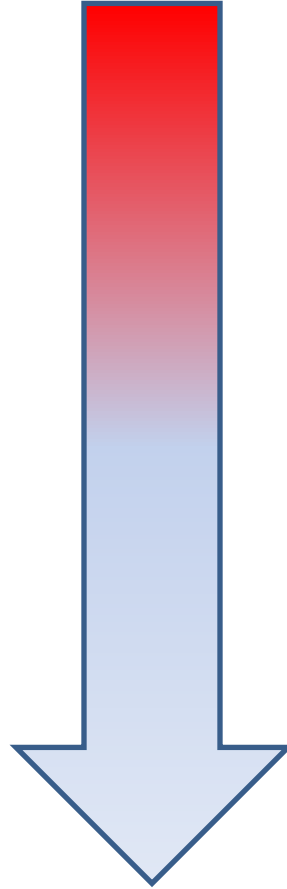


The ancient Egyptians were masters of preserving dead people's bodies by *making mummies* of them. **In short**, *mummification* consisted of removing the internal organs, applying natural preservatives inside and out, and then wrapping the body in layers of bandages. **And** the process was remarkably effective. **Indeed**, *mummies* several thousand years old have been discovered nearly intact. *Their* skin, hair, teeth, fingernails and toenails, and facial features are still evident. *Their* diseases in life, such as smallpox, arthritis, and nutritional deficiencies, are **still** diagnosable. **Even *their*** fatal afflictions are **still** apparent: a middle-aged king died from a blow on the head; a child king died from polio.

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Clarity

Tool #2 'Top Left' Subject and Verb

- Location
 - Beginning of paragraph
 - Beginning of sentence
- Most important information goes here
 - Make the subject the subject
 - Make the verb the verb



Correct Example: My mother and I drove the car to Dallas.

Incorrect Example: The car was driven to Dallas by me and my mother.

Disclaimer: The incorrect example is not incorrect if you wanted to emphasize the car as the subject of the sentence.

Exercise #2: Subjects and Verbs

Make the subject the subject

- Smartphone probes are in the spotlight recently. Comparing with traditional methods which are using fixed-location sensing infrastructures, for instances, inductive loop detectors, radars or video cameras, it has lower cost, higher scalability

Exercise #2: Subjects and Verbs

- Smartphone probes are in the spotlight recently.

Comparing with traditional methods which are using fixed-location sensing infrastructures, for instances, inductive loop detectors, radars or video cameras, it has lower cost, higher scalability.



Exercise #2: Subjects and Verbs

Make the subject the subject (Rewrite)

- Smartphone probes have been in the spotlight recently. They cost less and scale better than traditional methods that use fixed location sensing infrastructures such as inductive loop detectors, radars, or video cameras.



Tool #3 Concision



- *Eliminate vague words*, replace with specific ones
 - Wordy: The politician talked **about several of the merits of** afterschool programs in his speech (14 words)
 - Concise: The politician **touted** after-school programs in his speech. (11 words)
- *Change phrases* into single-words and adjectives
 - Wordy: The employee **with ambition**... (4 words)
 - Concise: The **ambitious** employee... (3 words)
- *Change unnecessary that, who, and which clauses* into phrases
 - Wordy: The report, **which was released recently**... (6 words)
 - Concise: The **recently released** report... (4 words)
- *Change Passive Verbs* into Active Verbs
 - Wordy: An account **was opened by** Mrs. Simms. (7 words)
 - Concise: **Mrs. Simms opened** an account. (5 words)

Taken from <https://owl.english.purdue.edu/owl/resource/572/01/>

Taken from <https://owl.english.purdue.edu/owl/resource/572/03/>

TOOL #3: CONCISION

- Edit for efficiency
- Learn **CPR**:

Concision

Precision

Revision



TOOL #3: CONCISION

Concision - begin by cutting the needless and virtually meaningless words

Examples: 'in a variety of ways' 'in terms of'



Precision - the key to making a paragraph's meaning more precise is to choose clear, meaningful, representative nouns place them at the head of each sentence, and follow them with verbs that describe each noun's meaning in the sentence.

Revision- once you have made the writing more concise and precise, revise the work

Exercise #3: Concision (CPR)

Read this paragraph and use CPR to make it more concise

Increasing foreign competition and technological change, in a variety of forms, are now, as they always have been, disrupting various well-established patterns in terms of industrial organization. An apparent growing quality in the upward movement of economic change is also causing geographers' interest in regional adjustment problems to grow as well: problems that often focus concern on regional economic decline in a context of low rates of national productivity improvement, on loss of international competitiveness in sectors such as automobiles and primary metals.

Exercise #3: Concision (CPR) applied

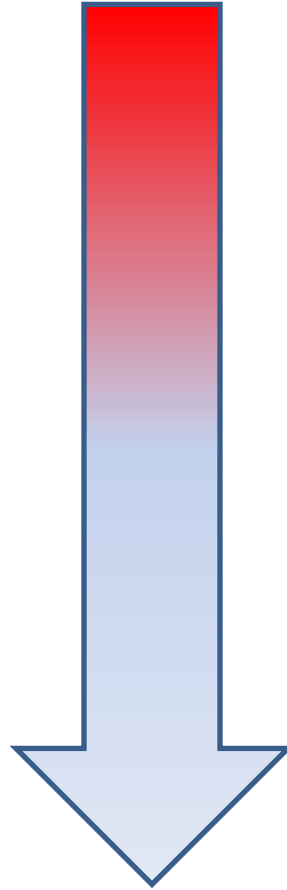
Paragraph with CPR applied

Recently, increasing foreign competition and technological change have disrupted well-established patterns of industrial organization. This acceleration in economic change has heightened geographers' interest in regional adjustment problems, drawing attention to regional economic decline in such sectors as automobiles and primary metals. Regional economic decline often manifests itself through low rates of national productivity improvement and a loss of international competitiveness.

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TOOL #4: Editing

- Take a break before reading
- Read out loud slowly
- Print it out (or expand on screen)
- Read it backwards sentence-by-sentence
- Ask someone to read out loud for you while you read silently
- Use Grammarly
- Make a writing consultation

Tool #5: Recognize Patterns of Errors

1. Avoid Nominalized Verbs – use of a verb, adjective, or adverb as a noun makes the sentence more wordy

Nominalized sentence: *The **experience** of children with respect to being at school for the first time is common.*

Non-nominalized sentence with subject and verb at front of sentence:
*Many **children experience** worries when they go to school for the first time.*

2. Avoid the misuse of colons – colons connect two independent clauses (where you could replace the colon with the word because); or they connect an independent clause with a list

Example: *He got what he worked for: he really earned that promotion*

Example: *You may be required to bring many things: sleeping bags, pans, utensils, and warm clothing.*

TOOL #5: Use Resources

There are several great grammar resources available to students who are native and non-native English speakers.

The OWL at Purdue has lots of mini-lessons and quizzes once you have identified your pattern of error



<https://owl.english.purdue.edu/exercises/>

Conclusion

- Incorporate these 5 tools into your writing process
 - Transitions: explicit and implicit transitions
 - Clarity: ‘top-left’ subjects and verbs
 - Concision: Learn CPR
 - Editing (punctuation, spelling, grammar)
 - identify patterns of error, practice with resources
- Learn how to self-assess a piece of writing
- Examine your writing process

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