

# Clear Scientific Writing: Tools for the Writing Process, Part 2

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# Writing is a Process



**EDITING**

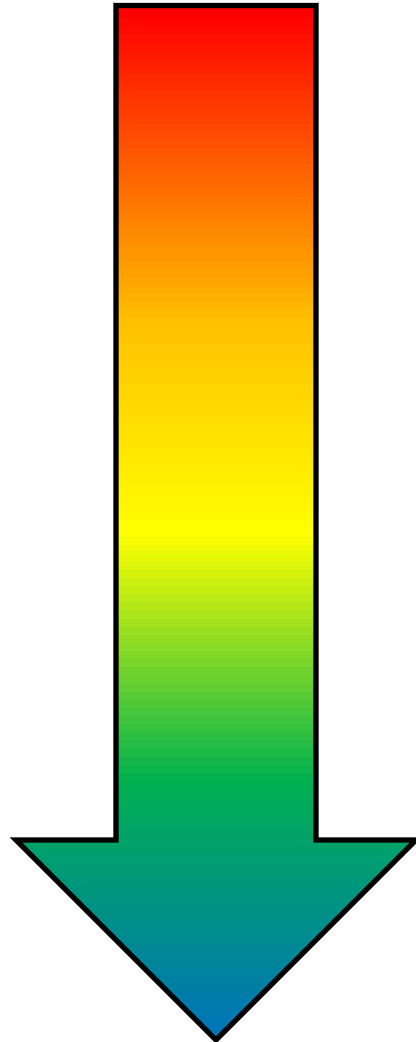


**PROOFREADING**

# 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
  - Words and phrases
  - Tell you “go this way”
- Implicit
  - Patterns of coherence
  - Direction is inferred



# TOOL #1: TRANSITIONS

## Patterns of Organization

- In *A Writer's Reference*, Diana Hacker talks about "patterns of organization"
- When you have a pattern:
  - (Writer) You can predict what will come next
  - (Reader) You can understand where you were coming from

examples and illustrations	narration	description
process	comparison and contrast	chronology
cause and effect		

**Type of pattern can determine  
type of transition**

# TOOL #1: TRANSITIONS

## Explicit Transitions

(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

# TOOL #1: TRANSITIONS

## Implicit Transitions

### **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

Time: 5 minutes

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.



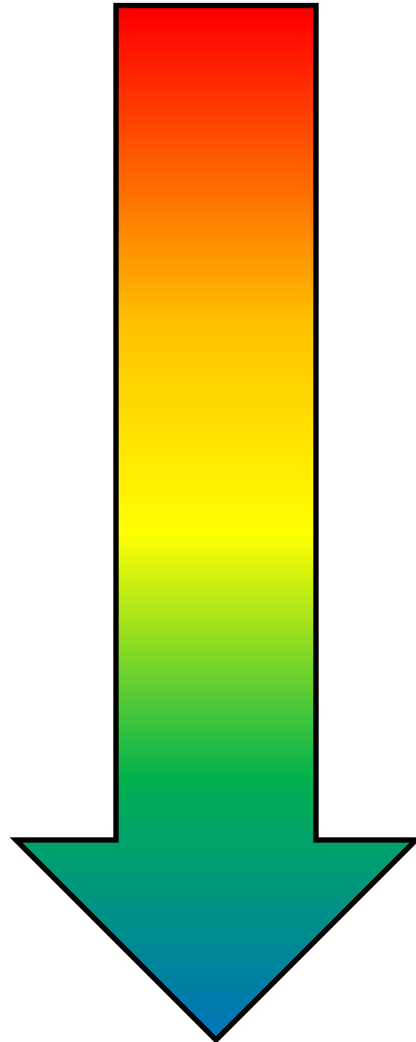
# Exercise #1: Identifying Transitions

- 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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# TOOL #2: CLARITY

## “Top Left” Subject and Verb Prime real estate in writing

### – Location

- Beginning of paragraph
- Beginning of sentence

### – Most important information goes here

- Make the subject the subject
- Make the verb the verb

When a mother and daughter are found brutally murdered in 19th century Baltimore, Detective Emmett Fields (Luke Evans) makes a startling discovery: the crime resembles a fictional murder described in gory detail in the local newspaper—part of a collection of stories penned by struggling writer and social pariah Edgar Allan Poe. But even as Poe is questioned by police, another grisly murder occurs, also inspired by a popular Poe story. Realizing a serial killer is on the loose using Poe's writings as the backdrop for his bloody rampage, Fields enlists the author's help in stopping the attacks. But when it appears someone close to Poe may become the murderer's next victim, the stakes become even higher and the inventor of modern detective story calls on his own powers of deduction to try to solve the case before it's too late. The killer is Ivan (played by Sam Hazeldine) who works as a typesetter in the offices of the Baltimore Patriot, which is a newspaper where Poe attempts to have his work published. During the period in which the film is set, Poe's great works are all long behind him and he's reduced to churning out critiques of other poets' works (such as Longfellow) to eek out drinking money from the editor of the paper (who keeps pressing Poe to write more of his gory works about the supernatural and murders, since those are what people clamor for...and since the editor's obsession with gruesome things is a red herring that later makes the audience think the editor is the killer when it's actually the typesetter). Ivan became an obsessed fan who later admits to going crazy when Poe stopped writing since Ivan needed his fix of gruesome fiction -- and in that time period, Poe was the only writer who delved into the macabre and deranged in this fashion.



# Exercise #2: Subjects and Verbs

Make the subject the subject

- Smartphone probes is on the spotlight in recent five years. 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.



**Where's the  
prime real  
estate??**

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- Smartphone probes is on the spotlight in recent five years. 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.

Is this a subject?

# Exercise #2: Subjects and Verbs

Make the subject the subject (and the verb the verb)

- Smartphone probes is on the spotlight in recent five years. 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.

Is this a subject?

The REAL subject!

# Exercise #2: Subjects and Verbs

Make the subject the subject (Rewrite)

- Smartphone probes have been in the spotlight for the past five years. 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

## Video Suggestions

- Edit for efficiency
- <https://youtu.be/iLzOvQUQEM4?t=1m40s>
- Eliminate the following:
  - Redundant words/ideas
  - Elevated phrases/languages
  - Unnecessary qualifiers

Taken from <http://writingcommons.org/index.php/open-text/writing-processes/edit/97-edit-for-economy>

# TOOL #3: CONCISION

## Additional Suggestions

- *Eliminate vague words*, replace with specific ones
  - **Wordy**: The politician talked **about several of the merits of** after-school 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)

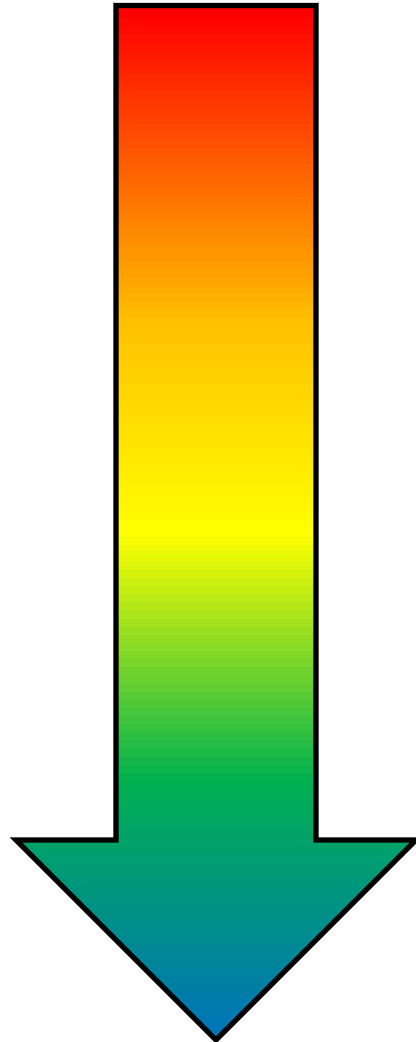
Taken from <https://owl.english.purdue.edu/owl/resource/572/01/>

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

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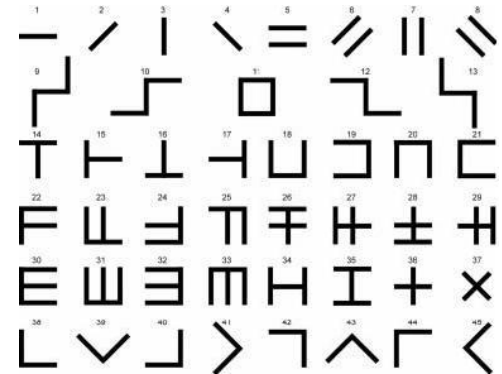
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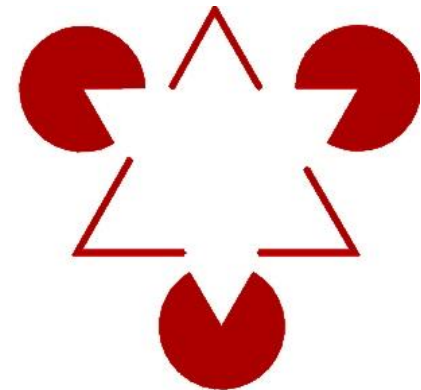
# Our Brains Recognize Patterns



**ADVANTAGE: prediction**



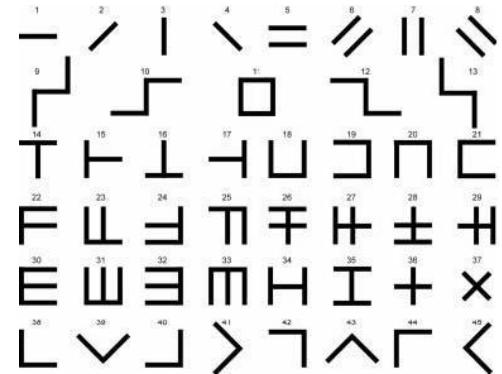
**DISADVANTAGE: blind spots**



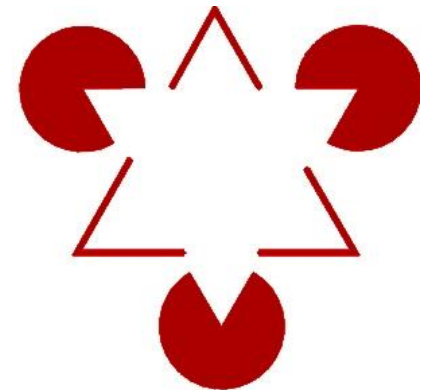
# Our Brains Recognize Patterns



**ADVANTAGE: prediction**



**DISADVANTAGE: blind spots**



**We tend to see what we *meant to write*, not what we *actually wrote*.**

# TOOL #4:EDITING

## Divorce yourself from the writing

- 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 a text-to-speech converter to de-familiarize the words
- Sample editing:  
<https://youtu.be/BTqjOLXhmT0?t=3m7s>

# TOOL #5: EDITING

## Recognize patterns of error

- I consistently saw:
  - Nominalized verbs
    - “Analysis” → “Analyze”
    - “Evaluation” → “Evaluate”
    - “Assembly” → “Assemble”
  - Misuse of colons (:)
    - Connect two independent clauses (where you could replace with the word “because”)
    - Connect independent clause and a list
- Recognize *your* patterns of error and focus on those first

# Conclusions

- Incorporate these 5 tools into your writing process
  - Transitions: patterns of organization, examples of explicit/implicit transitions
  - Clarity: “top left” subjects and verbs
  - Concision: eliminating wordiness
  - Editing: divorcing yourself from the writing
  - Editing: recognizing patterns of error
- Learn how to self-assess a piece of writing
- Examine your writing process



# Something to Think About

“The best people in any field are those who devote the most hours to what researchers call “deliberate practice.” It’s activity that’s explicitly intended to improve performance, that reaches for objectives just beyond one’s level of competence, provides feedback on results and involves high levels of repetitions....More deliberate practice equals better performance. Tons of it equals great performance.”

-Geoff Colvin

Any Questions?