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

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Writing is a Process

The Writing Process

- **Prewriting:** thinking about a topic, brainstorming, and planning
- **Drafting:** quickly putting thoughts on paper
- **Revising:** reworking the organization and details
- **Editing:** reviewing and correcting spelling, grammar, capitalization, and punctuation
- **Evaluating:** reflecting and assessing what has been written
- **Publishing:** sharing final writing with others

Arrow pointing to "Editing" and "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

<table>
<thead>
<tr>
<th>examples and illustrations</th>
<th>narration</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>process</td>
<td>comparison and contrast</td>
<td>chronology</td>
</tr>
<tr>
<td>cause and effect</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 *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 eke out drinking money from the editor of the paper (who keeps pressuring 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??
Exercise #2: Subjects and Verbs

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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

• [link](https://youtu.be/iLzOvQUQEM4?t=1m40s)

• Eliminate the following:
  – Redundant words/ideas
  – Elevated phrases/languages
  – Unnecessary qualifiers

TOOL #3: CONCISIION

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)
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✓ Word choice
✓ Spelling
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](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?