

Source Types and Paragraphs

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BIO153

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(A very little bit of) Rhetorical theory

Writing, like using tools, is something we do in order to do things

- Tools are typically used to do things that affect the world around us
- Writing is typically used to do things that affect the people around us (and then those people affect the world)
- We don't just "use tools": we choose specific approaches to writing for specific tasks, and sometimes we need to be EXTREMELY precise about how we write, depending on the task
- We don't choose what tool to use without considering what we will use it on and what changes we want to create in that thing
- Similarly, to identify how and what we want to write, we need to identify the audience of the writing and how we hope to affect the audience
- To understand what we're reading, we need to understand the audience and purpose it was written for
- If we try to "read" a paintbrush as a hammer, things will probably not go well

Source Types

Three classic source types:

- Primary, secondary, tertiary
- Defined based on originality and proximity
- Where are places that you could find a sample of each?
- Why would someone write a primary source? A secondary source? A tertiary source? If they are tools, what are the jobs that they are supposed to do?

Types of Sources

Primary	<p>Research and Development A researcher makes a discovery, develops a product, or a new methodology, etc.</p>
	<p>Invisible College, e-mail, Colleagues Information about the research goes out to the “invisible college”; results/discussion is shared with the colleagues who work with the researcher, individuals in contact with the researcher via email, etc.</p>
	<p>Conference (Proceedings/preprint), Research/Technical Report The researcher presents findings at a conference or writes a research report</p>
	<p>Journal Article The findings is published in a scholarly/peer-reviewed journal. Journal articles become secondary sources when they are review articles</p>
Secondary	<p>Indexing (e.g., Medline) With the growing availability of electronic publishing, the indexing of some scholarly journals and conference proceedings can occur before the article is published in print, though there are some that may take longer to be indexed (e.g., foreign publications)</p>
	<p>Book/Textbook This research finding may be published later in book form</p>
Tertiary	<p>Summarization: Encyclopedia, Almanacs, Bibliographies After several years, the finding could be summarized for an encyclopedia, manual, or almanac</p>

1. What type of source is this? How do you know?

The caspases are unique proteases that mediate the major morphological changes of apoptosis and various other cellular remodeling processes. As we catalog and study the myriad proteins subject to cleavage by caspases, we are beginning to appreciate the full functional repertoire of these enzymes. Here, we examine current knowledge about caspase cleavages: what kinds of proteins are cut, in what contexts, and to what end.

2. What type of source is this? How do you know?

Caspases, or *cysteine-aspartic proteases* or *cysteine-dependent aspartate-directed proteases* are a family of cysteine proteases that play essential roles in apoptosis (programmed cell death), necrosis, and inflammation.[2] Caspases are essential in cells for apoptosis, or programmed cell death, in development and most other stages of adult life, and have been termed "executioner" proteins for their roles in the cell. Some caspases are also required in the immune system for the maturation of lymphocytes. Failure of apoptosis is one of the main contributions to tumour development and autoimmune diseases; this, coupled with the unwanted apoptosis that occurs with ischemia or Alzheimer's disease, has stimulated interest in caspases as potential therapeutic targets since they were discovered in the mid-1990s.

Source Discussion

In groups, come up with some answers to these questions:

1. As a student, when/why would you use the various types of sources in your research?
2. When you graduate and move on to your career and/or graduate studies, when/why might you have to write these different types of sources?

The wonders of the Paragraph!

4 Basic Ideas about Paragraphs

A paragraph should have the following 4 elements:

1. A **central idea** that is
2. Expressed in the **topic sentence**, which is
3. Followed by material that **expresses/develops** the central idea and which is
4. Unified by **transitional expressions** and/or logical connections between sentences

Identify the topic sentence, transition words/expressions, and the extra sentence

Since the emergence of white-nose syndrome (WNS) in 2007, bat populations of eastern North America have declined precipitously due to disease-related mortality. The causative agent of white nose syndrome (WNS) is the fungus *Pseudogymnoascus destructans*, which erodes unfurred skin comprising wing membranes, muzzles, and ears of hibernating bats, inducing physiological perturbations, altered behavior, and death. This fungus was first observed in southern Massachusetts in 1982; since then, it has been seen in other parts of North America as well as west Africa. Although underlying causes for mortality from this invasive cutaneous mycosis remain unclear, proposed mechanisms include disruptions to vital homeostatic functions such as thermoregulation and water balance. For example, water and electrolyte losses across the ulcerated wing epithelium have been proposed to cause hypotonic dehydration and acid base disturbances. Consequently, alterations in behavior have been observed in infected bats, including increase frequency of arousal from torpor during hibernation and unusual day flights during winter.

The importance of transitions: They affect communication!

Underlying causes for mortality from this invasive cutaneous mycosis remain unclear. Proposed mechanisms include disruptions to vital homeostatic functions such as thermoregulation and water balance.

Although underlying causes for mortality from this invasive cutaneous mycosis remain unclear, proposed mechanisms include disruptions to vital homeostatic functions such as thermoregulation and water balance.

Proposed mechanisms causing the rise in mortality include disruptions to vital homeostatic functions such as thermoregulation and water balance, **but** underlying causes for mortality from this invasive cutaneous mycosis remain unclear

Is this enjoyable (or clear) to read?

White-nose syndrome (WNS) emerged in 2007. Bat populations of eastern North America have declined precipitously due to disease-related mortality. The causative agent of white nose syndrome (WNS) is the fungus *Pseudogymnoascus* (formerly *Geomyces*) *destructans*. It erodes unfurred skin comprising wing membranes, muzzles, and ears of hibernating bats, inducing physiological perturbations, altered behavior, and death. The fungus was first observed in southern Massachusetts in 1982. It has been seen in other parts of North America as well as west Africa. Underlying causes for mortality from this invasive cutaneous mycosis remain unclear. Proposed mechanisms include disruptions to vital homeostatic functions such as thermoregulation and water balance. Water and electrolyte losses across the ulcerated wing epithelium have been proposed to cause hypotonic dehydration and acid base disturbances. Alterations in behavior have been observed in infected bats. They are more frequently aroused from torpor during hibernation. They make unusual day flights during winter.

Can you define these words?

- Coherence
- Cohesion

The following material is adapted from Joseph Williams and Gregory Colomb, *Style: Lessons in clarity and grace* (2010, Longman).

A quick guide to creating coherent paragraphs

Sample 1

“Lasers have found widespread application in medicine. Lasers play an important role in the treatment of eye disease and the prevention of blindness. The eye is ideally suited for laser surgery. Most of the eye tissue is transparent. The frequency and focus of the laser beam can be adjusted according to the absorption of the tissue. The beam ‘cuts’ inside the eye with minimal damage to the surrounding tissue—even the tissue between the laser and the incision. Lasers are effective in treating some causes of blindness. Other treatments are not. The interaction between laser light and eye tissue is not fully understood.”

Sample 2

“Lasers have found widespread application in medicine. For example, they play an important role in the treatment of eye disease and the prevention of blindness. The eye is ideally suited for laser surgery because most of the eye tissue is transparent. Because of this transparency, the frequency and focus of the laser beam can be adjusted according to the absorption of the tissue. This means that the beam ‘cuts’ inside the eye with minimal damage to the surrounding tissue—even the tissue between the laser and the incision. Lasers are also more effective than other methods in treating some causes of blindness. However, the interaction between laser light and eye tissue is not fully understood.”

Reflect upon coherence

Think about the last two paragraphs with regard to this principle:

“We judge a whole passage to be **coherent** depending on how all the sentences in a passage cumulatively begin.”

Cohesive Paragraph Exercise

Which of the two following sentences would be best as a second sentence in the paragraph? Why?

- A. “The collapse of a dead star into a point perhaps no larger than a marble creates a black hole.”
- B. “A black hole is created by the collapse of a dead star into a point perhaps no larger than a marble.”

- Some astonishing questions about the nature of the universe have been raised by scientists studying black holes in space
- [Fill in the second sentence]
- So much matter compressed into so little volume changes the fabric of space around it in puzzling ways

Reflect upon cohesion

Think about the last slide with regard to this principle:

“We judge sequences of sentences to be **cohesive** depending on how each sentence ends and the next one begins”

Editing checklist for your paragraphs

- Do you have a clear understanding of the central idea of your paragraph?
 - If people asked you, could you clearly explain to them what paragraph's purpose?
- Does your paragraph have a topic sentence that expresses that purpose?
 - If so, is it clear, specific, and definite?
 - If not, why not?
- Can you clearly identify the relationship that every sentence in the paragraph has with the topic sentence?
- Are there transition expressions or other things (pronouns, restatements of words, etc.) that link the sentences together?
- Check the beginnings of the sentences in the paragraph to confirm that most of them are related to the topic sentence
 - Is your paragraph coherent?
- Check the beginnings of your sentences to see if most of them have some link to the end of the sentence preceding them.
 - Is your paragraph cohesive?