

Logic & Structure

Analyzing use of logic and structure in texts

Writing is a response

We write because we are reacting to someone or something. While writing can feel like an isolating, individual act—just you and the computer or pad of paper—it is really a social act, a way in which we respond to the people and world around us. Writing happens in specific, often prescribed contexts. We are not just writing—we are always writing to an audience(s) for some particular purpose. When we write, we do so because we want, need, or have been required to create a fixed space for someone to receive and react to our ideas. Understanding this social or rhetorical context—who our readers may be, why they want to read our ideas, when and where they will be reading, how they might view us as writers—governs some of the choices we make. The writing context requires writers to have a sense of the reader's expectations and an awareness of conventions for a particular piece of writing. The context of the piece further determines the appropriate tone, level of vocabulary, kind and placement of evidence, genre, and sometimes even punctuation.

Writing is linear

In order to communicate effectively, we need to order our words and ideas on the page in ways that make sense to a reader. We name this requirement in various ways: “grammar,” “logic,” or “flow.” While we would all agree that organization is important, the process of lining up ideas is far from simple and is not always recognized as “writing.” We assume that if a person has ideas, putting them on the page is a simple matter of recording them, when in fact the process is usually more complicated. As we’ve all experienced, our ideas do not necessarily arise in a linear form. We may have a scattering of related ideas, a hunch that something feels true, or some other sense that an idea is “right” before we have worked out the details. It is often through the act of writing that we begin to create the logical relationships that develop the idea into something that someone else may receive and perhaps find interesting. The process of putting ideas into words and arranging them for a reader helps us to see, create, and explore new connections. So not only does a writer need to “have” ideas, but the writer also has to put them in linear form, to “write” them for a reader, in order for those ideas to be meaningful. As a result, when we are writing, we often try to immediately fit our choices into linear structures (which may or may not suit our habits of mind).

Writing is recursive

As we write, we constantly rewrite. Sometimes we do this unconsciously, as we juggle words, then choose, delete, and choose again. Sometimes we do this rewriting very consciously and conscientiously as we reread a paragraph or page for clarity, coherence, or simply to see what we’ve just said and decide whether we like it. Having read, we rewrite the same phrases or ideas to make a closer match to our intentions or to refine our discoveries through language. The process of writing and then reviewing, changing, and rewriting is a natural and important part of

shaping expression for an anticipated audience. So while we are trying to put our words and ideas into a logical line, we are also circling round and back and over again.

Writing is both subject and object

We value writing because it reveals the personal choices a writer has made and thereby reveals something of her habits of mind, her ability to connect and shape ideas, and her ability to transform or change us as readers. We take writing as evidence of a subject or subjective position. Especially in an academic environment, we read written language as individual expression (whether or not multiple voices have informed the one voice we privilege on the page), as a volley from one individual mind to another. That said, writing also serves as an object for us, a “piece” or a “paper” whose shape, size, and function are determined by genre and conventions. While we don’t think of writing as technology, it is also that; it allows us to remove a person’s ideas from the confines of her head and fix those ideas in another place, a place where they will be evaluated according to standards, objectively. Here is where our sense of what counts as “good” writing develops. We have created objective (although highly contextualized) ideals for writing that include measures of appropriate voice, vocabulary, evidence, and arrangement. So while writing is very personal, or subjective, it creates an objective space, a place apart from the individual, and we measure it against objective standards derived from the context. It creates space both for the individual (the subject) and the idea (the object) to coexist so that we can both judge the merits of the individual voicing the idea and contend with the idea on the page.

Writing is decision making

It may seem obvious, but in order to get something on the page, a writer chooses the words, the order of the words in the sentence, the grouping of sentences into paragraphs, and the order of the paragraphs within a piece. While there is an ordinariness about this—we make choices or decisions almost unconsciously about many things all day long—with writing, as we have all experienced, such decision-making can be a complex process, full of discovery, despair, determination, and deadlines. Making decisions about words and ideas can be a messy, fascinating, perplexing experience that often results in something mysterious, something the writer may not be sure “works” until she has auditioned it for a real reader.

Writing is a process

Contending with the decision-making, linearity, social context, subjectivity, and objectivity that constitute writing is a process that takes place over time and through language. When producing a piece of writing for an audience, experienced writers use systems they have developed. Each writer has an idiosyncratic combination of thinking, planning, drafting, and revising that, for him, means “writing” something. No matter how an individual describes his process (e.g., “First I think about my idea then dump thoughts onto the computer,” or “I make an outline then work out topic sentences”), each person (usually unconsciously) negotiates the series of choices required in his individual context and produces a draft that begins to capture a representation of his ideas. For most people, this negotiation includes trial and error (this word or that?), false starts (beginning with an example that later proves misleading), contradictions (I can’t say X

because it may throw Y into question), sorting (how much do I need to say about this?), doubt about how the idea will be received, and satisfaction when they think they have cleared these hurdles successfully. For most people, this process happens through language. In other words, we use words to discover what, how, and why we believe. Research supports the adage “I don’t know what I think until I read what I’ve said.”

Altogether these elements make writing both an interesting and challenging act—one that is rich, complex, and valuable. What else is writing for you? Think about what the definitions discussed here miss and how you might complete the sentence “Writing is like...” From your experience as a writer, what else about writing seems essential? How is that connected to what you value about the process of writing and the final pieces that you produce?

What You Will Learn to Do

- analyze patterns of logical organization in texts
- analyze basic features of rhetorical patterns (narrative, comparison, definition, etc.)
- analyze logical structures in argument (i.e., warrant, claim, evidence)
- analyze logical fallacies

Video: Organizational Patterns

The following video addresses six patterns of structure and development. These will be common in non-fiction, academic reading you’ll do in college.

[Transcript: Organizational Patterns.pdf](#) 

To recap, the six patterns in the video are

1. Simple listing
2. Order of importance
3. Chronological order
4. Spatial development
5. Cause and effect
6. Comparison and contrast

An Overview of the Rhetorical Modes

What are Rhetorical Modes?

We’ve talked earlier in the course about **genres**, different ways of categorizing specific types of reading. We examined the different genres of literature, textbooks, journalism, and academic writing.

Non-fiction writing can be further defined by sub-genres, sometimes referred to as the **rhetorical modes** of communication. These are categories of types of writing, and they help us, while reading, anticipate the structure and purpose of the text itself.

Some of the most common types of rhetorical modes are addressed in detail below. A piece of writing can consist solely of one rhetorical mode, but most often they are used in combination throughout a text.

Description

Occasionally writers organize an entire document according to a topic's physical characteristics. Frequently, however, description plays a part in an essay that has a broader purpose. For example, an engineer conducting an analysis of a bridge might organize a section of his report by describing what the bridge looks like, identifying its type, daily load, or year built. A doctor might describe a patient's physical characteristics, perhaps noting her weight, height, and family history. A teacher describing a class might mention the class title, course content, number of students, and semester.

Definition

Because definitions for words evolve over time, there are several dictionaries that track these changes, including *Oxford English Dictionary*, *A Dictionary of American English*, and *A Dictionary of Americanisms*.

Why Do People Write Definitions?

Creative people seek to develop new terms, concepts, and activities. A doctor might discover a biological or medical process, causing the need for a new name or concept. A scientist might discover a new chemical reaction, perhaps a particle smaller than a quark. An astronomer may discover a new star. For example, Walker Gipson is commonly credited with developing the term "cyberspace" to describe the way people become so obsessed and focused on playing video games.

Occasionally, readers will reject a writer's term, concept, or research finding. And, at times, a writer may present a humorous definition or apply a word in a new context, one that helps us look at our behavior in new ways.

Comparing and Contrasting

Comparing and contrasting issues can be a powerful way to organize and understand knowledge. Typically, comparing and contrasting require you to define a class or category of objects and then define their similarities and differences.

Comparing and contrasting are very natural processes, a strategy we employ in our everyday lives to understand ideas and events. We learn new ideas by comparing the new ideas with what we've learned in the past. We understand differences between people and events by comparing

new events and people to past people and events. Comparisons are often conducted to prove that one concept or object is superior to another. People selling a grant idea or business proposal or people marketing a product may compare and contrast one idea or product to another, advocating their position.

Classification

Occasionally, an entire document focuses on explaining a taxonomy—that is, a scheme of classification.

Why Classify Information?

To make knowledge, we routinely categorize information. A biologist might refer to the periodic table. A musician might speak about country music, new age music, jazz, or techno. A movie critic might talk about suspense, thriller, drama, or comedic movies. A religious studies professor might discuss Christian religions, Muslim sects, and Buddhist practices. As a college student, you might talk about specific colleges' sports teams according to the divisions their teams play in.

Classification in Action: The following video categorizes characters from Marvel Comics into four types.

[Marvel Comics: Mutant Power Classes Explained \(Links to an external site.\)](#)



Transcript: [Marvel Classification.pdf](#) 

Narration

You'll encounter two uses of narrative in reading.

Chronological Narratives

Chronological narratives follow chronological time. For example, fiction writers often tell stories about people and events using dates, years, seasons, or even hours to define the progress of events. Historians tell stories about key people. Sociologists describe communities.

Some examples are found at the links listed:

1. [American Slave Narratives \(Links to an external site.\)](#).
2. [North American Slave Narratives \(Links to an external site.\)](#).
3. [First-person Narratives of the American South \(Links to an external site.\)](#).

Process Narratives

Process narratives explain how to do something or explain how something works. Process narratives are extremely common in many professional careers, including most engineering and scientific fields.

1. Number each step and substep in the process. Substeps might be lettered alphabetically. In some engineering and legal documents, each paragraph is numbered using the automatic numbering feature of most word processing tools. For example:
 - Identify a common software application that you know well.
 - Consider a feature of Microsoft Word. Make sure your teacher approves your topic
 - Work through the process once, taking notes of what important steps are involved, what substeps exist within each major steps.
2. Provide visual pictures of major steps in the process.
3. Be sure you follow the correct chronological order by actually conducting the process based on your instructions.
4. Be sure you define key terms and concepts. Provide the background information your readers will need to understand the instructions.

Video: Inductive and Deductive Reasoning

Another approach authors might take in presenting non-fiction, academic writing is based in logic. Especially in persuasive argument pieces, authors will present readers with a series of reasons why their thesis is correct.

The relationship between the thesis and the reasons to support that thesis can be introduced in two main ways: through **inductive reasoning**, and through **deductive reasoning**. Both are addressed in the video below.

Logical Fallacies

As the video establishes, this is a case where logic is misapplied. Claiming that, because his cigarette-smoking grandfather lived a long life, studies don't mean anything about the relationships between smoking and cancer, is a pretty clear violation of logic. It presents an argument in what sounds like a logical way, but it's very easy to disprove.

Watch for similar misapplications of logic in reading you do (or television you watch, or conversations you participate in).

These misapplications of logic—known as **logical fallacies**—occur frequently in reading and in daily life. Read through the list below to explore some of the most common ones.

- **Hasty generalization**: argues from limited examples or a special case to a general rule.
 - Argument: Every person I've met has ten fingers; therefore, all people have ten fingers.

- Problem: Those who have been met are not representative of the entire population.
- **Making the argument personal (*ad hominem*)**: attacking or discrediting the opposition's character.
 - Argument: What do you know about the United States? You aren't even a citizen.
 - Problem: personal argument against an opponent, instead of against the opponent's argument.
- **Red herring**: intentionally or unintentionally misleading or distracting from the actual issue.
 - Argument: I think that we **should** make the academic requirements stricter for students. I recommend that you support this because we are in a budget crisis and we do not want our salaries affected.
 - Problem: Here the second sentence, though used to support the first, does not address the topic of the first sentence, and instead switches the focus to the quite different topic.
- **Fallacy of false cause (*non sequitur*)**: incorrectly assumes one thing is the cause of another. *Non Sequitur* is Latin for "It does not follow."
 - Argument: I hear the rain falling outside my window; therefore, the sun is not shining.
 - Problem: The conclusion is false because the sun can shine while it is raining.
- **If it comes before it is the cause**: believing that the order of events implies a causal relation.
 - Argument: It rained just before the car died. The rain caused the car to break down.
 - Problem: There may be no connection between the two events.
- **Two events co-occurring is not causation (*cum hoc ergo propter hoc*)**: believing that two events happening at the same time implies a causal relation.
 - Argument: More cows die in the summer. More ice cream is consumed in summer months. Therefore, the consumption of ice cream in the summer is killing cows.
 - Problem: No premise suggests the ice cream consumption is causing the deaths. The deaths and consumption could be unrelated, or something else could be causing both, such as summer heat.
- **Straw man**: creates the illusion of having refuted a proposition by replacing it with a superficially similar proposition (the "straw man"), and refuting it, without ever actually refuting the original.
 - Argument: *Person A*: Sunny days are good. *Person B*: If all days were sunny, we'd never have rain, and without rain, we'd have famine and death. Therefore, you are wrong.
 - Problem: B has misrepresented A's claim by falsely suggesting that A claimed that only sunny days are good, and then B refuted the misrepresented version of the claim, rather than refuting A's original assertion.
- **The false dilemma**: the listener is forced to make a choice between two things which are not really related or relevant.
 - Argument: If you are not with us, you are against us.
 - Problem: The presentation of a false choice often reflects a deliberate attempt to eliminate any middle ground.

