



Achieving Coherence in Academic Writing

The Graduate Writing Center at Pennsylvania State University

Overview: This workshop will (re)introduce some basic principles of coherence for a wide variety of academic writing. It will cover general coherence principles, and it will present practical suggestions for achieving coherence at the paragraph and sentence levels.

Goals

1. To help you develop strategies to improve the coherence of your writing.
2. To help you signal the organization of your writing to a variety of readers.

The Graduate Writing Center

Relatively little individual consulting is available during these writing workshops because of their size and time constraints. However, the Graduate Writing Center, located in 111-L Kern Building, provides free, one-on-one consultations for graduate students working on any kind of writing project—from seminar papers to presentations to articles to dissertations. Scheduling an appointment with the Graduate Writing Center is an excellent way to follow up on the practical information you receive during the workshops.

To learn more about the Graduate Writing Center, visit the Center's website at <http://composition.la.psu.edu/composition/resources/graduate-writing-center>. To schedule an appointment with a consultant, call 865.4211. Available times are usually limited, so please try to call as far in advance of due dates as possible.

Exercise 1: Basic Coherence

Working in groups, arrange the paragraphs in the packets you received according to the order you believe the author of the essay intended. Be prepared to discuss your reasons for connecting the paragraphs the way you did.

Coherence: An Overview

Generally, the extent to which writing “flows” is referred to as **coherence**. Coherence is the result of tying information in your writing together so that connections you have made in your own mind are apparent to the reader. (You may hear this explicitness referred to as “signposting.”)

Especially in academic, professional, and technical communication in the United States and in many international contexts, coherence specifically results from honoring the **given-new contract** that you, as a writer, implicitly make with your readers. That is, your readers will tend to expect that you will start with familiar information and then use that information as a basis to lead them to new information. **This implies that you need to make solid assumptions about what your readers already know, since they will often expect you to start at the level of their understanding.**

In specific terms, coherence is achieved in three ways:

1. Through the use of **stock transition words or phrases** (see next page) that serve the specific function of indicating how a paragraph or sentence relates to the one before it.
2. Through the use of **pronouns** that not only stand in for nouns but also carry the idea the noun represents through a passage.
3. Through the use of **recycled words** or through **repetition**, which connects paragraphs or sentences by making a transition from a given use of a word or phrase to a new use.

In short, then, coherence means **creating a chain**. Even if the paragraphs and sentences in your writing appear to be independent of one another, they are not.

The following example paragraph exhibits some coherence problems that the revision addresses:

Original. Soils represent major sinks for metals like cadmium that are released into the environment. Soil does not have an infinite capacity to absorb metal contaminants, and when this capacity is exhausted, environmental consequences are incurred. Contamination of soils by cadmium and other heavy metals has become a global concern in recent years because of the increasing demands of society for food production, waste disposal, and a healthier environment. The main causes of cadmium contamination in soils are amendment materials (e.g., municipal waste sludge) and fallout from nonferrous metal production and power plants.

Revision. Such sources as mines, smelters, power plants, and municipal waste treatment facilities release metals into the environment. These heavy metals, especially cadmium, then find their way into the soil. The soil does not have an infinite capacity to absorb these metals. Instead, unabsorbed metals move through the soil into the groundwater or are extracted by crops that take the contamination into the food chain.

In the revision, the links in the chain are underlined. The beginning of each new sentence follows up familiar information, and the end introduces new information that is then recycled.

Transitional Expressions

Transitional expressions within and between paragraphs and sentences can make connections that make it much easier for your reader to read along with the flow of your writing. You may use transitional expressions for several reasons, some of which are listed below, along with some appropriate expressions. Using these expressions wisely will help you develop your writing style. However, overusing them can be distracting.

To add or show sequence: again, also, and, and then, besides, equally important, finally, first, further, furthermore, in addition, in the first place, last, moreover, next, second, still, too

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

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

To give examples or intensify: after all, an illustration of, even, for example, for instance, indeed, in fact, it is true, of course, specifically, that is, to illustrate, truly

To indicate place: above, adjacent to, below, elsewhere, farther on, here, near, nearby, on the other side, opposite to, there, to the east, to the left

To indicate time: after a while, afterward, as long as, as soon as, at last, at length, at that time, before, earlier, formerly, immediately, in the meantime, in the past, lately, later, meanwhile, now, presently, shortly, simultaneously, since, so far, soon, subsequently, then, thereafter, until, until now, when

To repeat, summarize, or conclude: all in all, altogether, in brief, in conclusion, in other words, in particular, in short, in simpler terms, in summary, on the whole, that is, to put it differently, to summarize

To show cause and effect: accordingly, as a result, because, consequently, for this purpose, hence, otherwise, since, then, therefore, thereupon, thus, to this end, with this object in mind

Example: Medical science has thus succeeded in identifying the hundreds of viruses that can cause the common cold. It has also discovered the most effective means of prevention. One person transmits the cold viruses to another most often by hand. For instance, an infected person covers his mouth to cough. He then picks up the telephone. Half an hour later, his daughter picks up the same telephone. Immediately afterward, she rubs her eyes. Within a few days, she, too, has a cold. And thus it spreads. To avoid colds, therefore, people should wash their hands often and keep their hands away from their faces.

Exercise 2: Coherence from Paragraph to Paragraph (Part 1)

Topic sentences often help maintain coherence, because they have two purposes:

1. To express a paragraph's main point and suggest its organizational scheme.
2. To create a transition from the previous paragraph.

Read this topic sentence (from an introductory textbook), then write your answer to the question that follows it.

The human body is made up of billions of cells, each of which contains, among other substances, millions of protein molecules.

How do you think the rest of the paragraph will go? Why?

Exercise 2: Coherence from Paragraph to Paragraph (Part 2)

Here is the rest of the paragraph:

The human body is made up of billions of cells, each of which contains, among other substances, millions of protein molecules. An average cell contains hundreds of different kinds of proteins, and all of the cells of the human body contain, among them, as many as 100,000 different kinds of proteins. These proteins can perform millions of different functions—a versatility that is largely responsible for life, itself.

What will the next paragraph be about? How do you know?

Exercise 2: Coherence from Paragraph to Paragraph (Part 3)

Here is the topic sentence of the next paragraph:

The human body is made up of billions of cells, each of which contains, among other substances, millions of protein molecules. An average cell contains hundreds of different kinds of proteins, and all of the cells of the human body contain, among them, as many as 100,000 different kinds of proteins. These proteins can perform millions of different functions—a versatility that is largely responsible for life, itself.

The proteins derive their versatility from their structure—they are composed of chains of molecules of amino acids, of which there are at least 20 different varieties in the human organism.

How will this paragraph develop? How do you know?

Exercise 2: Coherence from Paragraph to Paragraph (Part 4)

Here is the selection in its entirety:

The human body is made up of billions of cells, each of which contains, among other substances, millions of protein molecules. An average cell contains hundreds of different kinds of proteins, and all of the cells of the human body contain, among them, as many as 100,000 different kinds of proteins. These proteins can perform millions of different functions—a versatility that is largely responsible for life, itself.

The proteins derive their versatility from their structure—they are composed of chains of molecules of amino acids, of which there are at least 20 different varieties in the human organism. An average protein molecule consists of about 500 molecules of amino acids of different kinds (seldom all 20) arranged in some particular sequence. A sequence of 500 amino acids composed of 20 different ones would have as many as 1×10^{60} possible arrangements, each arrangement having particular chemical properties and, therefore, capabilities. From these few facts alone, we can easily appreciate how important the study of amino acids is to our understanding of proteins, of the cell, and of life.

Exercise 3: Problem Paragraph

The following paragraph gives its readers confusing signals about what the writer expects them to know and what s/he expects will be new information for them. In addition, it “signposts” things that do not actually happen. Working individually, then in groups, attempt to revise the paragraph.

¹“Foam applications” is the phrase used to describe the process that applies additives to a moving paper web as foam. ²This process has many advantages over conventional liquid applications. ³Two problems have hindered the progress of this new technology. ⁴The process must be established in the paper industry. ⁵The speed limits encountered in the current application technology must be increased in order to expand the number of paper machines that can potentially use foam. ⁶The development work run at the Placerville plant is attacking both of these problem areas, and this report summarizes the achievements that have been accomplished there during the year.

Exercise 4: Practice on Longer Excerpts

In the time remaining, focus on either activity—or both, as time allows.

1. Read the excerpt from the article that appeared in the *International Journal of Science Education*. Look for evidence of the authors' attempting to achieve coherence as we have discussed it this evening. Discuss your findings with your group, and be prepared to discuss how the excerpt does (or does not) achieve coherence.
2. If you brought a sample of your own writing, exchange it with someone else in your group. Read the sample you receive with an eye toward how it achieves coherence and how it can improve.

General Advice About Coherence

- Establish a routine for reading journals and other writing that circulates among your potential readers to determine what kinds of information will be “given” for them and what will be “new.”
 - In addition to helping you think through coherence, this will also help you think about how much literature to review and how much of an introduction to write.
- **Especially if you are writing the script of an oral presentation, an article in a journal not in your immediate field, or a grant proposal,** ask at least one person outside your field to read your writing for “flow.” Ask them to mark places where it breaks down.
- Print a draft and circle the links in your chains between paragraphs and sentences. If you cannot find them, your readers probably will not be able to, either.
- As you re-read and revise your draft, try to write the main point of each paragraph in the margin. Use this information to help you see if whole paragraphs need to be moved.

References

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