

Editorial: Becoming More Coherent

A favorite metaphor of scientists and historians alike is that of the contemporary scientist standing on the shoulders of the giants of history. That metaphor is apt in that what scientists do today depends on what scientists did yesterday: Scientific work builds on scientific work. While that work may not always prove to be correct (consider what was thought scientifically accurate yesterday with what is known today), nonetheless, that prior work is important because it sets the context for the work that follows. For example, physicists thought they knew almost all there was to know about matter, but the recent Nobel Prize winners for physics has upset many of those assumptions.

When our students study biology or engineering or sociology, they spend relatively little time on the history of the subject. Rather, the subject has evolved cumulatively over the years so that recent information encompasses what has come before. Compare this approach with what the student in literature studies. First, whole curricula are devoted to studying Geoffrey Chaucer, an English poet from the 14th Century. Even the critical commentaries and interpretations from the 14th to the 20th Centuries are examined. Rather than finding current information encompassing all that has come before, literature students study everything.

My point was not to present a highly simplified contrast between what students in science and students in literature study. Rather, it was to focus on getting access to the information you need in order to do your work—whether that work be as a scientist or a literary scholar.

Scholars need the informational context from previous scholars in order to do their work. That means that the work must be available in a form (usually in writing) that allows them to access it. Essentially, that work has two components: The content (what it says) and the structure (how it says it). We have all experienced reading material that we had to struggle with in order to understand. If I told you that the key to being clear and coherent in your writing is to use a center-embedded, right-branching sentence structure, you may have to puzzle out what that means. You know the words as individual words, but put them together and you have a concept that may be hard to grasp. Consider the sentences we have encountered that have run on and on, seemingly over far more lines of type than most normal persons would consider even continuing to read to get to the end (such as this last sentence; still with me?). Never mind the problem of understanding content; just what goes with what in the sentence?

Coherence refers to the way the sentences hang together—the way they are "glued" together. How does the author get from one thought to the next, from one sentence to the next? If we have to worry about understanding the content, we certainly do not need to worry about following the structure.

In order to understand how coherence works, let me start with some sentence anatomy. The figure below shows several levels of structure that we can find in a standard sentence: The usual grammatical parts (subject-verb-object), a layer that is almost like a script in a play (the agent/actor, the action, and the goal/receiver of that action), and an indicator of two characteristics about the content (information that we can assume the reader understands and need not explain—the old—and the information that the reader does not understand and we need to explain—the new). The secret (if you can call it that) to "glueing" sentences together lies in relating the new information in one sentence to the old information in the next.

For example

We calculated the mean ratio of the results from Test I. (1)

Applying the diagram to this sentence, we learn that We is the subject, the agent/actor, and the old information. Because it is old information, we do not need to explain who 'We' is. We assume that our reader can easily infer

that information (from the author identification, from a preceding paragraph, from a preceding sentence, etc.). If we needed to explain who 'We' is, we would reverse the sentence and change it from active voice to passive:

The mean ratio of the results from Test I was calculated by Jones and Smith. (2)

Jones and Smith is information the reader did not previously know, while the first part of the sentence up to the verb (The mean ratio of the results from Test I) was information the reader knew or could easily infer.

What sentence follows from example (1)? Following the suggestion above that the new information of one sentence becomes the old information of another, the next sentence should discuss that mean ratio:

This ratio indicates that the (3)

For example (2), the next sentence should discuss Jones and Smith.

We approached the analysis through (4)

As you can tell, sentence (3) is quite different from sentence (4).

The authors must choose what to talk about next, or they should move on to something completely new in a new paragraph. If they follow example (2) with a sentence that opens with something about the mean ratio, they have broken the coherence between them:

The third sample we examined (5)

There is another approach that the authors could use for the sentence following (1) or (2) that would still maintain a high degree of coherence: They could start, for example, with

These calculations (6)

In other words, they bridge between the two sentences based not on the agent or the goal but on the action. In any case, they have tied the two sentences together and helped the reader understand.

The next time you have to write something, complete your draft first (don't think about all this or you'll get a serious case of writer's block) and, when you edit, select a paragraph (the first one in the Introduction is a good choice) and ask yourself how the end of one sentence relates to the beginning of the next. If you can easily see that relationship, your reader should also.

Subject	Verb	Object
Agent	Action	Goal
New information		Old information

For Further Reading:

This idea of Old and New Information is not itself new. Writing teachers have used it for years in an effort to get their students to have coherent paragraphs. An excellent presentation of the concept is found in Williams JM. *Style: Ten lessons in clarity and grace*, 5th edition. New York: Longman; 1997. See especially Lesson 5, Coherence and cohesion.

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