CHAPTER 5

Patterns of Paragraph Organization

CHAPTER OBJECTIVES

In Chapter 5 you will study the ways writers arrange ideas within paragraphs and transitional devices, specifically

- Patterns of paragraph organization
- Coherence in paragraphs

PATTERNS OF ORGANIZATION DEFINED

The patterns of organization refer to the various ways that a paragraph’s sentences can be arranged. As you have seen, the paragraph is remarkably versatile; nevertheless, we can identify four standard patterns:

- Chronological
- Spatial
- Deductive
- Inductive

The first and second patterns are commonly found in narrative and descriptive writing; the other two are commonly found in expository or persuasive writing.
Chronological Order

Chronological (or time) order, the easiest pattern to recognize, refers to the order in which events happen. It is used to tell a story, to relate an incident, to recount a historical event, or to describe the steps in a process. Chronological order is evident in this paragraph from a psychology textbook, in which the writer describes babies’ perceptual development.

During infancy, children develop the ability to form cognitive representations of the world. For example, by 6 to 9 months of age, the child begins to understand that objects exist even when they are out of sight. This is called object permanence. Before that time, if an object at which the infant is looking is hidden from sight by a card, the infant will not push the card aside to look for it. It’s as if the infant does not know that the object is still there—a variation of “out of sight, out of mind.” After 6 to 9 months of age, however, the infant will search for the object behind the card, suggesting that the infant knows that it’s back there somewhere. This is both a happy and a sad development for parents. Now that the 9-month-old knows that spoons still exist when thrown on the floor, the infant quickly masters the game of “dropsies” (McCall, 1979). Infants joyously fill their mealtimes with the game of throwing their spoons on the floor while Dad or Mom picks them up. By 14 months, infants even look for objects that were removed 24 hours earlier (Moore & Meltzoff, 2004), but although infants can represent parts of the world in mental images, they cannot yet use those images to reason.

Benjamin B. Lahey, *Psychology: An Introduction*

Note that the transitional phrases referring to the baby’s age (“by 6 to 9 months,” “after 6 to 9 months,” and “by 14 months”) establish the chronological pattern.

Spatial Order

The term spatial is related to the word space. Spatial order refers to the arrangement of details observed in an environment. Most often used in descriptive writing, spatial order helps a writer organize his or her observations so that the reader can visualize the scene. In fiction and in nonfiction descriptive writing, spatial order helps us visualize the setting. Without it, the details would be a random assembly of impressions, making the scene difficult to re-create in our minds.

Some ways writers may arrange details are from left to right or right to left, near to far or far to near, top to bottom, or bottom to top. The transitions showing movement from one part of a scene to another are indicated by prepositional phrases. Here is a good example of spatial order from one of Alexander McCall Smith’s charming detective novels set in Botswana, a country in the southern part of Africa. As Mma Ramotswe, the owner of the No. 1 Ladies’ Detective Agency, drives her trademark tiny white van north out of the city, she observes the passing countryside. Spatial order is most evident in the last paragraph.
. . . Just past the Mochudi turnoff, the sun came up, rising over the wide plains that stretched away towards the course of the Limpopo. Suddenly it was there, smiling on Africa, a slither of golden red ball, inching up, floating effortlessly free of the horizon to dispel the last wisps of morning mist.

The thorn trees stood clear in the sharp light of morning, and there were birds upon them, and in flight—hoopoes, louries, and tiny birds which she could not name. Here and there cattle stood at the fence which followed the road for mile upon mile. They raised their heads and stared, or ambled slowly on, tugging at the tufts of dry grass that clung tenaciously to the hardened earth.

This was a dry land. Just a short distance to the west lay the Kalahari, a hinterland of ochre that stretched off, for unimaginable miles, to the singing emptinesses of the Namib. If she turned her tiny white van off on one of the tracks that struck off from the main road, she could drive for perhaps thirty or forty miles before her wheels would begin to sink into the sand and spin hopelessly. The vegetation would slowly become sparser, more desert-like. The thorn trees would thin out and there would be ridges of thin earth, through which the omnipresent sand would surface and crenellate. There would be patches of bareness, and scattered grey rocks, and there would be no sign of human activity. To live with this great dry interior, brown and hard, was the lot of the Batswana, and it was this that made them cautious, and careful in their husbandry.

Alexander McCall Smith, *The No. 1 Ladies’ Detective Agency*

In this second example, Kenneth Boulding uses spatial order in an unusual way: to locate himself first in his narrow environment and then to locate Earth in the larger universe. By repeating the key preposition *beyond*, Boulding enables us to follow his mind’s journey. (A basic knowledge of world geography also helps.)

As I sit at my desk, I know where I am. I see before me a window; beyond that some trees; beyond that the red roofs of the campus of Stanford University; beyond them the trees and the roof tops which mark the town of Palo Alto; beyond them the bare golden hills of the Hamilton Range. I know, however, more than I see. Behind me, although I am not looking in that direction, I know there is a window, and beyond that the little campus of the Center for the Advanced Study in the Behavioral Sciences; beyond that the Coast Range; beyond that the Pacific Ocean. Looking ahead of me again, I know that beyond the mountains that close my present horizon, there is a broad valley; beyond that a still higher range of mountains; beyond that other mountains, range upon range, until we come to the Rockies; beyond that the Great Plains and the Mississippi; beyond that the Alleghenies; beyond that the eastern seaboard; beyond that the Atlantic Ocean, beyond that is Europe; beyond that is Asia. I know, furthermore, that if I go far enough I will come back to where I am now. In other words, I have a picture of the earth as round. I visualize it as a globe. I am a little hazy on some of the details.
I am not quite sure, for instance, whether Tanganyika is north or south of Nyasaland.\(^1\) I probably could not draw a very good map of Indonesia, but I have a fair idea where everything is located on the face of this globe. Looking further, I visualize the globe as a small speck circling around a bright star which is the sun, in the company of many other similar specks, the planets. Looking still further, I see our star the sun as a member of millions upon millions of others in the Galaxy. Looking still further, I visualize the Galaxy as one of millions upon millions of others in the universe.

Kenneth Boulding, *The Image*

Aside from his unusual geography tour, what is the central philosophical point Boulding makes? Earth is an infinitesimally small part of the universe, and in a parallel point, he makes the point that human life is insignificant when put into this perspective.

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**Deductive Order**

In Chapter 2, you learned that paragraphs often begin with a main idea, which is reinforced by specific supporting sentences. This pattern of organization, the most common in the English paragraph, is called **deductive order**. For this reason, deductive order is sometimes called **general-to-specific order**. This term actually refers to a pattern of thinking, which you will read about in more detail in Chapter 9. Deductive order and its opposite, inductive order, are determined by the placement of the main idea. You can easily visualize deductive order if you imagine an inverted triangle with the base at the top:

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Main Idea
Supporting Statements

General
\(\downarrow\)
Specific
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Deductive order is particularly useful in textbook and other expository material, whereby the main idea is stated directly at the beginning of a passage followed by explanatory material. The deductive pattern is evident in this passage from Elizabeth Gilbert’s recent nonfiction bestseller, *Eat, Pray, Love*. Note that Gilbert restates the main idea from the first sentence in the third sentence.

Religious ceremonies are of paramount importance here in Bali (an island, don’t forget, with seven unpredictable volcanoes on it—you would pray, too). It has been estimated that a typical Balinese woman spends one-third

\(^1\)Since this passage was written, Tanganyika and Zanzibar joined together and are now called Tanzania; Nyasaland is now called Malawi.
of her waking hours either preparing for a ceremony, participating in a ceremony or cleaning up after a ceremony. Life here is a constant cycle of offerings and rituals. You must perform them all, in correct order and with the correct intention, or the entire universe will fall out of balance. Margaret Mead wrote about “the incredible busy-ness” of the Balinese, and it’s true—there is rarely an idle moment in a Balinese compound. There are ceremonies here which must be performed five times a day and others that must be performed once a day, once a week, once a month, once a year, once every ten years, once every hundred years, once every thousand years. All these dates and rituals are kept organized by the priests and holy men, who consult a byzantine system of three separate calendars.

Elizabeth Gilbert, *Eat, Pray, Love*

Explain the parenthetical remark at the end of the first sentence.

The parenthetical remark links Bali’s unpredictable volcanoes and prayer. Since one never knows when one of these volcanoes might erupt, Balinese pray to ensure their safety.

**Inductive Order**

Inductive order, the opposite of deductive order, is sometimes called **specific-to-general order**. Inductive order derives from a kind of thinking called induction, which will be taken up in Chapter 9. For now, it is enough to know that inductive order involves a series of specific observations leading to a generalization (the main idea) that the reader can validly infer from those statements. Again, the placement of the main idea determines the pattern.

A diagram of an inductively arranged paragraph looks like this:

![Diagram of an inductively arranged paragraph]

Malcolm Gladwell uses the inductive pattern in this paragraph about pit bulls. He begins with a series of observations about the breed, contrasting the behavior of pit bulls with that of another breed of guard dog, the German shepherd. He ends with a concise sentence that summarizes the main point of the paragraph—the main idea.

Pit bulls, descendants of the bulldogs used in the nineteenth century for bull baiting and dogfighting, have been bred for “gameness,” and thus a lowered inhibition to aggression. Most dogs fight as a last resort, when staring and growling fail. A pit bull is willing to fight with little or no provocation. Pit bulls seem to have a high tolerance for pain, making it possible for them to fight to the point of exhaustion. Whereas guard dogs like German
shepherds usually attempt to restrain those they perceive to be threats by biting and holding, pit bulls try to inflict the maximum amount of damage on an opponent. They bite, hold, shake, and tear. They don’t growl or assume an aggressive facial expression as warning. They just attack. “They are often insensitive to behaviors that usually stop aggression,” one scientific review of the breed states. “For example, dogs not bred for fighting usually display defeat in combat by rolling over and exposing a light underside. On several occasions, pit bulls have been reported to disembowel dogs offering this signal of submission.” In epidemiological studies of dog bites, the pit bull is overrepresented among dogs known to have seriously injured or killed human beings, and, as a result, pit bulls have been banned or restricted in several Western European countries, China, and numerous cities and municipalities across North America. Pit bulls are dangerous.

Malcolm Gladwell, “Troublemakers,” The New Yorker

Practice Exercise 1

Read the following paragraphs. First, decide which pattern of organization each represents.

- Chronological order
- Deductive order
- Spatial order
- Inductive order

Then write a sentence stating the main idea in your own words.

A.

Animals seem to have an instinct for performing death alone, hidden. Even the largest, most conspicuous ones find ways to conceal themselves in time. If an elephant missteps and dies in an open place, the herd will not leave him there; the others will pick him up and carry the body from place to place, finally putting it down in some inexplicably suitable location. When elephants encounter the skeleton of an elephant out in the open, they methodically take up each of the bones and distribute them, in a ponderous ceremony, over neighboring acres.

Lewis Thomas, Lives of a Cell

Pattern of organization: deductive

Main idea: Animals instinctively go into hiding to die.

B. This passage describing his Paris neighborhood is from George Orwell’s classic semi-autobiographical book, Down and Out in Paris and London.

It was a very narrow street—a ravine of tall, leprous houses, lurching toward one another in queer attitudes, as though they had all been frozen in the act of collapse. All the houses were hotels and packed to the tiles with lodgers, mostly Poles, Arabs, and Italians. At the foot of the hotels were tiny bistros, where you could be drunk for the equivalent of a shilling. On Saturday nights about a third
of the male population of the quarter was drunk. There was fighting over women, and the Arab navies who lived in the cheapest hotels used to conduct mysterious feuds, and fight them out with chairs and occasionally revolvers. At night the policemen would only come through the street two together. It was a fairly racy place. And yet amid the noise and dirt lived the usual respectable French shopkeepers, bakers and laundresses and the like, keeping themselves to themselves and quietly piling up small fortunes. It was quite a representative Paris slum.

George Orwell, Down and Out in Paris and London

Pattern of organization: inductive

Main idea: The Paris neighborhood Orwell is describing was a typical slum street—noisy but respectable at the same time.

C. This passage is from the Egyptian Nobel Prize-winning writer, Naguib Mahfouz.

Except for the father, the family gathered shortly before sunset for what they called the coffee hour. The chosen site was the first-floor sitting room surrounded by the children's bedrooms, the parlor, and a fourth small room set aside for studying. Its floor was spread with colored mats. Divans with pillows and cushions stood in the corners. Hanging from the ceiling was a large lantern illuminated by an equally large kerosene lamp. The mother sat on a sofa in the center. In front of her was a large brazier where the coffeepot was half buried in the embers topped by ashes. To her right was a table holding a brass tray with cups lined up on it. The children were seated opposite her, including those permitted to drink coffee with her, like Yasin and Fahmy, and those barred from it by custom and etiquette, like the two sisters and Kamal, who contented themselves with the conversation.

Naguib Mahfouz, Palace Walk

Pattern of organization: spatial

Main idea: Everything and everyone in this family's sitting room occupied a particular place.

How does the pattern of organization help clarify the main idea? Spatial order clarifies the arrangements and relative positions described.

D.

Monday, August 6, 1945, began like any other wartime day in Japan. By 8 A.M. most Hiroshima office workers were at their desks, children were at school, soldiers were doing physical exercises, high-school students and civilian work gangs were busy pulling down wooden houses to clear more firebreaks. During the night, there had been two air-raid alerts—and then all-clears. At 7:09 A.M., there was another alert, as a B-29 on a last weather check approached the city, and, at 7:31 A.M., another all-clear as it turned away. Minutes after eight, watchers in the city saw two B-29s approaching from the northeast: these were an observation
plane and the Enola Gay. (Colonel Paul Tibbets, the pilot, had only the day before named the bomber after his mother.) The Enola Gay, in the lead, held its course straight and level for ten miles; at eight-fifteen, it let fall its single bomb. Immediately, the other B-29 banked hard to the left, the Enola Gay to the right; both quit the scene. Released at thirty one thousand six hundred feet, or nearly six miles, the bomb fell for forty-three seconds and was triggered (by a barometric switch) by heavily symbolic chance nineteen hundred feet directly above a small hospital that was two hundred and sixty yards from the aiming point, the T-shaped Aoio Bridge.

Murray Sayle, “Letter from Hiroshima: Did the Bomb End the War?” The New Yorker

Pattern of organization: chronological

Main idea: Although August 6, 1945, began like any other day in Japan, that was the day the Americans dropped an atomic bomb on Hiroshima.

E.

As baths and their facilities grew more elaborate, Romans often spent most of their leisure hours there. With pools, exercise yards, gardens, libraries, meeting rooms and snack bars, the bath became a multi-purpose meeting point, a place to make connections, do business, flirt, talk politics, eat and drink. Prostitutes, healers and beauticians often had premises in the bath complex or in the shops around its perimeter, so it was possible to have sex, a medical treatment and a haircut as part of a regular visit. Although well-born men used their favourite bath as English aristocrats would later use their London club, the bathhouse was also the most democratic Roman institution. Unlike the Greek gymnasium, which was limited to middle-class and upper-class men, the Roman bath accommodated men and women, slaves and freedmen, rich and poor. A Roman, at least by the first century B.C., when there were 170 baths in the capital, had plentiful choice but usually settled on one as a regular haunt. It was common, when meeting a man, to ask where he bathed.

The purposes that cafés, town squares, clubs, gymnasiums, country clubs and spas served in other societies, including ours, were fulfilled here. Imagine a superbly equipped YMCA that covered some blocks, with gyms, pools, ball courts and meeting rooms. Then add onto it the massage and treatment rooms of a fancy spa and the public rooms and grounds of a resort. Finally, give it a fee structure that would allow the poorest people to use its facilities. That approximates, but does not equal, an Imperial bathhouse.

Katherine Ashenburg, The Dirt on Clean: An Unsanitized History

Pattern of organization (each paragraph): deductive order in both paragraphs

Main idea: For Imperial Rome, the baths played a major role as a place to spend leisure hours and as a place to socialize.

Explain why Roman bathhouses were “the most democratic Roman institution.”

Roman bathhouses were democratic because all Romans, no matter what their status, could enjoy them.
How do writers ensure that their readers stay on track, no matter which of the above patterns they use? As you learned in Chapter 2, careful writers try to help the reader follow the main idea by ensuring that the paragraph has unity, or singleness of purpose. In good writing, there should be no irrelevant or extraneous sentences to lead you astray. But in addition to unity, well-constructed paragraphs also have coherence, which literally means the quality of “sticking together,” so that each sentence leads logically and smoothly to the next, the sentences in effect forming a chain of interconnected thoughts. (Not all writers accomplish this, of course, which is why some reading material is so tedious to read.) Good writers achieve coherence through three primary techniques: by using transitions, by repeating key words, and by using pronouns.

Transitions are signposts or markers that indicate a logical relationship or a shift in direction. Transitions can be single words or phrases; occasionally, an entire paragraph can serve as a bridge between the major sections of an essay. Although transitions may appear at the beginning of sentences, this is not a hard and fast rule; transitions can come in the middle or at the end of sentences as well. Paying attention to transitions will improve your concentration and comprehension and will help you see the logical connections between ideas. Sometimes a good understanding of a passage may depend on a seemingly unimportant little word like “but” or “for” or “as.” To show you how crucial transitions are, this paragraph from a broadcasting textbook is printed without the transitions. The subject is virtual communities, in particular MySpace, where people congregate in cyberspace.

People congregate in many ways on MySpace. By posting a profile regarding one’s musical interests, one may draw viewers to the page; it might be a poem or an unusual self-portrait that entices someone. Perhaps the thing that’s so interesting about MySpace is its level of interactivity and the amorphous way it is possible to move from pictures, to words, to music, to people. If you’ll accept a city street analogy, each click takes the viewer down a new
People congregate in many ways on MySpace. By posting a profile regarding one's musical interests, for example, one may draw viewers to the page, but it might also be a poem or an unusual self-portrait that entices someone. Perhaps the thing that's so interesting about MySpace is its level of interactivity and the amorphous way it is possible to move from pictures, to words, to music, to people. If you'll accept a city street analogy, each click takes the viewer down a new street with new sights, sounds, and people to meet. Along the way, banner ads change as a new link is made. Over the last year, the Web site's membership has skyrocketed, and it currently boasts some 50 million users. However, not all is completely serene in the virtual world. There are concerns with MySpace and other virtual communities like it. Recently stories have surfaced about minors posting dangerously personal information like addresses and telephone numbers on their pages. Parents have complained about incidents of bullying from classmates, and there have been reports of sexual predators enticing minors into meeting for sexual encounters. Evidently a virtual community may pose the same risks as a real one.

Joseph R. Dominick, Fritz Messere, and Barry L. Sherman, Broadcasting, Cable, the Internet, and Beyond: An Introduction to Modern Electronic Media

The boxes in this section of the chapter present the various transitions according to their function, followed by a few examples of words or phrases indicating the logical relationship they bring to the sentences they join. An example is provided for each category of transition.
Example: The house was badly neglected: the windows were broken, and the paint was blistered. Moreover, what had once been a well-tended lawn was now only an overgrown weed patch.

Transitions Signaling a Contrast
but, yet, however, nevertheless, nonetheless, while, whereas, on the other hand, in contrast (to), contrary to

Example: Basset hounds and St. Bernards are known for their placid and friendly natures; in contrast, terriers are often high-strung and highly excitable.

Transitions Signaling an Example or Illustration
for example, as an example, to illustrate, as an illustration, for instance, namely, specifically, a case in point, consider the following

Example: Many residents of urban neighborhoods believe that an influx of national franchise stores can ruin local businesses and destroy a neighborhood’s unique quality, resulting in a homogenized, bland environment. For instance, neighbors of Larchmont Boulevard, a two-block street in Los Angeles lined with trees and small independent businesses, fought, unsuccessfully, to preserve its local character from intrusion by Payless Drugs, Koo Koo Roo, a fast-food enterprise, Starbucks, and a Rite Aid pharmacy.

Transitions Signaling Steps in a Process of Chronological Order
first, second, third, next, the next step, further, then, before, after that, finally, last, in July, last week, in a few days, in 2012

Example: To use the spelling-check function in Microsoft Word, first pull down under the “Tools” menu to “Spelling and Grammar.” The computer will then scan through the document to identify any misspelled or questionable words. After each word is flagged, select the correct spelling. Finally, be sure to save the changes in your file.
Transitions Signaling Emphasis
indeed, in fact, certainly, without a doubt, undoubtedly, admit-tedly, unquestionably, truly

Example: The American public has grown increasingly frustrated over the Administration’s current policies regarding the Middle East. In fact, the results of polls show that there is not much support for helping Middle East nations who are struggling to achieve democracy, if it involves sending military aid.

Transitions Signaling a Concession (an admission of truth)
although, even though, in spite of, despite, after all

Example: Although chimpanzee society is characterized by power displays, especially among males, the social hierarchy is usually quite stable. (In this sentence, the first clause concedes a truth. Another way to think of a concession is to substitute “regardless of the fact that” or “even though this is true, this is also true.”)

Transitions Signaling a Summary or a Conclusion
therefore, thus, then, to conclude, in conclusion, in summary, to summarize, consequently, hence, in short

Example: There has been a movement growing in the United States toward eating more locally grown produce. As a result, farmers’ markets have exploded in popularity in recent years, because they offer fresh produce at reasonable prices with better quality than one can find at the average supermarket.

Transitions Signaling Spatial Order
above, below, to the right, to the left, nearby, from afar, beyond, farther on, up the road, on top, underneath

Example: “Where the mountains meet the sea” is the official motto of Camden, Maine, a New England village known for its splendid harbor. No wonder. Behind the harbor, not far from where
the schooners, sailboats, and cabin cruisers are anchored, Ragged Mountain rises precipitously. Near the peak of the mountain one can find Maiden Cliffs, where, according to legend, an Indian maiden leaped to her death because of an unhappy love affair. At the base of the mountain is Lake Megunticook, a local swimming hole for midcoast Maine residents.

Another way writers achieve coherence—thereby producing a chain of interconnected thoughts—is by repeating key words and phrases, which help keep the reader on track and maintain focus. Readers who want to improve their concentration, a fundamental goal of reading students, will gain mastery over their reading by learning to identify such repetitions. Read this paragraph taken from former South African president Nelson Mandela’s autobiography. In it, he explains the significance of the circumcision tradition in Xhosa culture. Follow the links between the circled words to see how a good writer achieves coherence.

M andela’s paragraph is easy to read because he repeats key words and uses synonyms to replace key words.

When I was sixteen, the regent decided that it was time that I became a man. In Xhosa tradition, this is achieved through one means only: circumcision. In my tradition, an uncircumcised male cannot be heir to his father’s wealth, cannot marry or officiate in tribal rituals. An uncircumcised Xhosa man is a contradiction in terms, for he is not considered a man at all, but a boy. For the Xhosa people, circumcision represents the formal incorporation of males into society. It is not just a surgical procedure, but a lengthy and elaborate ritual in preparation for manhood. As a Xhosa, I count my years as a man from the date of my circumcision.

Nelson Mandela, Long Walk to Freedom

A pronoun is a part of speech that refers to words that stand for nouns. For example, the pronouns he or she can be substituted for the noun teacher, depending on his or her gender. In the sentence that you just read, his and her are also pronouns, in this case, possessive pronouns describing gender and referring to teacher. Using pronouns like this allows the writer both to achieve coherence and to avoid unnecessary repetition.

To show you how pronouns help you keep on track in reading, look at these first sentences from an article about malaria. Following each italicized pronoun, in the spaces with parentheses, write the noun that the pronoun refers to.

Malaria starts suddenly, with violent chills, which are soon followed by an intense fever and, often, disabling headaches, convulsions, and delirium. As the parasites multiply, they (parasites) take over the entire body. Anemia
is common, because malaria parasites live by eating the red blood cells they infect; they can also attach themselves to blood vessels in the brain. If it doesn’t kill you, malaria can recur for years.


You should have written in the noun “parasites” in the first three spaces and “malaria” in the last one.

Practice

Exercise 2

A. This paragraph describes Kabul, the capital of Afghanistan.

Kabul in winter is the color of the dust, though the dust is no color at all. It’s a fine particulate lifted by winds from old stone mountains and sifted over the city like flour. It lies in the streets and drifts over the sidewalks where it compacts in hillocks and holes. Rain and snowmelt make it mud. Mountain suns bake it. Cart wheels break it down. Winds lift it and leave it on every surface—on the mud houses and the mud walls that surround them, on the dead grass and trees of the park, on shop windows and the broken sign of the cinema, on the brown shawls of men in the streets and the faces of children. Dust fills the air and thickens it, hiding from view the mountains that stand all around. Dust fills the lungs, tightens the chest, lies in the eyes like gravel, so that you look out on this obscure drab landscape always through something like tears.

Ann Jones, Life without Peace in Afghanistan

First, circle these words—“dust” and the pronoun “it” that refers to it. Next, consider the pronoun “it” in the second to the last sentence (“Dust fills the air and thickens it”). In this case, what noun does the pronoun “it” refer to? “It” in the second to the last sentence refers to “air” (not dust).

B. Historically, ballparks have been urban places, gardens in the middle of the city. The greatest of them—Wrigley, Ebbets, Fenway, Forbes Field, Shibe Park—emerged out of the form and shape of their cities. Fenway has the Green Monster, the thirty-seven-foot wall that compensates for the truncation of left field; at Griffith Stadium, in Washington, D.C., the center-field wall was notched inward because the owners of houses next to the stadium refused to sell. Ballparks weren’t the same because the urban places belonged to weren’t the same. One football gridiron is identical to another, but a baseball field, once you get beyond the diamond, is not, which is part of the reason that
even the ugliest ones (baseball field) are loved so fiercely by the fans and become such repositories of civic feeling.

Paul Goldberger, “Home,” The New Yorker

In the three spaces with parentheses, insert the noun to which each italicized pronoun refers. Next, locate the single transitional word and indicate its function: Transitional phrase—“but” indicates a contrast

C.

There is much evidence that domestication physically changes the brains of animals. Darwin noticed that the brains of domestic rabbits are smaller than those of wild rabbits. A German scholar in the 1920s held that, on the average, domestic forms had brains 30 percent smaller than those of their wild ancestors. Brain-size reduction has been shown in rats, mice, rabbits, pigs, sheep, llamas, and domestic cats. German researchers found the brains of wolves to be as much as 29 percent bigger than the brains of dogs. Brain size, though, is not in itself a very reliable indicator of intelligence, and, at least in mammals, tends to correlate closely with body size. Some researchers believe that, if one scales the size of the brain to the size of the body, the shrinkage associated with domestication becomes insignificant. But there are structural differences between the brains of wild and domestic forms. In 1973, German researchers compared the brains of poodle dogs with those of wolves and found that the wolf brains were not just larger, but larger in particular regions. The wolf brains were 40 percent larger in the hippocampal region, which guides and regulates emotional reactions, aggression, and motivation, a finding that is consistent with the fact that domestication selects for gentleness and tractability. Some areas of the brain may also have a greater density of nerve cells—a difference that has been confirmed in comparisons of the brains of wild and domestic forms of cat.

Peter Steinhart, Thinking Like a Wolf

1. Write the main idea of the paragraph in your own words. Wild animals have ____________________________ larger brains than those of domesticated animals.

2. What are the two primary methods of paragraph development? ____________________________

3. What pattern of organization is most evident? ____________________________

4. What is the most important noun in the excerpt? ________ Circle this word every time it appears in any form throughout the passage. How many times does it appear? ________ Why do you suppose Steinhart didn’t use a synonym for this word? ____________________________

4. The key noun is “brain,” which occurs 14 times, including both singular and plural forms. and the adjective form “brain-like.” There really isn’t another synonym to replace it.
5. Next, underline the three instances of transitional expressions (individual words or phrases). In the spaces provided, write them again as well as their function.

Sentence 6: ____________________
“though” (contrast)

Sentence 8: ____________________
“but” (contrast)

Sentence 9: ____________________
“In 1973” (chronological order)

6. b Which one of these inferences is accurate based on the evidence in the passage?

(a) Brain size and intelligence are closely related in mammals, both large and small.

(b) Wild animal brains are larger undoubtedly because they have to develop certain skills to survive not required of domesticated animals.

(c) When domesticated animals are abandoned, they turn feral and develop larger brains as a result.

(d) Domesticated cats can’t survive in the wild because of their small brain size.

CHAPTER EXERCISES

Selection 1

Consider perhaps the central dogma in the child-as-food-sage theology—that a child “knows” when he or she is full. Such is the belief, repeated emphatically to this day, of many of the nation’s leading nutritional authorities, both academic and popular. This despite new research showing that children, just like adults, increasingly do not know when they are full. In a recent study by the Penn State nutrition scholar Barbara Rolls, researchers examined the eating habits of two groups of children, one of three-year-olds, another of five-year-olds. Both groups reported equal levels of energy expenditure and hunger. The children were then presented with a series of plates of macaroni and cheese. The first plate was a normal serving built around age-appropriate baseline nutritional needs; the second plate was slightly larger; the third was what we might now call “supersized.” The results were both revealing and worrisome. The younger children consistently ate the same baseline amount, leaving more and more food on the plate as the servings grew in size. The five-year-olds acted as if they were from another planet, devouring whatever was put on their plates. Something had happened. As was the case with their adult counterparts in another of Rolls’s studies the mere presence of larger portions had induced increased eating. Far from trusting their own (proverbial and literal) guts, children, the author concluded, should instead get “clear information on appropriate portion sizes.”

Greg Critser, Fat Land: How Americans Became the Fattest People in the World
A. Vocabulary
For each italicized word from the selection, write the dictionary definition most appropriate for the context.

1. the central dogma [sentence 1] ________________
2. the child-as-food-sage theology [1] ________________
3. equal levels of energy expenditure [5] ________________
4. their adult counterparts [12] ________________
5. proverbial and literal guts [13] ________________

B. Structure and Meaning
Complete the following questions.

1. The author’s purpose is to
   (a) inform the reader about the results of one nutritional study.
   (b) urge parents not to supersize their children’s meals.
   (c) warn parents about the dangers of fast food as a cause of childhood obesity.
   (d) explain exactly what the term “baseline” means in terms of food intake.

2. Which sentence best represents the main idea of the paragraph?
   ____________________________________________

3. What pattern of organization is evident in the paragraph? ____________
   ____________________________________________

4. Which two methods of paragraph development are most evident in the paragraph?
   ____________________________________________

5. One can conclude from the nutritional study cited that
   (a) most children are good judges of how much they should eat.
   (b) supersizing is the main cause of obesity in the United States.
   (c) parents should carefully monitor their children’s meal portions.
   (d) by age 5, children will eat more than they need to if they have the opportunity.

6. So that we can understand the main point, the writer distinguishes between
   (a) the eating habits of children younger than 5 and 5-year-olds.
   (b) the results of two different nutritional studies, which came to different conclusions.
   (c) the various baseline amounts given for each group of children.
   (d) the nutritional needs of small children and adults.
7. Which one of the following can we logically infer from the paragraph?
   (a) More definitive studies need to be conducted on the subject of children’s nutrition.
   (b) Children need to exercise more if they are to avoid gaining excessive weight.
   (c) If obesity is going to develop in a child, it is likely to begin around the age of 5.
   (d) Children should be allowed to choose their own foods and their own portion sizes.

8. Does the evidence in this paragraph primarily represent fact or opinion? Explain.

C. Paraphrasing
Write the meaning of these three excerpts from the passage in your own words.

1. “Consider perhaps the central dogma in the child-as-food-sage theology . . .” [sentence 1]

2. “The results were both revealing and worrisome.” [8]

3. “Far from trusting their own (proverbial and literal) guts . . .” [13]

Answers for Selection 1

A. Vocabulary
1. authoritative belief, principle, or doctrine
2. one who has wisdom and judgment
3. outlay, amount used
4. similar or corresponding people
5. referring to an widely accepted idea

B. Structure and Meaning
1. a
2. sentence 3
3. deductive order
4. cause and effect and process
5. c
6. a
7. c
8. facts (summary of a nutritional research study)

C. Paraphrasing

1. Let’s look at an idea that is widely believed and accepted—that the child displays good judgment and wisdom about how much to eat.
2. The results of the study were informative but also troubling.
3. Rather than relying on their own stomachs and their own instincts.

Selection 2

1. A key link between the obesity epidemic and economic hardship is chronic stress. Stress provokes the body to produce less growth hormone, a substance that reduces fat deposits and speeds up metabolism, and more of what are called stress hormones, which provoke cravings for soothing substances like glazed doughnuts and chocolate fudge ice cream.

2. People don’t invariably respond to stress by gorging comfort foods, however. Many opt instead for cigarettes, and therein lies a luscious little irony. The obesity epidemic that government agencies and advocacy groups are battling to reverse resulted in part from the success of antismoking campaigns by these same organizations in the recent past. The number of smokers declined by about a third during the 1980s and 1990s, and when people give up smoking, they tend to gain weight.

3. We social scientists call this the law of unintended consequences. Roughly the sociological equivalent of Newton’s third law, it holds that any social intervention that produces beneficial outcomes will be likely to give rise to unintended negative effects as well. The obesity epidemic cannot be explained entirely, though, by way of the law of unintended consequences. Even a valid application of the law, such as the connection between antismoking campaigns and obesity, accounts for only a fraction of the nation’s added tonnage. (The ranks of the obese include people who never smoked, and some people give up smoking without getting fat.)

Barry Glassner, from “What Made America Fat?” The Gospel of Food

A. Vocabulary

Here are four vocabulary words from the selection and their definitions. Study these definitions carefully. Then write the appropriate word in each space provided according to the context.

opted—chose
chronic—lasting, occurring over a period of time
irony—an occurrence that is the opposite of what is actually expected

provoke—cause, give rise to

There was a certain ________ that resulted from the government’s anti-obesity campaign:

While obesity rates dropped, many _______ for another unhealthy activity—smoking cigarettes. Scientists know that stress can _______ cravings for unhealthy foods, which for some is a way of dealing with _______ stress.

B. Content and Structure

Complete the following questions.

1. The writer’s purpose is specifically to
   (a) explain one interesting factor in the current obesity epidemic.
   (b) examine some common causes of stress in the contemporary lifestyle.
   (c) urge the reader to adopt a healthier lifestyle.
   (d) define the concept of the law of unintended consequences.

2. Which of the following accurately restates the “key link” described in paragraph 1?
   (a) Stress leads to obesity, which in turn leads to depression and economic hardship.
   (b) Stress is more common to economic hardship than it is to obesity.
   (c) Economic hardship leads to stress, which in turn can lead to obesity.
   (d) Obesity and economic hardship lead to stress, which in turn causes further stress.

3. Which of the following best explains the law of unintended consequences explained in paragraph 3? The government’s campaign against obesity
   (a) has resulted in an increase in the number of people who have both lost weight and given up smoking.
   (b) has had better results than the government’s campaign against smoking.
   (c) has resulted in people’s stopping smoking, only to begin overeating, thus contributing to the obesity epidemic.
   (d) has resulted some people’s eating less but taking up smoking, an equally unhealthy practice.

4. What method of development is most evident in both paragraphs 1 and 2? __________ In paragraph 3? __________

5. Using your own words, explain Glassner’s conclusion about why Americans are so fat. The writer concludes that the law of unintended consequences (people stop smoking and gain weight) is only part of the reason Americans have gained so much weight, since not everyone smokes and some people stop smoking and never gain weight. He explores other reasons in the discussion following this passage.
C. Inferences

Mark with an X any of the following statements that represent an accurate inference that one can make from the passage.

1. ____ The writer thinks that the government’s anti-obesity campaign was a big mistake.
2. ____ In the law of unintended consequences, the consequences are sometimes positive.
3. ____ All people who stop smoking eventually gain weight.
4. ____ The fact that so many people have stopped smoking is the primary reason that the U.S. is experiencing an obesity epidemic today.
5. ____ Economic hardship is an important factor in the current obesity epidemic.

Critical Thinking Exercise

Can you think of another example of the “law of unintended consequences”—a “social intervention” that gave rise to “unintended negative consequences”?

Edward, O. Wilson is Pellegrino University Research Professor (emeritus) and the Honorary Curator in Entomology at the Museum of Comparative Zoology at Harvard University. He has won the Pulitzer Prize twice for nonfiction. This excerpt is from an article published in American Educator that was adapted from Wilson’s introduction to The Best American Science and Nature Writing, 2001.

1Let me tell you a story. It is about two ants. In the early 1960s, when I was a young professor of zoology at Harvard University, one of the vexing mysteries of evolution was the origin of ants. Ants are the most abundant of insects, the most effective predators of other insects, and the busiest scavengers of small dead animals. They transport the seeds of thousands of plant species, and they turn and enrich more soil than earthworms. In totality (they number roughly in the million billions and weigh about as much as all of humanity), they are among the key players of Earth’s terrestrial environment. Of equal general interest, they have attained their dominion by means of the most advanced social organization known among animals. I had chosen these insects for the focus of my research. It was the culmination of a fascination that dated back to childhood. Now, I spent a lot of time thinking about how they came to be.

2At first, the problem seemed insoluble because the oldest known ants, found in fossil deposits up to 57 million years old, were already advanced anatomically. In fact, they were quite similar to the modern forms all around us. And just as today, these ancient ants were among the most diverse and abundant of
insects. It was as though an opaque curtain had been lowered to block our view of everything that occurred before. All we had to work with was the tail end of evolution. I was afraid I would never see a real “Ur-species” (primitive ant) in my lifetime.

Then, as so often happens in science, a chance event changed everything. One Sunday morning in 1967, a middle-aged couple, Mr. and Mrs. Edmund Frey, were strolling along the base of the seaside bluffs at Cliffwood Beach, N.J., collecting bits of amber. In one lump they rescued, clear as yellow glass, were two beautifully preserved ants.

The Freys were willing to share their find, and soon the two specimens found their way to me for examination. There they came close to disaster. As I nervously fumbled the amber piece out of its mailing box, I dropped it to the floor, where it broke into two halves. Luck stayed with me, however. The break was as clean as though made by a jeweler, and each piece contained an undamaged specimen. Within minutes, I determined that the ants were the long-sought Holy Grail of ant paleontology, or at least very close to it. They were more primitive than all other known ants, living and fossil. Moreover, in a dramatic confirmation of evolution as a predictive theory, they possessed most of the intermediate traits that according to our earlier deductions should connect modern ants to the nonsocial wasps.

Edward O. Wilson, “The Power of Story,” American Educator

A. Vocabulary

Look through the paragraphs listed below and find a word that matches each definition. Refer to a dictionary if necessary.

1. causing perplexity, puzzling [paragraph 1] vexing
2. the highest point reached, the end [1] culmination
3. pertaining to the earth or to land [1] terrestrial
4. neither transparent nor translucent, impenetrable by light [2] opaque
5. difficult to explain or to solve [2] insoluble
6. conclusions drawn from observation [4] deductions

B. Structure and Meaning

1. Write a sentence stating the main idea of the passage. A chance event—finding two specimens preserved in amber—allowed the writer to study the evolution of ants.

2. Which two modes of discourse are most evident in the passage? narration and exposition
3. Locate and write down three details that, according to Wilson, make ants worthwhile to study. They are the most abundant insect on earth, they are excellent predators and scavengers, they disperse seeds, they enrich soil better than earthworms, and they have the most advanced social system in the animal kingdom (any three).

4. What does Wilson mean when he writes in paragraph 1 “one of the vexing mysteries of evolution was the origin of ants”? Why, specifically, did this mystery exist? Entomologists had no way to study primitive ants and therefore it was impossible to know how modern ants developed from more primitive forms. Those ants found in fossil deposits from 57 million years ago were anatomically closer to modern ants than to primitive ants.

5. An allusion3 is a reference to something outside the selection that reinforces or sheds new light on the writer’s ideas. Explain the meaning of this allusion from paragraph 4: “the ants were the long-sought Holy Grail of ant paleontology.” Use either an unabridged dictionary or a Web-based information site like http://en.wikipedia.com, www.msn.com, or www.ask.com. The Holy Grail refers to the cup or chalice that Jesus used at the Last Supper. In medieval legend, King Arthur and the Knights of the Round Table made quests in search of the Grail. The phrase now means something that is the object of a prolonged endeavor.

C. Inferences

On the basis of the evidence in the passage, mark these statements as follows: PA (probably accurate), PI (probably inaccurate), or NP (not in the passage).

1. ___ PA Primitive ants, also known as the Ur-species, are more than 57 million years old.
2. ___ NP Wilson had advertised that he was looking for primitive ants.
3. ___ PI Mr. and Mrs. Edmund Frey were colleagues of Wilson’s in the entomology department at Harvard.
4. ___ PA Amber resembles yellow glass.
5. ___ PI The ants preserved in the amber looked more like wasps than like today’s ants.
6. ___ PA Sometimes chance events change our lives in significant ways.

3You will study allusions in detail at the end of Chapter 7.
Henry Petroski is a professor of civil engineering and history at Duke University. He specializes in making the abstruse subject of industrial design clear to the lay reader. For example, he has examined the design of common everyday objects such as the pencil, the toothpaste tube, books, the paper clip, and silverware. He has published a dozen books, among them To Engineer Is Human: The Role of Failure in Successful Design (1985) and Small Things Considered: Why There Is No Perfect Design (2003), from which this excerpt comes. In it, he discusses stairways.

**Preview Questions**

1. If you were going to design a staircase, what are the important elements that you would need to take into consideration to ensure that it was safe?

2. What are some design elements that make some staircases unsafe? Consider particular staircases that you have encountered in the past that had dangerous features.

Among the tourist attractions in Edinburgh is a Writers’ Museum dedicated to three of Scotland’s most famous authors: Robert Burns, Sir Walter Scott, and Robert Louis Stevenson. The museum is located in a house that was built in 1622 and acquired in 1719 by a Lady Stair, whose name it bears today. Lady Stair’s House is aptly named, for guides tend to focus not on the displays of memorabilia associated with the writers who lived and worked in the building but on the curious construction of its stairway.

For me, the description of the stairs leading to the second-floor bedroom was certainly the most unforgettable part of our introduction to the house and its historic significance. Before being allowed to climb upstairs, our small group of tourists was given a lecture on the stairway’s idiosyncrasy. Our guide explained to us that the person who built the house, one William Grey, was concerned about intruders sneaking up to the bedroom in the middle of the night and stealing from or attacking him and his wife, Geida Smith. As a form of protection, Grey had the stairway designed and constructed so that “the height of each of the main steps is uneven, making them difficult to run up and down.” Anyone unfamiliar with the house could not ascend the darkened stairway.
without faltering on a step of an unexpectedly different height. The noise accompanying the misstep not only would awaken the owner but also would startle the intruder, thwarting his intentions and causing him to flee. The irregularity of the steps would also impede his flight back down them, if not actually cause him to fall, making it more likely that he would be caught.

Forewarned, we tourists were invited to climb the stairs and experience the irregularity ourselves. Since we weren’t told exactly what the variation in the step height was, the man at the head of our expedition did trip on the way up, but, being on alert, he faltered but did not fall. Even though he had been warned of the irregularity of the steps, his strong predilection to find regularity in any stairs under his feet caused him to establish a rhythm of climbing that was soon thwarted. The rest of us, having observed how challenging the steps were, approached them with trepidation, experiencing the disruption of our own climbing rhythm but otherwise getting past the trap without incident, just as those residents who knew the secret of the stairway must have done even more quickly.

Even when they are not designed as booby traps, stairways can be tricky things. It seems that no two are exactly the same. Though they may have steps that are the same size, the number can vary from one or two to way too many. And even when the number is the same on two different stairways, the size of their (uniform) vertical and horizontal parts, known as the risers and treads, can vary according to the constraints of the space or the whims of the designer or builder. Indeed, it is a remarkable tribute to our ability to adapt to vastly different manifestations of technology that by paying close attention (which is possible in the daylight at least), we can negotiate even the most bizarrely designed and unfamiliar stairways with nary a fault.

Wouldn’t it be nice if all stairways were not only regular but also had exactly the same proportions, the same dimensions for their risers and treads? While that would not make them effective burglar traps, it certainly could be expected to reduce missteps and accidents. In the United States alone each year, about a million people receive hospital treatment for falls on stairs, and about five thousand actually die. At least some of these accidents might be attributable to the oddities of stairways, if not to their downright faulty design.

A. Structure and Meaning

Choose the answer that best completes each statement. You may refer to the passage.

1. What is the writer’s purpose in the passage? To explain the difficulties stairways present for would-be criminals and for ordinary people alike.
2. What two modes of discourse are represented in the passage?

   *narration and exposition*

3. In the second paragraph where the writer discusses Lady Stair’s House, what specifically does the “idiosyncrasy” refer to? The stairs were constructed of uneven heights to discourage intruders.

4. Locate the transitional word in paragraph 4 and indicate its function.

   **Transitional word:** indeed (emphasis)

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**B. Vocabulary in Context—Dictionary Definitions**

Each of these vocabulary words from the selection is followed by two or more dictionary definitions. Choose the best definition that fits the way the word is used in the context.

1. The displays of *memorabilia* associated with the writers [paragraph 1]
   
   (a) Objects valued for their connection with historical events, culture, or entertainment
   
   (b) Events or experiences worthy of remembrance

2. The *curious* construction of its stairway [1]
   
   (a) Eager to learn more
   
   (b) Unduly inquisitive, prying
   
   (c) Arousing interest because of novelty or strangeness

3. A lecture on the stairway's *idiosyncrasy* [2]
   
   (a) A structural or behavioral characteristic peculiar to an individual or a group
   
   (b) A physiological or temperamental peculiarity
   
   (c) An unusual individual reaction to food or a drug

4. Thwarting his intentions [2]
   
   (a) To prevent the occurrence, realization, or attainment of
   
   (b) To oppose and defeat the efforts, plans, or ambitions of

5. He *faltered* but did not fall [3]
   
   (a) To be unsteady in purpose or action, as from loss of courage or confidence
   
   (b) To speak hesitatingly; stammer
   
   (c) To move ineptly or haltingly; stumble

6. Approached them with *trepidation* [3]
   
   (a) A state of alarm or dread; apprehension
   
   (b) An involuntary trembling or quivering

7. Even when they are not designed as *booby traps* [4]
   
   (a) An explosive device designed to be triggered when an unsuspecting victim touches or disturbs a seemingly harmless object
   
   (b) A situation that catches one offguard; a pitfall
8. vastly different *manifestations* of technology [4]

(a) An indication of the existence, reality, or presence of something
(b) One of the forms in which someone or something, such as a person, a divine being, or an idea, is revealed
(c) A public demonstration, usually of a political nature

C. Inferences

On the basis of the evidence in the paragraph, mark these statements as follows:
PA (probably accurate), PI (probably inaccurate), or NP (not in the passage).

1. _____ Lady Stair’s House was first occupied by a woman whose last name was Stair.
2. _____ An intruder—and anyone else for that matter—expects stairs in a stairway to be of a uniform and consistent height.
3. _____ William Grey and his wife Geida caught many intruders with their ingenious stairway.
4. _____ A burglar who encountered Grey’s stairway would be more likely to be caught while trying to escape going down them than while going up them.
5. _____ The design of a stairway is dictated solely by the physical space that it will inhabit.
6. _____ The dangerous element about stairways that contributes to so many accidents is that no two are designed exactly alike.

D. Summary Writing

Write a summary of no more than 75 words of paragraphs 4 and 5.

E. Questions for Discussion and Analysis

1. What are some other ingenious devices or strategies that you have encountered or have used yourself to protect your home, apartment, or dorm room?

2. It seems as if one of Petroski’s purposes in writing books on everyday objects like pencils, books, toothpaste tubes, and stairways is to get the reader to think about these objects not just as design elements but as objects worthy of being examined in a completely new way. How specifically does Petroski accomplish this purpose in the passage you have read?

*Suggested Summary:*

Stairways pose problems because no two are identical. They can differ in both the number of steps and the size of the horizontal parts, which are called the risers and the vertical parts, which are called the treads. Petroski suggests that designing stairways that are regular and uniform would reduce the number of accidents attributed to stairways, around a million per year in the U.S. Poor design is the cause of most stairway accidents, he asserts. (78 words)