

Unit Three

Problem, Process, and Solution

In Unit Two we mainly explored one common kind of underlying structure to academic writing, that of general-specific movement. This structure will prove useful in later units when producing data commentaries (Unit Four) or writing introductions to research papers (Unit Eight). In this unit, we explore and practice a second underlying structure in academic writing, that of problem-to-solution (PS) movement, which we introduced briefly in Unit One and touched on in Unit Two. This structure will again prove useful later when writing critiques (Unit Six) and Introductions (Unit Eight). So, clearly this structure is one of the more important ones in academic writing, especially if you consider how much academic research activity is aimed at solving problems, which may be discussed in published research articles, various kinds of research proposals, and case reports in certain fields, to name a few examples. Beyond looking at the overall organization, we have built into the problem-solution structure some discussion of process descriptions. In many cases, it makes sense to see describing the parts of a process as the steps required to provide a solution to some problem. Alternatively, a problem may be described in terms of a process—for example, how malware infects a mobile phone or how a tsunami (tidal wave) forms.

As we have seen, general-specific passages tend to be descriptive and expository. In contrast, problem-solution texts tend to be more argumentative and evaluative. In the former, students and junior scholars will most likely position themselves as being informed and organized and in the latter as questioning, perceptive, and convincing. We say this because you may need to convince your reader that your problem is indeed a problem and/or that your solution is reasonable.

Now, write the second paragraph, making use of academic resources you find on the internet (remember, if you use or quote directly from source material, you will need to indicate this, making sure to use quotation marks around borrowed words). Here are some questions that might guide you.

1. What (briefly) had Cavour achieved as prime minister up to 1858?
2. Who was Victor Emmanuel?
3. What did Napoleon III want in exchange for helping the Piedmontese expel the Austrians?

TASK TWENTY-THREE

In every field of study, research that once seemed promising is abandoned. Concepts, models, chemicals, drugs, teaching methods, stylistic or design trends, and treatments are left behind for newer directions that offer more promise or are more in line with current needs. For instance, the causes of diseases such as cholera and the plague were once attributed to miasma or “bad air” and described in terms of miasma theory. In Astronomy, the steady-state theory of the expansion of the universe has been replaced by the big bang theory. In the field of nutrition, it was once thought that all fats were harmful, but now researchers know that some fats are better than others and have protective effects. Choose a concept, approach, design, stylistic trend, or line of research that was once widely accepted but has fallen out of favor. Explain the area and the reason it has been abandoned. Use some references, if you need them, but be sure to use your own words throughout your discussion. Organize in terms of GS or SG.

Do you think the transition from the specific instance to the broader issue is successful? Historians may also describe a specific historical incident, what led up to it, and what the consequences were. This then is followed by some evaluation of the incident's historical significance.

TASK TWENTY-TWO

Here are the first and third paragraphs of a historical text. Read them carefully so that you are able to write the second paragraph.

The Meeting at Plombières

Paragraph One

On July 19, 1858, Cavour, the Prime Minister of the small northern Italian kingdom of Piedmont, left his holiday place in Switzerland and traveled to the small spa town of Plombières in northeastern France, arriving there at nightfall on the following day. On July 21, Cavour had a secret three-hour meeting with Emperor Napoleon III of France. During the meeting, the Italian statesman and the French emperor devised a plan for forcing the Austrians out of northern Italy.

Paragraph Two

Paragraph Three

Although Cavour did not live to see the unification of Italy—he died at the early age of 51—he remains, along with Garibaldi and Mazzini, one of the three key figures in the struggle for Italian independence. Not surprisingly then, most Italian towns and cities have one of their principal streets or main squares named after Count Cavour of Piedmont.

**A Duty to Forget? The 'Hitler Youth Generation'
and the Transition from Nazism to Communism
in Postwar East Germany, c. 1945–49**

McDougall, A. (2008).

German History, 26(1), 24–46.

① The short story for the year 1949 in Günter Grass's "My Century" relates an encounter at a conference between the narrator, a West German man, and a woman he had known in his childhood in Stettin (then part of the Third Reich), who subsequently grew up in Communist East Germany. ② In the course of the story, we learn that the woman, Inge, had once been a zealous functionary in the National Socialist girls' organization, the League of German Girls (BDM), winning "promotion after promotion" and remaining loyal to the Nazi cause until the bitter end. ③ After "an eighteen-month grace period" at the end of the Second World War, she then became an equally active and successful functionary in the East's Communist-led youth organization, the Free German Youth (FDJ). ④ Inge, the West German narrator notes, appeared to be "perfectly at ease" in explaining her rapid switching of allegiance from one political system to another.¹

⑤ Inge had many real-life equivalents in the Soviet-Occupied Zone of Germany (SBZ) after the Second World War. ⑥ Hundreds of thousands of young East Germans made just such a speedy transition from the brown shirt to the blue, from one mass youth organization—the two branches of the Nazi youth movement, the Hitler Youth (HJ) and the BDM—to another, the FDJ, in the mid- to late 1940s. ⑦ Members of this "Hitler Youth generation"² played the decisive role in reconstructing the Communist state that ultimately emerged in East Germany from the ashes of the Third Reich.

¹ Grass, Günter, (1999), *My century*, Houghton Mifflin: New York, pp. 123–127.

² The term *Hitler Youth generation* refers to the generation of Germans born between 1919 and 1931, the oldest of whom could have joined the HJ in 1933 (the year in which the Nazi Party came to power) and the youngest of whom would have joined the HJ in early 1945. This paper focuses primarily on the younger part of the HJ generation (those born between circa 1925 and 1931), whose ranks contain the vast majority of young East Germans who experienced both the HJ and the FDJ. The generic term *Hitler Youth generation* will be used here to refer to former members of both the HJ and the BDM (i.e., both gendered branches of the Nazi youth movement).

1. Briefly describe the topic of each paragraph.

Paragraph 1: _____

Paragraph 2: _____

Paragraph 3: _____

Paragraph 4: _____

2. Which paragraph do you think is the most descriptive and which most evaluative?
3. Which paragraph do you think is the most interesting and successful, and why?
4. How well does the author "translate" the visual into the verbal at the beginning?
5. Has the author made a connection between the statue and the historical/cultural context? Do you think this is the author's overall purpose? Or is it mainly to engage in a formal analysis of the work so as to offer a fresh look at it? Is it to raise a social issue? Is the goal to discuss how the artist's life influenced the art?
6. What do you think of the title of this text? What, if any, changes might you suggest?
7. What do you think *onyx* and *patina* might mean in the first paragraph?

Often in SG texts the strategy is to give specific examples or details that provide a foundation for and justify the investigation of a larger concern. Notice how this next text from a history journal draws the reader in by starting with a story about a woman, but by the end of the second paragraph focuses on the broader topic of reconstructing the Communist state in East Germany after World War II. Before you read the text, discuss whether you think young people in particular feel the need to be part of organizations that have strong ideological agendas.

⑩ Johann Philipp Ferdinand ("Fritz") Preiss was born in Erbach in Germany in 1882⁴ and, as a boy, was apprenticed as an ivory carver. ⑪ In 1906, he and Walter Kassler established a workshop in Berlin, which reopened in 1920, following the First World War. ⑫ Preiss died in 1943 and the workshop, records and stock of the company were destroyed by fire in a bombing raid in 1945.⁵ ⑬ As a result, our information about Preiss and his work remains limited.

⑭ Preiss and the Romanian-born Demetre Chiparus remain today the two most important and famous of the Art Deco makers of small bronze and ivory figures. ⑮ These are mostly of young women, sometimes nude, sometimes as dancers and sometimes in athletic or sporting poses. ⑯ Original figures by these two men have become highly collectible and so can command several thousand dollars; ⑰ in consequence, numerous fakes have been produced.

⑱ *La Gamin*⁶ beautifully captures the spirit of the 1920s, particularly in terms of female freedom and emancipation.⁷

⑲ Gone were the complex underclothes, long dresses, and long hair of the pre-WWI era; ⑳ instead we find slender athletic bodies, close-cut hair, short skirts and loose, light tops. ㉑ It was these new fashions that made energetic dances such as the Charleston and sports such as golf and tennis possible for young middle-class women. ㉒ *La Gamin* today stands confidently before us, with her hands in her pockets (surely unusual at that time), optimistically looking out on a brighter future, representing the sophistication of her time.

⁴ B. Catley. (1978). *Art deco and other figures*. Woodbridge, U.K.: Baron Publishing.

⁵ C. Proudlove. *Chiparus and Preiss—doyens among Art Deco sculptors*. <http://writeantiques.com/chiparus-and-preiss-doyens-among-art-deco-sculptors>.

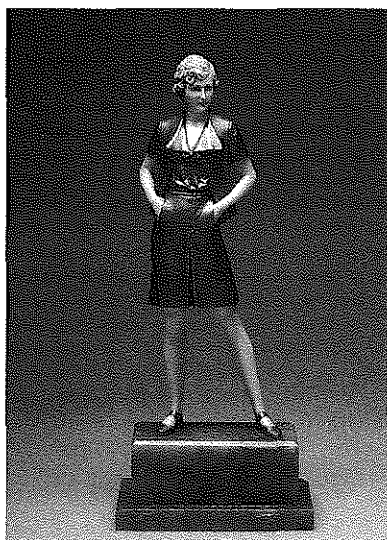
⁶ The traditional name for the figure is *gamin*, which is a slang French term for a young man, the expected female equivalent being *gamine*. It is possible that the title tries to capture the "tomboy" aspect of the sculpture.

⁷ E. Knowles, *Femmes Fatales*, www.ericknowles.co.uk/Femmes_Fatales.htm.

TASK TWENTY-ONE


Read the text about Figure 7 and discuss the questions on page 96. Note here that we have numbered independent clauses as sentences for ease of discussion.

FIGURE 7. *La Gamin* by F. Preiss (circa 1925)



① The illustration shows a small statue of a young woman with elegant legs, slender arms and a small head capped by short, curly hair. ② It is 25 cm. high. ③ The flesh is carved from ivory and the clothes and shoes are cast in bronze; ④ the figure stands on a base made of Brazilian green onyx. ⑤ The figure is signed "F. (Fritz) Preiss." ⑥ Although the statue is not dated, it was almost certainly created some time during the 1920s. ⑦ Some 90 years later, *La Gamin* is in excellent condition: The ivory is not stained or cracked; the bronze retains its original patina; ⑧ and there remain traces of brown in the hair and rose-red on the girl's cheeks. ⑨ Several copies of this statuette are known to exist.

Let's look at how one student in Mechanical Engineering organized this SG text as part of an introduction to a paper on using MEMS accelerometers to monitor human falls. The full text can be found in MICUSP.

<p>Specific Statistics</p>  <p>Recommendation</p>	<p>In 2005 a study completed by the Centers for Disease Control found that 5,800 people 65 and older died from injuries related to unintentional falls and another 1.8 million received emergency room care. Of those treated, 433,000 were hospitalized for long term care [1]. Seniors who live alone may suffer from an unintentional fall and are often not found for hours or days. Long waits for medical care exacerbate their injuries and increase their risk of death or permanent hospitalization. However, fast emergency response to a fall reduces the risk of hospitalization by 26% and death by 80% [3]. The problem with seniors not receiving immediate attention needs to be addressed.</p> <p>MICUSP File MEC.G0.08.1</p>
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We return to the writing of comparative summaries in Unit Five.

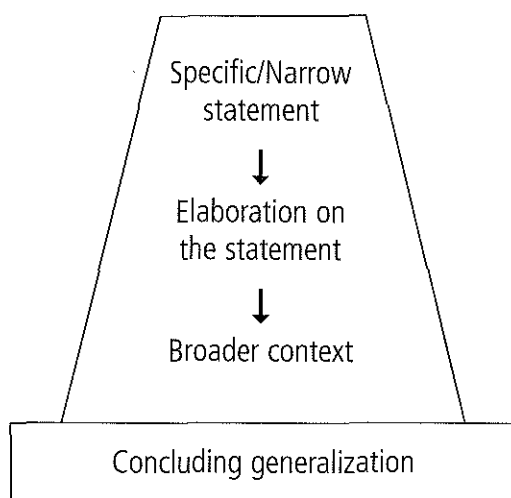
TASK TWENTY

Write a general-specific paragraph on your first language or on a topic from your field of study. Begin with either a definition or a generalization. Alternatively, write a “different schools of thought” text of relevance to your field.

Specific-to-General Organization

We began this unit by exploring GS texts, and in this final section we return to the notion of general and specific, but in terms of specific to general (SG). SG patterns are also possible in academic writing and, in fact, are fairly common in some fields such as History and Art, as well as some medical genres, most notably in case reports, and legal genres, in case notes. SG texts begin with a specific focus and then progressively become more general. The specific focus could be an event, a piece of art, an individual (e.g., a patient in a case report in Medicine), or organization (e.g., a company in a Business case study). The SG pattern, as you can well imagine, looks something like that shown in Figure 6.

FIGURE 6. Shape of an SG text



are the bases for humor. ¹⁹ To account for humor that appears to be a form of release from psychological tension, theorists developed relief theory. ²⁰ According to relief theory, humor provides relief from anxiety, hostility, aggression, and sexual tension. ²¹ Humor gratifies repressed feelings that operate on an unconscious level. ²² Strong proponents of this theory were early psychologists, such as Freud, Dewey, and Kline.

²³ More modern theories of humor are essentially variations of one of these three traditional ones. ²⁴ For instance, Duncan (1985), in his superiority theory, states that humor is linked to social status. ²⁵ Deckers and Buttram (1990) expand incongruity theory to include elements of schema theory. ²⁶ In their view, distinctions between and within schemata* are necessary for an understanding of humor. ²⁷ While each of these theories can explain some aspect of humor, none can successfully be applied to all instances of humor.

1. In which sentences are the different theories introduced?
2. What verb tense is used to introduce the theories of the various researchers? Why do you suppose this is?
3. Underline the sentence connectors in the passage. Why were they used?
4. What do you think might follow this discussion of humor theories—a presentation of the author's own definition of humor, an analysis of one event using the different theories, or something else?
5. Do you think that the whole passage is a GS text, that part of it is, or that none of it is?
6. Does the passage mention a modern version of relief theory?
7. Do you think that the author of this passage (Chris) has positioned herself as neutral, or do you think she has a preference? If you think she has a preference, what do you think it is? Why do you think so?

**Schemata* is the plural of *schema*; it comes from ancient Greek.

TASK NINETEEN

Read this comparative definition and answer the questions on page 91. This passage is more complex than others presented so far. Use a dictionary to check the meanings of words you do not know.

Theories of Humor

① Generally speaking, humor is a quality in an event or expression of ideas which often evokes a physical response of laughter in a person. ② It is an evasive quality that over the centuries has been the subject of numerous theories attempting to describe its origins. ③ There are essentially three main theories of humor, each of which has a number of variants: the superiority theory, the incongruity theory, and the relief theory. ④ The superiority theory, which dates back to Aristotle, through Thomas Hobbes (1651) and Albert Rapp (1951), describes all humor as derisive. ⑤ In other words, people laugh at the misfortunes of others or themselves. ⑥ Humor is, therefore, a form of ridicule that involves the process of judging or degrading something or someone thought to be inferior for a variety of reasons such as speech patterns, or clumsiness.

⑦ While the superiority theory can describe some forms of humor, it cannot account for others. ⑧ For instance, word play and puns are not humorous because of misfortune, but because of inconsistency. ⑨ This incongruity as opposed to degradation is thought by others to be the source of humor. ⑩ The incongruity theory maintains that humor originates from disharmony or inappropriateness. ⑪ Koestler (1964), for example, argues that humor involves coexisting incompatible events. ⑫ In other words, when two opposite or opposing ideas or events exist at the same time, humor may emerge. ⑬ This may involve finding something inappropriate in something that is appropriate, which gives rise to a cognitive shift. ⑭ Take, for instance, this joke. ⑮ "Two fish are in a tank. ⑯ One turns to the other and asks, 'Do you know how to drive this thing?'" ⑰ The play on the word *tank* can result in laughter.

⑱ Although the incongruity is widely accepted, this theory cannot explain instances where neither superiority or incongruity

8. The authors have chosen to place the references to previous work in parentheses. What would be the effect of clearly making the reference part of the sentences, as in this example?

They are aware of the fact that they get behind schedule. Nevertheless, Lay (1987, 1988) states that they still procrastinate because they do not know how to deal with the task.

How do writers refer to previous work in your field? Do they use numbers, parentheses, or something else? If you do not know, check a journal in your field.

9. What might the authors of this text discuss next?
10. What question (or questions) might this passage be part of an answer to?
11. What field do you think the passage is from?

TASK EIGHTEEN

We offer two choices here. Write an extended definition of a term for which there are competing definitions. Or write a contrastive definition for a term in your field. Remember to use citations if you refer to sources.

Discussions of Schools of Thought

Many fields have controversies that have led to competing schools of thought. Examples are schools of thought in Economics, the different categorizations of intelligence, or disagreements about the origins of the universe. Passages outlining these schools of thought often involve highlighting contrasts. Notice how this is done in the sample text in Task Nineteen.

optimistic procrastinator and the pessimistic procrastinator. ⑧ Optimistic procrastinators put off their intentions but do not worry about doing so (Milgram et al., 1992). ⑨ They are confident that they will succeed in the end, regardless of their engagement in the intended action now or later. ⑩ Moreover, they overestimate their progress and their chances to succeed and underestimate the time needed to achieve their goal (Lay, 1987, 1988). ⑪ In contrast, pessimistic procrastinators do worry about their dilatory behavior (Milgram et al., 1992). ⑫ They are aware of the fact that they get behind schedule. ⑬ Nevertheless, they still procrastinate because they do not know how to deal with the task (Lay, 1987, 1988). ⑭ They feel incompetent and are afraid that their involvement in the task will prove their incompetence. ⑮ Therefore, they procrastinate to avoid unpleasant experiences.

Dewitte and Lens, 2000.

1. What elements make the passage seem “academic”?
2. Why do the authors include the general discussion of procrastination in Sentences 1–6?
3. What is the purpose of Sentence 7? Is this sentence helpful to a reader? Why?
4. Underline the sentence connectors in the text. What kinds of connector did the author use (see page 37)? How do these affect the flow of ideas?
5. In Sentence 4 there is a summary phrase. What does *this phenomenon* refer to?
6. Why do you suppose the authors used *sometimes* and *might* in Sentence 6?
7. If, during the revision process, you thought that the passage would be improved by breaking it into two paragraphs, where would you put the paragraph break?

1. How many and what kinds of different definitions of road rage do the authors include? Why?
2. How is the text organized? Does it seem to be a GS text?
3. What verb tenses are used? Why?
4. In Sentence 5, what is *this cultural phenomenon*?
5. In which sentences do the authors seem to be cautious about their claims? Which words or phrases suggested that the authors were hedging (i.e., being careful)?
6. What do the authors mean when they say, *Classifying this cultural phenomenon as a mental disorder may be a stretch*?
7. What is the purpose of the second sentence (i.e., *Some researchers suggest that this definition is not entirely accurate*)?
8. What do you think the authors are going to write about next? Their data? Their method? Their hypothesis? Something else?

TASK SEVENTEEN

Read through the discussion of procrastination, which views the term from a variety of perspectives. Answer the questions on pages 88–89. Does it seem like a competing or a contrastive definition, or is it another kind?

① Procrastination refers to deliberately putting off one's intended actions. ② This means that procrastinators intend to perform an action at a certain moment, but do not engage in it at the moment that it was planned. ③ Instead, they postpone it, or even never do it at all. ④ This phenomenon is defined at the behavioral level (not doing what was intended) as well as at the cognitive level (postponing decisions) and does not refer to the possible causes of the dilatory behavior. ⑤ There may be several reasons for putting off one's intentions, some of which we are not interested in, such as illness, technical problems, and so on. ⑥ Moreover, sometimes procrastination might even be functional (for instance, postponing a decision because crucial information is lacking, as in Ferrari, 1994). ⑦ Two types of procrastinator have been described: the

Here are some skeletal phrases that you could use to present the definition that you have chosen.

While debate exists regarding a precise definition of . . . , the stance adopted in this paper is that

For the purposes of this paper, . . . refers to/is defined as/is considered to be

Here we define . . . as . . . In this paper I have adopted [author's] definition of

This paper follows [author's] definition of

TASK SIXTEEN

Take a look at this discussion of road rage and answer the questions on page 87.

❶ The term "road rage" was first coined in 1988 (Fumento, 1998) and is defined in the *Oxford English Dictionary* as "violent anger caused by the stress and frustration of driving in heavy traffic." ❷ Some researchers suggest that this definition is not entirely accurate. ❸ For example, road rage has been described as a cultural habit of retaliation that occurs as a result of frustration and can occur independent of heavy traffic (James & Nahl, 1998). ❹ Some have even gone so far as to label road rage a mental disorder (Schmid, 1997). ❺ Classifying this cultural phenomenon as a mental disorder may be a stretch, but there is substantial evidence that some drivers become very angry when confronted by an adverse driving event. ❻ Elevated levels of anger may prompt aggressive and other risk-taking behavior, behavior that can increase accident risk, and risk of other negative behavior such as physical assault between drivers or arguments with passengers (Deffenbacher, Oetting, & Lynch, 1994).

DePasquale et al., 2001.

Variations in Definitions

As we said earlier, sometimes a definition of a term or concept is not fixed. There may be a lack of agreement as to a precise definition, or perhaps there are competing perspectives. While not as common in the hard sciences, this is something that students in other fields may encounter. If competing definitions exist for a term that you will be using, a good strategy is to acknowledge some of the different definitions, but then make clear to your reader the definition you will adopt. Notice how the authors of the examples express the lack of agreement surrounding a term.

For two decades, and particularly during the 1990s, authors and practitioners concerned with vulnerability as related to food security and famine have engaged in a lengthy attempt to define vulnerability and develop methods to measure it. Nonetheless, just what the term means and how it informs assessment methods remain unclear.

Preeclampsia has been defined as a pregnant condition characterized by arterial hypertension, proteinuria, and edema during the second half of pregnancy. Although this definition seems simple and includes the main clinical signs, actually there is a wide diversity in the use of this term in clinical and epidemiological studies, leading to difficulties in comparing research outcomes.

Prudencia Ceron-Mireles, minor editing

For centuries scholars have attempted to define, explain, and theorize nationalism. Despite their efforts, it seems there is little agreement on the definition of this concept among researchers.

Hiroe Saruya, minor editing

TASK FIFTEEN

Discuss with a partner how you could re-write the patent/copyright passage using *the former* and *the latter*. The missing information could be placed at either the beginning or the end of the passage. Which strategy would result in the more effective presentation? Can you suggest other changes that might improve the passage?

Now look at the two suggestions from our students. Discuss how they differ and which one you prefer.

- A. Patents and copyrights are forms of legal protection concerned with the rights of an individual who has created something. The former grants an inventor sole rights to the production, use, or sale of an invention or process for a limited period of time, while the latter grants an originator of artistic work exclusive use of the artistic creation for a specific period of time. Patents guarantee an inventor the possibility of earning profit for a reasonable period, while the public is guaranteed eventual free use. Copyrights, however, are issued to authors, playwrights, composers, artists, and publishers, who then have control over publication, sale, and production of their creations.
- B. Patents and copyrights are forms of legal protection that grant inventors or artists exclusive rights to their creations for a limited period of time. Patent and copyright owners are guaranteed the possibility to earn a profit and have control over their creations, while the public is guaranteed eventual free use. However, the former deals only with the creator of an invention or process, while the latter is concerned with authors, playwrights, composers, artists, and publishers.

Did you notice how the second contrastive definition naturally makes use of contrastive connectors?

Read this draft of a contrastive definition. The draft focuses on patents and copyrights, the differences between which may not be clear to non-lawyers.

A patent, in law, is a right that grants an inventor sole rights to the production, use, or sale of an invention or process for a limited period of time. The inventor is guaranteed the possibility to earn profit for a reasonable period, after which the public is guaranteed eventual free use. On the other hand, a copyright is a form of protection which grants an originator of artistic work exclusive use of the artistic creation for a specific period of time. Copyrights are issued to authors, playwrights, composers, artists, and publishers, who then have control over publication, sale, and production of their creations for a period of time.

This is a good start, but the two terms have been presented rather independently. The passage does not reveal the writer's understanding that there is one major characteristic linking patents and copyrights—namely, that they both have a legal basis. The writer has also not made clear the distinction between the two. One way to do this would be to say

The former deals with . . . , while the latter is
concerned with

Other contrastive connectors are provided in Unit Five (see page 226).

TASK FOURTEEN

Complete one of these tasks.

1. Write an extended definition of an important term or concept in your field of study. If you use references, be sure to use your own words and provide a citation to the sources. We ask you to use your own words so that your instructor will have an opportunity to give you feedback and to make sure that you do not engage in inappropriate borrowing (see Unit Five).
 2. Write an extended definition for a key innovation or discovery in your field. For example, this could be a process, an approach to doing something, or a device. Include the following information: a sentence definition of the innovation, when the innovation came about, the importance of the innovation, the problem that the innovation addressed, and some discussion of how the innovation changed your field.
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Definitions to Demonstrate a Distinction between Two Objects or Concepts

So far, we have concentrated on developing a text starting from the definition of a single term. Often, however, you may be asked to display your knowledge about two (or more) related terms. Consider, for example, the following pairs.

a thesis	a dissertation
a scanning electron microscope (SEM)	a transmission electron microscope (TEM)
concrete	cement
ceramic materials	composite materials
cirrus clouds	cumulonimbus clouds
a pulsar	a quasar
formal English	informal English
an LED	an OLED

If you were asked in an in-class examination to explain the differences between the members of each pair, how many could you do?

Instructor's Comments

Your draft looks pretty good. Tenses are just fine, but there still are a few things you need to work on.

1. Consider beginning with a formal sentence definition, as we discussed in class.
 2. Take a look at the organization of the text. It seems to me that your text would flow better if you organized according to situation-problem-solution-evaluation in your definition.
 3. Some of your sentences are incomplete and/or should be joined with another sentence to improve the flow of ideas. See specifically Sentences 3 and 4, 9 and 10, 15 and 16, and 17 and 18.
 4. Add some connectors to improve the flow. Consider using a connector in Sentence 10. Sentences 13, 14, and 15 might also need connectors.
 5. Your use of articles is generally good except for the first paragraph. Check each noun, and remember to consider whether it is a count or non-count noun as you make your choices about articles (a, an, the, Ø).
 6. Sentence 19 would be clearer if you used this + summary word instead of it.
 7. In Sentence 18, consider adding some description of nitrogen as a harmless gas. Use a short definition within the sentence.
 8. In Sentences 6 and 8, consider placing the adverb in mid-position.
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TASK THIRTEEN

This task presents a draft of a definition along with some instructor comments (see page 81). Revise the text after reading the comments. Re-write the entire passage to reflect the changes that you think are reasonable.

① Automotive airbag is occupant restraint system. ② It provides protection for occupant of vehicle in crash. ③ Although airbags may seem to be somewhat recent innovation, rapidly inflating air cushions designed to prevent crash injuries existed for quite some time. ④ Before being used in the automobiles. ⑤ In fact researchers filed very first patents for inflatable safety cushion to be used in airplanes during World War II.

⑥ A recent study by the National Highway Traffic Safety Administration concluded that airbags save nearly 1,000 lives annually. ⑦ In the future even more lives will be saved as new airbag technologies are developed. ⑧ Currently, for example, research is being done on as many as six different types of airbags that will offer protection in a wider range of accidents beyond front-end and side-impact collisions.

⑨ Automotive airbag technology developed between 1940 and 1960 was quite similar to that of airbags currently in use. ⑩ Those early airbag systems were very difficult to implement and costly. ⑪ The main concern for design engineers at the time centered on storage. ⑫ And the efficient release of compressed air. ⑬ The housing of the system had to be large enough for a gas canister. ⑭ The canister had to keep the gas at high pressure for a long period of time. ⑮ The bag itself had to have a special design. ⑯ It would deploy reliably and inflate within 40 milliseconds. ⑰ The solution to these problems came in the early 1970s with the development of small inflators. ⑱ Inflators used hot nitrogen instead of air to deploy the bag. ⑲ It allowed the widespread installation of airbags in vehicles beginning in the 1980s.

TASK TWELVE

Here are the sentences of a GS passage on an unusual but interesting topic. Work with a partner to put them back in the correct order. Write 1 next to the first sentence, 2 next to the second, and so on.

Palindromes

- _____ a. The term itself comes from the Ancient Greek word *palindromos* meaning "running back again."
 - _____ b. Another good and more recent example is "draw pupils lip upward."
 - _____ c. Now, however, computers have allowed word puzzlers to construct palindromes that are thousands of words long, but these are simply lists of unrelated words that do not have meaning when taken together.
 - _____ d. A palindrome is a word or phrase that results in the same sequence of letters no matter whether it is read from left to right or from right to left.
 - _____ e. One of the classic long palindromes is "A man, a plan, a canal, Panama."
 - _____ f. Before we had computers, long palindromes used to be very hard to construct, and some word puzzlers spent immense amounts of time trying to produce good examples.
 - _____ g. Some common English words are palindromes, such as *pop*, *dad*, *noon*, and *race car*.
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TASK ELEVEN

Now read the extended definition by one of our students and answer the questions.

① Navigation is a process by which means of transport can be guided to their destination when the route has few or no landmarks. ② Some of the earliest navigators were sailors, who steered their ships first by the stars, then with a compass, and later with more complicated instruments that measured the position of the sun. ③ We are reminded of this by the fact that the word navigation comes from the Latin word for "ship." ④ However, the history and importance of navigation changed radically in the 20th century with the development of aircraft and missiles, which fly in three dimensions. ⑤ Today, both ships and aircraft rely heavily on computerized navigational systems, known as Global Positioning System (GPS), that can provide a continuous, immediate, and accurate report of position. ⑥ In fact, the capabilities of GPS render the older positioning technologies impractical and obsolete.

Benny Bechor, minor editing

1. What type of information is included in each of the sentences in the definition?
2. How is the passage organized?
3. What tenses are used for which sentences? Why?
4. Sentence 3 begins with *we*. Is this appropriate?
5. The term *navigation* is also used in connection with the internet. How and under what circumstances could this connection be included in the discussion?

Notice how the paragraph moves from a very general statement at the beginning to specific details and then "widens out" again in the final sentence to describe the current status of navigation. As noted at the beginning of this unit, this pattern is quite common in paragraphs of this type.

Transient insomnia is related to sickness, stress, and traveling. Chronic insomnia is a disruption in sleep every night for more than 6 months. If untreated, insomnia can increase the risk for severe depression. When patients are treated for insomnia, they often report little change, even when sleep patterns improve. These poor sleep habits are also correlated with anxiety and increased worrying (Jansson-Fröjmark & Lindblom, 2008).

To accomplish the necessary increase in effluent* quality, the city government selected to upgrade to a membrane bioreactor (MBR) system. MBRs can be defined as systems that integrate biological treatment of wastewater with membrane filtration techniques. They offer several advantages compared to conventional biological treatment systems, including improved biodegradation efficiency, higher loading rates, lower sludge production, improved effluent quality, and smaller plant size. Additionally, MBRs eliminate settling problems, which are often troublesome in wastewater treatment (Cicek, 2002), and are more automated, allowing for less operator monitoring. Disadvantages associated with MBRs are mainly cost related, due to expensive membrane units, frequent membrane cleaning, and high energy demands.

In each text, the author used non-integral citations, placing the original author and date information in parentheses. In doing so, the focus remains on the content rather than the source of the information. The choice of citation form, therefore, can be very important in establishing a good flow of ideas.

*outflow from a sewer or sewage system.

Extended definitions may also include information about many other features, such as rarity and cost. You can even go beyond the type of specific detail just described and display your breadth of understanding by discussing problems, exceptions, and future predictions, as demonstrated by this text written by one of our students.

A lab on a chip (LOC) is a microfluid device that integrates a variety of laboratory functions onto one chip that may be as small as a few centimeters or millimeters. The chips can be fabricated by standard photolithography and time controlled wet etching on a glass slide. Similar to electronic circuits that route the flow of electricity on computer chips without external controls, the microfluidic circuits etched onto a material regulate the flow of fluid through their devices without instructions from outside systems. A lab on a chip can analyze a volume of liquid 10,000 times (or more) smaller than that required for a conventional analytical instrument. A further advantage is that the work of an entire lab can be done on a single chip. Given their size and time-saving advantages LOC technologies will become key instruments in the process of diagnosing and fighting disease.

H. J. Kim, minor editing

The LOC text was written by a student who knew the concept well enough to not need citations to other work; our examination of MICUSP, however, reveals that most students rely on one or more citations in their extended definitions, the reasons for which are taken up in Unit Eight. Some students use quoted material, but many use their own words so as to reveal their understanding. Note the use of citations in these two texts. In each case, the authors chose to use their own words and placed the original author and date in parentheses.

Insomnia is defined as inadequate or poor sleep based on the quality of sleep, number of wakings in a night, length of time sleeping, and length of time spent awake during the night (Vincent et al., 2006). Causes of insomnia can be transient or chronic (Schenck, 2008).

2. Pollution is a form of environmental contamination resulting from human activity. Some common forms of pollution are wastes from the burning of fossil fuels and sewage running into rivers. Even litter and excessive noise or light can be considered forms of pollution because of the impact they can have on the environment.
 3. Perspective is a technique in art that is used to represent three-dimensional objects and depth relationships on a flat surface. Modern linear perspective (which involves making objects seem smaller the more distant they are from the observer) was probably first used in the 1400s by the artist Masaccio and the architects Filippo Brunelleschi and Leon Battista Alberti in Florence, Italy. Before this time, artists paid little attention to realistic perspective. In recent decades, many modern artists have returned to the practices of early artists and have abandoned realistic perspective.
 4. An acrylic plastic is a polymer which can take a high polish, is clear and transparent, and can be shaped while hot. Because of these and other characteristics, acrylic plastic is used in situations where glass is not suitable or desirable, for instance, in certain types of windshields.
-

An extended definition may also include information regarding operating principles or causes and effects. A description of operating principles is also known as a *process analysis*. A process analysis has some unique characteristics, which will be discussed in greater detail in Unit Three, but we provide this example to illustrate.

Lateralization is a developmental process during which the two sides of the brain become specialized for different functions. As a child develops, the two sides of the brain become asymmetric in that each side controls different abilities. Language, for instance, is controlled by the left side of the brain and certain types of pattern recognition by the right. However, there is some disagreement as to when this specialization is complete. Some researchers believe the process is not complete until puberty, while others maintain that the brain is lateralized by age five.

TASK NINE

Write a one-sentence definition for one of the following terms or one term from your own field. Make sure you provide enough specific detail to distinguish your term from other members in its class.

a bridge

a conductor

a piano

a computer virus

a carcinogen

a syllabus

a laser

a migraine

arsenic (As)

Exchange and discuss your definition(s) with a partner.

Extended Definitions

So far we have dealt only with sentence definitions. In some cases, one sentence may be enough before continuing with a GS passage. However, in others, it may be relevant and important to expand the definition, particularly in a course paper. In this way, you can demonstrate your knowledge of a concept more fully. An extended definition usually begins with a general, one-sentence definition and then becomes more specific as additional details are provided. There may be a need to focus on aspects such as components, types, applications, history, or examples.

TASK TEN

Read the following extended definitions. Discuss with a partner the kind of information that has been included. Does the definition mainly discuss components, applications, history, examples, or something else?

1. A microscope is an optical instrument with which the apparent size of an object can be enhanced. A simple microscope consists of a double convex lens and a magnifying glass. A compound microscope, on the other hand, will contain more than one of each of these lenses, which are situated at the ends of a cylinder.

Whereby is commonly used in formal writing instead of *by which*, *by means of which*, and *through which*.

Collective bargaining is a process whereby employers agree to discuss work-related issues with employee representatives.

Here are two final pieces of advice about writing formal definitions. First, if possible, avoid using any form of your term in the definition. Using the term itself in the definition can result in a circular or uninformative definition.

Erosion is a process during which the surface of the earth erodes. →

Erosion is a process during which the surface of the earth is degraded by the effects of the atmosphere, weather, and human activity.

Some authors, however, prefer to repeat the term (or a form of the term) to achieve clarity.

Queries may be one-time queries or recurrent queries. A recurrent query is a query that an application submits to request that a sensing/actuation task be carried out or that an event be detected repetitively with a given frequency and for a given duration.

Second, if possible, use *when* and *where* in definitions only if necessary. These may seem overly informal to readers.

Pollution is when the environment becomes contaminated as a result of human activity. →

Pollution is a form of environmental contamination resulting from human activity.

A fault is where there is a fracture in the earth's crust and the rock on one side of the fracture moves in relation to the rock on the other side. →

A fault is a fracture in the Earth's crust in which the rock on one side of the fracture moves in relation to the rock on the other side.

Now notice also that in a full relative clause, the relative pronoun can be preceded by a preposition. The relative pronoun *which* must be used in this type of restrictive relative clause. This construction is common in formal academic writing.

Organizational learning is a process through which firms develop new knowledge or insights.

A bioactive material is a material on which bone-like hydroxyapatite will form selectively after it is immersed in a serum-like solution [1] and [5].

TASK EIGHT

Complete the definitions by inserting an appropriate preposition.

1. A thermometer is an instrument _____ which temperature can be measured.
 2. Photosynthesis is a process _____ which sunlight is used to manufacture carbohydrates from water and carbon dioxide.
 3. A credit bureau is an organization _____ which businesses can apply for financial information on potential customers.
 4. An anhydride is a compound _____ which the elements of water have been removed.
 5. An eclipse is a celestial event _____ which one body, such as a star, is covered by another, such as a planet.
 6. An axis is an imaginary line _____ which a body is said to rotate.
 7. Mentoring is a means _____ which professional values are imprinted and transmitted from one generation to the next.
 8. Demography is a discipline that is concerned with changes in population size and the degree _____ which fertility (i.e., births), mortality (i.e., deaths), and migration (i.e., movement into and out of an area) contribute to these changes.
 9. Energy balance is a state _____ which the number of calories eaten equals the number of calories used.
 10. "Hotelling" is a new type of office design _____ which employees who mostly work at home or in the field are not given permanent offices but, rather, shared, temporary space as needed.
-

A Brief Look at the Elements of Formal Sentence Definitions

Let us now look at formal sentence definitions. As we said earlier, sentence definitions are often a useful starting point for a GS paragraph. In a formal sentence definition, such as the examples that follow, the term being defined is first assigned to a class or group to which it belongs and then distinguished from other terms in the class. The class word is a superordinate—a category word one level of generality above the term. Some common superordinates, or class words, are *technique*, *method*, *process*, *device*, and *system* (Pearson, 1998).

Annealing is a metalworking process in which a material is subjected to elevated temperatures for a period of time to cause structural or electrical changes in its properties.

To what class does annealing belong? How is it different from other members of the class, such as hammering or welding? So what we have here is this structure:

Term	<i>is/are</i>	<i>a/an</i> class	<i>that/wh</i> -word ³	+ distinguishing detail
A solar cell	is	a device	that/which	converts the energy of sunlight into electric energy.

Notice the use of the indefinite articles *a* and *an* in the first part of these definitions. Also note that the distinguishing information in the restrictive relative clause can be introduced by either a full or a reduced relative clause. (For more information on the grammar of definitions, see Appendix One.)

³ Although some style manuals recommend using *that* instead of *which* in restrictive relative clauses, research shows that *which* continues to be used in definition statements. Therefore, we have used both *which* and *that* in the sample definitions presented in this unit.

TASK SIX

Identify and underline the definitional elements in each passage.

1. In addition to the examination of historical records, a study of the geologic record of past seismic activities, called paleoseismology, can be used to evaluate the occurrence and size of earthquakes in the region. Geomorphic (surface landform) and trench studies may reveal the number of past seismic events, slip per event, and timing of the events at a specific fault.
2. The uncertainty associated with the energy obtained from other types of non-utility generators (NUGs), i.e., thermal and hydro, is relatively small compared to that associated with wind.
3. Average raw scores on IQ tests have been rising for years (Flynn, 1984, 1987, 1999), by an estimated three IQ points per decade (Neisser, 1998). This rise, known as the Flynn effect, has received much attention, though its exact nature was recently questioned.
4. Phytoremediation is the direct use of living green plants for *in situ*, or in place, risk reduction for contaminated soil, sediments, and groundwater.
5. Procrastination refers to deliberately putting off one's intended actions.
6. Software watermarking is a process in which identifying information is embedded into a file, enabling authors to control the distribution of and verify ownership of their digital information. The purpose of software watermarking is to protect the intellectual property that belongs to the author.

TASK SEVEN

Skim one or two journal articles in your area of study (perhaps the texts you examined in Task Fourteen of Unit One), looking for definitions. Highlight any definitions you find and try to categorize them as one of the types described. In which section of the article did you find the definitions? Why? Bring your findings to class.

- e. The verb *define* is widely used and often represents a safe option, especially in more elaborate explanations and for terms or concepts that can be defined in more than one way.

Shadow work may be defined as those subsistence activities engaged in by the homeless which are outside of the regular employment system, but not necessarily outside of the market system altogether (Ilich, 1981).

For the purposes of this study, fast food is defined as food sold by a franchised restaurant chain offering both dining and take-out facilities with no "table" service (e.g., McDonald's).

One important product attribute is perceived product sophistication, which I define here as the degree to which a product exhibits the latest technological advances.

In the preceding examples, what expressions suggest to you that other definitions may be possible?

- f. Finally, the verb *refer to* is widely used in definition sentences in academic writing.

The natural gas contained in coal formations is generally referred to as coal bed methane.

Individuals may go above and beyond the call of duty to help coworkers, prevent problems, or volunteer to stay late when not expected to do so. This behavior is intended to help others in the organization or the organization itself and is often referred to as organizational citizenship behavior (OCB).

Reductionism primarily refers to inappropriate simplification.

Identify the uses of the passive voice in the first two sample definitions. Why do you suppose passive voice was used?

Finally, remember that it is possible to simply place a short definition in parentheses after a term, as in this example.

DNA microarrays (or gene chips) are an extremely powerful new tool in the field of genomics-based biotechnology.



Language Focus: Verbs in Defining and Naming

Here we offer a few points on verb choices for you to consider when you offer an explanation of a term.

- a. The verb *name* itself is uncommon and seems restricted to a focus on the name itself.

This new species was named *Ascochyta mycoparasitica*.

- b. The verb *denote* is common but seems largely restricted to matters of notation.

Any rotational velocity is usually denoted by *f*. Any vector in this paper will be denoted by a bold letter.

- c. The verb *call* can be used in definitions, but using it in full sentences can be tricky. One danger in written papers is that it can give the impression of stating the obvious, as in this example.

A book containing lists of word definitions is called a dictionary.

While this kind of definitional explanation may be fine when provided by the instructor, it may not work so well when writing for experts. Notice the general-to-specific order of information and the use of the passive in the following examples.

This new method is called activity-based costing, or simply ABC.

Fig. 15 shows two simple mirrors, bending around the light. The configuration may be called a two-dimensional corner reflector.

- d. With more than a million hits on Google Scholar, the phrase *known as* would appear to be fairly common in definitional sentences.

Another principle source of heat is the natural increase in temperature as the depth increases. This is known as the geothermal gradient.

To sum up, we suggest that you offer a definition of a term or concept if one or more of the following apply

1. the term or concept is perhaps unfamiliar to your readers
2. you need to display your understanding for a course paper or examination
3. the origin of the term is interesting or sheds light on the meaning (as in our definition of *definition* earlier)
4. there is a lack of agreement on or some ambiguity surrounding the meaning

TASK FIVE

List some terms in your own field with meanings different from those in everyday life. In Engineering, you might consider the word *chip* or *jitter*. In Business, Computer Science, or Automotive Engineering, you might consider the word *crash*. Engineers may also consider *noise*. What about a *cloud*? Now define one or two of those terms as we did for *tone* in Linguistics and Physiology.

Some Common Ways to Define in Academic Writing

Definitions are common in student papers and published papers. Definitions may simply be short, parenthetical additions to a sentence or perhaps a larger part of a paper. The extent of the definition depends on the purpose of the paper, the level of familiarity your audience has with the subject, and the extent to which there is an agreed-upon definition of the concept. Here are some common ways to define.

1. short definitions or "glosses" that give information about a term in a word or phrase and are placed within either parentheses or commas in a sentence; phrasal definitions signaled by such devices as *i.e.* or phrases such as *known as*, *defined as*, and *called*
2. sentence definitions, which are brief and somewhat similar to a dictionary definition
3. extended definitions, which are longer and more detailed than definitions found in dictionaries

something to do with low temperature or a deficiency of heat. But *cold* is a relative term whose meaning changes with context. In the following text, how does the author define *particularly cold* for the reader?

Only when environmental conditions are particularly cold, for example during winter conditions at latitudes above about 50° in either hemisphere, or when cold is associated with windy and especially wet conditions, or when the athlete exercises in cold water for prolonged periods, does the risk arise that the athlete will lose heat faster than he or she can produce it.

Noakes, 2000.

Words and phrases may also have different meanings depending on the field of study. For example, *tone* has several definitions. In Music, a *tone* can be a sound of distinct pitch, quality, and duration; while in Linguistics, *tone* can refer to the rise or fall of the voice on a particular syllable (as in Chinese). In Interior Design, *tone* may be a color or shade of color. And, finally, *tone* in Physiology may be used to describe the normal state of elastic tension or partial contraction in resting muscles.

Apart from disciplinary differences in the meaning of a term, meanings may differ within some fields of study; this is not uncommon in the social sciences and the humanities. In these fields the definition of a term may not be agreed on by members of the discipline; there may be multiple or competing definitions, each of which has merit. An awareness of these differences may be critical for your reading as well as your writing. Indeed, to quote Boggs (2009), "Definitions are curious things. On the surface, one resembles another, sometimes more closely, sometimes less. Beneath their surface, however, lurks the essential quality that differentiates one definition from another, a quality that makes that definition unique to its referent."

To illustrate, while we may all have an understanding of *fast food*, definitions of the concept differ for different research purposes and it may be necessary to clearly state the definition so as to avoid misunderstanding or criticism. Even within the sciences there is a need for clarifying concepts such as high blood pressure, for which there are no universally accepted pressure readings (which in turn can complicate comparisons of study outcomes). Even in the sciences there are occasionally debates regarding the meaning of important concepts such as noise. We will return to the issue of multiple definitions later.

1. What message is the author trying to convey in the first three sentences?
 2. The purpose of this paper was to examine the extent to which economic models on collusion describe collusion in the lysine industry. Do you think this is an effective opening? Why or why not?
 3. What is the purpose of Sentence 2? How important is this sentence?
-

Opening with Definitions

Definitions are a common way of getting started; they are “hooks” from which GS paragraphs can be hung. Such paragraphs typically open with full-sentence definitions. Textbooks, in contrast, often introduce the definitional information as a minor part of the sentence, as in this example:

The majority of corporate profits, or earnings after all the operating expenses have been deducted, are subject to tax by the government.

Textbook definitional information is used to clarify terms that may be unfamiliar to the reader. However, this is not your task if your audience is already familiar with the terms and expects you to write a text that demonstrates your understanding of concepts.

In the next part of this unit, we will highlight certain aspects of the structure of these key definitional sentences. We will then consider more extended definitions, contrastive definitions (e.g., organic versus inorganic chemistry), and comparative definitions (i.e., discussions of the advantages and disadvantages of competing definitions).

Writing a Definition

The term *definition* comes from the Latin word *definio*, which means “to limit or bound; to interpret ideas or words in terms of each other; to understand one thing by another.” A definition sets the boundaries for a word’s meaning. As you are aware, one term can have different meanings depending on the context. The dictionary definition of *cold*, for example, usually has

Opening with Statistics

Statistics can be particularly effective openings to GS texts because they can sometimes generate reader interest in the text, as demonstrated by this excerpt from a student paper written for a mechanical engineering course.

In the United States in 2006, 4,784 pedestrians were killed in traffic accidents. Because a larger percentage of Americans use private vehicles than walk or use public transportation compared to people in many countries in the European Union and around the world, less attention is given in the U.S. to pedestrian safety than in these more pedestrian-friendly countries. In addition, though numerous efforts have been made to improve vehicle passenger safety (air bags, crumple zones, et cetera), no similar effort to protect pedestrians has been initiated. While pedestrians were involved in just over 1% of all traffic accidents in 2006, these vulnerable road users accounted for over 12% of all traffic fatalities.

MICUSP File MEC.G1.03.1

TASK FOUR

Discuss with a partner whether opening a GS text with some statistics is possible in your field of study. Why are such openings potentially interesting for readers? Now look at this GS opening from a student paper in Economics and answer the questions on page 65.

① Between 1992 and 1995, an international lysine cartel that included five companies illegally colluded on prices around the world. ② Lysine is an amino acid used as a feed additive for enhancing muscle growth in livestock. ③ Prior to the collusive agreement, worldwide sales of lysine were over \$600 million annually and this figure increased by \$200 million following the price-fixing arrangement.

MICUSP File ECO.G0.02.2

Sentence A may be good for either expert or non-expert readers. The information in Sentence A seems broadly accessible since readers should be familiar with global warming and dependency on foreign oil. Although most definitions often work for an audience that is unfamiliar with the topic to be addressed, the definition in Sentence B might be too technical for a broad audience. So, it seems that Sentence B would be best for an audience familiar with concepts like propulsion and traditional combustion engines. In the end, audience matters.

1. a. Since their introduction, social network sites (SNSs) such as MySpace, Facebook, RenRen, and Bebo have attracted millions of users, many of whom have integrated these sites into their daily practices. As of this writing, there are hundreds of SNSs, with various technological affordances, supporting a wide range of interests and practices.
b. According to Messinger et al. (2009) a social networking website is a platform in which members can (a) easily create "profiles" with information about themselves, and (b) define their "trusted" circle of friends.
 2. a. Since their discovery in the late 1970s, hydrothermal vents associated with mid-oceanic ridges have fascinated scientists of various disciplines.
b. A hydrothermal vent is a fissure in a planet's surface from which geothermally heated water emerges (Lal, 2008). Such vents are commonly found near volcanically active places, areas where tectonic plates are moving apart, and new crust is being formed.
 3. a. Folk art is often defined as an art form created out of everyday materials by untrained artists.
b. Folk art distinguishes itself from what is commonly known as fine art in that it has been and remains an important link in cultural transmission.
-

Suppose, for instance, the topic assigned is "The English Language." Now, if we were to write on this topic as linguists and the audience was a professor in Linguistics, we might open the text with a definition.

English is a language that belongs to the West Germanic subgroup of the Indo-European language family. It began its history as a distinct tongue in England around 500 ACE.

However, in other circumstances, depending on your purpose, it may be a better strategy to start with a generalization.

In comparison to many of the world's better-known languages, English is relatively new. Indeed, the English of 600 years ago can be understood only by specialists.

Although Chinese has the greatest number of native speakers, English is the most widely distributed language in the world today. This position derives from the fact that English is widely taught as a second language in schools and widely used in international communication as a lingua franca.

TASK THREE

Three pairs of sentences are shown on page 63, each consisting of a definition and a generalization. When would it be better to begin a text with the first sentence in each pair rather than the second?

Example

- A. Plug-in hybrid electric vehicle (PHEV) technology is considered a potential near-term approach to addressing global warming and U.S. dependency on foreign oil in the transportation sector as the cost, size, and weight of batteries are increasingly reduced.
- B. A plug-in hybrid electric vehicle (PHEV) combines the propulsion capabilities of a traditional combustion engine with an electric motor.

As in many GS texts, the electric vehicle passage (and the one on page 60) began with a general statement. General statements of fact or tendency can often be useful starting points of papers and sections of papers. In fact, our small study of a subset of student papers in MICUSP² revealed that this was overwhelmingly the most common choice of openings among students. Other common ways to begin a paper include providing some interesting statistics, a quotation, or a definition.

Opening with General Statements

General statements can include those providing facts as well as broad statements made about a topic that are usually, but not necessarily always, true. Here are a few examples.

Individuals in organizations exhibit a wide range of behaviors, from the minimalist who does the least possible to maintain membership to those who go beyond expectations, engaging in extra-role behavior to promote the effective operation of the organization or to benefit others.

In the last decade, tremendous strides have been made in the science and technology of organic light-emitting diodes (OLEDs).

Medical tourism is growing in countries such as Thailand, Malaysia, and the Philippines.

Generalizations that you anticipate readers are likely to accept can be effective opening sentences. By beginning with information that is generally accepted, you begin with something familiar to the readers, and ease them into your paper. While you may worry whether starting with familiar information is a good strategy, in many fields this may be preferred over starting with a highly challenging or provocative claim. Why do you suppose this is?

After making a general statement, some support or explanation for the statement should be offered, which, as we have discussed, helps move the passage from general to specific. Support can take the form of specific detail or perhaps a citation to earlier work. Whether you begin a GS text with a general statement or a definition is a matter of personal preference. However, sometimes one may be a strategically better choice than the other.

² The Michigan Corpus of Upper-level Student Papers is available at www.elicorpora.info/.

This text is a good example of old-to-new information flow. In Sentences 1 and 2 the old information is electric vehicles. Sentence 2 also introduces *energy* as some new and more specific information. *Energy* is then picked up in Sentence 3 as old information, and the sentence introduces *ultracapacitors* as new information. *Ultracapacitors* marks a clear narrowing of the topic, which in Sentence 4 now focuses on on-board energy storage and generation. In just a few sentences, the topic narrowed from the broad focus on electric vehicles to energy storage as well as performance and range of electric vehicles. This has been accomplished by strategically picking up some new information at the end of one sentence and providing more information on the new topic.

TASK TWO

Discuss with a partner how well the author moves the information from general to specific.

❶ The tragedy of the commons refers to the tendency to overuse common resources without controls or regulations. ❷ The tragedy of the commons was described in terms of herders sharing a common parcel of land (Hardin, 1968). ❸ Although the tragedy of the commons is an old concept, it remains a serious problem in the world. ❹ Most of the present environment and natural resource issues can be tied to this concept. ❺ Today this concept is applied to "global" commons such as transboundary pollution, tropical deforestation, and climate change. ❻ According to Dietz, Ostrom, & Stern (2007), environmental resources should be governed to protect the commons. ❼ Sustained research on both domestic and international policies (Dietz et al., 2007) is also necessary to determine the appropriate regulatory policies.

7. Why is *truth* in Sentence 13 in quotation marks?
 8. Note that Sentence 13 begins with *and*. How common is *and* in sentence-initial position in your field? Are you comfortable using it? If not, can you suggest another linking expression?
 9. Overall, how easy or challenging is this text to read? What features contribute to your opinion?
 10. Does the text give the impression that the author is knowledgeable? Why or why not?
-

The GS passage on reality TV is not unlike a response to a paper assignment in a Communications or Sociology course. An assigned topic might be something like this.

Are reality TV programs similar to or different from traditional documentaries?

Alternatively, the passage could also have been the opening paragraph to a different assignment—perhaps one asking students to analyze a reality TV program. Or it could have been an assignment focusing on the aims of reality TV.

Central to creating a GS text is your strategy for information flow. You want to be sure that the text is indeed becoming more specific. Let's look more closely at how this is accomplished in this text on plug-in hybrid electric vehicles.

- ① The increasing popularity of electric vehicles (EVs) and plug-in hybrid electric vehicles (PHEVs) is attributed to the savings in fuel costs compared to conventional internal combustion engine (ICE) vehicles.
- ② EVs and PHEVs save energy due to the employment of reverse regenerating braking during the deceleration cycle.
- ③ This energy is typically stored in batteries and/or ultracapacitors (UCs).
- ④ The incorporation of on-board energy storage systems (ESS) and generation in PHEVs has been facilitated and dictated by the market demands for enhanced performance and range.

Amjadi and Williamson, 2009.

Big Brother states, "I wanted it to look live and exciting. . . . [T]his was not meant to be a polished drama. *We were filming it for real*, and it was a virtue of the programme that viewers understood that" (Ruth Wrigley, cited in Ritchie, 2000, p. 11, italics added). ⑪ Indeed, Lewis (2004) refers to a "tele-reality" into which people from the "everyday world" are submerged to perform their role. ⑫ Viewers understand this blurring of boundaries between the public, private, and "adjacent realities" (Lewis, 2004, p. 295). ⑬ And they find pleasure in looking for moments of "truth" that may shine through improvised performances (Hill, 2005).

5. Now compare Sentence 1 and Sentence 13. The text has moved from talking about reality TV in general to the very specific point about viewers' understanding of the genre and the "truth." Can you outline how the author has created this general-to-specific discussion?

1. _____

 (most specific point in Paragraph A)

2. _____

 (most specific point in Paragraph B)

6. How much repetition of vocabulary is present in the text? Did you notice the repetition when you first read it or only after you began analyzing the text?

a fact/fiction continuum, which reflects the sliding scale of factuality. ⑤ The continuum covers contemporary documentaries and popular factual entertainment ranging from docu-soaps and game-docs to makeovers and quiz shows.

1. How does the author take readers from the general opening emphasis on reality TV to the final focus on “docu-soaps and game-docs to makeovers and quiz shows”? Would you agree that the first sentence provides a more general point than the last one?
2. Take a closer look at the information flow. Underline the beginning (or opening) focus of each sentence. Except for Sentence 1, for each sentence opening, can you find a connection to some similar information in the previous sentence? If so, how does this contribute to the information flow?
3. Do you think the author could have started with this variation of Sentence 4? Why or why not?

④ In her research on reality TV, Hill (2005, p. 50) suggests a fact/fiction continuum, which reflects the sliding scale of factuality.

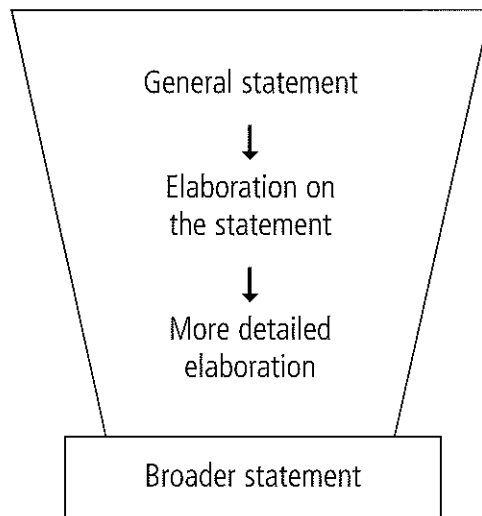
4. Read the next paragraph of the text. Does it logically flow from the first? How did you decide this?

B. ⑥ Similar to documentaries, reality programs aim for the “articulation of the authentic self” in order to depict “moments of truth” (Holmes, 2004, p. 159). ⑦ Tele-confessionals in designated video rooms and individual strategies for winning the game provide intimate accounts of unfolding events.

⑧ Also, slightly off-the-mark camera angles and out-of-focus shots contribute to a sense of immediacy and intimacy with characters and suggest a “fly-on-the-wall” experience for viewers. ⑨ Reality TV producers aim for this “tele-factuality” (Corner, 2002, p. 257), which is reflected in statements such as “the camera doesn’t lie, [e]specially up close” (*Canada’s Next Top Model*, Citytv, 2006). ⑩ Similarly, the executive producer of

to specific, these texts can widen out again in the final sentence. The shape is similar to that of a glass or funnel with a base (see Figure 5).

FIGURE 5. Shape of a GS Text



TASK ONE

Here are excerpts from a published paper entitled “Reality TV Formats: The Case of Canadian Idol” from the *Canadian Journal of Communication* (Baltruschat, 2009). Read them and answer the questions on pages 57–59.

A. From documentaries to docu-soaps and game-docs

- ① The emergence of reality TV represents a shift from what Kilborn (2003) calls the more “serious” representation of socio-historical events to programming that is produced predominantly for entertainment purposes.
- ② Reality programs are linked to different documentary forms, such as documentary journalism, cinéma vérité traditions, and the observational documentary.
- ③ However, due to elements of popular entertainment programming (e.g., talk shows, game shows, and soap operas), reality TV ultimately creates its own generic map.
- ④ Commenting on these programs, Hill (2005, p. 50) suggests

Unit Two

General-Specific and Specific-General Texts

We have chosen to begin our focus on writing tasks with a type of text sometimes referred to as general-specific (GS). As the name suggests, the structure of these texts involves movement from broader statements to more specific ones. At the end of this unit, we will also introduce texts that move in the opposite direction, namely from specific detail to more general content. Such texts are common in a variety of fields such as Art History, History, and Literature, but you may find exemplars of this writing strategy in other fields where it may be helpful to orient the reader by providing “immediate contact” with an object or context (Bondi, 2007).

GS texts are quite common in graduate student writing, and they are comparatively straightforward. The GS pattern can be used at the paragraph level as well as for larger units of discourse, such as a series of paragraphs in a section or even the text as a whole. GS organization is often used to structure an introduction for a longer piece of writing. A GS pattern can help you produce

- a. an answer to an examination question
- b. a course paper
- c. an opening paragraph of an assignment
- d. background (or scene-setting) to an analysis or discussion.¹

GS texts typically begin with one of the following: a short or extended definition, a generalization or purpose statement, a statement of fact, or some interesting statistics. While the overall movement is from more general

¹ Choices b, c, and d may also take the form of a descriptive or evaluative summary of previous studies. See Unit Five.