MICHIGAN SERIES IN ENGLISH FOR ACADEMIC & PROFESSIONAL PURPOSES

COMMENTARY *for* Academic Writing for Graduate Students

ESSENTIAL TASKS AND SKILLS

3RD EDITION

John M. SWALES & Christine B. FEAK

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Preface

For this third edition, we have again called this companion volume to *Academic Writing for Graduate Students* a "Commentary." As we explained in the introduction to the textbook, we view any instructors using *AWG* in class as colleagues or partners in a joint educational enterprise. Indeed, at the close of the Commentary, we solicit reactions and suggestions for further changes from such instructors. For these reasons, we have rejected the traditional label of "Instructor's Manual" with its implications of fixed procedures and set methodologies.

Another reason for avoiding the label "Instructor's Manual" has been our concern to produce a main text that can be selectively used by students and researchers as a reference volume. In light of this, we hope that the term Commentary suitably covers the answer key aspect and the associated discussion.

The volume contains commentaries on each of the eight units as well as on Appendix One and Appendix Two. The same format has been adopted for each unit.

- First, we summarize the main aims of the unit along with the topics covered.
- This summary is then followed by a synopsis of activities given in note form. This inventory is divided into Language Focus sections and tasks.
- After the synopsis, there are a number of general notes designed to capture the particular character of the unit, to indicate alternative activities, or to anticipate any problems that may arise.
- The final and longest section is entitled "Detailed Commentary" and consists of discussion of the individual tasks and some other material.

Wherever possible, we have provided "model" or "sample" answers and responses, but we need to emphasize that, in many cases, these are but one of several possible versions. In some units, such as Units Two and Four, we have also included additional tasks that can be used to supplement the main text. We also wish to acknowledge the students who allowed their work to be included in the Commentary.

CBF and JMS

Contents

Unit One

An Approach to Academic Writing

Main Aims

The important take-home messages of Unit One are that

- writers need to be aware of the characteristics of academic writing style in general as well as in their own disciplines.
- writers should consider how they can best position themselves as capable, credible, and knowledgeable.

To help writers explore the stated aims, the unit focuses on (but the Commentary does not necessarily discuss) these topics.

Audience

Purpose and strategy

Organization

Style

Cross-cultural differences in academic languages

Flow of information

Presentation

Positioning

Opportunities to gain a better understanding of the main topics are provided in these Language Focus sections (although not all are discussed here) and tasks.

Language Focus Sections

The vocabulary shift—verbs

The vocabulary shift—nouns and other parts of speech

Other stylistic features

Linking words and phrases

Tasks

Task One	Considering writing strategies
Task Two	Reflecting on writing strategies
Task Three	Considering the audience
Task Four	Writing a short definition
Task Five	Writing strategy advice for positioning
Task Six	Identifying the parts of a bad-news letter
Task Seven	Identifying the parts of a problem-solution text
Task Eight	Analyzing a problem-solution text
Task Nine	Finding exemplars of well-written texts
Task Ten	Considering characteristics of academic writing style in English
Task Eleven	Reducing informality—verbs
Task Twelve	Reducing informality—verbs
Task Thirteen	Choosing more "formal" vocabulary alternatives
Task Fourteen	Revising sentences and analyzing texts
Task Fifteen	Writing a one-paragraph problem-solution text
Task Sixteen	Considering the flow of ideas
Task Seventeen	Establishing old-to-new information flow
Task Eighteen	Editing for punctuation
Task Nineteen	Choosing linking words or phrases
Task Twenty	Choosing summary nouns
Task Twenty-One	Choosing summary nouns
Task Twenty-Two	Finding summary words to complete sentences
Task Twenty-Three	Choosing between *this* and *it*
Task Twenty-Four	Reacting to feedback and revising
Task Twenty-Five	Determining characteristics of writing that contribute to positioning

General Notes

a. This introductory unit is designed to provide some basic insights into the considerations underlying the writing of academic texts. The unit delves into a range of topics—some focused narrowly on grammar and vocabulary and others more broadly on strategic decision-making, particularly with regard to content. The topics are organized in terms of audience, purpose, organization, style, flow, and presentation.

b. Unit One moves through these six elements in a top-down manner. Moving from the macro to the micro has a number of advantages in our experience. First, it allows some important strategic issues to be presented early. Second, it emphasizes that if the basic strategy is seriously misjudged (e.g., incorrect assumptions about the audience or purpose), then no amount of grammar or vocabulary editing will save it. Third, and perhaps most importantly, the top-down approach is likely to contrast with the way some students were taught writing in the last years of high school and the first years of university. Fourth, it enables both you and us to demonstrate that writing involves more than just the production of correct sentences. Fifth, it allows us to introduce certain simple processes and techniques of textual analysis early. This in turn has two consequences. One is that the semi-analytic approach we adopt interfaces well with a student population known for its analytic strengths. The other is that it can demonstrate that academic writing requires a certain level of analysis no different than any other academic subject.

c. Unit One does not give equal attention to all six aspects. More space—and time—has been devoted to style and flow than to the others. We decided to do this because style can be a confusing issue to novice academic writers, especially if this is their first experience writing at this level. In such a situation, they are likely to be bombarded with informal language not only in informal settings but also in lectures and in email. With all of this conflicting input, it makes sense to spend some time on this topic. If, however, you are teaching in a non–English medium institution, the problem of mixed messages may be less likely to arise—even if some lectures are offered in English as an academic lingua franca, which has been shown to better resemble written academic English. We have also given special attention to flow. Although the section on sentence connectors will not likely offer much new information, the focus on old-to-new information flow and on *this* + summary word is, in our experience, something of a novelty. Over and above its intrinsic usefulness, this kind of cohesion (described long ago by David Charles as "how to get out of one sentence and into another") can demonstrate that the materials here will contribute to the creation of a writing course unlike most others students have taken.

d. Another advantage of the structure of Unit One is that instructors can use the material here while working on other units. In fact, this is what we and many other instructors do. Covering Unit One entirely before moving on to other units may be somewhat tedious, so we typically will work with the material through the section on organization in the first week, assign a problem-solution text, and then the following week begin Unit Two. During the remainder of the term, we go back and forth between Unit One and the other chapters, saving some Unit One tasks for the recycling of topics. Recycling is important since one discussion of a topic such as flow of ideas is likely insufficient.

We may delay, for instance, Task Thirteen for a time when students would benefit from a review of vocabulary choices. We may postpone the Language Focus titled Other Stylistic Features until after we have seen one or two writing assignments. Given the amount of material on old-to-new information flow, we do Task Sixteen and then return to Task Seventeen after we have become more familiar with our students' writing. Some of the summary word tasks (particularly Task Twenty-Three) can be deferred for review, perhaps until around midterm. Depending on our class, we might cover the material through organization and then wait until after the first or second writing assignment to see which sections and tasks would be most relevant to students. Sometimes we do not finish Unit One until the middle of the semester.

What we want to emphasize here is that we think it is important to keep a good pace, be selective, and not overwhelm or bog down students with too many tasks or writing points at the beginning. We also think it is wise to choose material in Unit One that will seem immediately useful and generate some interest. Postponing some tasks also means that there is material available when you notice that students would benefit from a review of points that were covered previously.

e. Like much of the book, the material in this unit has been designed to be gone through fairly quickly. Most of the texts and tasks are quite short and are often used to illustrate basic points. Many of the points made, such as flow of ideas, will be made again later, often in somewhat more sophisticated settings. In our experience, maintaining a good pace is important with graduate students, perhaps more so than attempting to cover everything possible on a given topic. Like all the units in the book, Unit One is a guide; parts can be left out and some of your own material inserted. In English for Academic Purposes courses, we believe that it is essential that the instructor control the materials, rather than the reverse. We ourselves do not teach quite all that we have provided here, and we each incorporate a few of our own favorite extras. So should you.

f. The first actual academic writing task in this unit does not occur until Task Fourteen. Of course, if you know very little about your students' writing ability, you may want to give some writing homework at the end of the first class. One topic that we have assigned and would suggest is "Briefly describe and explain one current controversy in your field." We have also used this topic and variations of it as an in-class writing task on the first day of class.

Finally, instructors (and students) may notice that the writing style of the textbook is not always in complete alignment with the points we make about academic style in Unit One. Although some may argue that we should "follow our own advice," it is important to keep in mind that the textbook genre often follows a style quite different from the genres that most of our students need to produce. Given our audience, purpose, and strategy, we have opted to employ some stylistic features more typical of conversation (e.g., verb + preposition) but not others (e.g., contractions). We believe our choices are especially important for a textbook like ours, where one of our aims is to "talk" to our audience. As one of our colleagues put it, the way the book is written gives the class a sense that there is yet another voice in the room.

We often discuss with our students the stylistic difference between the textbook and other academic genres. This discussion nicely reinforces the point we want to demonstrate in Figure 1.

Detailed Commentary

As we have already indicated, we begin the unit by looking more at matters of strategy. We think it is important to become aware of the many decisions that writers make about issues that are unrelated to grammatical accuracy.

TASK ONE: Considering writing strategies

Although answers will vary, we will comment on several of the strategies. To begin, it is surprising how many students who use English as an international language rely on translating (Strategy 1) during the early years of their graduate programs. Over time, this strategy becomes less and less effective as writing demands become increasingly complex. By the time students are finished with their degrees, many report that it is actually impossible for them to write an academic text or give an academic presentation in any language besides English.

Many students also report getting input from friends (Strategy 5), which is helpful only up to a point, especially when we consider that each discipline has its own unique writing preferences and traditions. We encourage students to seek feedback from as many sources as they can, but they also need to be aware that feedback from those outside their fields may not always be useful. Strategy 10 should probably be left to the last stage of writing. Perfect grammar cannot necessarily be equated with an effective text. Strategy 2 does not acknowledge the importance of the amount of time needed to write a convincing, well-organized text. While having good data is extremely important, the reporting of that data is not something that can, in most cases, be done quickly.

The strategies that we think are likely to be most helpful to students are 3, 4, 6, 7, 8, and 9. All of these strategies will be addressed at various points in the textbook.

TASK TWO: Reflecting on writing strategies

Like Task One, answers will vary. We always hope that students will comment on the second question since this can give us some ideas of what we should cover in class. We also sometimes ask students to write about where and when they write. Some students are very disciplined and schedule regular times to write, while others have not considered this as a useful strategy.

Some students have not thought about the effect that their writing environment may have on them. For instance, we regularly have students who report not having a good space to write and so they write while in bed. Perhaps not surprisingly, these students report falling asleep and not having enough time to complete assigned writing. Some discussion of writing environments may, therefore, be helpful.

A Few Comments on Figure 1

In discussing Figure 1, it is important to emphasize that the arrows go two ways. Although the unit works through the material top-down, at any moment during the actual writing process, a movement in either direction is possible. While students are aware that organization, style, flow, and presentation matter, they often fail to sufficiently consider their audience and purpose. We cannot emphasize these points enough. Knowing the audience involves understanding readers' expectations and familiarity with the writing topic, which in turn affects all other aspects. Purpose also seems to be underestimated with much emphasis being given to grades rather than to other aims such as signaling membership in the discipline as well as appearing knowledgeable and capable.

TASK THREE: Considering the audience

Text A is targeted at an educated, but not highly specialized, audience, while Text B is directed at experts. Text A was published in *Scientific American* and Text B in the *AIChE Journal.* If students need help at the comparison stage, they could be prompted by such things as the amount of background knowledge presumed, sentence complexity, and the use of technical terms.

1. Given the audience of Text A, there is little technical vocabulary in the first paragraph, apart from *desalination* and *distillation.* Text B immediately jumps into the narrow topic and employs quite a lot of technical vocabulary with which many of us may be unfamiliar. This, however, is reasonable since the journal readers are presumed to have some background knowledge of the topic.
2. Text A provides quite a lot of background material and does not provide too much narrow detail before reverse osmosis is introduced. Little detail on the process is given compared to Text B, which talks about network configurations and optimization.

3. Sentence 7 in Text A provides a definition. Most of Text B is a description and could be considered an extended definition. Definitions are covered in more detail in Unit Two.
4. We think each of the two texts is well written. The flow of ideas is good, largely following an old-to-new pattern of information flow. Although old-to-new information flow is discussed later in the unit, this is worth pointing out—planting a seed so to speak. The texts move from general to specific, even though they begin at different levels of specificity. General to specific is addressed in Unit Two, but we think it is worth highlighting here as a preview.

TASK FOUR: Writing a short definition

This task is not as easy as it may seem to be, and some students may have a hard time coming up with a term to define. Before doing this task in class, it may be helpful to learn a bit about your students and their fields so that you can provide some terms, if necessary. Alternatively, you can ask students to think about the topic of a recent lecture and choose something to describe for the two given audiences.

Purpose and Strategy

We think the discussion of purpose and strategy in Unit One is a good beginning, but this consideration (together with audience) should also be discussed in the later chapters.

TASK FIVE: Writing strategy advice for positioning

This section takes us into the heart of strategic considerations in academic writing and thus foreshadows several of the tasks in later units. Students may need reminding that this is not Sam's thesis research. It is data that he has acquired; it is not his own that he has painstakingly gathered. In other words, his personal commitment to it is not that great.

Piloting this activity in a number of our classes shows that a likely majority opinion is to want to include the "problem" element, but not place it as such an obvious "downer" right at the end. One of our students suggested this final sentence.

> These findings are provisional since there may be differences in visual attentional demand required in other kinds of games, such as first person shooting games, that require an awareness of a full screen. However, the results appear to support other studies . . . .

Here are two other student suggestions.

> . . . Despite the fact that the comparison conforms well with other studies, care should be taken in interpreting the results as other variables may affect the findings. For a thorough understanding, a comparison should be done of the effects of visual attentional demand in other types of games, such as first person shooting games, that require an awareness of a full screen. Even so, the findings are sufficient for a preliminary understanding of the problem.

> . . . One possible limitation of the analysis presented here is that this study did not examine other types of games that may affect visual attentional demand such as first person shooter games, which require an awareness of a full screen. Importantly, however, the results are consistent with many other previous studies which show . . . .

Organization

TASK SIX: Identifying the parts of a bad-news letter

Here are our answers to the questions about the bad-news letter. The bad news is often thought to need a preparatory "buffer" statement. Another difference in purpose is that the writer of the good-news letter knows that she has captured the goodwill of Ms. Wong, while the writer of the bad-news letter may be thinking about the likely reaction of Mr. Lee and so tries to "make amends" with her closing sentence.

	Parts
Dear Mr. Lee: Thank you for your interest in the graduate program in Industrial and Operations Engineering.	Greeting
We have now finished our rigorous review process of Fall 20XX applications. We received an unusually high number of applications for the Fall term and we unfortunately had to limit the number we could accept.	Preparation for bad news
While your background is impressive, I regret to inform you that your application to the program has not been accepted.	Bad news
Given your excellent qualifications, I trust you will be able to pursue your academic interests elsewhere and wish you luck in your further endeavors. Sincerely,	Close

The bad-news letter is a great topic of conversation and can help break the ice in a class. We always ask students whether the letter seems familiar and whether they received anything like this. It is interesting how many students are willing to disclose how many rejections they received. Students seem much more relaxed with each other when they hear that others had received rejections too, and that they all really dislike the part about Mr. Lee having excellent qualifications. After all, if Mr. Lee is so qualified, why not admit him? With the advent of email notifications and acceptances being posted on the internet, perhaps this letter will become outdated. But for now, we still think it is a good way to begin our discussion of organization.

TASK SEVEN: Identifying the parts of a problem-solution text

Description of a situation: Sentences 1–3
Identification of a problem: Sentences 4–7
Description of a solution: Sentences 8–11
Evaluation of the solution: Sentence 12

1. In such a short text, it is hard to say precisely how serious the problem is based on the amount of detail. The use of the word *threat* in Sentence 4, however, does suggest that this is not something to be taken lightly. If the freshwater supply is being threatened, then researchers have good reason to be alarmed. Many of our students have not heard of the problem before reading the text, but they anticipate that it is indeed a global issue.
2. The author suggests that the solution is a good one because it is simple and inexpensive. Note, however, that the author uses *can dispose* at the end and so seems cautiously optimistic.
3. Answers will vary, but students consistently talk about issues that are very cutting edge. The question is good practice for those who need to be able to talk about their fields in terms that others can understand.

TASK EIGHT: Analyzing a problem-solution text

1. The audience is likely educated readers, but not completely knowledgeable readers, as explained in the response to the second question.
2. The author provides content to fill in potential or assumed gaps in the background. For example, the author does not assume readers know much about Ghana (e.g., its location, exports, and economy). The author also seems to think that readers would not know that the capital is Accra. The author assumes readers may not know much about e-waste since a brief definition of e-waste is given that clarifies that the waste is still usable in part or totally. The author points out that the waste has advantages as indicated by the points about job creation, recycling, and information technology needs, which many readers may not know. The author might also question whether readers know what can be recycled and what is toxic. The author assumes readers can imagine the potential dangers of an e-waste recycling center being located near a market.

3. The author wants to inform readers about the potential benefits and hazards of e-waste recycling as well as to prompt them to think about who bears responsibility for the possible negative consequences of this activity.
4. In Sentence 7, *however* is used to indicate that there is a downside to e-waste recycling.
5. *This growth* in Sentence 3 refers to the growing economy, which is expanding by 10% annually. *These processes* in Sentence 10 are the retrieval and recovery of metals. Finally, *this approach* in Sentence 12 refers to the installation of modern recycling technology. These particular expressions establish a content connection to a previous sentence and contribute to the strong movement or flow of ideas. They help the author move in and out of sentences. This concept is discussed in more detail on pages 30–48 of the textbook.
6. The author seems to prefer the second solution to the first since the first one is rejected as creating another problem, namely who is responsible for the cost. This strategy of offering a solution that will be rejected is not uncommon in academic writing. Such a strategy may cause the second solution to be viewed more favorably by readers.
7. If the author believed the second solution would not work, then some explanation as to why should be included. This would then be followed by yet another alternative solution. The author could have written something like this.

   > Although this effort is attractive, it may not be feasible to eliminate all harmful metals and materials in electronics.

   This sentence alone would not be enough. Readers would likely expect an explanation of the challenges of eliminating the harmful metals and materials.

Style

There is a lot on style here, and some have criticized this focus as being reductive and less engaging than the earlier discussions on purpose and strategy. We understand this perspective, but we also need to consider that some students are concerned about style, and it is a good idea to acknowledge that concern. Additionally, we need to think about the fact that both the macro and micro aspects of writing are important.

TASK NINE: Finding exemplars of well-written texts

Over the years we have come to realize that this task is important in order for the material being covered to seem "real." This task appears several pages into the unit, but you may want to assign it as homework after the first day of class. We encourage students to use the same article(s) and collect more for reference throughout our introductory academic writing course, which covers Units One through Four. We call this set of texts a "reference collection."

Cross-Cultural Differences in Academic Language

As the main text indicates, less research has been done on academic languages other than English. We encourage our students to learn what is known about academic writing in a language other than English, especially a language in which they are fluent. To highlight interesting cultural (and disciplinary) differences, we sometimes ask students to look for research on dissertation acknowledgments.

TASK TEN: Considering characteristics of academic writing style in English

We cannot give answers since your students may come from a range of academic cultures. We can, however, say that there is some research to support each of the points. In some cases (such as Number 1, highlighting metadiscourse), there are quite a few studies. The list in Task Ten should not be considered a list of things that students must include in their writing, however. Rather, students should be prompted to think about whether the features might be relevant to or typical of writing in their own fields. Regardless of the tendencies in their disciplines, students should also think about whether they want to incorporate any of these features into their own writing or whether they should perhaps lessen their use. On the latter point, for instance, we have noticed that some students rely very heavily on sentence connectors (Number 9), using them so frequently to show logical connections that their writing may actually become less clear.

Language Focus: The Vocabulary Shift—Verbs

Students rather like the very focused tasks where they can choose from alternatives and fill in the blanks, but we try to challenge them to provide additional answers so that we can discuss what else might or might not work. In doing so, we can reinforce what was discussed earlier in the sections on audience, purpose, and strategy.

We have noticed that students often forget about the verbs they know and make choices that may be too general or do not quite convey the intended meaning. For example, some students rely heavily on *be, make,* or *do* when other options would be better.

> These exercises make students carefully think about verb choices.
>
> These exercises encourage students to carefully consider verb choices. (Or . . . *to consider verb choices carefully,* if you object to the split infinitive.)

TASK ELEVEN: Reducing informality—verbs

Task Eleven can be done fairly quickly in class and is well suited for pair or group work. Picking a word from the list may be easy for some students, so to challenge them a bit more, we ask them to find other possibilities beyond those on the list. This additional work can also get students ready for the more challenging Task Twelve.

1. tolerate
2. investigating
3. determine
4. developed
5. constitute
6. eliminate
7. reached
8. maintain
9. decreased
10. considering

TASK TWELVE: Reducing informality—verbs

This task is more difficult for students, so they will likely need more time than for Task Eleven. We offer a few possibilities for each item.

1. created, developed, devised, proposed
2. encountered, faced
3. raised, introduced
4. appeared, emerged, materialized, surfaced
5. examined, investigated, analyzed, considered

Many of our students suggest *brought* for Number 3, but this does not seem right to us. We think *raised* is more common.

Language Focus: The Vocabulary Shift—Nouns and Other Parts of Speech

The aim is again to encourage students to think about choosing vocabulary that is not only "formal" or "more academic" but that accurately reflects and is on par with the quality of their ideas.

TASK THIRTEEN: Choosing more "formal" vocabulary alternatives

Choosing between the two alternatives is fairly straightforward.

1. an integral part of
2. nearly
3. considerable
4. robust
5. increasing

We offer one suggestion for each of the sentences, but perhaps you and your students can come up with some other alternatives.

6. intensified
7. have insufficient
8. rarely occur
9. enlarged to facilitate loading and unloading

Language Focus: Other Stylistic Features

If you are familiar with the previous edition of this book, you will notice that we have shifted our perspective from what looked more like "rules" to what is now a set of possible features to consider. Research over the years has revealed that there is so much variation in academic writing that it is difficult to confidently tell students what they should and should not do stylistically. In this section, therefore, we are offering "food for thought."

We think it is also important to keep in mind that students are getting input from advisors on stylistic matters, some of which we think makes sense and some of which does not. One of our favorite discussion topics related to this Language Focus section is on the supposed "rules" that students have been told to follow or that they have heard. For instance, one of our students reported that she was told never to use adjectives. Another was told never to use passive voice. Still another was instructed never to start a sentence with *because.* Given that we often cannot clarify the reasoning underlying these rules, we want to encourage students to think about any style "rule" by considering what they in fact see in the writing of their field. Published research papers are certainly a good source of data, as are conference abstracts, dissertations, and proposals. If students violate a "rule," we want this to be the result of a choice, rather than something unintentional. In the end, students may still need to abide by their advisors' wishes, but along the way some spirited discussion with them about style can be enlightening.

TASK FOURTEEN: Revising sentences and analyzing texts

We can provide two options for Numbers 1–6 of this task but can offer no answer for the more important analysis in Number 7. You can certainly add items that you think are important for students.

1. This model can be used to optimize the water supply.

   The water supply can be optimized using this model.

2. The bridge collapsed for many reasons.

   Many reasons have been offered to explain the bridge collapse.

3. Some forms of traditional medicine frequently employ both herbs and animal products.

   In addition to herbs, animal products are frequently employed in some forms of traditional medicine.

4. To date, no comprehensive study has examined how conflict influences trust and respect in a group.

   To date, little research has examined how conflict influences trust and respect in a group.

5. Some studies in epidemiology have concluded that moderate alcohol consumption results in a lower risk of heart disease.

   Some studies in epidemiology have shown that moderate alcohol consumption lowers the risk of heart disease.

6. Developed in the 1980s, data mining collection methods aim to understand and make money from the massive data sets collected from electronic devices.

   Developed in the 1980s, data mining collection methods are designed to understand and profit from the massive data sets collected from electronic devices, such as supermarket scanners, weather buoys, and intelligence satellites.

To complete the table, students can use the articles they chose for Task Nine. This part of the task requires more time than we have available in class, so we always assign it as homework. However, if class time is available, it would be useful to have students complete the task and discuss it on the same day. Grouping students who are in the same or in related fields of study could promote some interesting discussion.

TASK FIFTEEN: Writing a one-paragraph problem-solution text

This is the first writing task in the textbook (although you may have already asked for a diagnostic writing task earlier). We leave it up to you to determine how you might grade it; whether or when you will ask for a second draft; whether or not you will use some set of correcting symbols; whether or not you might want to encourage peer critique or review either before submission or after evaluation; whether you will, in fact, offer a grade; whether this will be subdivided into content and language; or whether you will want to discuss some or all of the writings in class. These, we believe, are decisions that you need to make in light of your own situation, experience, and preference. However, we would like to point out that the way you grade the first written assignment and how you comment on this set of papers will, almost certainly, send a set of strong signals to your class.

We would also like to add that we think it is helpful to steer students toward topics that may be unique to the country featured in their texts. When we have done this, we have been quite happy with the thoughtfulness and creativity underlying students' topic choices.

Using Google Scholar to Identify Potentially Useful Words and Phrases

One question that students routinely ask in our classes is what they can do to improve their vocabulary. A related issue is that many students are concerned about plagiarism. Because of this concern, many students believe they cannot make use of vocabulary that they come across in their reading. This is an area where we, as writing instructors, need to offer students some support. While space does not allow us to offer an in-depth discussion of using Google Scholar, Lextutor, and other tools, we encourage you to develop some expertise in this area and share that expertise with your students. In a matter of an hour, it is possible to give students sufficient guidance to carry out some small-scale language research on their own. Students can be encouraged to build their own corpora. [See Lee and Swales (2006) for a description of how this was accomplished in an EAP course for doctoral students.] Finally, students can then run analyses to support their own language development. Alternatively, students can access any of the many corpora online, including MICUSP, the BNC, and the academic section of the CoCA.

Flow of Information

As we said earlier, this section deals with intersentential connection and transition, or "how to get out of one sentence and into another." Many students are inconsistent in doing this on entry to a graduate program, whether they are native speakers of English or not. Students generally find this section of the unit extremely useful, especially those who have been told that their writing is problematic but are not quite sure how to improve it.

The focus on old-to-new information flow before logical connectors (Table 1) is an important addition to the unit. This sequence, we hope, will encourage students and instructors to not over-emphasize the use of logical connectors to establish a good flow of ideas. We want to stress that a more successful strategy would be to first try to move from one sentence to another by establishing an information bridge consisting of old or familiar information toward the left end of the sentence with the new information toward the right. Old information can also consist of direct repetition, synonyms, or *this* plus a summary word. When old-to-new flow cannot be established, writers can then consider using a logical connector. This information flow strategy sounds simple enough, but in practice it is quite challenging for writers unfamiliar with it. Even so, of all the points made about academic writing characteristics, this one can have the most dramatic effect on a student's writing.

TASK SIXTEEN: Considering the flow of ideas

1. Most of our students tend to start looking for logical connectors and so focus on *however* in Sentence 2, *for example* in Sentence 3, and *but* in Sentence 4. A close look at the text, however, shows that there is an overall old-to-new information flow. Sometimes the grammatical subject is repeated across sentences. Sometimes information at the end of a sentence becomes the grammatical subject of the next sentence. These connections are underlined. This may become apparent when students move to Number 2.
2. ❷However, <u>the specific service workers that are customarily tipped</u>, and the <u>amounts consumers give those workers</u>, vary across nations. ❸For example, in the United States <u>consumers</u> tip in over 30 different service professions, while no service professions are tipped in Iceland (Star, 1988). ❹In Mexico <u>consumers</u> tip restaurant servers 15% to 20% of the bill, but tip only 5% to 10% of the bill in Romania (Putzi, 2002). ❺<u>These variations</u> in tipping norms are sources of uncertainty for international travelers and phenomena to be explained by hospitality and tourism researchers.

   ❻<u>International differences in tipping customs</u> may be partially explained by differences in national values. ❼According to Hofstede (1983), <u>national values</u> differ on four major dimensions—power distance, uncertainty avoidance, individualism, and masculinity. ❽<u>Power distance</u> reflects a nation's acceptance of power and status differences. ❾<u>This value</u> should be positively related to national acceptance of tipping because tipping gives customers power over servers (Hemenway, 1984; Lynn, 2000a).

3. Sentence 1 provides a description of tipping practices that are common across countries, conceding in Sentence 2 that differences exist. Since both points are true—there are similarities and differences at the same time—this is an adverse relationship.
4. The phrase *these variations* refers to the differences in the number of service professions and tip amounts in the places stated in Sentences 3 and 4.
5. The words *tip* (along with the variation *tipping*) and *consumers* are repeated often. Repetition of familiar information builds coherence. If students look very closely at the text, they should notice old-to-new information flow. Notice how the focus shifts in Sentence 7 to the four dimensions.
6. Students generally can offer a few ideas here. Given that four dimensions were stated, one could reasonably expect Sentence 10 to pick up the second dimension, namely uncertainty avoidance. Alternatively, Sentence 10 could continue talking about power. If you ask students how they decided, they may give a reason that closely resembles the idea of old-to-new information.

TASK SEVENTEEN: Establishing old-to-new information flow

Depending on your group, this task could take as much as an hour to complete, especially if done in group work and then discussed with the whole class. You can also ask students to write up the biological clock information that incorporates their decisions for each item.

1. Topic 1: more on the biological clock
   Topic 2: something on the circadian rhythm
2. The sentences are not clearly connected because a new topic/subject is introduced. The introduction of new information where familiar content is expected can make it difficult to follow the ideas.
3. The revision is better in that some old or familiar information—the clock—from Sentence 1 is repeated in Sentence 2. In Sentence 3, the new information given at the end of Sentence 2 (*the suprachiasmic nucleus*) appears early, where readers would expect some familiar information.

4. Although both Sentences 4 and 5 mention *light*, the precise relationship between the two sentences is not clear. Readers need more help because Sentence 4 indicates that the dark-light cycle is not needed for the biological clock. In the next sentence, *light* is said to be involved. Thus, the two points need to be reconciled, and the best way to do this is by adding a logical connector. A good choice might be to join the two sentences with *although*.
5. Sentence 5 seems connected, but you might want to suggest some ideas to promote discussion. For example, would it help to add *specifically* or *to clarify* at the beginning of the sentence to mark the transition to an explanation of why *light* is important?
6. *Promoting* seems to establish a causal relationship. This is a good opportunity to highlight *–ing* clauses of results, which are addressed in more detail in Unit Three.
7. Sentence 6 could be better connected if the order of information were reversed by using passive voice. This change would look like this.

   It was once thought that the biological clock is disrupted by aging.

   This change places *biological clock* in a location where readers would expect to find some familiar information. The opening clause *it was once thought* is fine where it is and does not distract readers from the focus.
8. We think it makes sense to put the information in a separate paragraph since a new aspect of the topic is being developed.
9. The connection is not strong. The introduction of *doctors* may seem a bit of a surprise to readers. This is completely new information at the beginning—where readers expect something familiar. Sentence 8 could be rewritten this way.

   This valuable information can be used by doctors in the treatment of sleep disorders among the elderly.

Note how the passive voice can be strategically used to improve the information flow. This is important to point out, given that grammar-checkers in word processing programs warn students that passive voice has been used and suggest alternatives in active voice that may actually disrupt the flow of ideas.

10. Text A is correct in terms of grammatical accuracy; however, the connection of ideas could be better. We suggest encouraging your class to explain why Text B is a more "considerate" text for the reader. Note the summary phrase in Text B (i.e., *this transparency*). Although B is better overall, it is important to stress that sentence connectors are not necessarily the best first strategy to establish good connections. We suggest first trying old-to-new information flow.

Language Focus: Linking Words and Phrases

Students are often quite familiar with the linking words and phrases provided in Table 1 but may need to review whether they are phrase linkers, subordinators, or connectors along with the appropriate punctuation. Also, ask students if they have items to add. For example, where would *given* go? (Given the lack of research, additional studies are needed.)

TASK EIGHTEEN: Editing for punctuation

This task can be gone through very quickly. Challenge students more by asking them to choose alternatives that require different decisions.

> Although most major companies provide their employees with email accounts as well as internet access**,** many of these companies are concerned about potential abuse and monitor their employees' use of these media. In fact**,** more than 75% of all major corporations report that they monitor their employees' use of email and internet access**,** either by spot-checking or constant surveillance. Businesses have many reasons for monitoring email and internet use**;** for example**,** they may be concerned about protecting sensitive company information**. In addition,** they may be worried about lawsuits arising from sexual harassment because of mass mailing of offensive jokes**. T**hey may also want to identify employees who are surfing the internet rather than working. In other words**,** they are concerned about cyberslacking.

<u>Instructors</u>: The first printing of the student book contained a few mistakes in this exercise. Subsequent printings are correct. The key provided here is correct. We apologize for the inconvenience.

TASK NINETEEN: Choosing linking words or phrases

Note also the summary word (*this behavior*) in the third sentence of Text A (a topic that is covered in more detail on page 43 of the text), the old-to-new information flow in both texts, and the overall move from general to specific.

A. It has long been documented that individuals in an organization may voluntarily carry out tasks that are not part of their regular job duties. **For example,** 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). **Although** (or **while** might be okay) it is recognized that OCB is important for an organization to effectively function, there is debate among researchers as to how OCB can be encouraged and rewarded. This debate is further complicated when considering the role of OCB in multinational corporations pursuing global diversity. Most OCB research has focused on Western cultures; **however,** whether these research findings can be extended to other cultures is not clear, **thus** suggesting a need to investigate OCB as it exists in other cultures, particularly those described as "collectivist."

B. Shape Memory Alloys (SMA) are a group of metallic materials that can return to some previously defined shape or size when subjected to the appropriate temperature. When some SMA are cold they can be deformed at a low temperature; **however,** when the material is heated above this temperature it undergoes a change in crystal structure, **thus** causing it to return to its original shape. Some materials exhibit shape memory only when heated; others can undergo a shape change both when heated and when cooled. **Although** (or **while** might be okay) many alloys are known to have the ability to "remember" their shape, only some may actually find widespread commercial use. Of particular interest are those that can recover substantial amounts of strain or that generate significant force upon changing shape. **For example,** one common nickel and titanium SMA, Nitinol, has this ability and is being used in surgical implants, clamps, miniature valves and switches, and other devices.

This ***and Summary Phrases***

As you know, "unattended" *this* (*this* with no following noun) is very common in spoken English and in informal writing, but there are good reasons to use *this* + noun in academic writing. Choosing a summary noun to follow a sentence-initial *this* is an empowering device for writers. It enables them to communicate to the reader how the previous sentence is connected and how they (writers) are interpreting the prior information. Here is an example from David Charles, who was a pioneer on this topic.

> The students said they wanted more tests.
>
> This request surprised the authorities.
>
> This statement surprised the authorities.
>
> This demand surprised the authorities.
>
> This ultimatum surprised the authorities.

In the sample sentences in the textbook, *this understanding* refers to understanding the differences between formal and informal texts; *this situation* refers to the mismatch between the number of applicants to PhD programs and the number of spaces available.

TASK TWENTY: Choosing summary nouns

This task is a subtle exercise in summary word management. It is a matter of getting students to see that word choice is highly strategic.

1. Four of the possible nouns are neutral, while one, *improvement*, is highly evaluative. *Improvement* would seem to belong more to persuasive than to expository rhetoric. Three of the others look like good candidates; *drop* does not, since the time frame is 30 years. We also ask students to consider which of the nouns someone in public health might choose and which the head of a cigarette company might prefer.
2. The second one is even more difficult. *Increase* seems tame given that the non-student population of the town is about 90,000. *Invasion* seems journalistic. *Jump* seems strange since the increase is maintained. *Rise* is fine, but *influx* seems to us to be the perfect term to describe the phenomenon. Interestingly, many of our students will choose *influx* because it is the one word they do not know. It also ends in *x*, so it must be a good choice in their opinion. Ask students who might prefer *invasion*.

3. Clearly, *changes* is insufficiently pointed and uninformative. The other three are all reasonable candidates, but to us the previous sentence seems to point to *improvements* more than *developments* or *advances*, since there is no technical discussion of changes.

TASK TWENTY-ONE: Choosing summary nouns

Picking a noun from the list may not be highly challenging, but students sometimes choose a noun that does not exactly work. For instance, many opt for *estimation* to complete Number 1, thinking that it is close in meaning to *assumption*, which they derive from *assume*. Ask students to list additional words that might be used.

1. view
2. finding
3. problem
4. process
5. disruption
6. situation

Encourage students to share other summary words they used so that they can compile a list to consider when working on their own writing.

TASK TWENTY-TWO: Finding summary words to complete sentences

When choices are not available, students, of course, have more difficulty than they do in Tasks Twenty and Twenty-One. So, it is good to plan some extra time for this.

1. method, approach, system, simple technology
2. decrease, reduction, improvement
3. conclusion, finding, outcome
4. phenomenon, unexpected result
5. trend, increase

TASK TWENTY-THREE: Choosing between *this* and *it*

The choice between *this* and *it* poses a real challenge for some students. Many tend to overuse *it*, in our experience, which often leads to confusion. Grammatically, either *this* or *it* will work in many instances, but in terms of the reader's ability to grasp the point, only one really works in the examples here. This task is quite challenging, so you may want to allocate extra class time. Alternatively, you may want to postpone this task until it seems that students are comfortable using *this* to refer to a chunk of information.

1. b—ask students if it would help to add a noun after *this.*
2. b—ask students what they think about *unexpected.*
3. b, c, and d are all okay, but we prefer c, while many of our students like the more specific d—ask students what is gained by adding *traffic.*

Presentation

Now that students are using word processors and have access to spell and grammar checkers, it would seem that there is less to be said on this issue than there was in the past. But students do need to be reminded that the checking features cannot find all misspellings (*two* vs. *tow*) and that the grammar advice might in fact not be all that useful. One of our pet peeves with grammar checkers is the warning to not use passive voice, which may sometimes be worth considering but often can make a sentence and point less clear. Take, for instance, this passage.

> *Original with Passive*
>
> Another feature of this conference was the frequency of humor and laughter. While humor *has been extensively studied* in other fields—see Attardo (2008) and Norrick (2010) for useful reviews—this topic is under-researched in the ESP speaking literature (Lee, 2004).
>
> *Revision with no Passive*
>
> Another feature of this conference was the frequency of humor and laughter. While other fields *have extensively studied* humor—see Attardo (2008) and Norrick (2010) for useful reviews—this topic is under-researched in the ESP speaking literature (Lee, 2004).

Note how the connector *while* places *other fields* and *the topic* in juxtaposition, which we think is not quite right. Technically speaking, however, the grammar is fine.

TASK TWENTY-FOUR: Reacting to feedback and revising

When students get feedback on their writing, we think it is important to consider whether it is fair or not, rather than to blindly accept everything. This skill can be particularly useful when students receive reviews of papers they have submitted for publication.

R 1. We think it makes sense to add detail to eliminate the vagueness of the information. Whether or not all three cities need to be named is a judgment call, but if one of the cities is likely known to readers, then at least that one could be mentioned. Those who are familiar with Turkey would probably want the names.

R 2. Yes, it would be easy to indicate that the earthquakes originate in the Central Anatolian Fault Zone. If space permits, a map would be a nice addition.

R 3. Although readers do know that earthquakes cause damage, this can be stated prior to giving the reasons. Readers might also be interested in the financial costs and personal losses associated with some of the bigger quakes.

R 4. This was suggested in Item 4. The point here is that details make the text more interesting and more informative.

R 5. The end of the sentence could be revised to say *signs of an impending earthquake such as . . . .*

R 6. Why not try to revise here? Sentence 2 is a bit short and the information given in that sentence could be added to Sentence 1 or 3. For example, it is possible to write this sequence of sentences.

> ❶ Turkey is located in a region that annually experiences severe earthquakes due to its location in the Central Anatolian Fault Zone. ❷This fault zone, which is one of the most active in the world, lies along the northern part of the country and runs from southeast to northwest.

R 7. Perhaps the data is detailed and has been collected for over 10 years. If this is the case, it is possible to state that the researchers looked at *detailed, 10-year seismic records from data collection stations near the epicenter of the earthquake.*

R 8. Sentences 5 and 6 could be combined to produce this new sentence.

> ❺Because many cities have been built on or within the vicinity of geologic faults, they are unquestionably prone to earthquakes.

U 9. We would disagree. The use of *unquestionably* gives readers a sense of the author's opinion and can contribute to positioning.

R? 10. The opening paragraph has already indicated that earthquakes occur annually, so this could be omitted. But rather than focus on the sentence in isolation, it might be good to think about the sequence of sentences. For example, what if the sequence were something like this?

> ❺Because many cities have been built on or within the vicinity of geologic faults, they are unquestionably prone to earthquakes. ❻The most serious of these annual disasters was a magnitude 7.6 earthquake that occurred in August 1999, causing $26 billion in damage and the deaths of over 20,000 people in a large area between Bolu and Istanbul.

U? 11. We think it is fairly clear that *it* is the earthquake but would agree that this could be stated more clearly. The revision proposed in 10 would take care of the problem.

R 12. Sure, something like *one way to* . . . or *one possible method of* . . . would seem to be an improvement.

R 13. There are reasonable alternatives like *provide* or *produce.*

R 14. This is always a good idea.

Positioning

The point of Figure 4 is to show how all of the considerations contribute to positive positioning. Macro considerations, such as audience and purpose, are very important, but without attention to micro characteristics, writing can be less effective.

Marking the characteristics is designed to refocus students' attention on the broader strategic issues that have provided the underlying rationale for this unit.

TASK TWENTY-FIVE: Determining characteristics of writing that contribute to positioning

Although variation is possible, these are our own responses to the statements.

1. U. Writers should definitely have their own style, but they do need to consider the expectations of the readers and then decide what style to use.
2. U. This is a gray area; however, at this stage, we think, on the whole, that it should not be overdone, although we know of cases where it can be highly successful.
3. Certainly, yes, H.
4. Certainly, no, U, unless this is done in the first sentence of a paper.
5. Yes, indeed, H.
6. Yes, indeed, H.
7. U. Except when specifically asked to do this, as in the case of a reaction paper or personal reflection, graduate students should refrain from an over-reliance on personal experience.
8. H. This should be done with balance, however. One should avoid an all-out attack. Always allow for praise where praise is due. This issue reappears in Unit Six.
9. Yes, indeed, H.

Unit Two

General-Specific and Specific-General Texts

Main Aims

The important take-home messages of Unit Two are that

- writers can order ideas in terms of general to specific or specific to general.
- organization may be influenced by the writer's goals and discipline.
- opening sentences and paragraphs can be challenging.
- short and extended definitions are common in academic writing.

To help writers explore the stated aims, the unit focuses on (but the Commentary does not necessarily discuss) these topics.

The place of general-specific and specific-general texts in academic writing
General-specific organization
Opening with general statements
Opening with statistics
Opening with definitions
Writing a definition
Some common ways to define in academic writing
The elements of formal sentence definitions
Extended definitions
Definitions to demonstrate a distinction between two objects or concepts
Variations in definitions
Discussions of schools of thought
Specific-general organization

Opportunities to gain a better understanding of the main topics are provided in these Language Focus sections (although not all are discussed here) and tasks.

Language Focus Sections

Verbs in defining and naming

Tasks

Task One	Analyzing a general-specific text
Task Two	Moving information from general to specific
Task Three	Deciding whether to begin with a generalization or a definition
Task Four	Considering whether to open with statistics
Task Five	Writing a definition of terms with more than one meaning
Task Six	Identifying definitional elements
Task Seven	Finding definitions in published papers
Task Eight	Choosing the correct preposition in a definition
Task Nine	Writing a one-sentence definition
Task Ten	Examining extended definitions
Task Eleven	Analyzing an extended definition
Task Twelve	Ordering the sentences of an extended definition
Task Thirteen	Revising a definition
Task Fourteen	Writing an extended definition
Task Fifteen	Revising definitions to make a strong distinction
Task Sixteen	Analyzing the discussion of a concept defined in several ways
Task Seventeen	Analyzing a longer discussion of a concept defined in different ways
Task Eighteen	Writing a competing or contrastive definition
Task Nineteen	Analyzing a comparative definition
Task Twenty	Writing a general-specific or "schools of thought" text
Task Twenty-One	Analyzing a specific-general text
Task Twenty-Two	Completing a specific-general text
Task Twenty-Three	Writing a specific-general or general-specific text about a term or concept that has fallen out of favor

General Notes

a. Although the unit is entitled "General-Specific and Specific-General Texts," much of the unit focuses on different kinds of definition, ranging from parenthetical definitions to extended definitions. There is quite a lot of material in this unit, some of which some students may already know. Because of this, instructors may want to be selective.

b. Appendix Two provides some tasks and explanations focusing on articles (*a* and *the*), and Appendix One discusses relative clauses as they relate to definitions, which may be of interest. This material was placed in appendixes to improve the pacing of the unit, which we felt was considerably slowed by a detailed focus on grammar.

c. The unit has 23 tasks, many of which focus on text analysis. Our goal here is to encourage students to get in the habit of analyzing texts not only in class, but outside class as well. We have found that many of our students read only to extract information. It has not occurred to them to read to identify typical grammatical structures, vocabulary, or organization. Once they are prompted to do so, however, they see the value of this activity. Analyses are also easy to do if students have put together a small reference collection of articles in their field, as suggested in Unit One.

Detailed Commentary

TASK ONE: Analyzing a general-specific text

1 and 2. Students may not notice the flow of information and instead say that the text gives general information first and specific information later, using logical connectors. While this may be true, more important is the fact that the author skillfully presents information in the sentences in an old-to-new pattern. To illustrate, we have bolded the old/familiar information and underlined the new. Point out the Sentence 4–5 sequence as an example of how to make the shift to a new, more specific topic.

❶ 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. ❷ **Reality programs** are linked to different documentary forms, such as documentary journalism, cinéma vérité traditions, and the observational documentary. ❸ 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. ❹ Commenting on **these programs**, Hill (2005, p. 50) suggests a fact/fiction continuum, which reflects the sliding scale of factuality. ❺ **The continuum** covers contemporary documentaries and popular factual entertainment ranging from docu-soaps and game-docs to makeovers and quiz shows.

3. We think it would not be a good idea to start with the proposed variation of Sentence 4. Readers need some background information before the narrower focus. A critical reader might immediately wonder why this point is relevant. With the background in Sentences 1–3, readers can see the relevance.
4. Yes, the next paragraph is connected because it picks up the documentary topic at the end of the previous paragraph and maintains an old-to-new connection. We think this is a really good strategy.
5. Students are often surprised to see the difference in how specific Sentences 1 and 13 are. Even so, they should be able to explain that old-to-new information flow facilitates the move toward increasing specificity in the text. Here is what one of our writing classes thought was the way the text became more specific. Your students might have other ideas with fewer or more points than given here.

   1. *Reality TV has emerged as a form of programming designed to* be purely entertaining, and as such it is a shift away from programming intended to give an account of socio-historical events.

      Reality programs are somewhat similar to documentaries.

         Reality programs have elements of documentary journalism, cinéma vérité traditions, and the observational documentary.

Reality programs have elements of talk shows, game shows, and soap operas.

Reality TV is its own genre that consists of various amounts of fact and fiction, resembling documentaries on one end and quiz shows on the other.

2. Like documentaries, reality TV program content represents some truth.

There are intimate accounts of individuals' views of events.

Events are made to seem real through camera angles that give viewers a sense of being a "fly-on-the wall."

Producers want the program to appear to provide "real" accounts.

Viewers of reality TV know that the content blurs the boundaries of public, private, and "adjacent realities" and enjoy the process of separating the "true" and the staged action—i.e., separating fact from fiction.

6. A lot of vocabulary is repeated, but most students report that they did not notice this until asked to closely look at the flow of ideas.
7. *Truth* is surrounded by scare quotes, which are used to indicate that *truth* should not be understood in the traditional sense. We discuss scare quotes in Unit Six, but it is good to mention them here since they are frequent in the writing in some fields.
8. Many students are told that *and* should never be used at the beginning of a sentence. This use here is yet another piece of evidence that academic writing style is hard to characterize and that students are getting conflicting input about writing. Students who do not like *and* often suggest *moreover, further,* and *in addition.*
9. This is essentially a review of the old-to-new flow. Students can follow it because their expectations about what will be discussed in subsequent sentences are confirmed, making the text easy to read.
10. We think the author appears knowledgeable. She carefully guides the reader, providing information as expected and needed. Citations situate the work, which also contributes to her positioning herself as knowledgeable.

TASK TWO: Moving information from general to specific

We know that the old-to-new information flow point is being repeated, but we wanted to provide an example where it is not consistently used. The information flow begins to break down in Sentence 4 where the sentence unexpectedly begins with a focus on the environment and the old information is at the end of the sentence. Sentences 6 and 7 do not seem well connected. We usually revise the passage in class; first, let students work with a partner and then regroup to produce a revision using ideas from each pair.

Opening with General Statements

It is a good idea to start this section by explaining generalizations. It is surprising to us how many students do not really know what we mean by that term. However, a few good examples are usually enough to get the point across. We ask students to construct some that are likely acceptable to most people and some that might be questionable. An example of one that we have used is *Everyone likes chocolate.* Although it may be hard to believe, there is usually one student in the class who does not, which means we need to make some adjustments to our generalization. This section raises the issue of audience again and allows us to introduce the notion of hedging, which is discussed in detail in Unit Four.

TASK THREE: Deciding whether to begin with a generalization or a definition

This is a very challenging task and, in the end, it may be impossible to argue strongly that one sentence is without question more suitable for one audience or another. This, however, gets to the issue of strategy, so if you and your students cannot agree, that is fine. Keep in mind that the aim here is not just to think about the audience. The aim is to also think strategically about which opening might help with author positioning. Here are our answers.

1. Because it begins with a citation, Sentence 1b may be better suited for a paper directed at a more specialized audience or one for which it is not necessary to justify the topic, as might be the case in an assigned paper topic. Sentence 1a would be a more suitable beginning for a class paper or any other paper where an author thinks that a general backdrop would help lead readers into the topic. It would be suitable for specialists and non-specialists alike.

2. *Fascinated* is an interesting choice in Sentence 2a and might suggest that the author is really engaged in the topic (we assume the author is also fascinated), which in turn might mean a very interesting paper follows. One could also reasonably expect an explanation to follow. The opening seems to us to be appropriate for a course paper and maybe even a paper for publication. Sentence 2b clearly would work for either a course paper or paper for publication. It provides very specific information but does not necessarily seem to be intended to gain a reader's interest.
3. Sentence 3a is a typical definition opening, lacking any language to indicate the author's stance. Sentence 1b immediately piques our interest because of the emphasis on cultural transmission. The opening suggests the remainder of the paper could be interesting. Either one of the openings would be adequate for a course paper, but Sentence 3b contributes more to author positioning, in our opinion.

Opening with Statistics

TASK FOUR: Considering whether to open with statistics

The discussion prior to reading can be quite interesting if your students are from a range of disciplines. You can point students to MICUSP if they wonder whether statistics are good openers for course papers in their disciplines. We examined about 150 first sentences in MICUSP and found that openings with statistics are common enough for us to recommend them. Such openings are often used in published papers but are more common in some fields than in others. Students should investigate a couple of issues from a journal focused on their field of study for an answer.

1. We have the impression that the author wants readers to see that the lysine cartel was a huge international problem and one that was costly.
2. The author does indeed convey the sense that the price-fixing was quite serious. Readers may not be familiar with the situation, although they may be more knowledgeable about the economic models that will be discussed.
3. The purpose of Sentence 2 is to define *lysine,* which may be necessary depending on the audience.

Opening with Definitions

The material on shorter definitions is helpful for all students, but some students, particularly those in the hard sciences, have argued that they generally do not need to worry as much about longer definitions. You may want to point out, where appropriate, that sometimes process descriptions form the basis of a definition. Further, an argument in favor of the use of one material or another may also require some contrastive definition strategies. For students in the social sciences and the humanities, the need to define is clear. In those areas, scholars sometimes have a hard time agreeing on much of anything.

Writing a Definition

TASK FIVE: Writing a definition of terms with more than one meaning

Answers will vary, but you might want to be prepared to discuss the terms in the task: *chip, jitter, crash, noise,* and *cloud.*

Some Common Ways to Define in Academic Writing

There is a lot of material here and, as we suggested earlier, you might want to be selective about what you cover and when. You can always come back to the items that you skip. We do this often and frequently return to this unit when we cover summaries (Unit Five) and introductions (Unit Eight).

Language Focus: Verbs in Defining and Naming

This Language Focus section highlights some verbs that can be used for defining. It may also remind students that Google Scholar can help inform their decisions while they write.

The fact that other definitions exist for *shadow work, fast food,* and *product sophistication* is indicated by *may be defined as, for the purposes of this study,* and *which I define as,* respectively. In all but two cases, the definitions use the passive. And notice that the passive sentences place the object or concept at the beginning. If the author is offering his or her own definitions, it makes sense to use *I* as in *I define here.*

TASK SIX: Identifying definitional elements

This task involves recognizing the definitional elements, which we think are helpful for students to gain a sense of when and how to define. Students also realize that they may have not been paying attention to these elements when they were reading, causing them to miss some important information.

1. In addition to the examination of historical records, a study of the geologic record of past seismic activities, called paleo-seismology, 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. (Note the definition within the definition here!)
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: Finding definitions in published papers

Students should be able to find some good examples. We would imagine that most of the definitions will occur early in the articles selected, primarily in the introduction or literature review if it is in a separate section.

A Brief Look at the Elements of Formal Sentence Definitions

We think the classic definition pattern is quite important. One might also argue that it, too, follows a general-to-specific progression from the class to the distinguishing detail.

Term *is/are* *a/an* class *that/wh*-word + *distinguishing detail*

You can challenge your students by asking them to include a modifier before the class, as in these examples.

> Shifting cultivation is an agricultural system in which plots of land are cultivated temporarily, then abandoned.
>
> Lead is an industrial pollutant that enters the ecosystem through soil, air and water.

Here and elsewhere we have elected to include the citation used in the original source. We believe this is important to model good behavior.

TASK EIGHT: Choosing the correct preposition in a definition

This task is quite challenging for some of our students, particularly those whose first language is not English. We always have the students do this together so that they have a chance to consider various options before deciding on one.

1. with
2. in
3. to
4. from
5. in
6. about
7. through
8. to
9. in
10. in

TASK NINE: Writing a one-sentence definition

The definitions may vary, depending on the student's field of study. The term *conductor*, for example, is used in physics, engineering, and music. The definitions of a *bridge* in dentistry and in civil engineering will differ. If possible, pair students from different disciplines that have unique definitions for the same word (so one student from dentistry and one from civil engineering). Ask students to share their definitions with the class.

Extended Definitions

Extended definitions are important for writing papers and essay examinations. As some of the examples in the main text illustrate, an extended definition may contain several definitions.

TASK TEN: Examining extended definitions

Be sure to ask students if they know of other types of information beyond those given in the main text and in this task.

1. components and types
2. examples
3. history
4. applications

TASK ELEVEN: Analyzing an extended definition

Although many students question the need for all of the information in the navigation definition, we think it nicely illustrates what is possible.

1. Sentence 1: General definition
   Sentence 2: Brief history
   Sentence 3: Etymology of the word
   Sentence 4: Impact of craft that fly in three dimensions
   Sentence 5: Importance of computers and GPS
   Sentence 6: Obsolescence of older technology

2. The passage follows general-specific organization.
3. Both present and past tenses are used. Present tense is used for general statement of facts (Sentences 1, 3, 5, and 6). Past tense is used in Sentences 2 and 4 for statements about past events.
4. *We* here refers to people in general (the readers) and does not refer to the authors (as in *We have argued that . . .*). The use of the pronoun is a way to engage with the audience. As such, *we* may well be appropriate. Although it can be used in academic writing, students should be encouraged to see how things are done in their own field of study. Students might like to discuss whether either or both of these different uses are found in their fields. If *we* is not used, an alternative formulation could be this sentence.

   The history is reflected by the fact that the Latin word for ship is navis.
5. Making a connection to internet navigation may be a challenge. However, it might be possible to add a sentence indicating that the concept of navigation is no longer limited to navigation of the "real world" and has now been extended to cyberspace. This point could conclude the definition.

TASK TWELVE: Ordering the sentences of an extended definition

This exercise is harder than it looks. It is not absolutely essential to do it in class, but some students really like the task. Some interesting discussions can arise about how to order examples b, e, and g (Sentences 3, 4, and 5). Students can be encouraged to discuss palindromes in their first language and give examples. We think this is the best order because it results in general-specific movement of ideas. We also think this order establishes old-to-new connections between sentences.

a. 2
b. 4
c. 7
d. 1
e. 5
f. 6
g. 3

TASK THIRTEEN: Revising a definition

Here is a response from one student. Notice the problem-solution-evaluation sequence in the last two paragraphs.

Airbags

An automotive airbag is an occupant restraint system that provides protection for an occupant of a vehicle in a crash. Although airbags may seem to be a somewhat recent innovation, rapidly inflating air cushions designed to prevent crash injuries existed for quite some time before being used in automobiles. In fact, the first patent on an inflatable safety device for airplanes was filed during World War II.

The automotive airbag technology that developed between the 1940s and 1960s was quite similar to that of airbags currently in use. However, those early airbags were difficult to implement and costly. The main concern for design engineers at the time centered on storage and the release of compressed air. First of all, the housing of the system had to be large enough for a gas canister that could keep the gas at high pressure for a long period of time. In addition, the bag itself had to have a special design that would deploy reliably and inflate within 40 milliseconds. The solution to these problems came in the early 1970s with the development of small inflators which used hot nitrogen, a harmless gas, instead of air to deploy the bag. This innovation allowed the widespread installation of airbags in vehicles beginning in the 1980s.

Today the National Highway Traffic Safety Administration estimates that airbags have annually saved nearly 1000 lives per year. In the future even more lives will be saved as new airbag technologies are developed. For example, research is currently 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.

TASK FOURTEEN: Writing an extended definition

It is very challenging for some students to write an extended definition without referring to a source. If students need to use sources, encourage them to use their own words, provide appropriate citations, and share their sources with you. We hope that we have set up the assignment in such a way that it encourages original work.

Definitions to Demonstrate a Distinction between Two Objects or Concepts

Sometimes it seems that differences between two objects or concepts are obvious but, then on closer examination, they appear to be less clear. These differences can influence such things as a reader's acceptance of an argument and research outcomes. Consider, for instance, the difference between *urban* and *rural.* One of our students was examining alcohol involvement in automobile crashes in urban and rural settings. Finding a definition that clearly distinguished the settings was difficult. Ultimately, her distinction was based on the density of two-lane roads—which was not something most of us would consider.

Although many students might say they would not be able to explain the differences between any of the terms on the list, you could offer *urban* and *rural,* which we have discussed. Also, it may be useful to point out that in Britain and Australia, PhD students write a thesis. In the U.S., master's students write a thesis, while doctoral students write a dissertation.

TASK FIFTEEN: Revising definitions to make a strong distinction

In our experience, the first patent/copyright passage gives rise to many differences of opinion. Many students think it is just fine the way it is, but many look at it and say they would not be satisfied. They would definitely want to take it apart and put it back together in a very different way. Discussions between these two groups can be quite interesting. Strategy issues are often raised.

Students should be reminded that *the former* and *the latter* can only be used anaphorically—they can only be used to refer to previously stated noun phrases.

Variations in Definitions

On page 43 of the Commentary we mentioned a student who needed to distinguish *urban* from *rural.* Recall that her distinction rested on the density of two-lane roads. We know, however, that the two terms could have been defined in other ways, such as population density, density of businesses, employment, or housing types. Since each of these perspectives highlights a different characteristic, we would imagine that had she chosen one of these alternatives, her results would have been different. Ask your students where issues like this arise in their own fields.

TASK SIXTEEN: Analyzing the discussion of a concept defined in several ways

We really like this text because of the many definitions it contains. It is not often that a traditional dictionary is cited in an academic paper, but we think it works quite well here.

1. There are three kinds of definition: a dictionary definition that a lay person (non-expert) would come across (Sentence 1), a definition for experts (Sentence 2), and an alternative definition for experts (Sentence 4). It would be nice to ask the authors why they included more than one definition, but the effect is that readers can see that there is a lack of agreement among experts as to what road rage is. Also, we can see how the lay definition differs from the expert definitions.
2. Yes, this is a general-specific text. It begins with a general definition and then narrows down to the more specific characteristics of road rage.
3. The text has instances of past (Sentence 1), present (Sentences 1, 2, 5, 6), and present perfect (Sentences 3 and 4). The present perfect suggests that the expert definitions are not accepted fact, but reasonable. Present tense (with modals) is used to express opinion (Sentences 3, 5, and 6).
4. *This cultural phenomenon* is road rage.
5. The authors are cautious in Sentences 2, 4, 5, and 6.
6. *May be a stretch* means that it may be an exaggeration to call *road rage* a mental disorder.
7. This sentence allows the authors to call the other definitions into question and introduce alternative definitions.
8. In the next section, the authors might provide their own definition.

TASK SEVENTEEN: Analyzing a longer discussion of a concept defined in different ways

Before we have students start the task, we like to have them discuss with each other whether and under what circumstances they procrastinate. We find that students are more engaged with the text when they see that the things they talked about are partly addressed.

The general definition of procrastination is not contrastive. It is a straightforward definition that offers clarification on subtypes of procrastinator, namely the difference between optimistic and pessimistic procrastinators. The authors do, however, show the difference between the two.

1. There are many aspects of the text that make it seem "academic": the citations, the vocabulary (e.g., *engage in* rather than *do* in Sentence 2), and the use of a summary phrase (Sentence 4), to name a few.
2. The general definition of procrastination provides a good backdrop against which to discuss the two types of procrastinator.
3. Yes, Sentence 7 is helpful because it tells the reader exactly what and how many types of procrastinator will be discussed next. Highlight this as a form of metadiscourse and explain the usefulness of such expressions.
4. Sentence 3: *instead* (contrast)

   Sentences 6 and 10: *moreover* (addition)

   Sentence 11: *in contrast* (contrast)

   Sentence 13: *nevertheless* (adversativity)

   Sentence 15: *therefore* (cause and effect)

   The connectors make it easier to read, and the reader knows what the author's intent is based on choice of connector.
5. *This phenomenon* refers to procrastination.
6. There are times when procrastination takes place for good reason.
7. A paragraph break would be appropriate before Sentence 7.
8. Writing the references into the sentences would place greater emphasis on the researchers who wrote those papers.
9. The authors might summarize the main differences between the two types, discuss the ramifications of each type, and/or discuss the proposal of their paper.

10. It might answer these questions: Are there different kinds of procrastinators? Can the two kinds of procrastinators change their behaviors?
11. Psychology

TASK EIGHTEEN: Writing a competing or contrastive definition

Answers will vary. In our classes, some students have been slightly intimidated by the given topics. Students should be reminded that they can choose something from their own fields of study.

TASK NINETEEN: Analyzing a comparative definition

1. The different theories are introduced in Sentences 3 (where all of the theories are introduced), 4, 9, and 19.
2. The theories are introduced using present tense. The theories are "timeless." Although they were formulated in the past, they are still widely accepted today.
3. Sentence 5: *In other words* (clarification)

   Sentence 6: *therefore,* (cause and effect)

   Sentence 7: *while* (contrast)

   Sentence 8: *for instance* (illustration)

   Sentence 11: *for example* (illustration)

   Sentence 12: *In other words* (clarification)

   Sentence 14: *for instance* (illustration)

   Sentence 18: *Although* (adversativity)

   Sentence 24: *For instance* (illustration)

   Sentence 27: *While* (contrast)

   The connectors were used to make sure the logical relationships are clear to readers.
4. There are a number of possibilities for what might come next—perhaps a discussion of the writer's own theory of humor in which flaws in the other theories are presented. Perhaps what may follow is an expansion of one of the theories. Another, perhaps more likely, next section is an analysis of a humorous situation (play, book, movie, or something else) demonstrating how each of the competing theories applies or does not apply.

5. The text is actually a general review of different theories. It is mostly a GS text, but it does not get more and more specific with each sentence. The text reaches a particular level of specificity and then remains at that level. It does not provide very specific details for each of the theories.
6. No, a modern version of relief theory is not explicitly mentioned. It simply says that modern theories are variations of old ones, and it only specifically mentions superiority theory and incongruity theory. (There is no complicated motive behind this. Chris simply had exhausted all her resources and did not look for modern versions of all the theories.)
7. If Chris (the author) expressed a preference, it was not intentional. Note the absence of evaluative language. However, she has a strong preference for incongruity theory. If she had wanted to express a preference, she would likely have discussed the incongruity theory last, rather than in the middle. Discussing the preferred point of view in final position is a common rhetorical strategy. (See Unit Eight for more on this.)

TASK TWENTY: Writing a general-specific or "school of thought" text

Answers will vary.

TASK TWENTY-ONE: Analyzing a specific-general text

We have included this small section on specific to general because this manner of organizing is common in some fields, particularly History and those in which historical accounts are important.

1. Paragraph 1: a description of the statue, including its age and current condition

   Paragraph 2: a biographical sketch of the artist, Johann Philipp Ferdinand ("Fritz") Preiss

   Paragraph 3: the status of Preiss, Chiparus, and their figures in the art world

   Paragraph 4: the characteristics of La Gamin that establish her as a reflection of women in the post-WWI era

2. The first paragraph gives a lot of descriptive information, as does the fourth paragraph. This last paragraph also seems evaluative, especially the first and last sentences.
3. Answers will vary here, but many of our students are actually interested in the history and the fact that the workshop, records, and artwork were lost. Others find the final paragraph more interesting because it directs their attention to aspects of the statue they might otherwise have missed.
4. The author translates the visual into the verbal fairly well. There are a lot of adjectives and precise detail.
5. A loose connection is made between the statue and the historical context, but little information is given about the era from which the statue emerged. This could be improved. Perhaps the author's overall purpose is to offer more detail on the statue than is typically available. We do not think the aim here is to engage in a formal analysis of the work so as to offer a fresh look at or to raise a social issue. We do not think it is possible for the author to discuss how the artist's life influenced the art. These questions, however, might underlie other discussions of art.
6. The title seems quite short for such a short text. Perhaps it can be expanded to reflect the content by including the Art Deco period and coming of age of the "new woman" untethered by the constraints of the past.
7. Since bases are made of stone, students reasonably guess that onyx is a type of stone. *Patina* is used in relation to a metal, bronze, and students guess that this has something to do with a desirable quality of its surface.

Here are a couple of other questions you could have your students discuss.

8. Why do we not know more precisely when the statue was made?

    The records were destroyed, so the author can give only a rough estimate.

9. Can you offer other reasons for the change in fashions from 1910 to 1920? Could some of your reasons be included in the text? If so, where?

> There were many changes in society during the years leading to WWII, such as the emphasis on freedom of movement, athleticism, and the new roles of women. This information could be used to help readers understand the significance of the statue.

The text on the Hitler Youth does a good job of moving from specific to general. The story about Inge is engaging, and the link to her real-world counterparts in Sentence 5 is skillfully done. If you want to do more with the text, consider this task.

1. What would be the effect of eliminating the story and beginning with something like this?

    > During World War Two, many young Germans belonged to the Hitler Youth (HJ) and the League of German Girls (BDM). Those same young people that were in the Soviet-Occupied Zone of Germany (SBZ) after the war were eager to join the Free German Youth (FDJ). In fact, hundreds of thousands of young East Germans made 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.

    While conveying information similar to that in the original, we think that the proposed revision is much less engaging. By situating the issue against the backdrop of a single, named person and revealing her role as a *zealous functionary*, the author draws readers into the text. In fact, a few of our students (from fields other than history) have been so drawn in that they have read the entire paper.

2. Does the second paragraph in any way reveal the author's stance or perspective toward the former Hitler Youth who then became members of the Free German Youth?

    > The use of *just such a speedy transition* does seem negative, and when we consider that Inge was described as a *zealous functionary* in the Hitler Youth, perhaps the author is hinting at a character flaw. *Speedy* suggests a lack of thought or a flaw in the weakness in the reasoning of these young people with regard to what they were doing. The second

paragraph also states that the Communist state has its roots in Nazism and, assuming that the author is not a Nazi sympathizer, is critical of the former East German communist state.

3. What assumptions does the author make about the background knowledge of readers?

   The author assumes readers have some knowledge of World War II and the two postwar Germanys, one of which was under Soviet control. Readers are assumed to know what brown shirts (the uniform shirts of the Hitler era youth groups) and blue shirts (the uniform shirts of the communist era youth group) represent. Readers are perhaps also assumed to have some familiarity with the different youth groups, beyond the uniform color.

4. This short text contains a lot of adjectives. Underline them. What would be the effect of omitting them?

   We focus on these as being important in shaping the message of the text. If any of these were omitted, the text would be much less engaging and important meaning would be lost.

   Sentence 2: *zealous, bitter*

   Sentence 3: *successful, Communist-led*

   Sentence 4: *rapid, political*

   Sentence 5: *real-life, Soviet-occupied*

   Sentence 6: *young, speedy, brown, blue, mass youth*

   Sentence 7: *decisive*

5. Typically, acronyms are derived from the first letters of important words in a noun phrase. The acronyms in this text do not match the initial letters of the associated noun phrases. Why?

   The acronyms here are associated with the original German terms. For instance, BDM is derived from *Bund Deutscher Mädel* and FDJ comes from *Freie Deutsche Jugend.* Students can check the internet for the origins of the other acronyms.

6. What does *c.* in the title mean?

> c. is short for the Latin *circa.* It means "approximately," usually in reference to a date. In history *circa* is often used when the exact dates of events are unknown. If students are interested in other Latin expressions, spend some time working with Appendix Three in the textbook.

If you do not want to examine the text via these questions, we are sure that you can touch on the same information by simply asking students what they think of the text. If students say that they found it interesting, prompt them to explain why. Students will talk about how the story got them interested and that the author has a critical perspective, but not overly so. They will also notice the frequency of adjectives and how these contribute to the message.

TASK TWENTY-TWO: Completing a specific-general text

This may be a difficult task, but it does get students thinking about information flow. Given the first and third paragraphs, one can assume that Cavour's secret plan should be explained, as should the fact that his efforts paid off. Unless your students know Italian history, they will have to find some information to complete the paragraph. Here is an attempt by one of our students who used information she found on the internet.

> In the secret plan, Cavour convinced Napoleon to take part in a war with Austria. The plan involved causing trouble in the Austrian-occupied Piedmont area so as to prompt a direct conflict between Austria and Piedmont. The Piedmont people received help from the French, who, in return for a victory, were promised Nice and Savoy. Because of the assistance from Napoleon, the Austrians were defeated in two battles and in 1859 the Piedmont area was handed over to Victor Emmanuel II, the first king of a united Italy (Oracle Thinkquest, 2010).

TASK TWENTY-THREE: Writing a specific-general or general-specific text about a term or concept that has fallen out of favor

Answers will vary here. We hope that this task is as interesting for students to write up as it is for us to read.

Unit Three

Problem, Process, and Solution

Main Aims

The important take-home messages of Unit Three are that

- problem-solution texts are common in academic writing.
- writers can organize an academic argument by following problem-solution organization.
- process descriptions can help writers explain a problem or a solution.

To help writers explore the stated aims, the unit focuses on (but the Commentary does not necessarily discuss) these topics.

The structure of problem-solution texts

Procedures and processes

Flow of ideas in a process description

Participles

Active voice in process descriptions

Introducing the solution

Opportunities to gain a better understanding of the main topics are provided in these Language Focus sections (although not all are discussed here) and tasks.

Language Focus Sections

Mid-position adverbs

–ing clauses to indicate cause and effect

Passive voice

Indirect questions

Tasks

Task One	Analyzing a problem-solution text
Task Two	Working with mid-position adverbs
Task Three	Analyzing a problem-solution text
Task Four	Analyzing a longer problem-solution text
Task Five	Analyzing a published problem-solution text
Task Six	Identifying causal connections
Task Seven	Analyzing *–ing* clauses of result
Task Eight	Establishing cause and effect using *–ing* clauses of result
Task Nine	Considering how to establish cause and effect
Task Ten	Creating more informative sentences
Task Eleven	Considering processes and passive voice
Task Twelve	Analyzing flow of ideas in a process
Task Thirteen	Improving the flow of ideas in a process
Task Fourteen	Examining a description of a natural process
Task Fifteen	Writing a problem, process, and solution text
Task Sixteen	Analyzing a process in a published text
Task Seventeen	Writing a process description
Task Eighteen	Inserting the verb *to be* in indirect questions
Task Nineteen	Writing up a methodology
Task Twenty	Writing about a problem and solution together with a process description

General Notes

a. Problem-solution movement is an important underlying structure in academic writing. This structure can prove especially useful for the writing of critiques (Unit Six) or research paper introductions (Unit Eight).

b. We have chosen to include a discussion of process descriptions in this unit rather than to treat them separately. Process descriptions rarely stand alone. In some cases, processes lead to problems (e.g., the formation of pollution or a hurricane) and in others processes provide a solution (e.g., the development of a vaccine or a biodiesel fuel for vehicles). Processes can also explain how things work and thus serve as background information (e.g., how solar panels convert sunlight into usable energy or how mobile phones work). Importantly, process descriptions are essential in writing up the methodology for a research paper (Unit Seven).

c. Problem-solution texts tend to be argumentative and evaluative. When writing these texts, students should ideally make it clear to the reader why the problem is in fact a problem and how the solution is indeed an appropriate solution. As such, writers should consider using some evaluative language.

Detailed Commentary

TASK ONE: Analyzing a problem-solution text

1. Students will need several minutes to discuss whether it is important for them to publish and what challenges they might face as novices in their chosen fields. Whether students want or need to publish depends on many factors, such as whether they are in a master's or PhD program or involved in research. Knowing how many of your students are interested in getting published might lead you to make changes in the material you choose to cover in this and the remaining units. The challenges that students report include many that focus on their confidence and experience in writing for academic purposes. Many students at the graduate level are pursuing degrees in fields different from their undergraduate degrees and report not knowing how to write or speak like others in their new fields; some have been in the workforce for several years and feel that their writing skills are rusty; some state that they actually did very little writing as undergraduates and think they are completely unprepared for writing at a higher academic level. Surprisingly, students do not always express concern about having good ideas and solid research, which, of course, are extremely important.

2.

Sections	Point being discussed
Situation: Sentences 1–3	Clear communication is important in biomedical research.
Problem: Sentences 4–10	Writing is a daunting task and many shy away from it. Novices lack experience.
Solution: Sentence 11	Writing instruction is needed and will help.
Evaluation: Sentences 12–13	If researchers can write, they can participate in the ongoing activity of the field.

3. The point in the opening sentence would apply to all academic fields, so the fact that it was made about Biomedicine is not that important. It is hard to imagine that anyone would disagree with the opinion that clear communication is important, so this is a good starting point. We often tell our students to think about beginning their papers with points that most readers would find non-controversial, such as definitions, as discussed in Unit Two. We then discuss the merits of getting readers on their side, so to speak, right from the start.
4. We would agree with the point in Sentence 7, particularly the part emphasizing that it takes time to develop one's writing skills.
5. The text is short on detail, so you might question whether it is convincing. To be fair to the authors, this excerpt is the introduction to a five-page paper, which you may be able to access and use with your class. The lack of detail, however, sets up a very important discussion on how detail can help authors be convincing and contribute to positioning.

   Our students tend to check these aspects of the text that contribute to the authors' attempts to convince the reader.

   _✓_ a. the problem-solution organization

   ____ b. the flow of ideas

   _✓_ c. references to other published papers (indicated by the underlined, superscripted numbers at the ends of some of the sentences)

   _✓_ d. claims that are stated cautiously (see Unit Four)

   ____ e. the explanation of the causes of the writing challenges

Students in our classes agree that writing instruction is a good idea, which, of course, is consistent with their enrollment in our writing classes. Although they need little or no convincing, they do sometimes mention that it might be better if writing classes were targeted at specific disciplines. We personally think that having students from a variety of disciplines allows for lively discussion during which students can question and defend their own writing practices. We prefer heterogeneity, but sometimes we do need to share our reasoning with our students.

6. It would be reasonable to conclude that the authors are sure of their position, particularly the importance of writing. More space is given over to the problem, so perhaps we can say that they are more convincing in that section. They do not offer anything concrete about the writing instruction that should be offered as a solution.

7. Our students generally think all these items could strengthen the text. We agree that each of them could possibly contribute to that aim.

   _✓_ a. a quote from a study that shows the progress of science is slowed because researchers do not write up their work

   ____ b. some statistics indicating that writing instruction is beneficial

   _✓_ c. some data on the relationship between writing (publishing) and career advancement

   ____ d. an explanation of the "writing to learn" movement mentioned in Sentence 11

8. Our students in the humanities and social sciences often refer to their need to create arguments, but the idea that scientific writing involves the creation of an argument is one that many of our students in the hard sciences have not considered before. They usually state that good data should be enough.

   Increasingly, students are coming to our classes with some experience in getting a paper published. This is useful information to have as we decide which material in the book to use. We often ask students with experience to talk about the process, including what was fairly straightforward, a bit difficult, or incredibly frustrating.

Language Focus: Mid-Position Adverbs

This subject was briefly mentioned in Unit One, but we felt it was important enough to cover again. This is not a difficult concept, but it is easily forgotten by students. One of the best ways to illustrate how placing the adverb in mid-position can influence one's reading is to move the adverb around—from sentence-initial to sentence-medial to sentence-final position. Note the "split infinitive" in Sentence 6 (*to accurately and effectively communicate ideas*) and in Sentence 10 (*to effectively contribute*), which we think are just fine. Most of our students have not heard of the "rule" that infinitives should not be split, so if it is important to you, be sure to discuss it with your students. The mid-position adverb in the text in Task One can be found in Sentence 2 (*possibly enable*).

TASK TWO: Working with mid-position adverbs

This task nudges students to think about the vocabulary they know and strategic placement.

1. The provisions of the law must be *carefully applied.*
2. Part II of this paper *briefly* describes the laws of the U.S. that pertain to agricultural biotechnology.
3. Myopia, which is *usually/generally* referred to as shortsightedness, is a common cause of visual disability throughout the world.
4. This study revealed that American and Japanese thresholds for sweetness and saltiness did not *greatly* differ.
5. Pulsed semiconductor lasers do not *typically* use the broad gain bandwidth to full advantage in the generation of subpicosecond pulses.
6. Environmental managers are *regularly/repeatedly* faced with having to determine the extent of environmental contamination and identifying habitats at risk.
7. The water supply lines must be *periodically* inspected to prevent blockages.
8. Although many elaborations of this model have been developed over the years, all of them have *largely* followed the traditional specification in presupposing that an individual will choose to make a tax report.

TASK THREE: Analyzing a problem-solution text

The topic of the text is one that will be of interest to students whose first language is not English. We also think it is important for academics to be aware of the status of English as an academic lingua franca.

1. Situation: Sentence 1

   Problem: Sentence 3

   Solution: Sentence 9

   Evaluation: Sentence 10

   Students might argue that this is not really a problem-solution text. The text is different from the text in Unit One, which deals with a real problem (the hazards of e-waste). But we would argue that the present text focuses on an "academic" problem and that this is just as typical for the research world as are "real" problems and solutions.
2. A division at Sentence 8 would be helpful. Some may argue that a paragraph division could also be made before Sentence 5.
3. Here are some examples produced by our students.

   The problem of overheating was suggested as residing in a poorly designed heat sink.

   The problem of inadequate pain management was suggested as residing in misperceptions and biases about pain.

   The problem of the ongoing power outages was suggested as residing in tree limbs that were touching circuit breakers and other protective equipment.

4. Time expressions include: *early examinations* (Sentence 3), *as long ago as* (Sentence 6), *more recently* (Sentence 7), *new data* (Sentence 8), *now suggests* (Sentence 8), *more accurate than previously believed* (Sentence 8), *further research is necessary* (Sentence 11). The passage is attempting to make a strong contrast between the assumptions of the past and the newly acquired knowledge of the present.
5. Answers will vary, but some students are quite frustrated by the dominance of English and believe that they will be severely limited by this in their academic pursuits. To counter this view, we like to ask students to look through some journals in their field and note where the

articles originate. In many cases, they may see that many (in some cases most) of the articles do not appear to be written by native speakers. Also, we stress the importance of experience. In fact, in our field, some of the most prolific and most cited authors are not native speakers of English. Go to page 341 of Unit Eight for an example. It would be interesting to do a study of regional journals that may be published in languages other than English to gain an understanding of publications of more local interest.

6. New students may have little to offer, but some may talk about how journals have shifted from a country's official language to English or how there are efforts to protect against this phenomenon.

Procedures and Processes

TASK FOUR: Analyzing a longer problem-solution text

This problem-solution text is noticeably different from "The Role of English in Research and Scholarship." It is a "classic" problem-solution text in that it is technical in nature and is concerned with the "real world."

1. The situation and the problem are presented in the first paragraph because the situation requires little explanation—only one sentence is necessary. Also the nature of the problem can be assumed to be clear to readers. We can all imagine the seriousness of the problems associated with the lack of fresh water. A one-sentence paragraph is not a good idea, so it makes sense to continue the paragraph with a discussion of the problem.
2. *nets are erected* → *water droplets of the fog are collected by the nets* → *water flows from the nets to troughs* → *water flows through filters into storage tanks* → *water is chemically treated* → *water flows to households*
3. Present tense is used because this is a repeatable process.
4. These are the passive instructions: *are attached, is designed, are trapped, is then piped, is chemically treated.* Passive voice keeps the focus on the process. The individuals involved are not of interest.
5. The adverbs *approximately, when, then, chemically,* and *finally* are in mid-position. *Unfortunately* is also used in Sentence 11 right after *is*, but *unfortunately* is often appropriately placed in sentence-initial position like other logical connectors. In fact, we like to highlight that *unfortunately* can often be considered to function much like *however*, but with an attitude.

6. Sentence 4: *this lack of rainfall* and Sentence 14: *this collection system.* Both occur near the end of their respective paragraphs. They serve to summarize the main points of the paragraph. At the beginning of the second paragraph in Sentence 6, we have *this problem,* which more broadly restates the water problem introduced in the previous paragraph. Finally, at the end in Sentence 20, the summary phrase is *this viable alternative technology.* The summary phrase again comes at the end of a paragraph and here broadly characterizes the net technology as both viable and alternative.
7. There is nothing fancy or elegant about the presentation of the solution. It is simply announced: *To address this problem scientists in the 1990s implemented. . . .*
8. We see a negative-positive approach, not unlike the discussion of limitations in the Discussion section of published research (see Unit Eight). We think this is a good strategy that students should know.
   The text appropriately explains the failure but does not end with it. Instead, the paragraph focuses on the positive and how the fog collection system will help other communities. Thus, the Chile experiment was not in vain. Some language that evaluates or reveals a stance includes: *success, unfortunately, lacked a clear commitment, viable alternative technology, successful implementation,* and *much needed fresh water.*
9. Students tend to select the following information as candidates for inclusion.

   _✓_ a. the dimensions of the nets
   _✓_ b. the brand name of the netting
   ____ c. where the netting can be purchased
   ____ d. the method of connecting the mesh to the posts
   ____ e. the time of day the fog comes in
   ____ f. the size of the fog water droplets
   ____ g. a description of the post material
   _✓_ h. the trough material
   _✓_ i. the storage tank materials and dimensions
   _✓_ j. the duration of the fog season
   _✓_ k. the time needed to construct the system

10. A new paragraph could be added after the description of the process. Adding this paragraph would also necessitate a change in the first sentence of the final paragraph to ensure good flow.
11. The information about cost could be added between Sentences 15 and 16.
12. Answers will vary.

TASK FIVE: Analyzing a published problem-solution text

1. Although it could be assumed that most readers are familiar with fog, the authors want to be sure that readers have some details about fog in mind in order to fully appreciate the water collection system described in the paper. It is probably a good strategy to remind readers that fog consists of water droplets and that fog is a result of a physical process. Although initially the authors do not seem to be envisioning experts, the use of *advection* in the fourth sentence and *impaction* later on in the eighth suggests that they are assuming their readers are knowledgeable to some extent. As mentioned, authors often begin their papers with information that they assume would be familiar to their audience.
2. Some obvious similarities are, of course, a result of the content. So, there has to be overlap in terminology such as fog, clouds, mesh, troughs, collection, pipes, and so on. But note the difference in the amount and kind of detail. The published text gives more detail on the meshes, collection efficiency, and water droplet diameter. The system is also described as having a *gravity flow system* in the final stage. This detail is of interest to other scholars in this area of research. The detail also allows other scholars to evaluate the work in terms of its scientific merit.
3. Both use present tense, likely because this is not a one-time process. Note, however, that the points about the efficiency of the system are in the past since they are true only for the system on El Tofo mountain.
4. In everyday English, most of us would consider *fog* to be non-count. To an untrained expert, fog is fog. As we know, however, experts make distinctions that non-experts do not. So, from the text, we can get the idea that there are indeed different kinds of fog, and the plural form is therefore typical. In other fields, common terms will have technical

uses that allow non-count nouns to be countable. Consider, for example *salts* in chemistry and *rices* in agriculture. Ask your students for examples from their fields. For a bit more on nouns that are both count and non-count, see Appendix Two.

5. Students in our classes have selected these expressions as potentially useful additions to their vocabulary.
   in the simplest terms
   . . . depends on . . . and nature of . . .
   collected by a simple . . . process
   The efficiency of . . . has been both measured in the field and modeled.
   . . . was found to increase with . . .
   the point of use

TASK SIX: Identifying causal connections

(17) Despite the success of fog harvesting in Chungungo, the system is, unfortunately, no longer in use (de la Lastra, 2002). (18) The availability of water <u>led to</u> a tripling of the population from 300 to 900, <u>putting pressure</u> on the water supply (IDRC, 2003). (19) <u>Because</u> the community lacked a clear commitment to the project (see Diehl, 2010, for a full explanation) they did not add new nets to increase the water supply, and instead petitioned for water to be piped in from 20 km away. (20) Although the village abandoned this viable alternative technology, the Chungungo experience has <u>led to</u> successful implementation of fog harvesting initiatives in other mountainous coastal areas of Chile, Ecuador, Mexico, and Peru, <u>providing</u> much needed fresh water to small communities.

Language Focus: *–ing* Clauses to Indicate Cause and Effect

One common problem with this structure is that students may think that *–ing* clauses of result can be used with all the causal connectors. It is important to stress that they can only be used with *thus* or *thereby.*

You may want to find instances of *–ing* clauses of result in articles that you or your students consult. Discuss why the *–ing* clauses of result were used rather than typical sentence connectors such as *therefore* or *as a result.*

TASK SEVEN: Analyzing *–ing* clauses of result

Students generally work through this task quickly. The main point here is for them to realize that *–ing* clauses of result can be used in many parts of a text.

1. Solution
2. Problem
3. Problem
4. Solution and/or evaluation
5. Solution

Although the sentences lack context, our students like this part of the task. Many find reformulating quite challenging. If you want to give them a bit of help, tell them that it is necessary to do more than simply insert a logical connector. Alternatively, you can wait until someone asks, which is what we do.

We offer these reformulations, but, of course, other answers are possible.

1. The laser light forms an EM field. As a result, the vibration of the atoms is slowed.
2. The demand for business loans falls due to drops in manufacturing output. Because fewer loans are made, banks have a strong lending capacity.
3. Contact among humans, livestock, and wildlife may increase. Thus, opportunities are created for the emergence of new livestock diseases.
4. Since users have access to information, they make smarter purchasing decisions that affect a company's bottom line. (Note, APA style tells writers not to use *since* to indicate causality. We do not follow this rule, but some students may have been instructed to do so.)
5. The propellant evaporates; as a result, the desired product is left behind.

Be sure to discuss with your students whether they prefer the original or the reformulated sentences. We cannot argue that one form is necessarily better than the other since this would depend on having a larger context that would allow us to look at the overall flow of information. In isolation, however, all of our proposed reformulations seem reasonable.

TASK EIGHT: Establishing cause and effect using *-ing* clauses of result

We are not sure why, but our students always like this task. Perhaps it is because they are practicing something new and, more importantly, something they see as immediately useful for their writing.

1. Technical improvements in resource efficiency can lower demand for resources, (thus) *lowering/leading to lower* prices.
2. Avatars can use graphics capabilities to build new artifacts individually or collaboratively in real time, (thus) *leading* to the creation of an effect referred to as "immediacy of artifacts."
3. The payment processing division of the bank announced that its systems had been breached by unknown intruders, (thus) *compromising* the personal information belonging to about 1.5 million cardholders.

   The payment processing division of the bank announced that its systems had been breached by unknown intruders, (thus) *causing* the personal information belonging to about 1.5 million cardholders to be compromised.
4. The plants extract the nickel and zinc form the soil, (thus) *leaving* it uncontaminated.
5. *When* rainfall levels plummeted, a slow, but steady, loss of grasses occurred, (thus) *transforming* the region into a desert.
6. *When* countries sign treaties on the use of "free resources" such as air and ocean fish, serious ownership questions arise, (thus) *causing* difficulties in enforcing any agreement.

   For Number 6, many students will want something like this.

   > When countries sign treaties on the use of "free resources" such as air and ocean fish, serious ownership questions arise, (thus) *making* it difficult to enforce any agreement.

   We suggest challenging them to find a way to avoid using *make*. For example, it is possible to write this sentence.

   > When countries sign treaties on the use of "free resources" such as air and ocean fish, serious ownership questions arise, (thus) *causing/giving rise to* difficulties in enforcing any agreement.

TASK NINE: Considering how to establish cause and effect

This task looks easy at first but can be challenging for students. One of our goals here is to prompt students to think about how they choose to connect ideas when several grammatically and lexically correct options are available. Choices may be influenced by old-to-new information flow, sentence length, avoidance of repetition, or personal preference.

The following answers seem appropriate to us.

1. b. Our choice of b here is somewhat due to the length of the point introducing the cost of $117,787. We did not choose a because *as a result* seemed to suggest that readers should anticipate that the result would be something related to monetary cost. Readers might instead have expected something about injuries and deaths. As for not choosing Item c, we simply thought there was no need for a separate sentence that clearly shifted the focus to monetary matters. The separate sentence could lead readers to expect that the subsequent sentence will focus on money (considering old-to-new flow), but the focus remains on wildlife strikes (the old connection).
2. c. We think c is a good choice because the previous sentence has already used the word *aircraft* twice and using it a third time, as in Item a, seems like too much. Item c also appealed to us because the use of *which* can be interpreted as the larger activity of replacing *aircraft.* Our reason for not choosing Item b is that we were concerned that readers might misinterpret the sentence by too strongly connecting the result to the two engines as opposed to the replacement process.
3. b. We rather like b since it begins with a summary phrase, *this concurrent increase in wildlife populations,* and as such establishes a strong old-to-new connection to the previous point. Item c would have been fine, had we not already chosen an *–ing* clause of result in Item 1b. We did not select Item a because *therefore* seemed somewhat abrupt—again almost as if readers should have expected the outcome of increased probability of a wildlife strike. Perhaps this is a reasonable expectation. So, in the end maybe our choice rests on a personal preference.

Language Focus: Passive Voice

This would be an appropriate time to review, if necessary, the grammar of the passive. A quick review of the passive is important if you want your students to write a process description. We did not include an explanation of the actual grammar in the text—thinking that at this level it would be unnecessary—but rather focused on why this construction can be useful. At this point, you may want to discuss the value of grammar checkers. Grammar checkers tend to flag all uses of passive, leading students to think that the use of passive voice is incorrect. Ask students about their advisors' attitudes toward the passive.

One important point to stress here is the difference between a process description and a set of instructions. The goal is not to provide information that allows the reader to duplicate the process. The goal is to explain how something works or is done. (Of course, this may enable someone to complete a task, but this is not the purpose.) You might consider bringing in a set of instructions for the students to rewrite in a process format. Some discussion of modal use in instructions versus process descriptions may also be helpful. Although modals are more commonly used in instructions than in process descriptions, they also occur in the latter. Our final point here has to do with the *by* phrases in the conduction passage. All of the *by* phrases focus on a nonhuman agent, of course.

TASK TEN: Creating more informative sentences

Answers will vary, but here are some sample responses.

1. Bacteria found in meat can be killed by a brief but intense period of radiation between butchering and packaging.
2. Possible harmful effects of drugs can be reduced by conducting carefully designed, large-scale clinical trials.
3. Information on political preferences can be obtained by questioning passersby in a busy public area.
4. Cultures are partly preserved by continuing ceremonial and ritualistic traditions—such as those surrounding marriage or the birth of a child—that have helped to define them.
5. Changes in land use can be detected by comparing images taken by satellite over a period of time.
6. The spread of infectious diseases can be controlled by vaccinations and by encouraging frequent handwashing.

TASK ELEVEN: Considering processes and passive voice

A Piezoelectric Frequency-Increased Power Generator for Scavenging Low-Frequency Ambient Vibration

Galchev, T., Aktakka, E.E., Hanseup Kim, and Najafi, K. (2010).

❶ Rapid advances in silicon-based wireless microsystems technology over the past few decades has [sic] led to devices with unprecedented performance and utility with low power consumption. ❷ These technological advancements have led to the recent pervasiveness of wireless technology. ❸ However, for these systems to truly become ubiquitous, the issue of power has to be addressed. ❹ Batteries power most of these devices. ❺ However, they typically cannot last the entire lifetime of the device, and periodic replacement or recharging is needed. ❻ This is preventing different applications of wireless devices from being feasible.

❼ Energy scavenging from ambient sources can enable many new uses for wireless microsystems. ❽ While several ambient energy sources have been explored, kinetic energy is one of the most prevalent [1, 2]. ❾ However, the vast majority of the reported devices are designed to operate at mechanical resonance and at high frequencies (>30 Hz), limiting them to scavenging vibrations from periodic sources such as motors and other man made machinery. ❿ This leaves out a number of applications that are prime candidates for energy scavenging such as wearable or implantable devices, environmental monitoring applications, wireless devices for agriculture, and various security and military uses. ⓫ This is because the kinetic energy in these applications is not periodic and occurs less often.

We think the use of the passive nicely keeps the important information in focus and contributes to a good flow of ideas. Ask students whether the authors could have used more passives. What about Sentence 4?

On the question of adding a noun phrase to any of the instances of unattended *this*, we think no noun can easily be added in Sentence 11. In Sentence 6, it is possible to add *limitation* or *drawback*. In Sentence 10, *constraint* could be used.

Flow of Ideas in a Process Description

We think it is a good idea to look at the sample passages in each unit to revisit flow of ideas. Students may get a bit tired of revisiting the issue, but it seems that if we do not, some may forget about the strategies they can employ for moving in and out of sentences. Note that the placement of the prepositional phrases at the ends of the sentences creates ambiguity.

TASK TWELVE: Analyzing flow of ideas in a process

We think the difference between the two passages should be rather clear. Text B flows better because of the language to indicate the sequence and because some of the information has been "repackaged" to eliminate short, choppy sentences.

Participles

While students are familiar with participles as verbs, many may not be as familiar with them as modifiers and as a means to establish a good flow of ideas.

TASK THIRTEEN: Improving the flow of ideas in a process

This is a good task to demonstrate how the same idea can be expressed in different ways. We offer a few possible revisions for each.

1. The oil is skimmed from the surface using a boom and then pumped into a tank for recycling.

   After being skimmed from the surface with a boom, the oil is pumped into a tank for recycling.

   Oil skimmed from the surface with a boom is pumped into a tank for recycling.

2. When banana trees first become infected with the banana bunchy top virus, they produce fruit that is deformed, later yielding no fruit at all.

   Trees infected with the banana bunchy top virus initially produce deformed fruit, eventually producing no fruit at all.

   Initially, the banana bunchy top virus causes the deformation of bananas, but over time it prevents the tree from forming any fruit at all.

3. After the glass is cut to size and inspected to determine if it has any imperfections, it is heated to over 600°C and then cooled in a step known as quenching.

   The glass is cut to size and inspected to determine if it has any imperfections. It is then heated to over 600°C and cooled in a step known as quenching.

   Glass that has been cut to size is inspected to determine if it has any imperfections. It is then heated to over 600°C and cooled in a step known as quenching.

4. A vessel taken from the leg is grafted to the aorta and the coronary artery beyond the narrowed area, (thus) allowing blood to flow to the heart muscle.

   After a vessel is taken from the leg, it can then be grafted to the aorta and the coronary artery beyond the narrowed area, which allows blood to flow to the heart muscle.

   A leg vessel is grafted to the aorta and the coronary artery beyond the narrowed area, allowing blood to flow to the heart muscle.

5. Water from rain or melted snow percolates into the ground through cracks, where it is heated by the underlying rocks to temperatures well above the boiling point. Rather than boiling, the water becomes superheated and pressurized, causing it to eventually burst out of the ground in an explosive steam eruption.

   When water from rain or melted snow percolates into the ground through cracks, it is heated by the underlying rocks to temperatures well above the boiling point. The water does not boil, but, rather, becomes superheated and pressurized, causing it to eventually burst out of the ground in an explosive steam eruption.

   When water from rain or melted snow percolates into the ground through cracks, it is heated by the underlying rocks to temperatures well above the boiling point, but does not boil. The superheated water becomes pressurized, causing it to burst out of the ground in an explosive steam eruption.

6. Answers will vary, but we hope that students attempt to incorporate many of the features we have highlighted. Before assigning this for homework, we usually reiterate the difference between a set of instructions and a process, emphasizing that the purpose of each differs and therefore language choices differ as well. Here is a response written by one of our students.

Inoculation of eggs in flu vaccine development

The eggs are placed into egg trays with the blunt end up, and then labeled with a specific identification number. Three eggs are allocated for each specimen. After being labeled, the blunt end of each egg is wiped with 70% ethanol and a small hole is punched in the shell over the air sac. After the hole has been punched, 0.6 ml of the specimen is aspirated into a tuberculin syringe with a 22 gauge, 1-1/2 inch needle. The specimen is now ready to be injected into an egg.

The egg is held up to a candler to locate the embryo. Once the embryo is located, the needle is inserted into the hole in the shell and the amniotic membrane is pierced with a short stabbing motion so that the amniotic cavity can be reached. Next, the needle is withdrawn by about 1/2 inch (1.25 cm) and then 100 μl of the specimen is inoculated into the allantoic cavity. The needle is then removed and the process repeated for each egg.

Active Voice in Process Descriptions

We have devoted a section to active voice in process descriptions to highlight the fact that naturally occurring processes are typically described using this verb form.

TASK FOURTEEN: Examining a description of a natural process

1. Situation: Sentences 1–2

   Problem: Sentences 3–9

   Solution: Sentences 10–11

   Evaluation: Sentence 12

   As this analysis reveals, the problem receives the greatest treatment. The likely reason is that the process causing the coral to perish is better understood than are the solutions that are currently available.
2. Sentence 6: *in response*

   Sentence 7: *thus*

   Sentence 8: *if*
3. Investigations are underway and have not been completed. It is an ongoing process.

4. The agent is unnecessary. Passive voice here helps keep the focus on recovery.
5. If Sentence 2 had said *They are the marine equivalents of terrestrial rainforests*, we could consider this as accepted fact. As it stands in the original, the authors are being cautious about making such a strong claim.

Explain that natural processes are, by their very nature, different from those involving human action. It follows, then, that the verb forms will differ. Students sometimes think that change-of-state verbs are somehow "special." It is enough to say that these are simply verbs that usually take the active because there is a natural agent that generally does not need to be mentioned.

TASK FIFTEEN: Writing a problem, process, and solution text

Many instructors tell us that this task is one that they really like; it offers students a chance to be a bit creative as they try to envision what background to provide. At the same time, the writing possibilities are limited. Here is a sample response from a student. We have corrected some minor language problems.

> Very often a person suffers a serious muscle injury as a result of an automobile crash. In many cases, muscles can eventually heal themselves with minimal medical intervention. However, sometimes surgical grafts of muscles must be made to restore a person's ability to bend their legs or arms. Grafting, while often successful, is not suitable for all types of injuries, particularly when injuries are extensive and there is little muscle suitable for grafting. Researchers have now developed a form of artificial muscle, which in clinical trials has shown promise. The artificial muscle is made of Orlon, a form of artificial silk, using the following process.
>
> First, the Orlon is cooked and then boiled until it turns into a rubbery substance. The boiled substance is poured onto Plexiglas to form a thin film, from which the excess water is vacuumed away. Once the film has dried, it is cut into 2 centimeter–wide strips and baked in a 90° oven. After baking, the material is ready for use.
>
> Prepared Orlon has a structure similar to that of human muscle fiber and is naturally negatively charged with electricity. When acid is applied to the material, a positive charge is introduced, causing the

ions to attract. This attraction contracts the material like a muscle. On the other hand, when a base material is applied, a negative charge is introduced, causing the ions to repel and the muscle to expand.

This artificial muscle material has restored some limited muscle function in patients with severe injuries. Further research is needed to determine the optimal ways to use this new material and thereby assist patients who currently have little hope of regaining the use of their limbs.

TASK SIXTEEN: Analyzing a process in a published text

Answers will vary, but be prepared for the possibility that some students will have articles with no Methods sections. In these cases, you might want to have a few articles on hand for these students to use.

TASK SEVENTEEN: Writing a process description

Answers will vary.

Language Focus: Indirect Questions

Indirect questions can be tricky for both native and non-native speakers because there is no inversion of subject and verb. This difference between direct and indirect questions may eventually disappear, but for now students should be reminded to follow standard word order for indirect questions.

Indirect questions are useful to introduce a problem. As discussed later in Unit Eight, they can also be used to indicate a gap in a particular area of research.

TASK EIGHTEEN: Inserting the verb *to be* in indirect questions

We can usually go through this task quickly, although some students may still find a few of these challenging. We sometimes ask students to create new sentences using content from their own fields. We also think this is a good exercise to discuss the issue of proofreading one's work. It is quite easy to overlook that the verb *to be* is missing in an indirect question.

1. The question remains whether it **is** possible to develop a reliable earthquake warning system.
2. We need to know what precautions **are** being taken to prevent the spread of the disease.
3. There is some question as to whether the current crisis can eventually **be** overcome.
4. It has not been determined how these policies **are** likely to affect small businesses.
5. It might also be of interest to investigate to what extent persistence **is** a major factor in graduate student success.
6. Another issue raised by this study is whether and to what extent poverty and environmental degradation **are** linked.
7. The process uses the CPU power it needs, depending on what it **is** doing and depending on what other processes **are** running.
8. The research investigated whether time **is** money and found that $V = \{W[(100-t)/100]\}/C$, where V is the value of an hour, W is a person's hourly wage, t is the tax rate, and C is the local cost of living.

TASK NINETEEN: Writing up a methodology

Answers will vary, but this is how one of our students handled the interview information. The response has been edited to address a few awkward word choices.

> Because this study dealt with human subjects, permission was obtained from the Institutional Review Board. Ten subjects were recruited from the local Chinese community and interviewed to determine whether Chinese communities in the U.S. were maintaining the tradition of looking after their elderly. During the semi-structured interviews, subjects were also questioned about their likelihood of accepting help from those outside the community. Interviews were conducted one-on-one without other family members present to encourage subjects to answer truthfully. Interviews lasted approximately one hour and were conducted in the language the interviewees were most comfortable with—Mandarin, Taiwanese, or English.

Introducing the Solution

It makes sense to us to use purpose statements to introduce the solution. For a more detailed discussion, refer to Unit Seven. Before assigning the final task, you can also ask students to compile a list of purpose statements that they have found in the article(s) from their own fields. The statements can be compiled and a list given to the class for discussion.

TASK TWENTY: Writing about a problem and solution together with a process description

Answers will vary.

Unit Four
Data Commentary

Main Aims

The important take-home messages of Unit Four are that

- discussions of data can contribute to the development of an argument.
- the commentary that accompanies data can help writers position themselves.
- effective data commentary involves finding the right strength of claim in discussing the data and ordering statements in an appropriate way.

To help writers explore the stated aims, the unit focuses on (but the Commentary does not necessarily discuss) these topics.

Strength of claim
The structure of data commentary
Location elements and summaries
Highlighting statements
Organization
Concluding a commentary
Dealing with graphs
Dealing with chronological data

Opportunities to gain a better understanding of the main topics are provided in these Language Focus sections (although not all are discussed here) and tasks.

Language Focus Sections

Verbs in indicative and informative location statements
Linking *as* clauses
An introduction to qualifications and strength of claim
Specific ways of moderating or qualifying a claim
Comparisons
Dealing with unexpected outcomes or "problems"
Prepositions of time

Tasks

Task One	Determining the strength of claim
Task Two	Discussing internet behavior and related data
Task Three	Choosing data to highlight in a data commentary
Task Four	Identifying indicative and informative verbs
Task Five	Choosing prepositions in a data commentary
Task Six	Analyzing a published data commentary
Task Seven	Expanding a data commentary
Task Eight	Discussing markers of stance
Task Nine	Analyzing student data commentaries
Task Ten	Identifying weaker claims
Task Eleven	Adjusting claims
Task Twelve	Comparing student data commentaries
Task Thirteen	Writing a data commentary
Task Fourteen	Evaluating an instructor's comments on a commentary
Task Fifteen	Revising a data commentary draft
Task Sixteen	Identifying the function of sentences in a data commentary
Task Seventeen	Writing a commentary on a problem or unexpected data
Task Eighteen	Completing a commentary accompanying a graph
Task Nineteen	Describing data given in a graph
Task Twenty	Ordering the sentences of a data commentary
Task Twenty-One	Writing a data commentary
Task Twenty-Two	Collecting data and writing an original data commentary

General Notes

a. To begin this unit you might consider having a discussion with your students about the types of data displays that are common in their fields and the reasons these displays are used. Many students will talk about tables. Depending on the fields of your students, we would expect many of these other common types of display to be mentioned.

Display	Examples
Diagrams	Flow charts, electrical schematics, models of various kinds (networks, for instance)
Illustrations	Photographs or drawings (for example, an apparatus or experimental set-up)
Maps (a middle ground between diagrams and pictures)	Political, physical, and geological maps depicting phenomena
Montages	Hybrids in which different types of display are combined into one—for instance, split screen displays, a photograph with superimposed images, or a graph combined with a photograph
Graphs	Line graphs, bar graphs, scatter plots, pie charts

As in previous editions, much of the work in this unit is based on tables. While we are very aware that many students may deal more with other types of data display, especially graphs and montages, we believe that the material in this unit has relevance for commentary on all types of data representations. An added benefit of using tables is that unlike graphs, which may be more easily interpreted, tables typically require a very careful reading of the data and some mental effort to identify trends and tendencies. This, in turn, can generate more class discussion. If, however, your students largely come from fields that use more graphs and other visual displays, you may want to start with the graph material at the end of the unit and use some of your own graphs and data displays to discuss the other main points in the unit.

b. As you can see (linking *as* clause!), there is quite a lot of material in this unit, but in our experience much of it can be covered quite quickly. Indeed, it is probably quite important to maintain a good pace by selecting material that suits your students' needs best rather than attempting to finish everything.

c. We think it is important for you to supplement the materials with some of your own that seem directly relevant for your students. We say this because one of the problems with textbooks as opposed to an instructor's own "just in time" materials is that textbooks cannot handle highly topical material. So, it definitely makes sense for you to consider using your own data or perhaps data culled from a student paper or a recent publication. Search the internet for topics of interest to your students. Alternatively, ask your students to do some data collection on their own.

d. Some of the Language Focus sections in the textbook are designed to be handled quickly—that is, we assume that students already have a good handle on the basic underlying material in the section.

e. The unit has 22 tasks, many of which have deliberately been kept short in terms of both the amount of writing and the amount of time needed for completion. We have done this to maintain pace. The first actual writing tasks come quite late in the unit. In fact, the first writing assignment does not appear until Task Thirteen. If this seems too late for your purposes or you simply want more opportunities for students to write, you could assign a commentary describing the data collected in Task Six. Alternatively, you may want to provide some data for a writing assignment.

f. Note that this unit deals with data commentary, focusing on quantitative data. It does not deal with technical commentaries of objects, as when a botanist describes a plant, an art historian describes a painting, or an anthropologist describes a cultural artifact. If you have students from such fields, you may want to substitute such technical descriptions for one or two of the tasks. Notice also that we have in the end decided not to include commentaries on responses to individual questions from questionnaires, such as in this example.

Q11. For my career, good English is

very important	37%
quite important	33%
not very important	22%
unimportant	8%

Commentary on this kind of material is very hard to do in a non-tedious manner, and we believe including it would be more likely to hold the students back rather than teaching them to position themselves. However, if you have a number of students heavily involved in processing survey data (as may happen in Political Science or Public Health), you may want to incorporate it. The general principles of data commentary apply—but only more so!

g. We also do not deal with the different ways to display data—line graph, pie chart, table, or something else—since this is best left for those with far more expertise than we have. If, however, you are comfortable with this type of discussion, you can definitely spend time on the merits of the different ways to display data. This topic might be a comfortable starting point before delving into the unit.

h. In our experience, students from certain fields are unlikely to write data commentaries during their degree programs (e.g., those in Music, Literature, or Philosophy). They may have quite a lot of difficulty finding published data or a published data commentary in their fields. For these students, it is useful to highlight the many elements in the unit that can be useful beyond the writing of data commentaries, such as linking *as* clauses and strength of claim.

Finally, some students may wonder (and, we hope, ask) whether data commentary and Discussion sections (or Results-Discussion) found in published research papers are the same. In some respects, the two are very similar, particularly with regard to finding the right strength of claim and highlighting relevant aspects of the data (results). In other respects, the two differ in important ways. For instance, in typical Discussion sections, authors need to situate their new results within the body of previous work. This, of course, then means that Discussions sections typically contain citations. Another important difference is that Discussions sections in many fields highlight the limitations of the study and results. These topics will be taken up in Unit Eight. Certainly, if your students need to engage in the more challenging task of writing a Discussion section, it makes sense to us to work on both Units Four and Eight, perhaps first beginning with Unit Four and then moving directly into Unit Eight.

Detailed Commentary

Strength of Claim

We decided to begin with a simple task to demonstrate early on that an author's choice of words can reveal the level of commitment to a claim. Claims that are presented too strongly may be rejected, while those that are made too cautiously may be ignored. This message is carried through the entire unit along with other relevant aspects of data commentary.

TASK ONE: Determining the strength of claim

N a. We think *contribute to* is neither strong nor weak.

S b. *Caused* is strong.

W c. Adding *may* to *contribute to* weakens the expression.

S d. This one might seem weak because of *probably*, but then excessive credit is characterized as a major cause. So, *probably* looks more like it is boosting the claim. We think this is closer to strong.

W e. By saying *one of the causes*, the author appears to be making a weaker statement.

W f. The use of *might* and *factor* (rather than *cause*) considerably weakens the claim.

TASK TWO: Discussing internet behavior and related data

1. We think it is a good idea to have students think about a topic before moving into the more narrow discussion of a piece of writing. The data presented in this task will certainly get students talking. Students usually have no difficulty coming up with at least a couple of examples of illegal behavior. One of the most common is illegal downloading of music and movies. We do not expect students to reveal whether they engage in these or other illegal activities, but, surprisingly, many of them do.
2. Students usually say that illegal downloading is fairly common. With regard to other activities that might be mentioned, students often say that if they know about them, then they must be fairly common.
3. Many of our students think illegal downloading is not a big issue; others, however, disagree. You may need to limit the amount of discussion on this or other activities listed in the table. Be sure not to lose the focus on data commentary.

4. Students are usually surprised by at least one thing in the table—often activities that are clearly illegal, such as the unauthorized use of another person's email or bank account.
5. The purpose of Sentence 1 is to describe the content of the table. Sentence 2 highlights an important finding in the table; the finding is presented generally and then further explained in Sentence 3.
6. The commentary begins with the most common and perhaps most tolerable misbehavior. Near the end, the least acceptable form of misbehavior is given. The highlights are organized in terms of what the author views as least to most objectionable. The author concludes the commentary with an explanation and implication of the findings. In doing so, the commentary broadens at the end. We can see specific-to-general movement.
7. Most of our students choose Sentence 7 since it really captures how the author views the data.
8. The commentary falls into the categories of highlighting results and offering implications.
9. The student has chosen data that seems the most interesting and most relevant, highlighting the most common behavior and the behavior that is clearly illegal; these are the extremes of the data. It makes sense to focus on what is most interesting or relevant. Commenting on everything would result in a text that is tedious to read.
10. In several sentences we get a sense of the author's stance—Sentences 4, 7, and 10, for instance. In general, we think authors should convey their stance toward their claims since others might not view them in the same way. In Sentence 4, it is helpful to know that the author thinks the percentage is alarming.
11. Most of our students are comfortable with *slightly more than 75%,* but they do not much care for *about 75%* since the percentage is actually higher than 75. *Most* may be a bit of an exaggeration and is vague, even though it is correct.
12. *Useful, interesting,* and *relevant* are used, but *important* seems to be the most common.
13. Here is what we found:

    it is worthwhile to note that: 37,400 instances

    it is worth noting that: 365,000 instances

    it is worthwhile noting that: 15,200 instances

14. Elements that give the text the appearance of being "academic" include the standard phraseology used to introduce and refer to the table, as in Sentence 4, *this very high percentage.* The vocabulary that reveals the author's stance also contributes to the academic quality. We can also add the author's efforts to adjust the strength of some points, such as *seem to be patterned* in Sentence 7 and *will likely continue* in Sentence 10.

The Structure of Data Commentary

TASK THREE: Choosing data to highlight in a data commentary

Many of our students want to highlight differences between men and women as well as differences between expert and non-expert users. They often focus on the fact that plagiarism is fairly common. Students seem to have no difficulty offering explanations.

Location Elements and Summaries

Language Focus: Verbs in Indicative and Informative Location Statements

We know that the terms *indicative* and *informative* may not be transparent and thus may not be the best terminological choices. However, after failing to find good alternatives, we decided to use them.

TASK FOUR: Identifying indicative and informative verbs

The chart works well as a homework assignment, but we often do this task in class so that students can hear how others made their decisions on the verbs.

	Indicative	Informative
show	Y	Y
provide	Y	N
give	Y	N
present	Y	N
summarize	Y	N
illustrate	Y	Y
reveal	Y	Y
indicate	Y	Y
display	Y	N
demonstrate	Y	Y
suggest	N	Y

Language Focus: Linking *as* Clauses

You may want to point out that in *as it has been proved* (Sentence a) *as* equals *since*, but that this is not the case with Sentence b.

We may not have the correct prepositional usages for all of the items. For example, would you accept *As can be seen from Table 3?* Ask your students to check Google Scholar for some guidance.

TASK FIVE: Choosing prepositions in a data commentary

1. in
2. by
3. in
4. in
5. in
6. in
7. with, of
8. by/in
9. by
10. in

TASK SIX: Analyzing a published data commentary

Answers will vary. Take the opportunity to compile the responses so that you might be able to make some generalizations. The last two rows are intended to yield some information that can be compared with data provided later in the unit.

TASK SEVEN: Expanding a data commentary

This is a short task and could be done as part of a homework assignment or orally in class. Here is a possible response.

> Table 10 summarizes the strategies used by a sample of Japanese scientists when writing up their research in English. As can be seen, . . .

Notice that the opening sentence does not simply repeat the exact words in the table heading but offers a slight expansion. Also, do not forget to point out that later location statements in the same paragraph are likely to use the definite article and no number—for example, *The table also shows that. . . .*

Highlighting Statements

As suggested in the textbook, creating highlighting statements can be challenging. This process requires authors to take a step back from the data and ask "what does this data mean?" For instance, the data in Table 9 leads to the assumption or conclusion that Japanese scientists have difficulties.

Language Focus: An Introduction to Qualifications and Strength of Claim

Students are often concerned that they will appear less knowledgeable if they cautiously express their claims and overly confident if they boost them. Be sure to reassure them that finding just the right strength of claim is important. Understated or overstated claims, however, can weaken a paper.

TASK EIGHT: Discussing markers of stance

Table 9 presents some very interesting data for writers to consider. Here are a few highlights from one of our writing classes.

- Hedges are more frequent than either attitude markers and boosters.
- The rates of attitude markers in the softer sciences are rather similar.
- Attitude markers are more frequent in the softer sciences than the harder sciences.
- Philosophy uses more stance markers than other fields.
- In terms of hedges, Biology differs from all of the harder sciences.
- Physics and the Engineering fields seem rather similar.
- It is somewhat surprising that Marketing has more hedges per 1,000 words than all of the other fields and that it is more like Philosophy.

There are other aspects that can be highlighted, of course. Consider asking your students to write a commentary based on the data.

TASK NINE: Analyzing student data commentaries

The items that are underlined indicate caution toward the claim; expressions that are circled boost the claim.

A. There are a number of explanations for why musicians have superior cognitive abilities to non-musician controls. First, <u>it is possible</u> that only the more intellectually rigorous people continue with music training once they have been exposed to it. Practicing a musical instrument takes a tremendous amount of discipline. Individuals who are willing to work that hard <u>may</u> also work hard in academic settings, thus improving their cognitive abilities. Secondly, socio-economic class <u>could</u> be playing a role. In a study comparing scholastic aptitude among musicians and non-musicians, Phillips found a difference in the two groups, but once socio-economic class was taken into account the difference <u>nearly</u> disappeared (Phillips, 1976). <u>It is possible</u> that the differences between musicians and non-musicians is actually innate or caused by something not musically related in the environment.

MICUSP File PSY.G1.03.1

B. The <u>overall</u> size increase in <u>many</u> of the speedometer design parameters between speedometer set A to set B <u>seems to have accounted for</u> the <u>overall</u> lower average response times and lower average error and miss percentage rates. However, other design differences, such as location of the speedometer on the instrument display panel, did not have such influential effects on the data. Comparing speedometers 1 and 4 (speedometer on left side) to speedometers 2 and 3 (speedometer on right side) only one <u>small</u> pattern was seen. Speedometers 2 and 3 had, compared to their respective speedometer set, <u>slightly</u> lower average response times than the other speedometer in the set. Whether or not this <u>small</u> difference in average response time <u>can</u> be attributed to the location of the speedometers on the instrument display panel was not possible.

MICUSP File IOE.G0.02.1

TASK TEN: Identifying weaker claims

The less strong verb is underlined. If it is easier to focus on the stronger verb, then refocus.

1. The results (<u>indicate</u>/establish) that there is a link between smoking and lung cancer.
2. The survey results (<u>suggest</u>/show) that the reuse of sentences or sections from one's previously published papers is a questionable practice.
3. The latest series of studies (<u>question</u>/challenge) the value of including consumer expectations in the assessment of service quality.
4. The results given in Figure 4 (validate/<u>support</u>) the second conclusion that certain bacteria can reduce arsenic (As) levels in groundwater.
5. Baseline conditions have been (<u>assumed</u>/shown) to be accurate at the time of the surveys.
6. Several studies have (identified/<u>alluded to</u>) the importance of cultural sensitivity as a precursor to culturally appropriate medical care.
7. Changes in ambient temperature may have (<u>influenced</u>/distorted) the test results.
8. Previous studies (failed/<u>forgot</u>) to consider the change in the fiber interface during the cracking process.
9. As shown in Figure 3, trade liberalization has (stimulated/<u>encouraged</u>) economic growth in developing countries, leading to rising incomes.
10. Figure 12 (<u>depicts</u>/clarifies) the relationship between these two systems.

TASK ELEVEN: Adjusting claims

There are so many possibilities here that we do not feel the need to provide any sample responses. In our experience, this task works well if students are challenged to provide the most hedged but still potentially acceptable claims. Who can go farthest? This is almost a parody of academic discourse. A note about the first statement: Yes, research does indicate that in some countries tall people are likely to have higher salaries than short people.

In addition to the examples given, you may want to provide additional practice by asking students to make statements about the class as a group.

> Women comprise about a quarter of the class.
>
> There are three times as many students from Asia as there are from Latin America.

If you would like to offer some more information on the language for making comparisons, jump to Unit Seven. Some of the examples there are quite complex.

Organization

TASK TWELVE: Comparing student data commentaries

Many of our students really like the opening of Student C's text because of the expression *decision-making patterns.* When we ask them whether it is a good strategy to use the same wording as the table title, some change their minds and opt for B. We think that all three opening sentences are fine, but B seems to offer a more original description of the table content because of the expression *solely responsible for important decisions.*

Most of our students do not think that Student A has produced a particularly good commentary because it repeats information readers should be able to see for themselves. The commentary fails to point out that the differences are really not that great, instead focusing on minor differences. Student B does a good job of highlighting that there are more similarities than differences and pointing out the one big difference where parents are very involved when it comes to boys—clothing. It would have been more interesting if the author had offered an explanation. Is it because boys are less interested in what they wear and so parents simply buy clothing knowing that their boys will be content? Student C also emphasizes the overall similarity of parental decision-making for boys and girls but further notes where parents and their children are equally involved. Student C's text is also more general in the sense that it talks about the parental involvement in terms of it being *high, low,* and *similar,* which we know is common in Results sections. What is missing, however, are highlights clearly pointing to precise differences between boys and girls. Even so, we prefer C to the other two.

TASK THIRTEEN: Writing a data commentary

Here is a sample commentary that students wrote as a group in one of our writing classes. We think the text represents a good day's work.

> Table 10 shows the patterns of parent and adolescent decision-making with regard to important aspects of adolescents' lives. As can be seen, overall, parents are similarly involved in decisions for both boys and girls, but the level of involvement differs depending on the type of decision. It seems that parents are more likely to be the sole decision makers when it comes to issues that have to do with safety (curfew) and a child's moral education (religion). The high level of decision-making regarding allowance could simply reflect the family's economic situation, but no information on family income is available to support this. It is somewhat surprising that low percentages were reported for decisions regarding the child's friends, who maybe influential in a child's life. This might seem inconsistent with the data suggesting parents are concerned with moral education (religion), but perhaps friends may have similar moral perspectives and more data is needed. In general, however, it is interesting to note that parents are involved in their adolescent children's lives, particularly when it comes to matters of safety and morality, suggesting the need for future studies to investigate whether there is a relationship between the two that is statistically significant.

TASK FOURTEEN: Evaluating an instructor's comments on a commentary

This is another task that asks students to evaluate a content instructor's comments (something that students should do all the time, of course). It seems to us that none of the comments are really worthless, but depending on the differing expectations of different fields, students can vary in terms of how they evaluate them. For what they are worth, here are our own thoughts.

_R_ 1. Yes, we agree that international students are singled out unfairly. The focus of the commentary ignores the fact that international students in some fields finish earlier than domestic students (e.g., Education, the humanities, and some Engineering and non-science fields). Unfortunately, the commentary seems to be trying to reinforce a misconception that international students need more time to complete degrees.

R 2. Given our response in the previous item, of course, we would agree that it makes sense to consider the Education data.

U 3. The point is a good one, but it is not clear whether the available data would support it. Maybe a lot of the international students are native speakers or have excellent English. As we are given no data on language background, perhaps it is best to leave it out.

R 4. Yes, it might be interesting to point out that across the board it takes longer than five years to earn a PhD.

R 5. The results in the table says nothing about advisors and the student is attempting to offer an interpretation. The point is interesting, and the fact that it is supported by a citation to previous work does suggest that the interpretation is reasonable. However, it seems to us that more support would perhaps be advisable.

Concluding a Commentary

We encourage students to conclude and not simply stop at the end. Students can consider the implications of the data and even call for research on an aspect of the data worthy of further consideration.

TASK FIFTEEN: Revising a data commentary draft

Here is one revision offered by a student. We like the location statement, the linking *as* clause, and the emphasis on dry suits offering the most protection.

> Figure 8 shows how long people can survive in water when wearing different kinds of clothing with different levels of insulation. As can be seen, clothing clearly influences survival times. The most effective forms of protection in all water temperatures are wet and dry suits, with dry suits offering the greatest amount of survival time.

Language Focus: Dealing with Unexpected Outcomes or "Problems"

This section is designed to increase students' awareness of the need to consider whether and how to address data that one did not expect. Such surprises can result, for example, when theory and experimental outcomes do not match. As far as we can see, the four verb phrases presented at the beginning of the section are interchangeable—at least in these examples.

The grammatical point about the second set of five sample sentences is that *may be due to* requires a following noun phrase (hence the use of dummy-like *the fact that* in Sentence 2). We have heard considerable differences of opinion about the acceptability of Sentence 5. You should consider whether it seems okay to you. Ask your students to search on Google Scholar for more input.

TASK SIXTEEN: Identifying the function of sentences in a data commentary

Task Sixteen could be done in pairs in class or for homework. Here are our answers.

Sentence	Purpose	Qualifying Words or Phrases
1	highlighting statement 1	*slightly*
2	highlighting statement 2	*appear*
3	qualified conclusion	*overall, would appear to suggest*
4	unexpected result	*somewhat*
5	possible explanation	*probably*
6	limitation of the data	*with some caution*
7	suggestions for future research	*would be one possible direction*

Did your students notice the summary phrase *this phenomenon* in Sentence 5? Do you or your students think the text is overly cautious?

TASK SEVENTEEN: Writing a commentary on a problem or unexpected data

This writing task can be done in several ways. Students can choose to write a standard data commentary similar to those presented in the unit. This approach would produce something like a formal report on the discrepancy. Alternatively, they could write email messages to the professor, maybe something like these examples (the second is from Y.C. See).

To: Professor Smith
From: Fulani Fulani (TA, Bio 130)
Subject: Results of Make-up Exam
Date: April 3

This is my response to your request for an explanation of the unexpected poor test results of the students who took the make-up exam (average score of 72 as opposed to 86).

1. All my fellow TAs agree that the make-up exam was no more difficult than the regular test. I also believe that the proctoring arrangements were the same.

2. Part of the explanation may be due to the fact that the students took the test at 4 PM on Friday directly after several other classes and at the end of a very hard week. It should also be pointed out that the room for the make-up test was a little warm. The lower average score might also be attributed to the fact that attendance in my section was rather low the day before the exam due to the snowstorm and so many students did not have the benefit of the review.

3. However, I do need to admit that I did not work through any examples on the board immediately prior to the test. The students were tired and restless and said that they did not want any examples. It is, therefore, possible that this difference may have contributed in some minor degree to the discrepancy.

Best,
Fulani

Last week, an examination was given to each student enrolled in the BIO101 class. In addition to the regular examination, a make-up exam was administered to resolve the time conflicts encountered by 25 students of the class. Although the difficulty of questions asked in both exams is similar, the students who took the alternative exam produced an average score that is lower by 14 points than those who took the exam at the original time. As the proctor of the make-up exam, my duty is to prepare this report of my assessment on the possible causes of the aforementioned discrepancy.

Based on personal observation and data available to me, the difference in test conditions are briefly compiled in Table 13. A clear red flag found in the table is the high room temperature recorded during make-up exam. The room temperature was measured at 28°C, high enough to cause some of the students to sweat profusely. Moreover, even those did not sweat showed visible sign of discomfort. As a result, most students finished the exam in haste to escape from the heat. By spending less time on the test, students could have made more mistakes during the examination, thus lowering the test score. For your information, attempts were made to rectify the problem but the temperature control was faulty and the windows of the room are sealed shut.

Although the proctor for the make-up exam is relatively inexperience and did not put up board examples, these shortcomings may not be as crucial as the room temperature in affecting the average score. The exam is so well written such that no student have asked for any clarifications on examination materials even after being solicited for several times during the make-up exam. Thus, broad examples may not useful to students at all. In addition, the smaller number of test takers at the replacement exam also made the actual task of proctoring much easier. In conclusion, the main cause for the lower average score of make-up exam is more likely to be the higher room temperature during the course of the test. However, the date of make-up exam is also speculated to a chief contributor to the lower score. A certain infamous annual event was held on the campus on April 7, 2012, the day after the Friday exam. Some amount of "pregaming" for the event was suspected to have been performed by a few of the students before the make-up exam, but obtaining concrete proof was not within my means. Until new evidence arises to substantiate this claim, the conclusion will remain unchanged.

Dealing with Graphs

TASK EIGHTEEN: Completing a commentary accompanying a graph

Because there is no list of words to choose from, the task is challenging but not too challenging. Alternatives to our suggested responses are clearly possible for some blanks.

1. are shown
2. measured
3. was chosen
4. Figure 9
5. decrease
6. presumed
7. underestimates them during the vacant period
8. may be due to
9. On the other hand,
10. observed levels
11. may be reduced
12. the effects of

When she discussed her assumptions and how they might have been wrong, Jiyoung could have used a hypothetical statement, as in this revision.

> . . . because the model assumed that there would be nobody in the building after 6 PM and that the air would be fully mixed. In fact, *there might have been* overtime workers in the building and the ventilation rate *might have been reduced.*

Did anybody in your class suggest using one of these or a similar construction in the blanks? Be sure to acknowledge the contribution and discuss how such expressions can contribute to author positioning.

We think the labeling exercises are transparent enough. You may get somewhat different terms from mathematicians or from biologists. See what you can elicit.

One question that may arise in this unit and elsewhere is what is meant by "hard" and "soft" sciences. Research has shown that one way to distinguish a hard from a soft science is to consider graph use (Latour, 1990). On average, hard sciences make more use of graphical displays of data than do the soft sciences; the former can also be characterized as high-consensus fields (e.g., Physics) in which phenomena may be considered less variable, while the latter can be viewed as low-consensus fields (e.g., Sociology) (Smith et al., 2000). Another useful distinction is that although tables are common in both the hard and soft sciences, the soft sciences seem to have a greater tendency to use them as a means to provide data (Arsenault, Smith, & Beauchamp, 2006).

TASK NINETEEN: Describing data given in a graph

Although students may have other ideas, we offer these answers.

1. peak	A. local minimum
2. remain steady	B. spike
3. falling off	C. peak
4. rise	D. kink
5. decline	E. level off

Although the hard and soft sciences differ in the extent to which graphs are employed, it is reasonable to expect some overlap in terms used to point readers to relevant information. The similarities and differences will, of course, depend on the nature of the data and the points to be made. We ask our students to look for frequently used terms for graphs in their disciplines; we then ask students to share their findings with the rest of the class—sometimes in the form of a data commentary.

Dealing with Chronological Data

TASK TWENTY: Ordering the sentences of a data commentary

You can help students do the task by reminding them to think about what they have learned about the organization of data commentaries and old-to-new information flow.

a. 7	f. 8
b. 2	g. 9
c. 4	h. 3
d. 5	i. 6
e. 1	

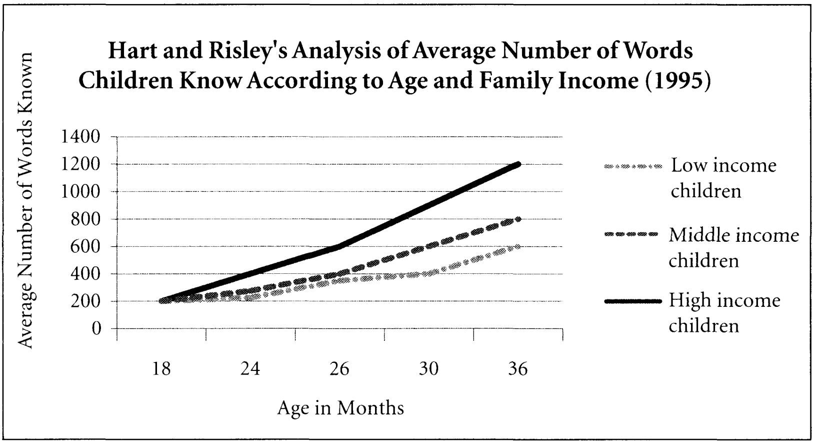
This commentary is organized in the standard manner.

Location + indicative summary
Highlight 1
Explanation
Highlight 2
Implications of the data

Language Focus: Prepositions of Time

Prepositions are always hard, it seems. To offer additional practice, we provide two extra tasks (these are reproducible). See also page 97.

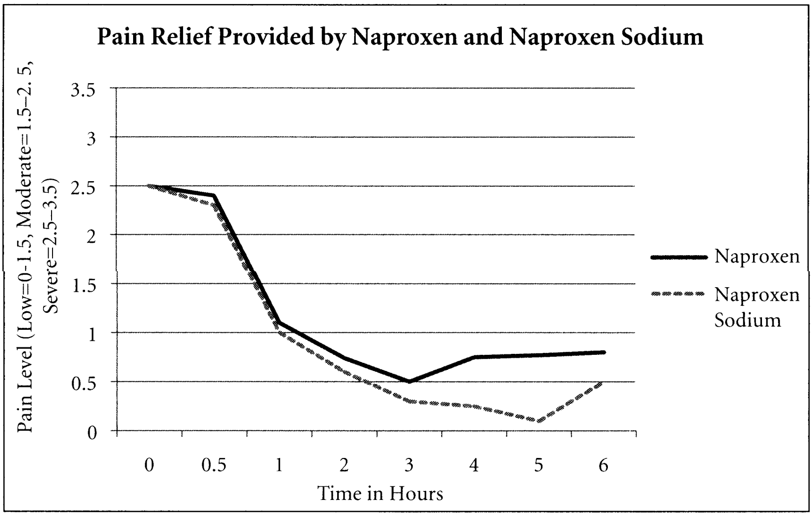
1.



Based on Hart, B., and Risley, T. (1995). *Meaningful differences in the everyday experience of young American children.* Baltimore, MD: Paul H. Brookes.

The graph shows the number of words that children know for different ages and income levels. As can be seen, _____ 18 months on average all children know the same number of words and _____ their first 36 months all make gains in their vocabulary. However, these gains differ widely, with disparities beginning to emerge _____ age 2. _____ 18 months _____ 24 months children from high income families have come to know nearly twice as many words as those from low income families. _____ another 12 months the gap in vocabulary knowledge is even greater. _____ 36 months children from low income families know 25% fewer words than those from middle income families and half the vocabulary of children in the high income group.

2.



Based on Sevelius, H., R. Runkel, E. Segre, and S. S. Bloomfield (1980). Bioavailability of naproxen sodium and its relationship to clinical analgesic effects. *British Journal of Clinical Pharmacology 10* (3): 259–263.

The figure shows the mean pain intensity scores before and after the administration of either 500 mg naproxen or 550 mg naproxen sodium to women with pain after childbirth. _____ the time the medication was administered, the two groups of women experienced similar levels of pain. _____ 30 minutes _____ three hours after receiving their medication, both groups of women experienced significant pain relief. _____ this time, both medications appear to be nearly equally effective. However, _____ 3 hours the effect of naproxen began to diminish, while naproxen sodium continued to lower the pain level for an additional two hours. _____ five hours, the naproxen sodium offered less relief. Overall, naproxen sodium provided greater pain relief for a longer period of time.

1. The graph shows the number of words that children know for different ages and income levels. As can be seen, **at** 18 months on average all children know the same number of words and **during** their first 36 months all make gains in their vocabulary. However, these gains differ widely, with disparities beginning to emerge **by** age 2. **From** 18 months **to** 24 months children from high income families acquire nearly twice as many words as do those from low income families. **After** another 12 months the gap in vocabulary knowledge is even greater. **By/At** 36 months children from low income families know 25% fewer words than those from middle income families and half the number of words of children in the high income group.

2. The figure shows the mean pain intensity scores before and after the administration of either 500 mg naproxen or 550 mg naproxen sodium to women with pain after childbirth. **At** the time the medication was administered, the two groups of women experienced similar levels of pain. **From** 30 minutes **to** three hours after receiving their medication, both groups of women experienced significant pain relief. **During** this time, both medications appear to be nearly equally effective. However, **after** 3 hours the effect of naproxen began to diminish, while naproxen sodium continued to lower the pain level for an additional two hours. **After** five hours, the naproxen sodium offered less relief. Overall, naproxen sodium provided greater pain relief for a longer period of time.

TASK TWENTY-ONE: Writing a data commentary

This is quite a tough task, perhaps appropriately so at this stage. Suggest to students that it would be fine for them to guess at or even "invent" possible explanations. You might want to mention possibilities.

It may help to explain to your students that Elsevier is one of the leading publishers of science and health information. The company publishes approximately 1,800 scientific and medical journals. We assume that the publication rates for Elsevier are similar to those of other publishers.

Here is a commentary written by one of our students, S. Park, who challenged himself by trying to integrate both Table 14 and Figure 13.

Can Publication Disparities between Developed and Developing Countries be Addressed?

For many years the United States has led the world in publication output. In 2010, for example, the number of publications in Elsevier journals originating in the U.S. outnumbered those of the number 2 country, China, by 3 to 1 (see Table 15). Table 15 provides the country rankings for publications in Elsevier journals from 1996–2010 for the top 35 countries. As can be seen, most of the published papers originate from developed countries and newly industrialized countries (e.g., Brazil, Mexico, India, and Turkey). The only developing country in the top 35 is Iran.

Although it is not surprising that more publications emanate from developed countries, it is of interest to consider what scholars in developing countries might be doing to overcome their publication challenges. The answer may lie in Figure 13, which shows that the publications of developing and resource-poor countries are more likely than those originating in the U.S. to include authors from different countries. As can be seen in the figure, scholars in such African countries as Ghana, Uganda, and South Africa do engage in scholarly research and publication with scholars in other countries. Of these three, the lesser developed countries of Ghana and Uganda have a higher percentage of publications with authors from other countries than does South Africa and a significantly higher percentage than does the United States. Such cross-country collaborations, however, may indeed be necessary to provide under-represented, developing countries with greater publication opportunities and should be encouraged, especially with the involvement of the top publishing countries.

TASK TWENTY-TWO: Collecting data and writing an original data commentary

The task in the main text is one of several that we have used. Another one that we like to assign involves investigating whether students think that the time spent on Facebook, RenRen, or other social networking sites can affect grades (we have two journal articles that students can use for support). We started asking students to collect some data a while ago for two reasons and strongly recommend grounding this task in some initial reading. First, many students did not have good data to discuss and struggled with assignments that ask them to find some data. Second, students seem to enjoy doing a mini-project, even though it is not exactly rigorous research. For the most part, they like figuring out how to collect the data (face-to-face? via Facebook or RenRen?). Although the students work together to collect the data, they write individual papers in which we encourage them to set up the paper as a problem-solution text. We have gotten some very nice responses to these mini-projects.

Here is a first draft from K. Lin, one of our students who was doing a Master's in Materials Science when he wrote this. We think he did a good job, despite some errors that we chose not to correct.

Relationship between Academic Performance and Social Networking Website Use

There are many onging discussions about whether social network influence student grades.[1] To explain this issue, we collected 45 survey results from a series of related questions given to students at the University of Michigan. Our result suggests that the social network websites may have influence on academic performance, but not very significant.

Generally, social networking websites provide a convenient platform for people to socialize with friends, maintain their relationship in a very efficient way. Socializing via internet has become an increasing important part of young adult life.[1] In addition, students using these websites share pictures and videos, read a friend's blog, or get other informations and news. In other words, student do not have to make phones call or get together frequently to get updates on their lives. Since informations exchange is easier and faster, theoretically, social networking websites may save time on those social activities, freeing up time for other things, thus elevating work efficiency.

However, there are also problems along with the convenience of social networking websites. Fig. 1 shows the amount of time of respondents spent on social networks while studying. About 90% of the students spend no more than 60% of study time on social networking websites. The average percentage of the usage of time spend on social networking websites is about 25%, which means 15 minutes wasted for every 1 hour studying.

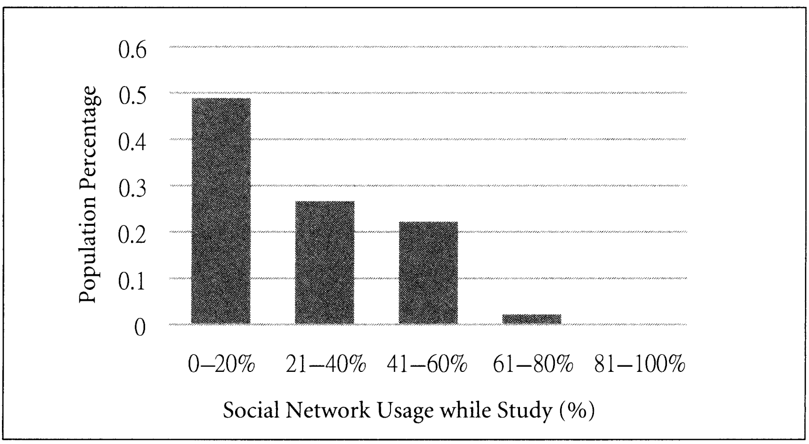


Figure 1. Demographic of the social network usage while studying

About half of the respondents (Fig. 2) were unsatisfied with their academic performance. Among those respondents, 84% use social *websites while studying, which indicates a very high percentage* of students are engaged in more than one task while studying. Another interesting survey result is that 53% of multitasking students feel affected and incapable of completing their homework on time. Given the existence of many uncontrolled variables, we cannot directly infer that this situation mainly results from social websites usage while studying. But social networking websites might be a part of reason to influence their time management and concentration. Evenmore, since the cognitive resource of the human brain is limited[1], the switching between different tasks will reduce the work productivity. Generally, social networking websites usage may be linked to a multitasking problem, which causes time management problems and further reduces academic performance.

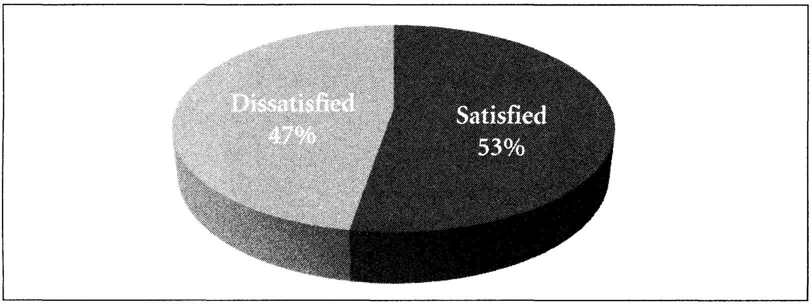


Figure 2. Academic performance satisfaction of students with social network usage while studying

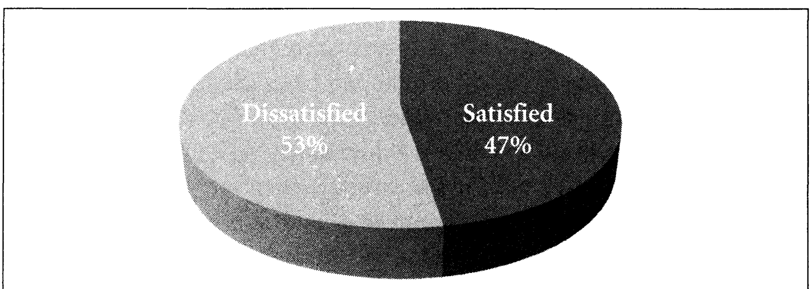


Figure 3. Academic performance self-reported affection of students with social network usage while studying

Nevertheless, there exist an alternative interesting point of view. Fig. 4 reveals that many students who do not use social networking sites while studying, are not satisfied with there academic performance. If we consider that the same rate of dissatisfaction exist among multitasking students, the ratio of dissatisfaction would decrease to zero. This suggests that no student is dissatisfied with their grade based on the usage of social websites, and dissatisfaction comes from the issue of self-esteem. Possible explaination is that the social network also provides students short period of rest, which helps long-term concentration physically and psychologically. Moreover, after enjoying some time on the social networking websites, student may have a sense guilt of wasting the time, which drives them study harder than they usually do. Thus, social networking websites do not substantially affect performance.

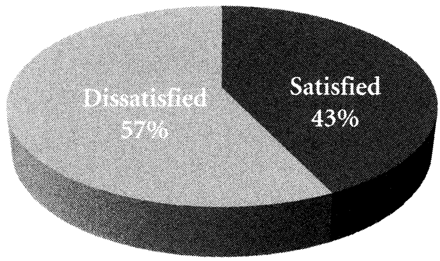


Figure 4. Academic perfomance satisfaction student without social network usage while studying

In conclusion, though there are many studies looking for a connection between academic performance and social network activities, based on the observations we have made, the affection of social networking websites would be trivial. For UM students, using social networking websites while studying do affect to their performance, but they accept the consequence and satisfied to their grade. Since the sample number of our survey is merely 45, which only represent 0.1% of total UM students, and without a selected control group to compared, this results is inconclusive. Other possible variables such as department, credits, or total time spend on internet activity could influence the generality of survey result. The further research should be done with more accuracy survey data or redesign a more complex questions set to reveal slight diversity.

Reference

[1] Kirschner, P.A., and Karpinski, A.C. Facebook and academic performance. *Computers in Human Behavior, 26,* 1237–1245.

Unit Five

Writing Summaries

Main Aims

The important take-home messages of Unit Five are that

- summaries are an essential part of academic writing, whether the writing is for homework, a thesis or dissertation, or for publication.
- direct copying of the written work of others should be avoided, and writers should attempt to put source material in their own words.
- writers often use multiple sources to make a point.
- summaries are generally not stand-alone texts, but typically are components of a variety of academic writing series such as book reviews, research papers, and proposals.

To help writers explore the stated aims, the unit focuses on (but the Commentary does not necessarily discuss) these topics.

Considerations before writing a summary

Plagiarism

Paraphrasing

Careful use of synonyms

Syntheses of more than one source

Opportunities to gain a better understanding of the main topics are provided in these Language Focus sections (although not all are discussed here) and tasks.

Language Focus Sections

Identifying the source

Summary reminder phrases

Showing similarities and differences

Tasks

Task One	Deciding what to include from a source text
Task Two	Chosing the best background paragraph
Task Three	Determining the line between plagiarism and acceptable use of the written work of others
Task Four	Considering what to include in a summary and how organization might affect content choices
Task Five	Paraphrasing
Task Six	Evaluating a student's use of a source
Task Seven	Identifying potentially useful reporting verbs
Task Eight	Distinguishing between objective and evaluative reporting verbs
Task Nine	Identifying well-written citation statements
Task Ten	Examining reminder phrases
Task Eleven	Choosing the best representation of a source
Task Twelve	Creating a yes-no question to answer using the information from an article
Task Thirteen	Strategies for writing using more than one source and addressing more than one perspective
Task Fourteen	Evaluating instructor comments on a student's discussion of multiple sources
Task Fifteen	Writing and taking a position using more than one source

General Notes

a. This unit marks a break from the type of writing tasks presented in Units One through Four. In this unit, we turn our attention to writing with sources, which is important for most academic writers. In order to illustrate some of the more relevant aspects of summarizing, we have mainly used texts that we think are accessible to most students, even if the texts are not in a student's own discipline. Although we cannot offer narrow guidance on discipline-specific matters of summarizing, we believe that our general discussion in this unit should provide a solid basis for students who may be quite unfamiliar with the conventions of this task.

b. In this unit, we view summarizing as a task that contributes to other academic writing tasks, such as course papers, proposals, or literature reviews, all of which require students to be selective about the content they use from sources. We have adopted this perspective based on input from our students over the years as well as studies of academic writing genres that indicate students do not frequently write standalone summaries. And, when they do, these may be done for the purposes of sharing the information with peers, comparable to the exchange of information in journal clubs, which are common in the health sciences. Given our perspective, we have promoted the notion of summary writing as a means to answer a yes or no question, the answer to which requires students to select *relevant* information from a source, not necessarily or exclusively the main ideas. The information selected as relevant for a particular purpose can then support an opinion. In the end, this allows students to begin to realize that they need to reveal not only what they *know*, but also what they *think*.

c. Because we want to use yes or no questions to promote purpose-driven summaries, the unit does not contain a task that simply asks the students to summarize. Of course, this provides instructors an opportunity to construct such a task, if it makes sense for their particular group of students. We would caution, however, that students not be allowed to choose any article, since some difficulties may arise when giving feedback on a summary dealing with highly technical content.

d. We also realize that it is not common for graduate students to simply summarize without providing commentary; even so, we do not deal with evaluation explicitly here, but we do encourage evaluation while focusing more on summary writing. Unit Six on critiques builds on the foundation established here and deals with various kinds of critique, including book reviews.

e. The material presented here will also be important for Units Seven (Constructing a Research Paper I) and Eight (Constructing a Research Paper II).

f. The focus is on summaries that will be read and perhaps be evaluated as part of a course writing assignment or some kind of assessment. It therefore makes sense to take time to discuss again the importance of understanding one's audience and purpose. Students can easily become frustrated when each individual instructor has his or her own expectations of a student's use of previous work and, thus, in many ways, they are "held hostage" to these expectations. For example, some of our students in Dentistry are expected to identify their source, briefly summarize methodology, and then list—in order of appearance in the article—key findings, rather than compose an original, coherent text complete with nice transitions. This type of task, however, is not so common.

g. Task Six asks students to write a response to a question, a task that requires them to summarize. The next writing assignment comes rather late in the unit—Task Fifteen. You may want to assign a writing task involving summarizing a text that you provide in order to get a sense of the students' ability to handle this task. We have had good success with problem-solution texts as sources since students are already familiar with them. We encourage you to devise a task that has a purpose beyond summarizing. Consider creating a yes or no question that can be answered by selectively summarizing material from a source. Another possibility is to ask students to actually write the response to the question they formulate in Task Twelve, using only one article as source material, before moving on to the more challenging assignment in Task Fifteen, which asks students to use multiple sources in their response.

Detailed Commentary

Considerations before Writing a Summary

Spending time talking about the points listed here is worthwhile, especially since some students may have little or no experience with summary writing.

TASK ONE: Deciding what to include from a source text

Remember we have created a purpose, a question to be answered, to guide students' choices. We have underlined the information that one of our classes chose to support the fact that energy drinks are potentially harmful and should be closely regulated. As you can see, the class picked a lot of information. Your students may have different ideas.

Caffeinated Energy Drinks—A Growing Problem

Reissig, C.J., Strain, E.C., and Griffiths, R.R. (2009).

❶ In 2006, annual worldwide energy drink consumption increased 17% from the previous year to 906 million gallons, with Thailand leading the world in energy drink consumption per person, but the U.S. leading the world in total volume sales (Zenith International, 2007). ❷ Although "energy drinks" first appeared in Europe and Asia in the 1960s, the introduction of "Red Bull" in Austria in 1987 and in the U.S. in 1997 sparked the more recent trend toward aggressive marketing of high caffeine content "energy drinks." ❸Since its inception, the energy drink market has grown exponentially, with nearly 500 new brands launched worldwide in 2006 (Johnson, 2006), and 200 new brands launched in the U.S. in the 12-month period ending July 2007 (Packaged Facts, 2007). ❹ From 2002 to 2006, the average annual growth rate in energy drink sales was 55% (Packaged Facts, 2007) (Fig. 1). ❺The total U.S. retail market value for energy drinks (from all sources) was estimated to be $5.4 billion in 2006 and has shown a similar annual growth rate over this same period (47%) (Packaged Facts, 2007). ❻These drinks vary widely in both caffeine content (ranging from 50 to 505 mg per can or bottle) and caffeine concentration (ranging from 2.5 to 171 mg per fluid ounce) (Table 1). ❼For comparison, the caffeine content of a 6 oz cup of brewed coffee varies from 77 to 150 mg (Griffiths et al., 2003). ❽The main active ingredient in energy drinks is caffeine, although other substances such as taurine, riboflavin, pyridoxine, nicotinamide, other B vitamins, and various herbal derivatives are also present (Aranda and Morlock, 2006). ❾The acute and long-term effects resulting from excessive and chronic consumption of these additives alone and in combination with caffeine are not fully known. ❿ Although the full impact of the rise in popularity of energy drinks has yet to be realized, the potential for adverse health consequences should be considered and may be cause for preemptive regulatory action.

Students say that some of the same information could be used no matter what the scenario, but if the goal is to suggest that a company should create an energy drink, it would make sense to focus on the sales and popularity of the drinks and ignore or mention only in passing, that there is some concern that energy drinks could pose a health hazard. If the goal is to recommend whether energy drinks should be included in campus vending machines, the information chosen from the text would depend on whether the recommendation was positive or negative. Some of our students would choose to recommend putting energy drinks in vending machines because sales would be strong and there is no proof that the drinks are dangerous. They would highlight the sales information and the hedged statements about the health hazard to demonstrate that there is no need to worry. Others would recommend that the drinks not be sold in vending machines and would highlight the information about the potential dangers to human health. They would choose some data from the table showing the very high caffeine content in several of the drinks.

TASK TWO: Choosing the best background paragraph

This task generates a lot of discussion. Students generally reject Text 1 because it primarily restates many of the facts given in the source. While the facts are important, they do not reveal a perspective toward the issue, nor do they suggest what point the author may want to argue. Text 4 clearly reveals a perspective, especially the claim that there is an *insatiable demand for caffeine.* Our students say they would be uncomfortable writing such a strong claim and then using it to state that a public health crisis may soon emerge. The link between energy drinks and caffeine has not been made and yet readers are expected to accept the conclusion. Text 3 seems rather thin; it is not clear why readers should be concerned about energy drinks. Readers are assumed to know that many are highly caffeinated, that they contain other ingredients that may interact with caffeine, and that the combination of these elements may have harmful effects on human health. Text 5 makes the connection between caffeine content and possible harm, but it is a bit short on detail. Perhaps with some additional information this one would be okay. This leaves us with the second text, which we think is pretty good. We do, however, think that the opening sentence could be improved. The *according to* opening can be easily changed so that the first few words say something potentially more engaging. The level of detail seems okay to us, although some students think there is too much. Discuss with your students how much detail is enough, how clear the stance should be at the beginning, and how many citations would be best.

Plagiarism

We know that the topic of plagiarism seems to appear rather late in the textbook. Our reasoning was that since the writing tasks in earlier units could often be done without source material, it made sense to address the issue here. Sometimes we cover this section very early in our classes—when we discuss skeletal phrases and using Google Scholar to inform academic writing.

TASK THREE: Determining the line between plagiarism and acceptable use of the written work of others

We think it is reasonable to draw the line between the third and fourth statements. Clearly Statement 3 is a gray area. The degree to which a person follows the fourth approach is very important. In discussions of plagiarism, the notion of *intent to deceive* is often raised. This is an interesting point to discuss with a class.

The issue of plagiarism should be treated very carefully so as to not generate so much worry among students that they are afraid to borrow any language. Students should be encouraged to identify and use standard expressions, as we have suggested, but they need guidance so that they can begin to see the difference between plagiarism and using common academic expressions. Ask your students to find the plagiarism policy for your institution. Take some class time to discuss it. If your students are in schools with honor codes, focus on those as well.

TASK FOUR: Considering what to include in a summary and how organization might affect content choices

The passage is organized in terms of situation, problem, and solution. We have underlined content to include as proposed by one of our writing classes.

Design of a Haptic Gas Pedal for Active Car-Following Support

Mulder, M., Abbink, D.A., Van Passen, M.M., and Mulder, M. (2011).

❶ The fact that the motor vehicle fatality rate per 100 million vehicle miles has gone down from 5.1 to 1.4 since the 1960s is most certainly the result of improved driver safety regulations, higher driver training standards, better road design, and advancements in car-safety systems. ❷ From the early seatbelts and anti-crash bodies to airbags and side impact protection systems, car manufacturers have come up with a broad range of passive safety improvements that significantly reduce the severity of driver, passenger, and pedestrian or cyclist injury when involved in a traffic accident.

❸ However, with the increased importance of the car as a personal means of transportation, nondriving-related devices, such as car stereos, mobile phones, and, more recently, navigation systems, divert drivers' attention increasingly more away from the primary sources of information necessary for safe operation of the vehicle: the road and other road users. ❹ With traffic accident statistics attributing driver inattention as one of the major causes of traffic accidents, this increase of in-vehicle devices is worrisome at least—if not dangerous.

❺ To bridge the gap between the gain in improved passive safety and the increasing development and use of nondriving-related in-vehicle devices, research on car safety systems is directed more towards systems that actively support drivers in their driving task. ❻ Ultimately, active support systems aim to prevent drivers from getting into accidents. ❼ This is a radically different approach compared with that of passive safety systems, which help lessen the impact of driving accidents but do nothing to contribute to preventing drivers from getting into an accident.

❽ The goal of this paper is to present the design of an active haptic support system for car-following. ❾The intended application range of the proposed system is limited to speeds of approximately 80 km/h and higher (minimum highway speeds). ❿ The system is intended to provide continuous car-following support within a wide range of car-following situations—not only in critical situations. ⓫ The intensity of the support is, therefore, continuously adapted to the car-following situation.

Paraphrasing

TASK FIVE: Paraphrasing

Here are some examples from our classes.

1. Driving safety may be decreased because drivers are distracted by technology such as cell phones and MP3 players and pay less attention to the road and the traffic.

   Because drivers have access to nondriving technology such as cell phones in their cars, they may be easily distracted and be less aware of the traffic flow and the road.

2. Drivers are increasingly distracted by technology in their vehicles that is not related to driving, leading to decreased attention to the road and other traffic.

   The availability of technology in cars such as cell phones can lead to driver inattention and decreased focus on safe driving practices.

3. **Important points**
   If there is an accident, passive safety systems can offer protection.
   Passive safety systems do not prevent accidents.

   Relationship between the points
   Adversative
   There is some benefit, but not a complete protective effect.

   Linking phrases or expressions
   although, but, however

Possible synonyms

Severity could replace *impact.*

Stop or *avoid* can replace *prevent.*

Crash can replace *accident.*

Accident occurring can replace *getting into an accident.*

Of course, other alternatives may be possible. Note that there is no appropriate synonym for *passive safety system.* This is a technical term.

Paraphrase 1

Although passive safety systems offer protection in an accident, they cannot help drivers avoid a crash.

Paraphrase 2

Passive safety systems can lessen the severity of an accident; however, they do not stop crashes from occurring.

Careful Use of Synonyms

Along with some discussion of synonyms, it is important to remind students of collocation (broadly, a sequence of words that typically co-occurs such as *strong coffee;* it would be unusual to say or write *brawny* or *tough coffee*).

TASK SIX: Evaluating a student's use of a source

1. We think the author made a lot of improvements to the original draft and seems to have done a good job of answering the question. The author provides background information, highlights the problem with passive safety systems, and then offers a solution to the problem of preventing accidents.
2. We think the author has used good information from the source and, while it is important, the author's own perspective is quite strong. The author tells a good "story."
3. The author has done a good job.
4. The author's understanding of the problem and solution seems clear to us.

5. There are several instances of evaluation. Here are a few.

   Sentence 1: *dramatic improvement*

   Sentence 5: *particularly*

   Sentence 6: *highly successful*

   The author has added information to tell the story. For instance, cell phones were singled out as a big part of the problem. This is not stated in the original, but the point does make sense given what we regularly read and/or hear about. The author also added the point about drivers being unaware that they are following a car too closely and being unable to stop safely. This seems reasonable too.

6. We think the text could have a better conclusion. What kind of car-following warning system is the author thinking about and what are the advantages of such a system? How would this system be designed so that it is not yet another piece of technology that could distract drivers?

7. We do not have another sample text that we can share, but some kind of problem-solution text would be appropriate.

Language Focus: Identifying the Source

The examples here are straightforward. The importance of identifying the main idea is clear. Students generally find Table 15 both interesting and useful.

TASK SEVEN: Identifying potentially useful reporting verbs

Answers will vary. We often ask students to identify the reporting verbs in a small set of articles and bring their results to class. We then compile a new table to reflect all of the different fields represented in our classes.

TASK EIGHT: Distinguishing between objective and evaluative reporting verbs

Here is how we categorize the verbs. As you discuss them, be sure to point out that a verb is not evaluative if the authors of the original text state that they are claiming or contending; reflecting the perspective of the original could be objective.

	Objective	Evaluative
describe	X	
recommend	X	
claim		X
assume		X
contend		X
propose	X	
theorize	X	
support	X	
examine	X	

TASK NINE: Identifying well-written citation statements

1. This first one could be improved. The reference to *author Chad Reissig* could be shortened to *Reissig et al. (2009)*. The *how* should be omitted because *that* was used. It would be good to talk about when an author's full name should be used.
2. There is no need to restate the title. We also wonder whether *claims* is the best reporting verb here, but this could very well be okay for someone who questions the potential danger.
3. We have the same problem with the title being restated along with the question about the use of the author's first name. The part focusing on the article content, however, seems fine.
4. The use of *mention* here seems to be a weakness since the authors give a lot of information on consumption. Perhaps *state* would be a good choice.
5. *Said* is fine in speaking, but apart from its use in Philosophy, it is not that common as a reporting verb. Refer students to Table 15.

Language Focus: Summary Reminder Phrases

This topic may also prompt your students to ask whether they should include a citation after each sentence in a paragraph based entirely on one source or whether they should simply cite the source one time at the end. This is a very difficult question to answer. On the one hand, students should always indicate where information comes from. On the other hand, citing the same text after each sentence seems excessive. We do not have a good answer but often suggest that students find a second source or find a way to include more information that does not need to be cited so that there are fewer sentences in one paragraph with the same citation. We also suggest that students ask their advisors how this should be handled.

TASK TEN: Examining reminder phrases

1. This sentence would be fine in spoken English, but it is too informal for an academic paper. *Say* can be replaced by *state* or *argue.*
2. This sentence could be improved by including a citation to Reissig.
3. *In Reissig et al.'s (2009) article, they* also *point out* is awkward. A better choice would be to say, *In their article, Reissig et al. (2009) also point out . . . .* Some of our students also suggested changing *point out* to *note* or *emphasize.*
4. This one seems fine.
5. We cannot say *concludes about.* If *about* is eliminated, then a bit more rewriting is needed. The sentence could be rewritten *Reissig and others (2009) conclude that energy drinks may pose health risks.*

TASK ELEVEN: Choosing the best representation of a source

We have included this task because students need to realize that the amount of source material used can vary in length, depending on one's purpose in using the source.

The text is organized in terms of problem and solution. TOD is defined in Sentence 6, and the remainder of the text further explains the concept. This is a good time to remind students of problem-solution organization (Unit Three) as well as the need to define concepts (Unit Two).

None of the options includes a proper citation to the text, which should be addressed. Here are a few additional comments on each.

1. This text is short and would be fine as part of a longer paper—as a form of support.
2. This text seems "off." At first it seems like the focus will be on reducing the number of vehicles to address the pollution problem, but then the focus shifts to dwellings. The focus or point here is not immediately clear.
3. This one is seems fine. The summary maintains its focus on urban planning, TOD.
4. This text adds an evaluation at the end, which we like. (Others may feel it should be reserved for a critique.). However, as written, it is unclear whether this is Iseki's idea or that of the author writing the summary. Some clarification seems in order here.
5. This text does not mention urban planners and instead focuses on TOD. It is worth considering how to include them since the paper is supposed to consider their role in improving the environment.

TASK TWELVE: Creating a yes-no question to answer using the information from an article

Most of our students in the social sciences and the humanities have little or no difficulty creating a yes or no question. Surprisingly, each time we assign this task, students in Engineering will say that engineers do not answer yes-no questions. We are not sure why students think this because all research involves making choices to use/not use a method, material, analytical procedure, model, and so on. So, if your students also believe that there are no yes-no questions, ask them what research is being done in their field and then follow up by asking whether one method is better than another or one material is superior to another. Here is a set of unedited questions from one of our Electrical Engineering students who initially said that yes-no questions are not part of the mindset in his field. He really enjoyed coming up with all of these questions, some of which he said may even become the focus of his future research.

1. In full-duplex relay communication, is the self-interference the main difficulty?

   Yes

2. Does the limited dynamic range hamper the perfect cancellation of the interference?

   Yes

3. Can the relay generate spatial nulls without sacrificing its degrees-of-freedom?

   No

4. In a half-duplex system, does the signal-to-noise ratio decrease by the self-interference signal destined to the destination?

   No

5. Does the dynamic range of the transmitted and received signals inversely proportional to the symbol energy?

   No

6. Is mutual information of the additive-Gaussian-noise-channel the worst among the other random noise channels?

   Yes

7. As the channel estimation training sequence duration increases, does the lower channel capacity converge to the upper bound?

   Yes

8. If we can change the transmission duration of the source to relay and the relay transmissions does the mutual information (17) remain the optimal?

   No

   ("Some New Adaptive Protocols for the Wireless Relay Channel," Bin Zhao, 2003)

You can also remind your students that yes-no questions may be part of a conference Q&A or a dissertation defense during which it may be necessary to explain why one thing is better/worse than another.

Syntheses of More than One Source

Students typically use multiple sources but are often unsure how to organize them.

TASK THIRTEEN: Strategies for writing using more than one source and addressing more than one perspective

There is no right or wrong approach to organizing a response to each of these questions. However, some approaches may be better for positioning than others. We offer some suggestions from our students.

Approach	Instructor's Expectations
1. Look at topics that both Alkon and Farley discuss in their articles and then analyze the similarities and differences.	The instructor probably wants to see if the students can identify where the two overlap—where they agree.
Do not just look at Alkon and then look at Farley. Pull out key concepts that each article discusses and then see how they compare.	Perhaps the instructor wants to see if students can make connections where he/she has not. He/she is testing their analytical skills.
2. Try to see if the two agree or disagree. Then discuss the similarities in detail followed by the differences.	The instructor is interested in knowing if students can see where the two agree and disagree. It's probably important to write up the analysis with regard to what happened in class (try to relate the discussion to topics covered in class).

3. This one is pretty complicated. Maybe Kohl and Jaworski's article should be summarized, keeping in mind how different points in the article are connected to various points in the other articles. If Kohl and Jaworski mention Point A and so does Juran, then this similarity should be noted in the summary. At the end, the response should try to show the big picture—maybe generalize about the similarities and differences. Don't talk about each author separately. Organize according to ideas.

   The instructor probably wants to see if students can take a new article and relate it to things already read and discussed in class. Students should show they have the basic concepts. Since the question asks for themes, not specific details, the instructor probably wants to see if the students have a good overall understanding of product and service quality. It's probably important to see how the articles relate to each other with regard to general ideas.

4. Find some recent papers on vegetable oil and diesel fuels. Prepare a table with the different properties of the fuels that can be used to evaluate each type, like viscosity, energy content, and cetane rating (the self-ignition quality of the fuel). Write about the table to show the viability of vegetable oil as an alternative fuel, but highlight the viscosity problem. Then, provide another table with the approaches to lowering the viscosity of vegetable oil and highlight the one that is best.

   The instructor wants students to be able to look at data and see both strengths and problems. The instructor wants students to then make a data-driven recommendation.

5. Students may find this part of the task challenging, but if they have come up with a reasonable question in Task Twelve, they have a good start.

TASK FOURTEEN: Evaluating instructor comments on a student's discussion of multiple sources

R 1. If there is other research, then it should be included. We wonder, however, whether a lot of studies have focused on this issue.

R 2. Chronological order is important at times, but it is a good idea to group studies according to the points they address. This helps reveal areas of agreement and disagreement.

R 3. The text is simply reporting information, but the reason for discussing the studies is not apparent.

R 4. We would agree that it is hard to tell from the text whether there is agreement or not.

R 5. The finding is interesting, but what does it mean? Readers are left to decide on their own.

U 6. It seems Cox was interested in the visualization aspect of unpleasant sounds. We are not sure why it would be important to talk about frequency, frequency having to do with the aspect of a sound that is related to its pitch. We need to know more in order to understand the instructor's point here.

We hope you agree that the revised discussion is better. Spend some time discussing the differences.

TASK FIFTEEN: Writing and taking a position using more than one source

Our goal for this final task is for students to create a mini-review of previous work to make a point. We hope students will see that by thematically grouping related studies, they can support a point of view. If you have graduate students in their first or second years, be sure to have realistic expectations of what they are able to produce. Although we draw much of our material in our books from published papers, we do not expect students to be writing like experts. If students need more guidance, examine a good literature review section of a student-written paper, perhaps one from MICUSP. If you have students who have achieved candidacy or are almost there, raise your expectations.

Unit Six

Writing Critiques

Main Aims

The important take-home messages of Unit Six are that

- writers may be called on to take a critical stance toward the work in their fields.
- writers should consider whether and how to express their evaluative comments within their fields' accepted standards of judgment.
- evaluation should be "fair and reasonable."
- writers need to read critically in order to evaluate.

To help writers explore the stated aims, the unit focuses on (but the Commentary does not necessarily discuss) these topics.

Book reviews

Evaluating a published article

Evaluative adjectives across the disciplines

Critical reading

Reaction papers

A few thoughts on manuscript reviews for a journal

Opportunities to gain a better understanding of the main topics are provided in these Language Focus sections (although not all are discussed here) and tasks.

Language Focus Sections

Stating opinions

Evaluative language

Unreal conditionals

Evaluative language revisited

Beginning the critique

Inversions

Non-standard quotation marks (scare quotes)

Tasks

Task One	Discussing different kinds of critiques
Task Two	Exploring perspectives on book reviews
Task Three	Comparing a book review to the proposed book review moves
Task Four	Analyzing a published book review
Task Five	Examining the language of book reviews
Task Six	Analyzing a published book review
Task Seven	Considering the fairness of evaluation in book reviews
Task Eight	Discussing strategies for writing a book review assigned in a course
Task Nine	Examining a book review written for a course assignment
Task Ten	Evaluating a published article
Task Eleven	Reconsidering the evaluation of an article
Task Twelve	Considering what to include in a critique
Task Thirteen	Using unreal conditionals
Task Fourteen	Rating adjectives
Task Fifteen	Evaluating the fairness of evaluative comments
Task Sixteen	Writing a critique
Task Seventeen	Completing inversions
Task Eighteen	Writing a critique
Task Nineteen	Analyzing reaction papers
Task Twenty	Writing a reaction paper

General Notes

a. This unit directly follows from the previous one on summary writing and, in its closing pages, prepares students for the final two units. We have assumed, for pedagogical purposes, a simple rhetorical arrangement of summary followed by critique. We know, of course, that it is also possible to incorporate the critical evaluation within the summary. If students want to attempt this somewhat more difficult strategy in their writing tasks, instructors could offer support for it. This might be particularly important if students are constructing a critical review of a body of literature.

b. As in the previous unit, we chose texts that we hoped would be accessible to and interesting for most class participants. However, we encourage you to find other texts, perhaps some from a specific discipline, to tailor your instruction.
c. We hope that the introduction to the unit is self-explanatory. The only additional point we would like to make concerns students who may be asked to critique non-textual objects. In our view, students in fields such as Art or Architecture should be encouraged to critique such things. However, there is very little research into such written genres. Instructors might do best by contacting departments for guidance.
d. We decided to begin the discussion of critiques by focusing on book reviews, although we are well aware that not all students will be required to write them in their fields of study. Nevertheless, they are a useful starting point, especially since they are so widely available—unlike other forms of critique, such as manuscript reviews.

Detailed Commentary

TASK ONE: Discussing different kinds of critiques

Apart from critiques of the students' own work, some common critiques include book reviews, reviews of manuscripts submitted for publication, proposal reviews, and reaction papers. In some fields, students also critique musical or theatrical performances, works of art, buildings, and designs. Other critiques may focus on medical or social work interventions and school curricula.

Regardless of the type of critique, students often report not even knowing what to critique and, even if they find something to critique, lacking confidence to evaluate. They are sometimes unsure of what it means to critique, thinking that their job is to find fault with as much as they can so as to appear knowledgeable. (John has described this as an attempt to gain membership in "the young and the cruel" club.) Others may be hesitant to critique at all, feeling they do not have the expertise or believe that a text must be good if it has already been published. Students may not realize that their task is to evaluate based on a set of criteria. For an article critique assigned in a class, students may be expected to evaluate a text in light of what has been covered in the course. The concerns students raise may help you decide where to focus your attention in this unit.

Book Reviews

We have found that even students who are unlikely to write book reviews enjoy going through the material in this section. Be sure to point out that, for all the sample book reviews, the author of the review and his or her institutional affiliation are given. We personally think that this information serves to hold the author accountable for the opinions in the review. Consider discussing in class whether your students would agree.

TASK TWO: Exploring perspectives on book reviews

D 1. Most students unfamiliar with the genre will likely think that book reviews are largely negative.

D 2. Book reviews do include some form of summary; sometimes this appears at the very beginning, but not necessarily.

A 3. A good review of an assistant professor's book can actually help him or her get tenure in some fields; a bad one could block it. A review that is simply a "hatchet job" may reflect poorly on the writer.

A 4. Yes, of course, authors are often anxious when reviews are published. Much time and effort goes into the writing of a book, and the author is hopeful that it will be well received.

A 5. Book reviews are often a first publication, and some professors encourage their doctoral students to do this.

A 6. We and many of our colleagues in other fields regularly read reviews. We are not sure whether most members of a field do. Students in the hard sciences often report that book reviews are not regular reading. This would be an interesting question to investigate.

A 7. Yes, cost is often a key point.

A 8. Yes, sometimes the review is merely a starting point for reviewers to air their own views. This is more likely in the social sciences and humanities.

A 9. The writing style greatly depends on the author, the discipline, and the publication. Some book reviewers adopt a somewhat less formal style and use idiomatic expressions. The examples in this book should be quite interesting in this regard.

A 10. Generally, references are not needed, but some book reviews do contain them. In fact, in our field, the use of references in book reviews seems to be on the increase.

TASK THREE: Comparing a book review to the proposed book review moves

Many of our students have never written a book review and report that they are not likely to do so. Those who have done book reviews report that Motta-Roth's proposed moves and their own aims align rather well.

TASK FOUR: Analyzing a published book review

1. Although we have not read the book, the comments seem reasonable and thus the review gives the appearance of being fair.
2. The reviewer does not present the first weakness as a serious problem. In Sentence 17, it seems as if she feels obligated to write something negative. The next negative comment on research output and social media in Sentence 18 seems more serious. We think that if there is a weakness in what otherwise is a good book, it makes sense to point it out. After all, other readers will probably see it as well.
3. Paragraph 1: General overview of the book as well as the target audience (Introducing)

   Paragraph 2: Specific details (Highlighting)

   Paragraph 3: Strengths of the work (Highlighting)

   Paragraph 4: Weakness (Highlighting)

   Paragraph 5: Positive conclusion (Final commentary)

   Although the review does not give a detailed chapter-by-chapter overview, it is overall consistent with Motta-Roth's scheme.
4. We think the author's praise is global, and the criticism is specific.
5. The positive evaluation can be found in Paragraphs 1, 3, and 5. The criticisms appear near the end in Paragraph 4 (Sentences 17 and 18). The negative is immediately mitigated by the positive comments in the final paragraph. The evaluation is conveyed via different parts of speech—for instance, the adverb *tightly* and adjective *clear* in Sentence 2. Ask your students to look at the different evaluations to see what kind of variety there is.
6. Present tense predominates. In Sentence 14, we find *will be*, which is a future construction.

7. The negative comment is certainly made with care in Sentence 17 (*if any criticism were to be leveled at the book it would be to note that . . .*). In Sentence 18, the criticism seems a bit more direct when the author writes, *Related to this point, it is a pity that more attention is not paid to . . . .*
8. In Sentence 17, the author writes, *If any criticism were to be leveled at the book it would be to note that . . . .* This is an unreal conditional statement. This kind of conditional weakens the criticism.
9. In Sentence 16, the reviewer is hypothesizing the outcome if the book were to be used in a class. She is saying that, if the book were used for a class, the case studies would form a good basis for classroom discussions that would, most likely, lead to broader debates.
10. We think that the author is part of the "imagined reader" or readership. Many reviewers use *the reader* to distance themselves from the commentary, giving them an opportunity to project their thoughts through this other entity and to perhaps achieve an air of objectivity. Note also the use of *the "busy information professional"* in Sentence 1. The reviewer could have used *I*, but, for some reason, elected not to.

TASK FIVE: Examining the language of book reviews

We are not sure how others react to this review, but we certainly did not expect to find one like this in the hard sciences. The recommendation of the book on Chinese cooking was a surprise as was the enthusiasm that underlies the beginning of the review. The author seems to be genuinely pleased to be offering his impressions of the book. The tone is upbeat and conversational at times. Most of our students in the hard sciences and Engineering who have read some published book reviews report that this review is not typical. Even students in the social sciences have said this is quite unlike most reviews in their fields. Although the opening and closing may appear to be atypical, much of the review is fairly typical.

We have underlined the elements that appear less formal or academic and those that seem somewhat out of the ordinary.

Quantum Field Theory in a Nutshell (2nd edn)

❶ Anthony Zee is not only a leading theoretical physicist but also an author of popular books on both physics and non-physics topics. ❷ I recommend especially 'Swallowing Clouds', on Chinese cooking and its folklore. ❸ Thus, it is not surprising that his textbook has a unique flavor. ❹ Derivations end, not with 'QED' but with exclamation points. ❺ At the end of one argument, we read 'Vive Cauchy!', in another 'the theorem practically exudes generality'. ❻This is quantum field theory taught at the knee of an eccentric uncle; one who loves the grandeur of his subject, has a keen eye for a slick argument, and is eager to share his repertoire of anecdotes about Feynman, Fermi, and all of his heroes.

[Paragraphs 2 and 3 have been omitted.]

㉓ One topic from which Zee does not restrain himself is the quantum theory of gravity. ㉔ In the first hundred pages we find a 'concise introduction to curved spacetime' that includes a very pretty derivation of the Christoffel symbol from the geodesic equation. ㉕ Toward the end of the book, there is a set of chapters devoted to the quantization of the gravitational field. ㉖ The structure of the graviton propagator is worked out carefully. ㉗The van Dam-Veltman discontinuity between massless and massive spin 2 exchange is explained clearly. ㉘ But after this Zee runs out of steam in presenting fully worked arguments. ㉙ Still, there is room for more prose on connections to the great mysteries of the subject: the ultraviolet behavior, the cosmological constant, and the unification of forces. ㉚ A new chapter added to the second edition discusses 'Is Einstein Gravity The Square Of Yang-Mills Theory?' and suggests an affirmative answer, based on brand-new developments in perturbative quantum field theory.

㉛ Quantum field theory is a large subject that still has not reached its definitive form. ㉜ As such, there is room for many textbooks of complementary character. ㉝ Zee states frankly, 'It is not the purpose of this book to teach you to calculate cross sections for a living.' ㉞ Students can use other books to dot the i's. ㉟ This one can help them love the subject and race to its frontier.

1. We rather like the review. Both praise and criticism are offered so that readers can see strengths and weaknesses. The reviewer clearly likes the book and so there is a bias in the positive direction. We can consider the review to be more or less objective in that it is not completely one-sided.
2. Answers will vary here, but many of our students like these expressions.

   Sentence 7: . . . *illustrates the depth and tone of the book* . . . .

   Sentence 12: . . . *discusses the implications for* . . . .

   Sentence 15: *The book takes on the full range of topics* . . . .

   Sentence 16: *It is a large amount of territory to cover* . . . .

   Sentence 18: . . . *too abbreviated to be fully comprehensible* . . . .

   Sentence 20: . . . *opens the door to some deeper subject* . . . .

   Sentence 25: . . . *a set of chapters devoted to* . . . .
3. Many of our students would like to have the book, but it is a bit expensive. Copies cost anywhere from $52 to $70 (U.S.).

Language Focus: Stating Opinions

You may also want to return to Unit Four and review some of the information on strength of claim.

TASK SIX: Analyzing a published book review

Answers will vary here, and this is something that you can capitalize on. We do this in class and have students work in groups. We ask them to write down or type up their findings that they present in the last part of the class. We then create a list of the students' findings in which we have categorized all of the interesting language as positive, negative, ambiguous, or neutral. We distribute the list to the class so that students can see if there are some expressions that they could also use.

Language Focus: Evaluative Language

Students find the differences rather interesting; once again this Language section focus makes the point that students need to find out how things are done in their own fields.

TASK SEVEN: Considering the fairness of evaluation in book reviews

_?_ 1. It's hard for us to evaluate this point, and we need more detail to fully appreciate the criticism. We can, however, say that we use the materials with graduate students whose first language is English and have not heard complaints from them. Also, the book is not set up in a manner that requires it to be gone through systematically. We do not cover all of the material ourselves and advise instructors in the Introduction and in the Commentary to be selective, choosing the material most relevant to their students.

_R_ 2. This is not a terribly strong criticism and a reasonable one, but we disagree. We know from talking with authors that many of them think the Methods section is the easiest part to write up and that this is often where they start the writing process. It makes sense to us that authors would begin with a factual account of what they did and to suggest that novice writers do the same.

_U?_ 3. This is quite critical of the opening unit, and we have marked it as possibly unreasonable. We understand that for some students, having a more intellectually compelling starting point may be good. However, we also know that many, if not most, of our students in classes that use the book have little experience writing for academic purposes. Thus, lacking experience, these students do benefit from being eased into more intellectually persuasive views of academic writing. Unit One has material that students find immediately accessible and useful. It does get them thinking about using language strategically. Our goal is to start the discussion of some considerations that go into academic writing, allowing the deeper story to unfold as students work through the other units. In the end, we do not want students to feel overwhelmed.

_U_ 4. This is definitely a negative comment. However, no book could ever do this, and we acknowledged this in the Introduction of the book. Instructors do need to supplement.

R 5. We agree, of course.

R 6. This is one of our aims, so we think this is a reasonable comment.

R 7. Although we were not intentionally targeting upper-level undergraduate students, we know that much of the material in the book is appropriate for them. We know of undergraduate courses that have adopted the book. Even Chris's children used the book as a reference when writing papers in the final two years of their undergraduate degree programs.

U 8. It may be that some instructors will work with students who will not likely write book reviews, but there are many instructors whose students need to produce them. As we stated in the textbook, book reviews can be found in all disciplines, so it is also possible that a student might need to review a book in the future. Regardless, we think that the book review section does offer some insights into the language of evaluation and this is important for all academic writers.

R 9. We definitely agree. We think it is very important to emphasize this higher-order aspect of writing as opposed to looking at matters of right and wrong.

U 10. We understand that some sample texts may be challenging, but we have tried to choose topics that we think are likely to be accessible and interesting. If a text is not accessible, then instructors can find a suitable alternative to use in class.

TASK EIGHT: Discussing strategies for writing a book review assigned in a course

A 1. Yes, it is important for students to understand the place of the book in the ongoing research story of the field.

A 2. Very important. If students can do this, they can reveal their understanding.

A 3. Yes, it is never too early to work toward this aim.

? 4. We would agree with having some kind of summary, but whether a summary of each chapter is necessary is unclear.

D 5. Probably not, unless this is part of the assignment.

? 6. If the author is known in the field, then perhaps, yes. If the author is a relative newcomer, perhaps yes, again.

A 7. Yes, this is important.

A 8. Yes, this shows that students can identify where their views are in relation to those in the book.

A 9. This makes sense to us.

____ 10. Students may add something on style, strategy (whether to be positive or negative toward the work), or even on the need to read the whole book.

TASK NINE: Examining a book review written for a course assignment

1. In Sentence 4, the author gives some background information on Stiglitz (Statement 4 in Task Eight). We see some evidence that the student is able to evaluate using criteria and language appropriate for the field (Statement 3 in Task Eight). We are not sure about the other points.
2. There are quotes in Sentences 1, 12, and 19, and these are placed near the beginning of the paragraphs. It seems they are being used to situate the points that the author wants to make. We think this is a fairly common strategy among students.

3. We have made our best attempt to underline the evaluative language and language revealing the author's stance. The opinions are very strongly stated, and we do not detect any effort to be cautious. The language seems to help with author positioning. The author's stance is clearly critical. It may be overly critical but, again, not knowing the book or the course content, we cannot be sure. We are also not sure if the student was supposed to review the book or critique the World Bank and IMF. But the mention of *the reader* in Sentence 8 makes us think it is a book review in which the student uses the book as a backdrop for expressing his views (similar to Number 8 in Task Two).

The World Bank and IMF: Broken but Worth Fixing

❶ "But for millions of people globalization has not worked. ❷ Many have actually been made worse off" (Stiglitz 248). ❸ In *Globalization and its Discontents*, Stiglitz challenges the World Bank and the IMF, questioning their motives and their successes. ❹ As a Nobel Prize winner and former chief economist of the World Bank, he shines a credible light on the institutions. ❺ This makes his arguments <u>powerful</u> and <u>enlightened</u>. ❻ He offers <u>insightful</u> suggestions on improving the organizations, so people everywhere can enjoy the attainable benefits globalization offers. ❼ The World Bank and IMF started after WWII with different missions. ❽ Currently they have similarities and differences, strengths and weaknesses, explained <u>logically</u> by Stiglitz so the reader can synthesize an opinion of their value today. ❾ While the pair exhibit <u>severe deficiencies</u>, their power for good, <u>though largely unrealized</u>, makes them necessary, once improved, in today's world.

❿ The World Bank opened after WWII to rebuild Europe, and the IMF to provide global financial stability. ⓫ With Europe's recovery from the war, the institutions turned to developing nations. ⓬ Today, Stiglitz says that "one (the World Bank) is devoted to eradicating poverty, the other (the IMF) to maintaining global stability" (p. 23). ⓭ Both organizations <u>ultimately</u> answer to the western powers: the USA and the European Union. ⓮ As a result, the World Bank and IMF see the developing world through an <u>industrialized</u> lens. ⓯ Stiglitz <u>repeatedly</u> notes that though the duo intends to do good, they fall short because of their ties to the western governments and financial communities. ⓰ The author differentiates the two, writing that the IMF acts less transparently than the World Bank, and with an <u>unflinching adherence</u> to the

Washington Consensus policies of the 1980s. (17) The sincere nature of the World Bank, in its mission to alleviate poverty, puts it ahead of the stubborn IMF in Stiglitz's view. (18) Both fall short in helping developing nations cope with globalization, but the World Bank less so.

(19) "The problem is that the institutions have come to reflect the mind-sets of those to whom they are accountable" (216). (20) From this statement stem the problems with the World Bank and the IMF. (21) The World Bank's programs of education, community development, and infrastructural improvement point to its commitment to help the poorest countries. (22) In the end though, the head of the bank receives his/her appointment from the president of the U.S., which puts its goals ahead of those of the developing nations. (23) Until that organization focuses on poverty alleviation above all, it will continue to face scrutiny and fail in its service. (24) The more opaque IMF more forcefully imposes its will on the countries with which it works. (25) They receive money with many strings attached. (26) These conditions do not make sense, as seen repeatedly with the former Soviet nations and East Asian countries. (27) When compared to success stories like China, which avoided the IMF, one wonders who it actually wants to aid. (28) Until it reforms its ways away from disproved Washington Consensus policies, the IMF will hurt developing nations it ostensibly aims to help. (29) Should the two organizations and the industrialized countries backing them fail to devote themselves to the developing world, they will increasingly face backlash and suffer from a lack of credibility.

(30) The World Bank and the IMF have great potential; they provide the framework necessary to humanely bring globalization to the world. (31) Developing nations need the projects brought by the World Bank, and the stability supposedly provided by the IMF. (32) The US, the EU, and the other countries controlling the two need to loosen their grip. (33) If the pair would operate in a more egalitarian way, they would do a better job. (34) This means opening governance to developing nations, granting them votes and a deserved say in any matter which affects them. (35) The United Nations provides a good model overall, which the two could emulate. (36) The World Bank's development strategies should come from within countries. (37) The IMF should restructure its policies and economic models to reflect reality, not what works in a perfect world. (38) While we should not eliminate the two organizations, fundamental changes must occur to ease globalization's pains.

(39) Stiglitz brings a strong perspective to the globalization debate, and makes valid points about the World Bank and the IMF's failings. (40) They possess the power to lift people and nations from poverty, but currently they lack the leadership, independence, and policies to do so. (41) The western powers which control them must recognize that they should support each country's unique strategy for dealing with and benefiting from globalization. (42) If they fall short, one can hardly blame those hardest hit for pushing back unpredictably and violently against the two institutions and their western controllers, which have backed them into a corner.

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4. We have a hard time distinguishing what Stiglitz is saying from what the student is saying. This may be a problem or it may simply be due to the fact that we have not read the book.
5. We are not sure whether we would consider this an excellent paper. Lacking information about the text and the course, it is hard to know whether this is high-quality work. The fact that we cannot distinguish the students' ideas from those in the book raises questions for us.
6. It is rather unusual to begin a paper with *but.* Note, however, the first sentence is a quote. In many fields, students and others use quotes to have a thought-provoking opening.

TASK TEN: Evaluating a published article

We really like the teamwork article; students do too. For another interesting article that confirms the findings, see Singh and Fleming (2009).

Since the questions and the task are not together, we have provided the questions for this task to make it easy to follow.

1. Who is the audience?

   The paper was published in Science, *which targets an interdisciplinary readership. Readers are assumed to be academics from a variety of fields.*

2. What is the purpose of the article?

   The authors want to argue that teamwork-based research has a greater impact on the production of knowledge than does individual (solo) work.

3. What research questions or hypotheses (are) being addressed in the article?

   Are teams responsible for more knowledge production than solo researchers?

   Has the process of knowledge production fundamentally shifted away from solo researchers toward teams of researchers?

   Does the knowledge production of teams now have a more significant impact than that of solo authors?

   Do teams produce more frequently cited work?

4. What conclusions does the author draw from the research?

   Regardless of the questions considered, the answer is yes. *For a variety of reasons, there has been a shift toward teamwork, which is quite marked. Research done by teams is more highly cited and now dominates knowledge production.*

5. What kind of evidence was collected to explore the research questions? Is there any evidence that could or should have been collected and included but was not? How good is the evidence? How well does the evidence support the conclusions?

   The authors collected and analyzed almost 20 million papers from the ISI Web of Science spanning 50 years of research (beginning in the mid-1950s) together with slightly more than two million patents (from 1975 to the start of the research). The paper includes a table showing the growth of teamwork for patent registrations and published papers in fields in the sciences and engineering, social sciences, as well as the arts and the humanities. A graph is provided that shows the growth in team size and publications (Fig 1). Fig. 2 shows the impact of team-authored papers with regard to citations received. The data show on average that teamwork in the chosen fields is growing and team authored papers are being cited with increasing frequency. This seems like very good evidence to us and does support the conclusion.

6. Are the author's conclusions valid or plausible based on the evidence? Why or why not? How do the conclusions relate to what you have been learning in class? Are they consistent or inconsistent?

   Based on the evidence the conclusions seem reasonable, but one has to wonder somewhat whether the number of citations is necessarily an indication of overall quality. There is no information on whether the citations were negative or positive, which seems relevant. Perhaps more team-authored papers are criticized and presented in a negative light than solo papers.

   The importance of the paper in furthering knowledge of the field seems relevant. How can we reconcile the findings with those of Swales and Leeder (see Unit Eight) that show a solo author was the most cited in her field? Perhaps one needs to look at more subfields to get an accurate picture.

7. Are there any important assumptions underlying the article? How do these influence the conclusions?

   Some students say that the authors assume that the most highly cited work is found in the ISI Web of Science. Publications on local or regional issues written in languages other than English are not significant. This assumption may not be true and could somewhat bias the conclusion.

8. Are the charts, tables, and figures clear? Do they contribute to or detract from the article?

   Yes, they are clear enough and add to the quality of the paper.

9. Does the research make an original contribution to the field? Why or why not?

   We think it does make a contribution to the larger field of citation analysis. The findings shed light on questions regarding the influence and dominance of teams.

10. If the evaluation is focused on a published article, why was the article chosen? Is the research consistent with material, best practices, and perspectives presented in class?

    We would assign this to prompt students' thinking about the value of teamwork in research. In other fields, the paper may be assigned so that students could evaluate the methods. The paper could also be assigned as a critique in a class focusing on creativity.

TASK ELEVEN: Reconsidering the evaluation of an article

This unit has a lot of tasks asking students to consider whether something is reasonable or not. Although we have similar types of tasks in other units, we have included more of them here to help students stay in a questioning mode. Although answers will vary, we think each of the points has merit and can give students insight into some of the less admirable aspects of research and writing for publication, such as fraud and hyper-authorship. In the end, you and your students will have to decide which of the points make sense. But overall, the evidence does not support the view that solo authors and teams have the same level of knowledge production.

TASK TWELVE: Considering what to include in a critique

Answers will vary. We do, however, expect that students will be able to fairly evaluate the excerpt using some or all of the criteria we have offered. As the previous task suggests, there is a lot of debate on the issue. Students should come up with ideas in relation to whether the excerpt presents a reasonable, well-supported perspective on teamwork. This is picked up again in Task Fifteen.

Language Focus: Unreal Conditionals

Students may have some difficulty with unreal conditionals, either because of interference from speaking or from a gap in their grammar knowledge. We think it is a good idea to spend time on these.

TASK THIRTEEN: Using unreal conditionals

This is one of the few exercises in the book that can be done orally and can be done in only a few minutes. Students seem to have a lot to say about the situations.

Language Focus: Evaluative Language Revisited

Sometimes students forget that different parts of speech can be used in their evaluative comments. Consider having students come up with their own variations.

TASK FOURTEEN: Rating adjectives

You may reasonably disagree with our answers. For some of these, it is hard to decide. Students may need some explanation of *ambiguous*. For us, it means the term may be either be positive or negative. We mark the ambiguous terms as 0-A and those that are neutral as 0-N.

++ very positive + positive 0 neutral/ambiguous - negative - - very negative

> In this ________ study, the authors attempt to show that domesticated animals are in some way just as responsible as automobiles for our current CO_2 imbalance.

0-A	unusual	-	limited	0-A	ambitious	0-A	modest
0-A	small	-	restricted	++	important	--	flawed
0-A	useful	++	significant	++	innovative	0-A	interesting
+	careful	-	competent	++	impressive	++	elegant
0-A	simple	0-A	traditional	0-N	complex	0-N	small scale
0-N	exploratory	++	remarkable	0-N	preliminary	--	unsatisfactory

Sometimes it may not be clear in isolation whether a term is negative or positive. *Lengthy*, for example, does not seem negative at first glance. In context, however, it often seems so. Consider: *The lecture was lengthy.* This suggests it was too long. *Long*, however, tends to be more neutral.

Critical Reading

Many of the previous tasks have involved analyses of various kinds of texts. More particularly, Unit Four focused on the critical analysis of data, and the end of Unit Five focused on synthesizing. In this section, these skills are brought together in the critical assessment of academic text.

TASK FIFTEEN: Evaluating the fairness of evaluative comments

Opinions may differ on the points listed here. We have marked the ones we think would be worthwhile with a check mark (✓).

✓ 1. The fact that the authors examined nearly 20 million published papers and just over two million patents strikes us as a sufficiently large sample on which to base the claims. One might, however, criticize their use of the ISI, which we know does not capture all published work.

____ 2. When there are so many aspects of the article to discuss, it seems that discussing writing style is rather unnecessary. Unless there is something highly unusual or particularly noteworthy about the writing style, we would suggest that students focus their efforts elsewhere.

✓ 3. If the patents are exclusively from the U.S., then we think the authors could have shared this. We do not know whether teams are more or less commonly seen in patent filings in the U.S. compared to other countries, but perhaps there is a difference.

____ 4. We thought a lot about this, but this is very likely something that the authors could not control. While we would agree that not having all of the information does make it somewhat more difficult to read the article, we also know that, increasingly, journals are working with serious page and cost constraints, leading to more and more information being available only in an online supplement. The research itself is not weakened because of the supplement material, and so we decided that this point may not be worth making in a critique.

✓ 5. We think that this point does merit some consideration. Definitions can often influence the results. We are not sure that the results would differ if another definition of self-citation had been used, but it does reveal some good critical thinking.

____ 6. When we first heard this, we thought the student meant that the figures were not clear in terms of formatting, which we did not think was so important. After all, there are more important points to raise. After probing for more information, we learned that the student did not quite understand how to interpret the figures. This then raises the question of whether the inability to understand here should be attributed to the article or to a reader's lack of knowledge. We thought the figures were fine, as did most students. So, it may not be fair to criticize the article on this point.

_✓_ 7. As we indicated in our comment on the first point, we do think that including only ISI articles may not have been the best approach. The sample may in fact have missed a lot of work that is not in ISI journals.

_✓_ 8. The large sample size, the inclusion of both patents and journal articles, and the attention paid to self-citation suggest to us that the work was carefully done.

____ 9. We actually thought it was a really good idea to include the humanities. After all, if there had been some indication that teamwork was also becoming more widespread in the humanities, that would have been quite interesting.

____ 10. This is an interesting point, but it seems like this was beyond the scope of the work. It would also be challenging to do this given that teams can include members from several countries. Perhaps this should not be a criticism, but a suggestion for future work.

TASK SIXTEEN: Writing a critique

We do not have a draft that we can include. We recommend that you save some submissions from your students and ask for permission to share them with future classes.

Language Focus: Beginning the Critique

There is no single way to actually begin the evaluative portion of the critique. Ask students to try different ways and then give them feedback.

Language Focus: Inversions

It may be necessary to stress that these inversions are rather uncommon and should only be used for strongly highlighted comments.

TASK SEVENTEEN: Completing inversions

We do not know if these answers are really needed, but here are a few from our classes.

1. Especially notable are the results demonstrating that the patients tolerated the treatment quite well.
2. Much less expected was the observation that four-year-olds in the study spent less time in teacher-directed activities.
3. Especially noteworthy was the high signal intensity.
4. Of greater concern is the rising cost of attending a public university.

TASK EIGHTEEN: Writing a critique

We do not have an example to offer here. We encourage students to consider choosing a paper that they have to read for one of their classes. If students are pressed for time, they could consider choosing a published short communication or brief report.

Reaction Papers

We have found writing a reaction paper to be common in many graduate courses at the University of Michigan, sometimes in rather unlikely places, such as the School of Dentistry. We recognize that this is an underresearched type of assignment, and we would welcome any further information from the users of this text.

TASK NINETEEN: Analyzing reaction papers

1. Text A *from my experience*
   if I am
   I have found
   I often find
   worse than if I had done it myself
   while I have had
   I have always found it difficult
   I would argue

   Text B *Personally, I find*
   my work
   I rarely
   I had a group project
   this forced me to do
   it gave me a skewed view
   the settings that I often work in
   my personal bias against
   but I can understand

   Note the many uses of *I* and *my.*
2. Text A starts with the general idea of the article and then moves into the author's opinions. Overall, it seems to move from general to specific. Text B starts with the author's personal experience and then ends with the conclusion of the source article. It seems more like specific to general.
3. In Text A, the author's personal experience appears in the second paragraph (Sentences 4–7). The personal experience in Text B is found in the first paragraph (Sentences 1–7). Little detail on the authors' personal experiences is provided and, although they generally support the authors' positions, we would have liked more detail.

4. As we said in Number 3, the student authors give only very general details from their past experience working with others. Their points would have been stronger if they had provided some concrete detail. So, we think they could have done a bit more to explain or support their perspectives.
5. Neither paper uses very much of the teamwork article beyond highlighting the conclusion. This is not surprising since the purpose of the paper is to share a reaction, which means being somewhat more focused on one's opinions as opposed to the specific content of the article.
6. There were indeed a few points that we found interesting. For example, the author of Text A notes that the authors of the teamwork paper also did their work as a team. Another good point is that personalities can greatly influence the direction of a group project and so the best work may not emerge. The final point is skillfully made through the creative use of *two* and *double.* Text B seems to largely be a criticism of group work and highlights frustration.
7. The papers seem to lie somewhere between informal and formal. This strikes us as appropriate.
8. The title for Text A seems better since it mentions the name of the article. The title of Text B, "Group Work," does not accurately reflect the focus of the article. We do not think that group work and teamwork are the same.
9. We think Text A is a bit more thoughtful and makes more interesting comments than does Text B.
10. We cannot provide an answer here, but we would imagine that the two responses are more personal and discuss the very general idea of working in a team as opposed to evaluating the quality of the research. Each of the reactions includes personal experience as evidence to question the conclusion that working with others results in greater productivity.

Language Focus: Non-Standard Question Marks (Scare Quotes)

For more information on scare quotes, look at "Scare-quotes in MICUSP: Some preliminary observations," which is available as a MICUSP kibbitzer at www.elicorpora.info/. This paper proposes that there are five scare quote categories: "so-called/safe (with sneer/snarky as a subcategory), style, term, coinage, and uncertain/mixed."

TASK TWENTY: Writing a reaction paper

Answers will vary. Note that this task may be more appropriate for students in the social sciences and the humanities, but we also know that students in other fields need to be able to give a reaction to a paper, particularly when an advisor asks for some quick feedback on a manuscript or newly published paper.

A Few Thoughts on Manuscripts Reviews for a Journal

We think this topic is worthy of book-length treatment, so we cannot do it justice here. Students are increasingly being asked to review manuscripts, often without a lot of guidance. When students ask for some advice on where to begin, we suggest that they use the questions in the section on evaluating a published article and that they ask an advisor for some examples. We also recommend that they talk to others about the manuscript they are reviewing. Talking to others about the strengths and weaknesses of the work can help reviewers sharpen their thinking and come up with some useful feedback that can actually be implemented during the revision process. The main goal here again is to be fair and not find as much wrong with the paper as possible. The reviewer's job is to offer guidance that would result in a better paper, not to tear it apart. Reviewers should be constructive, not destructive, offering suggestions for improvement that could in fact be implemented and providing clear explanations if an article does not seem worthy of publication.

Unit Seven

Constructing a Research Paper I

Main Aims

The important take-home messages of Unit Seven are that

- there are many types of published papers, including those that are empirical, theoretical, mainly argumentative, or focused on the state of the art of a field.
- research paper authors are concerned with positioning and demonstrating that their research is relevant.
- research paper writers often start the composition process with the Methods section because it may be somewhat easier to write than other sections.
- Methods sections may be organized in terms of moves.
- important differences exist between discussing data and results as well as between the Results and Discussion sections.
- Organization of Results sections
- Results sections consist of statements about data and often involve comparative language.
- results may be presented as approximations rather than exact repetitions of actual numerical data.

To help writers explore the stated aims, the unit focuses on (but the Commentary does not necessarily discuss) these topics.

Types of journal publication

Variations in linguistic features across sections

The importance of Methods sections

Variable goals in Methods sections

Condensed and extended Methods sections

The use of initial linking phrases to help cohesion

Differences among data, results, and discussions

Disciplinary differences and location statements

The role of comparison statements in Results sections

Types of commentary to include or to postpone until discussion

Opportunities to gain a better understanding of the main topics are provided in these Language Focus sections (although not all are discussed here) and tasks.

Language Focus Sections

Linking phrases in Methods sections

Another look at location statements

Special verb agreements

Making comparisons

Tasks

Task One	Building a specialized corpus or reference collection
Task Two	Analyzing a review article of relevance
Task Three	Reading and answering questions on a short research note
Task Four	Determining linguistic features across research paper sections
Task Five	Identifying sentences according to section
Task Six	Agreeing (or not) about which statements apply to a Methods section
Task Seven	Responding to the data in Table 19
Task Eight	Analyzing a Methods section
Task Nine	Determining whether a Methods section is condensed or extended
Task Ten	Editing a Methods section or writing up an original one
Task Eleven	Comparing Results and Discussions sections
Task Twelve	Scanning a reference collection for location statements
Task Thirteen	Comparing three partial Results sections and writing up individual results for a table
Task Fourteen	Reviewing some results from MICUSP searches
Task Fifteen	Choosing singular or plural verbs

Task Sixteen	Rewriting comparison statements
Task Seventeen	Deciding what kind of commentary is acceptable in Results sections
Task Eighteen	Analyzing commentary elements in Results sections or those in a reference collection
Task Nineteen	Editing a Results section
Task Twenty	Producing a Results section

General Notes

a. Units Seven and Eight are designed to represent a consolidation of what has been done in the preceding six units. They also represent a culmination of *AWG*, since they provide users with opportunities for constructing their own research papers (RPs) or—if students are not quite at that stage—preparatory activities for such tasks. As we have learned from MICUSP, complete RPs seem very uncommon in the early years of graduate school. However, class participants are often required to produce accounts of their methodology, usually accompanied by introductory material and/or a literature review. Students may alternatively be asked to write up the results of an experiment and discuss their findings.

b. Unit Seven in this third edition is considerably longer than that in the second (the number of tasks has increased from 13 to 20, for example). As a result, both instructors and students working on their own may need to be selective in terms of the time and attention given to particular tasks and explanations. For some students, it may make sense to focus more on the surface linguistic features that we introduce; for others, a better strategy would be to concentrate on factors relating to content and organization.

c. The unit consists of three main parts. The first offers a general discussion of the various types of research papers, of the standard sections in empirical research papers, and of linguistic differences among them. It also includes a brief discussion and illustration of a short Research Note based on field research. The aims, therefore, of the first five tasks include bringing these matters more into the forefront of everybody's mind. The next five tasks (plus the surrounding explanatory material) comprise the middle part of the unit and are devoted to Methods. The third and final part deals with results. Some of the issues raised are differences between the Results and Discussions sections, the question of what kind of commentary on findings tends to work well, and the need for complex and sophisticated statements of comparison.

Detailed Commentary

We think it is important for instructors to have a sense of the kind of research papers that their students will be writing or could perhaps be writing. Students can benefit a lot from hearing about what others are doing as well.

TASK ONE: Building a specialized corpus or reference collection

We anticipate that most users of *AWG* will already have put together a small reference collection of papers directly relevant to their circumstances. If not, now is the time to do so. We will be asking students to use the collection to see whether our findings about research writing are relevant for the writing in their fields. This is important because in any book of this size it is impossible to cover the discoursal character of research writing in all disciplines (not that the appropriate research has always been done). Hence, we would not expect, for example, that what we have to say about Methods sections would necessarily or directly apply to Evolutionary Biology, or what we say about Introductions would work for Mathematics where disciplinary attention would focus more on definitions and creation of agreement about basic premises.

TASK TWO: Analyzing a review article of relevance

Obviously, answers will vary, but Swales (2004) examined a number of review articles from his own field of applied linguistics. The average number of references was 80, and most reviews concentrated on Noguchi's category of *Current Work*, often accompanied by some account of *Theories/Models*. So that students may see how a review article might look in another field, here is an example list of section headings from a review of *Language rights and political theory* from Kymlicka and Patten (2003).

- The context
- Conceptualizing language rights
- The need for a normative theory of language rights
- Nation-building and language policy
- Maintaining languages and language diversity
- New directions

As Myers (1991) notes, a successful review article "draws the reader into a writer's view of what has happened, and, by ordering the recent past, suggests what can be done next." Would this be true of a review you have written at some point? Ask students about this as well. Most of our students comment that they would like their reviews to do what Myers suggests, but they find it extremely difficult to do so.

TASK THREE: Reading and answering questions on a short research note

For this task we recommend that you either provide a photograph of a badger or ask your students to quickly find one on the internet using a smart phone, laptop, or tablet. Knowing that students can often easily access the internet in classrooms, we did not feel the need to include an image.

There are a lot of questions on the badger text, some rather speculative. The answers here reflect our ideas, our students' answers, as well as insights from the first author of the paper.

1. The purpose, we take it, is to have a public record of a new finding. The audience will be those seriously interested, both professionals and amateurs, in the natural history of the Great Lakes region.
2. We suggest the following as characteristics of academic writing: the use of the passive, the presence of references, the use of acronyms, the very precise numbers, the considerable detail—e.g., the kind of cage and the drug used to immobilize the badger. Our students have also added that the topic alone is enough to give the text the appearance of being academic because only those with an academic orientation would be likely to read the text.
3. The other claim can be found in Sentence 15 where the authors write, . . . *badgers have probably occupied areas of PRNL previously.*

4. Paragraph 1: Introduction to badgers in Michigan
   Paragraph 2: The particular capture
   Paragraph 3: Detailed measurements
   Paragraph 4: The badger's later movements
   Paragraph 5: Conclusions and recommendations
5. The text is clearly not organized according to problem-solution; while there are general-specific elements, it can probably be best summarized as a "scientific narrative."
6. The title could have started with something like, *First occurrence* . . . . But the first author replied to our query about the title by saying that he did not want to go quite so far. The decision was to be more conservative. We think this is an important point to discuss with students. We often think that strength of claim is something to consider only in the body of a paper, but we always discuss with our students that the claims can begin with the title, which in turn contributes to author positioning.
7. We think that the conclusion is entirely reasonable. Our students do, as well. After all, the call for more research can be justified at the conclusion of almost any study.
8. Giving both metric and U.S. measurements may be relevant since the state of Michigan shares a border with Canada, which uses the metric system. Even so, the first author of the paper reported to us that giving both kinds of measurement was a journal requirement. Discussing journal requirements may be useful as students move forward.
9. The first author is an associate professor at Mississippi State University; the other two were Biology technicians. (We found the first author on the internet, and he told us who the co-authors are.) Our students think that it matters a lot that the first author is affiliated with a university. They believe that a university or company affiliation is necessary to get published and that someone with a passing interest in a topic would not be able to publish. We are also not so sure that an amateur cannot publish, but it may be more difficult.
10. The first author did not think that it was necessary in a scientific research note to indicate who trapped the animal. On the question of whether the sex of the badger should have been included, the first author said he could have specified that the badger was female, but

that the gender was clearly implied in the middle paragraph. In terms of additional information, our students say that it might be nice to know something more about badgers.

11. In John's experience, this is pretty typical of the reports of the occurrences of rare birds that he reads.
12. To determine whether the paper has been cited, students can use Google Scholar. At the time of this writing, apparently the paper had not yet been cited.

We believe that the general account of standard empirical research papers that follows Task Three is largely self-explanatory and does not need further commentary. However, you might want to ask your students whether published papers in their journals generally have these section labels or others.

TASK FOUR: Determining linguistic features across research paper sections

This is a scanning task, asking students to first eyeball the finite verbs in their reference collections and then examine a number of other features. Of course, some tenses are intrinsically less common than others. The present perfect is one that is less common than the present or the past; the question then is whether it occurs with any frequency in any of the sections of the articles. A similar situation exists with boosters (expressions that add strength to a statement).

TASK FIVE: Identifying sentences according to section

Here are the expected answers.

1. Results
2. Methods
3. Introduction
4. Discussion
5. Introduction
6. Results
7. Discussion
8. Methods

The Importance of Methods Sections

One point that should be commented on in the overview of this section is the long list of items that could be included in the Methods section. Here *sources* refer to the manufacturers' products that are used in experiments; *permissions* would be approvals from what are known in the U.S. as Institutional Review Boards; and *inclusion criteria* are important in medical research, in which a pool of patients/subjects is recruited for a study according to pre-established criteria for inclusion or exclusion. There may, of course, be other information that needs to be included. Be sure to ask your students about this.

TASK SIX: Agreeing (or not) about which statements apply to a Methods section

This task should understandably reveal disciplinary differences from, say, Chemistry to Education. In other words, you should expect disagreement on the answers. From our own position as applied linguists, we would disagree with Numbers 6 and 8, and put a question mark next to Number 2, 5, and 9. But that's just us!

TASK SEVEN: Responding to the data in Table 19

1. The differences may not necessarily indicate a failure to provide a location but merely may reflect the nature of the research in different fields. For example, Chemistry and Physics principles do not change depending on whether the work was done in Europe or Asia. If, however, the work was done in a unique location such as CERN in Switzerland or Fermilab in the U.S., this might matter. Also, if a study was conducted on a space station as opposed to Earth, this too might matter. Keep in mind that Methods sections should include information that is relevant to the outcome of a study, which may very well be the case for culturally specific social science. The interesting case is the field of Biology. We presume that laboratory studies of cells do not require location descriptions, while work in the field would.

2. Overviews may be unnecessary because these fields often rely on well-established and well-known procedures. In the social sciences, the readers may need orientation as to whether, for instance, the approach is qualitative or quantitative and to other unique characteristics.
3. The two candidates closest to Business would seem to be Law or Language and Linguistics. These areas fall into the broader category of social science and so the similarities are not so surprising.
4. Perhaps there are no relevant limitations in, say, Chemistry; or perhaps, as is often the case, the limitations in Methods sections are postponed until the Discussion sections.
5. We were struck by the relatively low figures for research aims in many fields; we can only presume that authors considered that they had adequately dealt with these toward the end of their introductions.

TASK EIGHT: Analyzing a Methods section

1. The moves would seem to be subjects, location, and procedure. For example, no mention is made of how the questionnaire results were analyzed, nor is there any indication of the limitations of the study.
2. The level of detail is sufficient, although replication is not possible because only two of the nine scenarios are illustrated. Indeed including all nine would slow down the section unreasonably.
3. We think the sample scenarios are important. Without them, it would be quite difficult to envision what was actually done. Many of our students say that the authors should have described how the final sample was derived since this might have had an impact on the outcomes. Others say that this information would not change one's reading of the paper and so they would leave it out.
4. The material is organized by location, subjects, and then procedures. The Methods section is short enough not to need subsections. As it is, the paragraphing identifies the various steps.
5. The past tense dominates (except for the scenarios). This tense choice is entirely expected since the section describes what was done. It would be hard to use another tense.

6. In the opening paragraph, the first three sentences develop from general to specific, and then the last three give some information that pertains to all participants. The paragraph follows old-to-new information flow rather well. In the final paragraph, the first three sentences carefully explain further information about the questionnaires. This paragraph does not follow old-to-new information flow quite as well.
7. There is a mixture of active and passive, with the active being largely used to describe participants and questionnaire features and the passive for describing researcher actions.
8. For this, ask students to refer to the papers they have collected.
9. Various discussion points occur to us. These might include the reliability of self-report data on moral issues, the apparent peculiarity of selecting university people and those at malls, and the puzzle of the final sample. (We presume that two of the people recruited at the mall were students!)
10. Answers will vary. In general, however, our students see that many of the moves proposed by Peacock can be found in their samples.

TASK NINE: Determining whether a Methods section is condensed or extended

The Task Eight Methods description is fairly extended in terms of subjects and procedures, but it does not deal with justifications and explanations. The two short extracts in Task Nine are obviously condensed. The "counterfeit money" passage is again fairly extended, but the only explanation given is at the beginning of the samples subsection; and there is one purpose statement in Sentence 12.

Language Focus: Linking Phrases in Methods Sections

Here are some possible short completions.

A. 1. In an effort to evaluate gender bias, we estimated pooled regressions, including data for men and women.

2. In order to establish a baseline for comparison purposes, we first ran experiments using well-tuned P and PD controllers.

3. To further test this hypothesis, we interviewed 40 additional adolescents.

4. To determine the cost, cost-effectiveness analysis (CEA) was used.

5. In the interest of obtaining useful data, we chose to interview men and women separately about their communication styles.

B. 1. During the data collection, tentative classifications were made.

2. Prior to collecting the data, we calibrated the camera system.

3. On arrival on campus, the participants were invited via a personal letter to participate in a four-year longitudinal study of alcohol use and other lifestyle behaviors.

4. In the follow-up phase of the study, patients were tested for recurrence after six months.

5. After the interview, subjects were debriefed about the purpose of the experiment.

C. 1. Based on the feedback from the pilot study, the survey instrument was modified.

2. On the basis of the literature review, 14 covariates were selected.

3. Because of privacy issues, we opted for a wearable computer that actively collects information about its environment.

4. In spite of these issues, we elected to use grade point average (GPA) to rank the students.

5. In light of these unexpected findings, the studies were repeated using opiate receptor knockout mice.

TASK TEN: Editing a Methods section or writing up an original one

Here is a draft of Mei-Lan's revision.

1. Semi-structured interviews were employed to investigate relationships between elderly Chinese and their immediate families. The study was conducted in three small midwestern communities since research to date had focused on larger coastal communities (Olsen & Chang, 2009). Ten one-on-one interviews were conducted with elderly Chinese, lasting about an hour and in the interviewees' preferred language. Family members were not present during the interviews in case they might have inhibited the subjects from expressing their true feelings. Prior IRB approval was obtained.
2. Answers will vary.
3. Answers will vary.

Results Sections

We open this section with an attempt to clarify two distinctions. The first is the difference between data and results, and the second is the difference between Results and Discussions sections.

TASK ELEVEN: Comparing Results and Discussions sections

Results	Discussion
research questions	findings
statistics	no statistics, or only a few
some tables	no tables
no references to previous studies	study is related to other work in the field (note especially the first two sentences of the discussion in which a previous study is introduced and the results of the new study are presented as consistent with that study)
experimental conditions not related to real-world situations	related to real-world situations
some evaluative statements about the results, implications not stated	evaluative statements about the results, implications stated

TASK TWELVE: Scanning a reference collection for location statements

This is a rather complicated task and may take some time. John did it with 20 Portuguese articles (a language that he does not really know), and he managed to finish in a little over two hours. In any case, please email us any significant results that you and your students find. We would really like to know!

TASK THIRTEEN: Comparing three partial Results sections and writing up individual results for a table

A. We like the fact that this version states that *data* occurred once or more than once in fewer than half the papers. Given Table 23, we do not like the decimal places per 10k for the three disciplines. It also seems a bit flat because of the absence of commentary.

B. We like the link in the first sentence and the next one about what might be expected. The focus on CEE seems a bit excessive; the point about Linguistics seems to belong more in a Discussion section.

C. This seems overall to be excellent. If we were writing up the table, we would use this as a basis, adding some information from Version A.

TASK FOURTEEN: Reviewing some results from MICUSP searches

To search on MICUSP, click on the search function, enter the word or phrase of interest in the search box, and wait for the results. This may take a few seconds. Then press the Per 10,000 Words button. To obtain the exact number, place the cursor on the column of choice. And do not forget to click on Clear Search before starting the next one.

Here are our responses to the questions.

1. *Language.* As expected, Linguistics came in on top with 28.48 per 10,000 words. Second was Education with 11.44, followed by Psychology at 8.34. Interestingly, English did not make it.
2. *If.* Did anyone guess that it was Philosophy with 37.04 per 10,000 words? John, who was a Philosophy major many years ago, remembers examination questions like, "If a man says he parts his hair down the middle as a matter of moral principle, what reasons would you have for believing him?"

3. *Time.* We guessed that the top three might be History, Political Science, and perhaps Physics (Hawkins', *A Brief History of Time*). Quite wrong! They were Education (20.75), IOE (21.25) and Mechanical Engineering (19.56). The word *time* was also surprisingly rare in Philosophy.
4. *Work.* Well, we thought that a field like Mechanical Engineering would be high since, after all, machines do work, right? In fact, we found Sociology (12.11), Education (11.14), IOE (9.76), and History (8.78).
5. *Life.* It turned out to be English by quite a bit (15.07 v. 9.52 for Nursing). Presumably, this mostly comes from students writing about the lives of writers.
6. *Should.* This one is different because it is a (strong) modal verb. Not surprisingly, Nursing was top with 15.44, but it was unexpectedly followed by Philosophy (14.88).

Try to come up with some other MICUSP surprises for your students, or ask them to find some for the class.

Language Focus: Special Verb Agreements

These special verb agreements are vexing. We recommend having students look for examples in their reference collections.

TASK FIFTEEN: Choosing singular or plural verbs

Despite the fact that the first nouns are all singular, all the verbs, except for Number 2, should be in the plural. As for the final two, we offer these suggestions.

> A small number of high performing students *were* able to predict their test scores.

But, compare the sentence to this one.

> The small number of student errors *was* attributable to their careful preparation.

We discuss this with our students in the following way. We can see the difference by viewing the first instance as one in which multiple individuals are operating independently, not as one, and so we prefer the plural. In the second example, there is only one number to describe the errors, and so we prefer the singular. This works well enough.

Language Focus: Making Comparisons

Results sections typically employ quite a number of comparative statements. They often need care in formulation, and there may be need for some stylistic variety. The length and complexity of these comparisons is therefore a result of these facts.

TASK SIXTEEN: Rewriting comparison statements

Here are some answers; other variations are, of course, possible.

1. Group B produced 15% more errors than Group A but completed the task in one-third less time.
2. The amount of rice exported by Thailand, at 8.8 million metric tons, was four times greater than the amount exported by India.
3. The number of barrels of oil consumed by Spain was 1,482,000 a day, a rate of consumption a little over four times greater than that of Sweden.
4. The height of the Lituya Bay tsunami was over five times that of the 2004 Indian Ocean tsunami in which the death toll was more than 230,000 people in fourteen countries. It's hard to see this as a separate response. The death toll of the Indian Ocean tsunami was significantly higher than that of the Alaska tsunami.

TASK SEVENTEEN: Deciding what kind of commentary is acceptable in Results sections

This is another task where our students disagree. Disciplinary variation is to be expected. However, most students agree that Number 2 (*Calling for further research*) and Number 3 (*Citing agreement with previous studies*) are better left for the Discussion section. Students often agree that it is quite appropriate to deal with Number 4 (*Commenting on the data*) in the Results section but to not engage in too much interpretation. As for Number 5 (*Interpreting the results*), it might depend on the kind of interpretation attempted. If that interpretation is closely related to the data, it seems unfortunate to deny writers the opportunity to make some intelligent observations on what they found. On the other hand, high-level interpretations related to theories might be better postponed. Most students also say that they would postpone the remaining categories (Numbers 1, 6, and 7). After all, we need to keep some things back for the Discussion section. What is important here is for students to see the need to consider placement of information.

For students in fields where the results and discussion of results are combined in one section, the task of writing up the results may be somewhat easier since there is less need to worry about where to place certain information.

TASK EIGHTEEN: Analyzing commentary elements in Results sections or those in a reference collection

No answer possible.

Organization of Results Sections

In this section, we ask our students to pay particular attention here to some of the Notes on Figure 15, particularly, 3, 4, and 5. These are good, research-based guidelines to follow.

TASK NINETEEN: Editing a Results section

As their proficiency in written academic English increases, our students report that they are increasingly involved in commenting on and editing the writing of others—perhaps undergraduates they are working with, perhaps fellow graduate students from their program or another one, or authors of manuscripts that an advisor or instructor has passed on for review. Importantly, after all of the text analysis tasks in this book, our students indicate feeling somewhat confident to engage in this activity as well. Ask your students whether this is also true for them.

In the case of the children's pain study, we offer these points. We might start with what we like (good news before bad); this would have these positive effects: The section would have a clear progression, the table would appear more interesting, and the quotations from the children would make a strong impression. Here are some other considerations.

a. We think that the description of the results does not really bring out the variability in the numbers of children who attest to one or more pain management attempts. So, after the opening sentence, something like, *However, the number of children reporting the various strategies varied greatly; from 51 out of 52 in the case of **distraction** down to single individuals in the case of three strategies (Table 2).*

b. Next, the original *most of the children* seems rather overgeneralized. Why not say something like, *As shown in Table 2, 50% or more children reported using four strategies (distraction, . . .), ranging from almost all in the case of* ***distraction,*** *down to just over half in the case of* ***positioning and asking for pain medication, nurses' help.***

c. Then we might suggest that there is a lack of balance in dealing with the middle categories. So, we might offer, *Of the four strategies that were used by between 12% and 31% of the children, the most interesting would seem to be a method of drawing attention away from pain by the use of imagery.*

d. As a final thought, we might observe that the application of ice to reduce pain was only adopted by a single child and that this might seem very low in comparison to adult strategies.

TASK TWENTY: Producing a Results section

Answers will vary. (If someone claims not to have any data, we suggest referring him or her to the internet or some of the other data given in other units in the student book.)

Unit Eight

Constructing a Research Paper II

Main Aims

The important take-home messages of Unit Eight are that

- Introductions to published papers need to appropriately situate the work within the existing body of related research and create a space for the new work.
- Introductions to published papers consist of a series of moves, each of which has a purpose.
- citation use can involve a number of strategic decisions.
- the decision of what to include in a Discussion section is challenging.
- Discussion sections require writers to present their claims appropriately—neither too strongly nor too weakly.
- Discussion sections can vary a lot in terms of organization.
- like Introductions, Discussion sections make reference to the work of others, but this work is foregrounded in the Introduction and backgrounded in the Discussion section.

To help writers explore the stated aims, the unit focuses on (but the Commentary does not necessarily discuss) these topics.

Why research paper (RP) introductions take the shape they do

The create-a-research-space (CARS) model for Introductions

Claiming centrality in RP Introductions

Imposing order on the Literature Review

Citation and tense

Establishing a niche

Alternative types of Move 2

Negative elements in Move 2

Completing an Introduction

Ways of extending Move 3

Aims for Discussion sections

Variation in Discussion sections

The structure of Discussion sections

Levels of generalization: Discussions, Results, and abstracts compared

Expressing limitations in Discussion sections

Requirements for good titles

Analyzing titles across disciplines

Use of colons in titles

Types of abstracts

Tenses and personal pronouns in abstracts

Features of acknowledgments

Opportunities to gain a better understanding of the main topics are provided in these Language Focus sections (although not all are discussed here) and tasks.

Language Focus Sections

Citation and tense

Negative openings in Move 2

Purpose statements and tense

Levels of generalization

Expressions of limitation

Tasks

Task One	Analyzing an Introduction
Task Two	Dividing an Introduction into moves
Task Three	Discussing the real and apparent motives for research
Task Four	Completing Move 3 of an Introduction
Task Five	Reconstructing a short Introduction
Task Six	Examining Introductions to research articles
Task Seven	Examining phrases for claiming centrality

Task Eight	Examining citations in research articles
Task Nine	Organizing a literature review
Task Ten	Examining tense choice in citations
Task Eleven	Writing or revising a literature review
Task Twelve	Classifying types of Move 2
Task Thirteen	Judging the negativity of verbs and adjectives
Task Fourteen	Reviewing critiques in two Introductions
Task Fifteen	Sorting out purposive and descriptive Move 3s
Task Sixteen	Revising a Move 3, updating Google Scholar results, and commenting on the results
Task Seventeen	Examining research articles for extended Move 3s
Task Eighteen	Revising a textual outline
Task Nineteen	Analyzing a complete Introduction
Task Twenty	Writing or rewriting an Introduction
Task Twenty-One	Reflecting on the concluding sections of a research paper
Task Twenty-Two	Analyzing the final section of a research paper
Task Twenty-Three	Identifying Discussion section moves
Task Twenty-Four	Re-assembling a Discussion section
Task Twenty-Five	Writing a limitations subsection
Task Twenty-Six	Analyzing questions about a Discussion section
Task Twenty-Seven	Writing or rewriting a Discussion section
Task Twenty-Eight	Analyzing the structure of titles
Task Twenty-Nine	Analyzing titles in a specific area
Task Thirty	Discussing the creation of a title
Task Thirty-One	Responding to an abstract
Task Thirty-Two	Drafting an abstract for a research project
Task Thirty-Three	Writing acknowledgments for a paper

General Notes

a. Unit Eight is one of the longer units and, overall, deals with some of the more difficult material. This is partly because Introduction and Discussion sections are more concerned with evaluation than description; partly because they require the writer to discuss the wider context; and partly because writing the beginning and final paragraphs of an extended academic paper usually turns out to be more troublesome than writing those in between.

b. As in other units, the illustrative texts serve two main purposes in Unit Eight. They focus attention on matters of language, organization, and rhetoric, but, just as importantly, they are designed to help authors reflect on *their own* strategic objectives as they plan, draft, and revise their own academic and research texts. The disciplinary range of these illustrative texts is wide, and the number of associated tasks is quite large; as a result, instructors are once again advised to be selective. Despite the abundance of material, instructors may well want to introduce parallel and/or alternative texts if they are teaching classes with a narrower disciplinary focus than the broad EAP orientation for which this textbook has been designed.

c. Users familiar with the second edition of *Academic Writing for Graduate Students* will find that our original mini-RP on sentence connectors has now disappeared from the Appendix. On the other hand, we have retained much of the original CARS model for the structuring of Introductions. While we are aware of the large volume of studies published since 2004 on this topic, we have decided to largely retain the simple picture of the original. We hold to the view that simple models are more pedagogically useful; they offer a clearer vision of what most researchers do, so that well-justified deviations from that vision become better motivated. We always remind students that the CARS model is a starting point and that they need to determine how well it matches the Introductions in their fields.

d. The subsection on abstracts has been further reduced. Additional material on this topic can be found in *Abstracts and the Writing of Abstracts* (Swales and Feak, 2009, University of Michigan Press). Although we devote less space to abstracts, this in no way suggests that abstracts are less important than other parts of a paper. In fact, research shows that the better the abstract, the more likely the paper will be favorably received.

Detailed Commentary

TASK ONE: Analyzing an Introduction

This is a good first task because students can see whether and/or how this Introduction resembles those in their fields. In addition, the text offers students an opportunity to talk about criticism in the form of feedback on their papers.

Sentences 1–2	The value of criticism
Sentences 3–13	Positive and negative responses to criticism; differences between ingroup and outgroup criticism
Sentences 14–15	Attributing motives to criticism and causes to behaviors
Sentence 16	Lack of research on critics' attributions
Sentence 17	Present research designed to explore how attribution might affect response

Be sure to point out how the authors of the Introduction carefully establish the context for their research before announcing their primary aim.

Creating a Research Space

Figure 16 should be clear, but it is important to remind students that *move* is a rhetorical, not a linguistic, term. As a result, a move might be expressed by a phrase (if rarely), by one or more sentences, or by one or more paragraphs. In the case of the passage in Task One, the first 15 sentences are devoted to Move 1, while Sentences 16 and 17 realize Move 2 and Move 3, respectively. Students should be reassured that there does not need to be a balance in the number of words or sentences used to accomplish a move. If necessary, make a comparison to soccer/football moves and how a player makes a move to score a goal.

TASK TWO: Dividing an Introduction into moves

1. Move 1: Sentences 1–7

   Move 2: Sentences 8–10

   Move 3: Sentences 11–12
2. The obvious paragraph break is between Sentences 10 and 11. If a further break seems necessary, one option would be to start a new paragraph with Sentence 5.
3. The opening sentence is clearly a Move 1a; Sentence 2 starts the literature review and so marks the beginning of Move 1b.
4. This looks like an "indicating a gap" Move 2. In most fields, these gap-indications are the most common type of Move 2s.
5. This Move 3 is one that states the nature of the present research, rather than its purpose.
6. In our opinion, these expressions serve to establish the research territory.
   - *one of the greatest*
   - *over the last thirty years*
   - *many studies*
   - *major exhibition devoted entirely to his art*
   - *his best-known pictures*
   - *compositional brilliance/deep insight into character*

   As you can see, John worked hard to establish that Thomas Eakins is a very important painter.
7. There are two citations in the text and seven in the footnotes. Discuss with students if it is typical to use footnotes and the reasons for using them.
8. The first three footnotes seem well motivated. In the humanities, the long list of works in Footnote 1 would seem clunky or heavy if placed in the main text. Those knowledgeable about Art History know that realism is a much discussed term; John acknowledges this in Footnote 2, but sensibly avoids dealing with it. Since John is not attempting a small piece of new art history, Footnote 3 thus seems appropriate. In contrast, if John were to rewrite this passage, he would then put Footnote 4 into the main text since it seems relevant to the story he wants to tell.

TASK THREE: Discussing the real and apparent motives for research

1. and 2. We deal with the first two questions together. We do not think that the true story really belongs in either the Introduction or the Discussion. Doubtless, John's ability to correctly identify the various bird species in the pictures will come out in the main body of the paper.

3. Most published authors do have stories to tell. Perhaps the research did not come about by accident, but many of our students report that they were simply instructed to do something. There is nothing very interesting about that and so they frequently need to recreate a reality in the Introduction.
4. Our students find it difficult to answer whether sequencing is important. We think it is reasonable to make changes as long as altering the chronology is not deliberately misleading. Authors are entitled to retell events in such a way as to make their papers more rhetorically effective.

TASK FOUR: Completing Move 3 of an Introduction

Here is a possible completion.

> In this paper, a set of proposals is put forward for developing improved bridge inspection and improved maintenance procedures. In part, these proposals are based on new techniques for electronic remote monitoring of RC structures.

TASK FIVE: Reconstructing a short Introduction

Here is the original order: j, i, c, f, a, d, h, k, e, g, b

However, many of our students opt to reverse i and c. This is because c seems to be an expansion of j, while i introduces a new element. We ask our students whether the original order would have been smoother if the first two sentences had been combined, as in *America's population is growing older, and the growing size of America's population of seniors has drawn attention to their economic and social well-being.*

TASK SIX: Examining Introductions to research articles

Of course, answers will vary. Students should anticipate, however, that in longer introductions, moves will be repeated. A simple example could be this kind of order of moves: 1-2-1-2-3. In such a case, authors introduce a first body of work on one topic and indicate a gap, and then deal in the same way with a second topic before announcing their own research intentions.

TASK SEVEN: Examining phrases for claiming centrality

These *centrality* phrases are drawn from Google Scholar as a whole, so not all will have come from Move 1 in Introductions; however, we strongly suspect that your students will find a strong minority (note our hedge here) of them in that location.

Instructors may well want to ask pairs or small groups to prepare complete sentences for phrases such as *has been extensively studied.* In our experience, they can produce excellent completions with 5–10 minutes of preparation.

At a workshop in Beijing, John's participants the next day came back with these Google Scholar results.

It has long been known that	109,000
Research has been conducted	195,000
. . . is a hot topic.	261,000
Much research has been done	23,000

TASK EIGHT: Examining citations in research articles

This is a quick task. The point here is to notice the distribution of citations in Introductions. Are they still concentrated in one or more sections expressing Move 1b, or are they now more generally distributed, as Samraj (2005) claims?

Motives for Citing

Those familiar with the second edition of *Academic Writing for Graduate Students* will note that we have now shifted the controversies about citing to the narrower topic of self-citing (citing your own work). We believe that this shift follows recent developments in the field of Information Science. Even so, you may still want to discuss those controversies, so we provide them here.

Which do you think contribute most to our understanding of why citations are used in academic writing? Are any other theories possible?

1. This theory is widely proposed in manuals and standard practice guides.

    Citations are used to recognize and acknowledge the intellectual property rights of authors. They are a matter of ethics and a defense against plagiarism.

2. This theory also has many supporters, especially in well-established fields like the sciences.

    Citations are used to show respect to previous scholars. They recognize the history of the field by acknowledging previous achievements.

    The remaining theories have been proposed by individual authors.

3. Ravetz 1971:

    Citations operate as a kind of mutual reward system. Rather than pay other authors money for their contributions, writers "pay" them in citations.

4. Gilbert 1977:

    Citations are tools of persuasion; writers use citations to give their statements greater authority.

5. Bavelas 1978:

   Citations are used to supply evidence that the author qualifies as a member of the chosen scholarly community; citations are used to demonstrate familiarity with the field.

6. Swales 1990:

   Citations are used to create a research space for the citing author. By describing what has been done, citations point the way to what has not been done and so prepare a space for new research.

TASK NINE: Organizing a literature review

Unlike the immediately preceding tasks, Task Nine is somewhat complicated and fairly demanding. In fact, this is inevitable given the fact that organizing a literature review is itself complicated and demanding. As always here, we think it is important to stress that there are several credible ways of completing this task. And we would also like to point out that some coherent plans may be more difficult to write up than others. Consider presenting one of these answers as an example if students struggle.

Alternatives to the specific-general version that we provided in the main text include these variations from our students and workshop participants.

A. I will move from the quantitative studies to those that deal with interpretations and explanations. I will finish with Hyland's three-part motivation for self-citing because this will be the springboard for my own (imaginary) study. In that study, I will investigate which of these three motivations is the most important for the group of researchers from my field whose citation practices I will study.

B. I am planning to structure these eight papers in a deductive manner. So, I will start with Hyland's three-part hypothesis. Then I will deal with White's finding that supports Hyland's first motivation. Then I will deal with the percentage evidence (#1, #2, #7), finishing with Phelan (1999), and the issue raised about great disciplinary variation. This next leads me to Fowler & Aksnes (and Medoff) and the question whether excessive self-citers need to be punished in some way.

> Finally, for my possible study, I could say I will interview some academics about the need for penalties.

We think it is useful to provide these alternatives to students to illustrate the variety of ways to organize.

Task Ten: Examining tense choice in citations

Although answers will vary, we provide an example. We took three randomly chosen articles from a recent issue of *Discourse Studies.* We ignored citations that contained directly quoted material or citations in the notes. This is what we found.

Pattern I: 4

Pattern II: 6

Pattern III: 30

Other: 12

As expected, Pattern III was the most common. Nearly all of those in the category of *other* were single researchers followed by the present tense, as in these examples:

[Author] (1995) argues . . .

The research by [Author] (2007) provides . . .

According to [Author], . . . it has . . .

[Author] (2003) reveals that . . .

TASK ELEVEN: Writing or revising a literature review

Here is one possible revision of the paragraph about the first scientific articles.

> The first scientific journals were established in the 1660s in both London and Paris (Banks, 2011). Obviously, the first scientific articles had no direct models to build on, and several scholars have discussed possible influences. Ard (1983) and Valle (2000) have suggested that these first articles developed from the scholarly letters that scientists were accustomed to sending to each other. Other suggestions include the influence of contemporary newspapers (Sunderland, 1986), the philosophic essay (Paradis, 1987), the scientific treatises written by Robert Boyle (Shapin, 1984), and inventories of natural products (Gross, 1990; 2008). On the other hand, Bazerman (1988; 1997) argued that discussions among the scientists themselves made their own distinct contribution to the emerging shape of the scientific article.

TASK TWELVE: Classifying types of Move 2

We think the appropriate answers are:

1. C
2. A
3. B
4. C
5. D
6. B
7. A
8. D

TASK THIRTEEN: Judging the negativity of verbs and adjectives

We believe that these verbs are likely to be read as strongly negative.

b. disregarded

c. failed to consider

d. ignored

f. misinterpreted

i. overlooked

Similarly, we think that these adjectives will likely be seen by readers as strongly negative.

d. misguided

f. unconvincing

g. unsatisfactory

We also note that in certain contexts, some of the other verbs and adjectives will also be interpreted negatively. In the end, you can see that these are difficult to categorize without more context.

TASK FOURTEEN: Reviewing critiques in two Introductions

1. In this passage, we can find three critique expressions:

   However, the practical implementation . . . has met with obstacles. . . . (Sentence 4)

   Oceanic waves . . . cause devices to fail. . . . (Sentence 5)

   . . . , it is still not clear to what extent the approach is practically useful. . . . (Sentence 11)

2. We think the expressions are only mildly negative. The theory is good, but there are practical problems.
3. To signal the end of Move 1, the authors use *However* in the first paragraph; to mark the start of Move 2, they use *it is still not clear.* The preceding *Although* clause is also an indication of what is to come.
4. We might anticipate that the authors will explain how soft capacitors can actually be shown to be a practical development for harvesting wave energy.

Now for the second passage.

_A_ 1. We think that the first reference does indeed establish the seriousness of the problem.

_A_ 2. We also concur that the text indicates a continuing tradition. As for the four possible reasons for the lack of a citation, we opt for the third—durability monitoring is the topic of the paper.

_A_ 3. We think that *can* is best interpreted as meaning that both kinds of monitoring can get the job done.

TASK FIFTEEN: Sorting out purposive and descriptive Move 3s

This is a quick and simple task. For 3 to 10 we suggest these answers.

3. D
4. P
5. P
6. D
7. D
8. D
9. P
10. P

Language Focus: Purpose Statements and Tense

We believe that the explanation of these tense usages is clear and useful. However, a small complication arises with the use of the word *study*. The choice of this text-referring expression is common in Medicine and Psychology, among other fields, and is usually taken to refer to the type of investigation, but it can be used to refer to the type of text. Hence, both options may be possible here. (On Google Scholar, the *was* alternative is somewhat more common, but this is probably because *The purpose of this study was* can be used in Discussions and Conclusions as part of the summing up.)

TASK SIXTEEN: Revising a Move 3, updating Google Scholar results, and commenting on the results

Answers will vary, but here, for your interest, is the original version of the Move 3 from the bridges Introduction.

> The objectives of this article are twofold: (i) to present a probabilistic mechanistic approach based on durability monitoring to assess the life cycle performance of concrete bridge decks in corrosive environments; and (ii) to demonstrate the effective use of selected data obtained from field monitoring to update and improve the accuracy of mechanistic service life prediction models. A case study of the monitoring of a concrete highway bridge barrier wall is presented and used to illustrate the approach and its benefits.

Here are some conclusions.

Tense choices other than *is* and *was* (such as *has been* or *will be*) do occur but are rare. With *paper* as the second noun, the present tense is about five times more common than the past. Further, the use of *this* is about five times more common than the use of *the present*, but *the present* is clearly a viable alternative.

TASK SEVENTEEN: Examining research articles for extended Move 3s

Answers will vary. Of the three articles from *Discourse Studies,* two have no extended Move 3s, but one has a closing paragraph that begins, *The organization of this article is as follows* (Move 3e).

TASK EIGHTEEN: Revising a textual outline

The revision of this text could look more like the Pierre Martin text that preceded it. However, you may want to discuss whether any changes are needed at all. Some of our students have made the convincing argument that the overview with less textual variety is actually easier to read and therefore a better choice.

TASK NINETEEN: Analyzing a complete introduction

Here are some possible responses.

1. We think the research territory is established by these expressions.

   has increased remarkably

   During the 1990s

   numerous occasions

   endemic in many scientific disciplines and in most countries

2. *Clandestine* means "secretly."

3. These are the linking expressions.

   In fact. This prepares the way for the upcoming and dramatic quotation.

   However. A classic signal for the shift to Move 2.

   In addition. A further justification for the employment of biostatisticians.

   Discuss with your students whether they might want to add *During the 1990s* as an indication of the prevalence of the problem.

4. The gap is indicated in Sentence 4, which establishes the difficulty; Sentence 5 explains the lack of knowledge, and refers, in general terms, to possible consequences.

5. This short paragraph consisting of Sentences 6 to 8 is inserted because of the *by* statement toward the end of Sentence 9; it is also there because of the second half of the title. According to the authors, these biostatisticians will be in the best position to detect scientific fraud.

TASK TWENTY: Writing or rewriting an Introduction

Obviously, answers will vary. However, instructors, tutors, and colleagues should be ready to provide feedback.

Discussion Sections

Although a number of studies of Discussions sections have been published over the past decade, giving concrete advice as to what to include or not include is still not an easy matter. In Discussion sections, unlike Introductions, much more depends on the exact nature of the results found, particularly in terms of whether the results are expected or unexpected or whether they confirm or disconfirm any hypotheses. But we have done our best!

TASK TWENTY-ONE: Reflecting on the concluding sections of a research paper

1. Other labels for the final section that we have noticed in our own field and that students have suggested include *Conclusion, Final Remarks,* and *Final Considerations.*
2. There are obviously no black-and-white responses regarding the statements about Discussions sections. Much will depend on the type of study, the kinds of results, and the expectations of particular disciplinary areas. Even so, here are our thoughts:

   D a. Many academics will reject this, particularly in areas such as the life sciences. In Research Notes and Letters they can indeed be short, but in full journal articles there is a general expectation that authors will reflect intelligently on what they found and relate those findings to the work of others and (often) to the real world.

   D b. Length is not necessarily an indication of quality, but a Discussion section that is too short may fail to reveal what is truly relevant and how the work relates to other studies in the field.

   D c. The Discussion section may be an opportunity to promote one's own research, particularly if the author shows how the work is superior to previous work or advances the knowledge of the field. However, this can only occur if the findings are good. It is also important to keep in mind that in the Introduction, the work of others is foregrounded and it is backgrounded in the Discussion section. For the Discussion section, the new work presented in the paper should be foregrounded.

D d. We doubt that conclusions are unnecessary. Although readers may scrutinize tables, figures, and other data, they may be interested in seeing how the authors interpret them. In some cases, readers might even pay closer attention to the Discussion section than to the Results section.

A e. Yes, there is a lot of variation in Discussion sections and so the point seems to be generally correct.

A f. We also think it makes sense not to worry about length. What is important here is highlighting what is new, better, or interesting about the findings. Authors need to take a step back and see how their work fits in the existing body of research.

Following the quotation from Weissberg and Buker (1990), we see nothing contradictory in expecting, for example, that Discussion sections will be both more theoretical and more connected to the real world.

TASK TWENTY-TWO: Analyzing the final section of a research paper

1. In our view, the first bulleted section contains the major claim.
2. If there were another section, perhaps it could include something specific about the case study on a highway bridge near Montreal.
3. We think the opening paragraph fulfills both purposes. It serves as an abstract-like summary and as an orientation for the recommendations to come.
4. We have a marginal preference for b as the final sentence. In the original, the use of *suggested* seems odd in this context.
5. The first *given* basically means *because of*, while the second in Sentence 10 means *any defined* network of bridges.
6. One could reasonably have expected the second sentence to say *This article has proposed* . . . . The present perfect suggests that the story told in this paper is not past but still has living relevance. Ask your students which they prefer.

7. Be sure to discuss the use of these modifiers. The participles can be found in these sentences:

   Sentence 6: *proposed*

   Sentence 7: *proposed*

   Sentence 8: *damaged, simplified, proposed*

8. The closing section does not strike us as being overly promotional; rather, it explains how the authors' methods can be applied in the real world of bridge maintenance.

TASK TWENTY-THREE: Identifying Discussion section moves

Answers will vary.

TASK TWENTY-FOUR: Re-assembling a Discussion section

This is the order we expect: c, e, a, d, f, b.

Language Focus: Expressions of Limitations

Ask students to look back at the sentences from the paper in Task Twenty-Four to also see how the authors express their tentative conclusions and discuss the difficulties and dangers of extrapolating their findings to other contexts. We suspect that increasing scrutiny by journal reviewers regarding author claims is partly responsible for increased use of qualified conclusions and implications.

TASK TWENTY-FIVE: Writing a limitations subsection

Here is a possible response for the bridges text.

> This study has been located in the Canadian province of Quebec, which is known for cold winters and heavy snowfall. These meteorological conditions will rarely turn out to be identical to those elsewhere, such as Scandinavia and Russia. Further, the amount of chlorides used to keep bridges ice-free will also vary according to a range of factors, including the finances available and the level of environmental concern. For these reasons, our proposed approach may, in certain circumstances, need modification.

TASK TWENTY-SIX: Analyzing questions about a Discussion section

This is a long task, but we think it is important to show a complete Discussion section so that students can see all of the different facets of this part of an RP.

Answers to questions on 6.1

1. The opening sentence indicates what the researchers generally found and points to the type of study. Although the authors do not review what they did in detail, it is not unusual for Discussion sections to do so. Even so, we do not see any need for the authors to have given an overview of the study.
2. Sentence 2 is important because it places the study within a wide research context. The authors could also have used language such as *consistent with previous work* or *comparable to earlier studies.* The new work here could also have been compared with the old in terms population size or perhaps the location and the ages of the children. If the findings had been different from those of other studies, some further explanation would be needed. To introduce differences the authors could have used language such as *in contrast to previous work.*
3. These sentences focus on the difficulties of getting the children to talk openly about their pain experiences.
4. Although the past is the most common tense used to report what was done and what the children reported, the present tense is used for comparisons to other studies (e.g., Sentence 2) and a warning (Sentence 5). *May* occurs in Sentences 4, 10, and 13 to indicate cautious conclusions and *should* is used in making recommendations (Sentence 2 and 14). There is nothing out of the ordinary here, in our opinion.
5. Four out of the 14 sentences refer to previous literature. This seems about right to us, especially since this is not a major area of research compared to other areas of Medicine.
6. The claims appear to have been made carefully and seem acceptable.
7. Sentences 12 and 13 offer clarifications.
8. It may be that Alex and Ritchie (1992) found somewhat different results.
9. Sentence 14 is important. It lays out the implications of the work for nursing practice.

Answers to questions on 6.2

10. This section is remarkable in terms of the honesty with which the authors discuss a series of problems that might have affected the study outcomes.

11. The authors are meticulous is describing difficulties that arose. Since we are not in Nursing, it is difficult for us to assess how serious the concerns are. The authors, however, as insiders, may be right to be concerned.
12. Not all of these are really defects. Perhaps *challenges* or *difficulties* would be better choices.
13. The order is good news-bad news. Sentence 15 opens with a positive summary and then 16 comes in with some caveats. The semi-colon balances the two points.
14. Sentence 20 raises the possibility that a different question format might have led to different results, and this is definitely something worth thinking about.
15. Sentence 13 is an interpretation of the results, while Sentence 17 is speculating what might have occurred. Since Sentence 17 is looking backward at a past possibility of what the children did (and cannot be confirmed with the available results), the correct form of the verb is *may have tried.*
16. It is not entirely clear to us whether they are describing what they did or what they might have done. But if the authors are not talking about what they did, we could reasonably expect them to use *might* and not *may.*

Answers to questions on 6.3

17. In our view this section is not discussing anything of much interest. It does not add to (and may in fact detract from) this carefully written Discussion section.
18. The moves in this Discussion section are the following.

    General finding
    Agreement with previous studies
    Main findings
    Explanation of findings
    Discussion of methodology, limitations and strategies
    Recommendations for future work

TASK TWENTY-SEVEN: Writing or rewriting a Discussion section

Answers will vary.

Unfinished Business

We believe the lengthy opening discussion on titles does not need any further commentary.

TASK TWENTY-EIGHT: Analyzing the structure of titles

Title	Number of Words	Any Verbs?*	Punctuation	Field
1.	4	does . . . pay	question mark	information science
2.	21	no	question mark	history
3.	7	no	none	ecology
4.	12	increased/scavenging	none	electrical engineering
5.	6	growing	dash	public health/medicine
6.	11	no	none	engineering
7.	12	is, addresses	question mark	linguistics
8.	11	no	none	economics
9.	9	increasing	none	psychology
10.	14	keeping up	colon	marketing

* Note we counted both finite and non-finite verbs.

TASK TWENTY-NINE: Analyzing titles in a specific area

Answers will vary, but consider asking your students to compare their results with those obtained for the previous task.

TASK THIRTY: Discussing the creation of a title

There will be variety, but we thought we would share a brief description of how we came to the title of one of our book chapters.

A few years ago, Chris and John were asked to write a chapter for an edited volume on academic English. We decided to base it on our development at that time of the small volume that eventually became *Abstracts and the Writing of Abstracts* (2009). We wanted a title that showed (a) that the material was based on research into the structure of abstracts and (b) that was concerned with pedagogy. Our first efforts, as best we recollect, were preliminary titles like "Researching and Teaching Abstracts" or "Designing Materials Based on Abstracts Research."

However, we eventually arrived at this.

From Text to Task: Putting Research on Abstracts to Work

As you can see, this title has a certain "movement," helped indeed by the colon and the following *–ing* verb. We also liked "From Text to Task"; it captured how we worked, and it was nice to have two single-syllable nouns that started with the same letter. In fact, without too much effort, instances of alliteration can be found in titles in the humanities and social sciences.

TASK THIRTY-ONE: Responding to an abstract

1. Yes, indeed this is an RP summary-type abstract. Here is our analysis in terms of IMRD.

   I: Sentence 1 and Sentence 2

   M: Sentence 3 and Sentence 4

   R: Sentence 5 and Sentence 6

   D: Sentence 7 and Sentence 8
2. The authors consistently use the present tense in the abstract. We believe that this choice is increasingly more common.
3. Answers will vary. In our own field, we tend to find first-person pronouns in qualitative studies but less in quantitative ones.
4. We see no problem with not restating 692,455 and instead saying *more than half a million.* This makes its macro point very well.
5. The only thing that strikes us as promotional is the closing statement *These results . . . represent new information . . . .* This seems to us to be a bit bold.
6. We presume the number of citations is related to the large size of the study and because the results can be used to question many of the current practices employed to evaluate academics.

TASK THIRTY-TWO: Drafting an abstract for a research project

Answers will vary.

TASK THIRTY-THREE: Writing acknowledgments for a paper

Answers will vary.

Appendix One

The Grammar of Definitions

Main Aims

The important take-home messages of Appendix One are that

- definitions are characterized by certain grammatical forms.
- restrictive relative clauses are common in definitions.
- restrictive relative clauses can be reduced in terms of grammar under certain conditions.

To help writers explore the stated aims, the unit focuses on (but the Commentary does not necessarily discuss) these topics.

Articles in definitions

Relative clauses in definitions

Opportunities to gain a better understanding of the main topics are provided in these Language Focus sections (although not all are discussed here) and tasks.

Tasks

Task One	Inserting articles (*a, an,* or *the*)
Task Two	Reducing restrictive relative clauses

General Notes

a. This material was part of Unit Two of the second edition of *Academic Writing for Graduate Students.* Although some students may benefit from a close look at articles and relative clauses as they relate to definitions, many of our students were either confident in this aspect of definitions or were capable of reviewing it on their own. Since we often did not go through this section in our classes, we opted to move it to an appendix. In doing so, the material is still available for those who need it, and the pace of the unit is improved.

b. To reinforce the material here, ask your students to look for relative clauses in definitions in publications in their own fields.

Detailed Commentary

TASK ONE: Inserting articles (*a, an,* or *the*)

1. Helium is **a** gas with **an** atomic number of 2.
2. El Niño is **a** disruption of **the** ocean-atmosphere system in **the** tropical Pacific, having important consequences for **the** weather worldwide.
3. **A** white dwarf is **a** star that is unusually faint, given its extreme temperature.
4. Rice is **a** cereal grain that usually requires **a** subtropical climate and **an** abundance of moisture for growth.
5. Transduction is **a** technique in which genes are inserted into **a** host cell by means of viral infection.
6. In seismology, liquefaction is **a** phenomenon in which **the** soil behaves much like **a** liquid during **an** earthquake.
7. **A** disability is **a** physical or mental impairment that substantially limits one or more major life activities such as seeing, hearing, speaking, walking, breathing, performing manual tasks, learning, caring for oneself, and working.
8. **A** hydrothermal vent is **a** crack in **the** ocean floor that discharges hot (350–400°C), chemically enriched fluids and provides **a** habitat for many creatures that are not found anywhere else in **the** ocean.

TASK TWO: Reducing restrictive relative clauses

1. . . . metal that is often used . . . → . . . metal often used . . .
2. Should not be reduced (A relative clause with a modal cannot be reduced because the modal meaning will be lost.)
3. . . . device that is capable of . . . → . . . device capable of . . .
4. . . . roof which is on top of . . . → . . . roof on top of . . .

5. . . . precipitation which results from . . . → . . . precipitation resulting from . . .
6. Cannot be reduced
7. . . . flute that is pitched an octave higher . . . → . . . flute pitched an octave higher . . .
8. a process that involves the selective transport . . . → . . . a process involving the selective transport
9. Cannot be reduced
10. . . . a celestial body which has approximately the same mass . . . → a celestial body with approximately the same mass . . .

Numbers 6 and 9 are tricky because it is important to look at what is going on in the whole sentence. Each of these presents or describes a function of the subject. There is a process not a constant state. *Cause* and *speed up* are related to the process not a final state.

Appendix Two

Articles in Academic Writing

Main Aims

The important take-home messages of Appendix Two are that

- some guidelines are available to help students with article use.
- focused practice can help students make good choices.
- it is important to distinguish between count and non-count nouns.

To help writers explore the stated aims the unit focuses on (but the Commentary does not necessarily discuss) these topics.

Countability

The indefinite article and Ø

The definite article

Generics, specifics, and generalizations

Tasks

Task One	Marking nouns as either count or non-count
Task Two	Inserting articles
Task Three	Inserting articles

General Notes

a. *It goes without saying that article use is a problem for many non-native* speakers of English. We have not provided an exhaustive discussion of articles in Appendix Two, but rather focused on some key points that can be easily managed within the context of a writing course.

b. We hope that the explanations and exercises we have provided in the text are reasonably straightforward. To be sure, there is considerable room for supplementation. For example, it might be helpful to bring in some material on article use and place names.

c. Since the explanations in the text are reasonably complete (we hope), we have opted to simply provide answers for the tasks.

Detailed Commentary

TASK ONE: Marking nouns as count or non-count

behavior	C	money	U
complication	C	problem	C
crisis	C	progress	U
device	C	proposal	C
discrepancy	C	research	U
energy	U	reception	C
equipment	U	research project	C

TASK TWO: Inserting articles

This first exercise may be a little tricky. *Writing, reading, copying, thinking, revising,* and *speaking* do not take an article because the text refers to all instances of these activities, not a specific instance. The rule of previous or second mention should not be applied. In view of this, instructors may want to consider doing Task Three before Task Two.

ø Writing is **a** complex sociocognitive process involving the construction of **ø** recorded messages on **ø** paper or some other material and, more recently, on **a** computer screen. **The** skills needed to write range from making **ø** appropriate graphic marks, through utilizing **the** resources of **a** chosen language, to anticipating **the** reactions of **the** intended readers. **ø** Writing as composing needs to be distinguished from **the** simpler task of **ø** copying. **ø** Writing is slower than **the** other skills of **ø** listening, **ø** reading, and **ø** speaking. It is further slowed by **the** processes of **ø** thinking, **ø** rereading what has been written, and **ø** revising. **ø** writing is not **a** natural ability like **ø** speaking but has to be acquired through **ø** years of **ø** training or **ø** schooling. Although **ø** writing systems have been in existence for about 5,000 years, even today, only **a** minority of **the** world's population knows how to write.

TASK THREE: Inserting articles

Much has been learned about **the** brain in **the** last 150 years. **The** brain, **the** most complicated organ of **the** body, contains **ø** ten billion nerve cells and is divided into **ø** two cerebral hemispheres—one on **the** right and one on **the** left. Interestingly, **the** left hemisphere controls **ø** movements on **the** right side of **the** body, while **the** right hemisphere controls **ø** movements on **the** left.

ø Researchers also know that **ø** specific abilities and behaviors are localized; in **ø** other words, they are controlled by **ø** specific areas of **the** brain. **ø** Language, it seems, is highly localized in **the** left hemisphere. In **the** 1860s, Dr. Paul Broca discovered that **ø** damage to **the** front left part of **the** brain resulted in **ø** telegraphic speech similar to that of young children. Soon thereafter, Karl Wernicke found that **ø** damage to **the** back left part of **the** brain resulted in **ø** speech with **ø** little semantic meaning. These two regions in **the** brain are now referred to as **ø** Broca's area and **ø** Wernicke's area.

Although there is some debate surrounding **the** specialization of **the** brain, **ø** researchers generally agree that **ø** speech is controlled by **the** left side. There is no debate that in **the** great majority of cases, **ø** injuries to **the** left side nearly always have an impact on **ø** speech.

Final Observations

We have now completed the commentaries on the eight units and the first two appendices of the third edition of *Academic Writing for Graduate Students.* We hope that you have found the detailed commentaries collegial and useful, whether you are an instructor for a writing course on academic English, whether you are a tutor, or whether you are either a student or a scholar using *AWG* as a reference manual or self-study guide. If you are familiar with the second edition, you will have noticed that both the main text and the Commentary are considerably longer. In the case of the Commentary, this increased length has arisen because we have extended the amount of explanatory material and the number of teaching suggestions, particularly in the first four units.

Like the second edition, this book remains a work in progress, especially as there are prospects for a fourth edition before the end of this decade. As a result, your comments and suggestions for improvement on either the textbook or the Commentary are always welcome. We can be most easily contacted at cfeak@umich.edu or jmswales@umich.edu.

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The Commentary for the third edition of this successful guide to writing for graduate—and undergraduate—students has been revised and expanded in many ways to provide more support for instructors; this includes tasks for Units Two and Four that supplement the main text. However, the collegial tone established in previous Commentaries between Swales & Feak and instructors has been retained.

This volume contains commentaries on each of the eight units plus the two appendixes. The format for each Commentary unit includes

- a summary of the main points of the unit along with a list of topics covered.
- a synopsis of activities, divided into Language Focus sections and list of tasks.
- some general notes designed to capture the character of the unit, to indicate alternative activities, or to anticipate problems that may arise.
- detailed commentary and discussion of individual tasks, including model or sample answers where possible.

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