Be prepared to discuss your findings in class. Bring the passage from your field with you.

Task Ten

Produce a Results section from your own work (or part of one if your work is extensive). If your results are not yet complete, create some findings on your own. Alternatively, you may complete the final paragraph of the Results section for the sentence connector mini-RP.

Unit Eight
Constructing a Research Paper II

In this final unit, we deal with the remaining parts of a research paper in the following order:

Introduction sections
Discussion sections
Acknowledgments
Titles
Abstracts

Introduction Sections

It is widely recognized that writing introductions is slow, difficult, and troublesome for both native speakers as well as nonnative speakers. A very long time ago, the Greek philosopher Plato remarked, "The beginning is half of the whole." Indeed, eventually producing a good Introduction section always seems like a battle hard won.

Writing the Introduction of an RP is particularly troublesome. In some kinds of texts, such as term papers or case reports, it is possible to start immediately with a topic or thesis statement

The purpose of this paper is to . . .
This paper describes and analyzes . . .
My aim in this paper is to . . .
In this paper, we report on . . .

However, this kind of opening is rare and unusual in an RP (probably under 10% of published RPs start in this way). In fact, statements like those above typically come at or near the end of an RP Introduction. Why is this? And what comes before?

We believe that the answer to these questions lies in two interconnected parts. The first half of the answer lies in the need to appeal to the readership. In a term paper assignment, the reader is set. (In-

deed the reader is *required* to read and evaluate your paper!) On the other hand, a paper that is designed for the external world—if only in theory—needs to attract an audience. We can illustrate this by taking the case of one of those few published papers that actually does start by describing the present research. Here is the opening sentence of the Introduction:

> This study of the writing of 22 first graders and 13 third graders is concerned with how children learn the rules of punctuation.
> (Cordeiro 1988, 62)

The Cordeiro paper, "Children's Punctuation: An Analysis of Errors in Period Placement," was published in a journal called *Research in the Teaching of English*. As the title of this journal indicates, the journal covers several different research areas. Doubtless, the very specific opening to the Cordeiro paper will appeal immediately to those researchers actively involved in the topic. On the other hand, it is likely at the same time to "turn off" many other readers of the journal—readers who have no interest in this precise research area. We believe that we can best explain the second half of the answer by using a metaphor—that of *competition* as it is used in ecology. Just as plants compete for light and space, so writers of RPs compete for acceptance and recognition. In order to obtain this acceptance and recognition, most writers use an organizational pattern that contains the following three "moves" in table 21, in the order given.

Creating a Research Space

In summary, then, the Introduction sections of RPs typically follow the pattern in table 21 in response to two kinds of competition: competition for research space and competition for readers. We can call this rhetorical pattern the Create-a-Research-Space (or CARS) model.

Task One

Read our draft Introduction to our mini-RP and carry out the tasks that follow.

TABLE 21.   Moves in Research Paper Introductions

Move 1	Establishing a research territory
	a. by showing that the general research area is important, central, interesting, problematic, or relevant in some way. (optional)
	b. by introducing and reviewing items of previous research in the area. (obligatory)
Move 2	Establishing a niche[a]
	a. by indicating a gap in the previous research, raising a question about it, or extending previous knowledge in some way. (obligatory)
Move 3	Occupying the niche
	a. by outlining purposes or stating the nature of the present research. (obligatory)
	b. by announcing principal findings. (optional)
	c. by indicating the structure of the RP. (optional)

[a] In ecology, a niche is a particular microenvironment where a particular organism can thrive. In our case, a niche is a context where a particular piece of research makes particularly good sense.

The Position of Sentence Connectors in Academic English
C. B. Feak and J. M. Swales

Introduction

[1]Many commentators have noted that sentence connectors (e.g., *however*) are an important and useful element in expository and argumentative writing. [2]Frequency studies of their occurrence in academic English extend at least as far back as Huddleston (1971). [3]ESL writing textbooks have for many years regularly included chapters on sentence connectors (e.g., Herbert, 1965). [4]Most reference grammars deal with their grammatical status, classification, meaning, and use. [5]Some attention has also been given to the position of sentence connectors in clauses and sentences. [6]Quirk and Greenbaum (1973) observe (a) that the normal position is initial; (b) that certain connectors, such as *hence* and *overall*, "are restricted, or virtually restricted, to initial position" (p. 248); and (c) that medial positions are rare for most connectors, and final positions even rarer. [7]The only attempt known

to us to explain differences in position on semantic grounds is an unpublished paper by Salera (1976) discussed in Celce-Murcia and Larsen-Freeman (1983). [8]The Salera paper deals only with adversatives like *however* and suggests that initial position reflects something contrary to expectation, while medial position reflects a contrast that is not necessarily unexpected. [9]However, neither of these studies provides any descriptive evidence of the actual positions of sentence connectors in academic texts. [10]In the present paper, we report on a preliminary study of sentence-connector position in a sample of twelve published articles.

1. Divide the text into the three basic moves.

2. Look at table 21 again. Where in our Introduction would you divide Move 1 into 1a and 1b?

3. What kind of Move 2 do we use?

4. What kind of Move 3a do we use?

5. Underline or highlight any words or expressions in sentences 1 through 3 used to establish a research territory.

6. List the six citations used in our draft introduction. (Salera is cited twice.) Do you have a criticism of our review of the previous literature?

7. Where do these six citations occur in the sentence? What does this tell us?

In Unit Seven, we argued that RPs were not simple accounts of investigations. This is also very true of our own mini-RP. If you look back at our introduction, you will note that we never actually say what our motive or rationale for carrying out this small study was. Rather, the study seems to emerge as a natural and rational response to a discovered gap in the literature.

In fact, this is not how the study started at all. In Fall 1992, a student in John's Research Paper Writing class asked him if there

were any rules for where to put the sentence connectors. Not having any immediate answer, John played for time and asked what the class did. Most said they always put them first, even though they had noticed that they did not always come first in the books and papers that they read. Then one student, Arthur Hsieng, said that he remembered a sociology professor telling the class never to put *however* in initial position. As English teachers, we were so struck by this piece of grammatical folklore that we decided to investigate!

Task Two

Discuss the following issues with a group.

1. Do you think the "true" story behind our investigation should be built into the Introduction? If so, where and how?

2. Alternatively, do you think it should be made part of the Discussion? Or would the Acknowledgments be the best place to mention how the study came about? Or a footnote? Or should it be omitted altogether?

3. Do members of your group have comparable experiences to relate—perhaps stories about how pieces of research started almost by accident but are described as if they were planned?

4. How would you answer the following question? In any investigation, certain events take place in a certain order. Do you think it is necessary to keep to that order when writing an RP, or is an author free to change that order to construct a more rhetorically effective paper?

Of course, by this time you may be thinking that all this rhetorical work in Introductions is only needed in the social sciences and the humanities. There, academics may indeed need to create research spaces for themselves. Surely, you may be thinking, the CARS model is not necessary in "true" science. Before coming to any such conclusion, consider the first half of the Introduction to this paper from aerospace and atmospheric science.

High Angle-of-Attack Calculations of the
Sub-sonic Vortex Flow in Slender Bodies
D. Almosino

M
O
V
E

1a

[1]The increasing interest in high angle-of-attack aerodynamics has heightened the need for computational tools suitable to predict the flowfield and the aerodynamic coefficients in this regime. [2]Of particular interest and complexity are the symmetric and asymmetric separated vortex flows which develop about slender bodies as the angle of attack is increased. [3]The viscous influence on the separation lines and the unknown three-dimensional (3D) shape of the vortex wake are some of the main flow features that must be modeled in the construction of a computational method to properly treat this problem. [4]Among

O
N
E

1b

the many potential flow methods developed in attempting to solve body vortex flows are early two dimensional (2D) multivortex methods,[2-4] 2D timestepping vortex models that include boundary-layer considerations,[5-8] and a quasi 3D potential flow method[9] that uses source and vortex elements.... [5]The potential flow methods are of special interest because of their ability to treat 3D body shapes and their separated vortex flows using a simple and relatively inexpensive model.

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Find the three uses of *interest* in this passage. What does this tell us? What might the author say in sentence 6?

Language Focus: Claiming Centrality

Note particularly the language used in the first two sentences to express Move 1a.

The increasing interest in . . . has heightened the need for . . .
Of particular interest and complexity are . . . (This second sentence uses the emphatic inversion discussed in the Language Focus on pages 144–47.)

Here are some further "skeletal" examples of these strong opening statements. Notice how many of them use the present perfect.

Recently, there has been growing interest in . . .
The possibility of . . . has generated wide interest in . . .
The development of . . . is a classic problem in . . .
The development of . . . has led to the hope that . . .
The . . . has become a favorite topic for analysis . . .
Knowledge of . . . has a great importance for . . .
The study of . . . has become an important aspect of . . .
A central issue in . . . is . . .
The . . . has been extensively studied in recent years.
Many investigators have recently turned to . . .
The relationship between . . . has been investigated by many researchers.
Many recent studies have focused on . . .

Task Three

Find a recent journal from your field of interest. Look at the openings of up to six articles. All the articles should come from the same journal. How many, if any, begin with a Move 1a? If any do, photocopy the openings or write them down and bring them to class. (Or send them to your instructor on electronic mail.)

Reviewing the Literature

The CARS model states that Move 1b (introducing and reviewing items of previous research in the area) is obligatory. Why should it be obligatory?

Task Four

There are, in fact, a surprisingly large number of theories about the role and purpose of citations in academic texts. Six are given here.

Discuss with a group the validity of each. Which do you think contribute most to our understanding of why citations are used in academic writing? Does your group have any other theories?

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 (see Notes on Plagiarism in Unit Five).

2. This theory 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.

Now suppose that we have actually carried out a study of the reasons for using citations in academic texts and have begun to write an RP. This is the draft of the introduction so far. Read it and consider the questions that follow.

M	[1]Citations are widely recognized as being an important
O	and distinctive property of academic texts. [2]Indeed, the
V	presence or absence of citations allows the casual reader
E	to get an immediate sense of whether a text is an "academic" or "popular" one. [3]Because citation is such an obvious surface phenomenon, it has been much discussed in
1a	the academic world. [4]Indeed, there are several theories about the role and purpose of citations in academic texts.

We now have to write Move 1b.

1. How can we sequence our six theories (plus any others that have come up in your groups)? The key element in literature reviews is that *order* is imposed on the material, not so much order in your own mind, but order in the reader's mind.

2. Clearly we need to start with the two major traditional views (theories 1 and 2). How can we order the remaining four (3–6)?

3. Should we organize in the chronological order as presented? Is this—at least in this case—a weak kind of ordering? Is there another way?

4. One possibility might be to *categorize* theories 3–6. Do you consider the theories by Ravetz, Gilbert, Bavelas, and Swales to be

economic theories?
sociological theories?
rhetorical theories?

We could then decide to take next the case where we have two members in the category. One plan could look like this.

| Theory 1 | Established major theories |
| Theory 2 | |

Rhetorical	Theories 4 and 6	Theories associated with individual authors.
Economic	Theory 3	
Sociological	Theory 5	

Task Five

Write either a short review of the citation literature or a short review of at least five papers from your own field. Use the reference system that you are most comfortable with. If you review papers from your field, also hand in a rough diagram showing how you have imposed order on the material.

Language Focus: Citation and Tense

Tense choice in reviewing previous research is subtle and somewhat flexible. (It is also not very much like the "rules" you may have been taught in English classes.) The following, therefore, are only general guidelines for tense usage.

Several studies have shown that at least two-thirds of all citing statements fall into one of these three major patterns.

I. Past—researcher activity as agent

Jones (1987) *investigated* the causes of illiteracy.
The causes of illiteracy *were investigated* by Jones (1987).

II. Present Perfect—researcher activity not as agent

The causes of illiteracy *have been* widely *investigated* (Jones 1987, Ferrara 1990, Hyon 1994).
There *have been* several investigations into the causes of illiteracy (Jones 1987, Ferrara 1990, Hyon 1994).
Several researchers *have studied* the causes of illiteracy. [1-3]

III. Present—no reference to researcher activity

The causes of illiteracy *are* complex (Jones 1987, Ferrara 1990, Hyon 1994).
Illiteracy *appears to have* a complex set of causes.[1-3]

Note these common uses of these patterns:

Pattern I—reference to single studies—past
Pattern II—reference to areas of inquiry—present perfect
Pattern III—reference to state of current knowledge—present

Also note that in patterns I and II, attention is given to what previous researchers did, while in pattern III, the focus is on what has been found.

Finally note that different areas of scholarship have somewhat different preferences. Patterns I and II are most common in the humanities and least common in science, engineering, and medical research. However, all three patterns tend to occur in many extensive literature reviews, since they add *variety* to the text.

We have said that these three patterns cover about two-thirds of the cases. The reason this proportion is not higher is because writers of literature reviews can have certain options in their choice of tenses. This is particularly true of pattern I. The main verbs in pattern I can refer to what a previous researcher *did* (*investigated, studied, analyzed,* etc.). By and large, in these cases the past is

obligatory. However, the main verbs can also refer to what the previous researcher *wrote* or *thought* (*stated, concluded, claimed*, etc.). With these reporting verbs, tense options are possible.

Jones (1987) concluded that illiteracy can be related to . . .
Jones (1987) has concluded that . . .
Jones (1987) concludes that . . .

The differences among these tenses are subtle. In general, a move from past to present perfect and then to present indicates that the research reported is increasingly *close* to the writer in some way: close to the writer's own opinion, close to the writer's own research, or close to the current state of knowledge.

The present tense choice is sometimes called the *citational present* and is also used with famous or important sources.

Plato argues that . . .
Confucius says . . .
The Bible says . . .
The Constitution states . . .

Comparable options exist in the subordinate clause.

Jones (1987) found that illiteracy *was* correlated most closely with poverty.
Jones (1987) found that illiteracy *is* correlated most closely with poverty.

The first sentence shows that the writer believes that the finding should be understood within the context of the single study. In the second, the writer implies that a wider generalization is possible.

Variation in Reviewing the Literature

In the language focus, we concentrated on the three main citation patterns. There are, of course, some others.

According to Jones (1987), the causes of illiteracy are closely related to poverty.

Jones' research shows that illiteracy and poverty are inter-related (Jones 1987).

Can you come up with some more?

Good writers of literature reviews employ a range of patterns in order to vary their sentences. As this is something that we have already discussed in Task Twelve of Unit Six, you may want to review that section before doing this next task.

Task Six

Here is a review that uses only citation pattern I. As you can see, using the same structure all the time can cause the reader to lose interest. Rewrite the passage so that it has more variety. Your version will probably be shorter than the original—another advantage!

The Origins of the First Scientific Articles

[1]The first scientific journal was started in London in 1665. [2]Obviously, the first scientific articles had no direct models to build on, and several scholars have discussed possible influences. [3]Ard (1983) suggests that the first articles developed from the scholarly letters that scientists were accustomed to sending to each other. [4]Sutherland (1986) showed that early articles were also influenced by the newspaper reports of that time. [5]Paradis (1987) described the influence of the philosophical essay. [6]Shapin (1984) claimed that the scientific books of Robert Boyle were another model. [7]Finally, Bazerman (1988) argued that discussion among the scientists themselves made its own contribution to the emergence of the scientific article.

Move 2—Establishing a Niche

In many ways, Move 2 is the key move in Introductions. It is the hinge that connects Move 1 (what has been done) to Move 3 (what the present research is about). Move 2 thus establishes the motivation for the study. By the end of Move 2, the reader should have a good idea of what is going to come in Move 3.

Most Move 2s establish a niche by indicating a gap—by showing that the research story so far is not yet complete. Move 2s then are a particular kind of critique (see Unit 6).

Usually Move 2s are quite short, often consisting of no more than a sentence. Sometimes, however, Move 2s can be quite complicated. Consider, for example, the Move 2 from the Almosino paper on the calculation of vortex flows. (Move 1 appears earlier in this unit.)

Task Seven

Read the middle section of the Almosino introduction (containing Move 2) and then answer the questions that follow.

M
O
V
E
2

[6]However, the previously mentioned methods suffer from some limitations mainly concerning the treatment of the vortex wake formation and its interaction with the body. [7]The first group of methods[2-4] cannot treat 3D flows and is limited to very slender bodies. [8]The second group of computational methods[5-8] is time consuming and therefore expensive, and its separation prediction is not sufficiently accurate. [9]Both the methods in this group and the method in[9] suffer from the dependency on too many semi-empirical inputs and assumptions concerning the vortex wake and its separation. [10]The steady, 3D nonlinear vortex-lattice method, upon which the present method is based, eliminates many of these limitations by introducing a more consistent model, but it can treat only symmetrical flow cases.

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1. How many "critique" expressions can you find in the passage? Underline or highlight them.

2. What word signals that Move 1 has ended and Move 2 has started? What other words or expressions could also indicate this shift?

3. This Move 2 occupies five sentences. Why do you think Almosino has put these sentences in this particular order?

4. What do you think the next sentence is going to be?

As we have seen, Almosino relies mostly on verbs and adjectives to characterize weaknesses in the previous research. Care is obviously needed when selecting vocabulary of this sort.

Task Eight

Here are some "negative" verbs and adjectives. Decide how "negative" they are. Work with a partner. Use the key below.

definitely or strongly negative = − −
neutral or slightly negative = −

Verbs

However, previous research in this field has _____.

___ a. concentrated on x.
___ b. disregarded x.
___ c. failed to consider x.
___ d. ignored x.
___ e. been limited to x
___ f. misinterpreted x.
___ g. neglected to consider x.
___ h. overestimated x.
___ i. overlooked x.
___ j. been restricted to x.
___ k. suffered from x.
___ l. underestimated x.

Adjectives

Nevertheless, these attempts to establish a link between secondary smoke and lung cancer are at present _____.

___ a. controversial
___ b. incomplete
___ c. inconclusive
___ d. misguided
___ e. questionable
___ f. unconvincing
___ g. unsatisfactory

Language Focus: Negative Openings

Probably the most common way to indicate a gap is to use a "negative" subject. Presumably, negative subjects are chosen because they signal immediately to the reader that Move 1 has come to an end. Note the following uses of *little* and *few*:

Uncountable	However,	little information . . .
		little attention . . .
		little work . . .
		little data . . .
		little research . . .
Countable	However,	few studies . . .
		few investigations . . .
		few researchers . . .
		few attempts . . .

Note the differences in the following pairs:

He has little research experience. (negative, i.e., not enough)
He has a little research experience. (neutral, i.e., maybe enough)

The department has few computers. (negative, i.e., not enough)
The department has a few computers. (neutral, i.e., maybe enough)

Note the use of *no/none of:*

No studies/data/calculations . . .

Use *no* when your conclusion is based on but does not directly refer to the cited literature. If you want to refer directly to the previous research, use *none of.*

None of these studies/findings/calculations . . .

Of course, not all RP Introductions express Move 2 by indicating an obvious gap. You may prefer, for various reasons, to avoid negative or quasi-negative comment altogether. In such cases, a useful alternative is to use a contrastive statement.

The research has tended to focus on . . . , rather than on . . .
These studies have emphasized . . . , as opposed to . . .
Although considerable research has been devoted to . . . , rather less attention has been paid to . . .

Two other strategies are quite common, particularly in the "harder" areas. The first is raising a question, a hypothesis, or a need.
Here are some skeletal examples.

However, it remains unclear whether . . .
It would thus be of interest to learn how . . .
If these results could be confirmed, they would provide strong evidence for . . .
These findings suggest that this treatment might not be so effective when applied to . . .
It would seem, therefore, that further investigations are needed in order to . . .

Note that in these cases, sentence connectors are not limited to the *however* type.
The second strategy is continuing a line of research. This last strategy is largely restricted to RPs written by research groups who are following up their own research or that done by similar groups. The authors draw a conclusion from their survey of the previous research indicating how some finding in the immediate research literature can be extended or applied in some way. Here are three examples.

These recent developments in computer-aided design clearly have considerable potential. In this paper, we demonstrate . . .
The literature shows that Rasch Analysis is a useful technique for validating multiple-choice tests. This paper uses Rasch Analysis to . . .
Such active-R networks eliminate the need for any external passive reactance elements. This paper utilizes the active-R approach for the design of a circuit . . .

Occupying the Niche

The third and final step in the typical RP Introduction is to make an offer to fill the gap (or answer the question) that has been created in Move 2. The first element in Move 3 is obligatory. It has two main variants:

Purposive (P)   The author or authors indicate their main purpose or purposes.

or

Descriptive (D)   The author or authors describe the main feature of their research.

Task Nine

Here are the beginning parts of ten opening Move 3 sentences. Decide in each case whether they are purposive or descriptive, and enter a *P* or a *D* in the blank. One of them is from the Almosino paper (see Move 2 in Task Seven). Can you guess which one it is? Complete at least three of the sentences with your own words.

____ 1. The aim of the present paper is to give . . .

____ 2. This paper reports on the results obtained . . .

____ 3. In this paper we give preliminary results for . . .

____ 4. The main purpose of the experiment reported here was to . . .

____ 5. This study was designed to evaluate . . .

____ 6. The present work extends the use of the last model by . . .

____ 7. We now report the interaction between . . .

____ 8. The primary focus of this paper is on . . .

____ 9. The aim of this investigation was to test . . .

____ 10. It is the purpose of the present paper to provide . . .

Note that Move 3 is typically signaled by some reference to the present text, such as the uses of *this, the present, reported*, and *here*. If the conventions of the field or journal allow it, it is also common for the authors to switch from the impersonal to the personal by using *we*, or more rarely *I*. Also note that these signals come early in the sentence. It is very unusual to find:

We present the results of three experiments *in this paper*.

rather than:

In this paper we present the results of three experiments.

Language Focus: Tense and Purpose Statements

Students sometimes ask whether they should use *was* or *is* in purpose statements. Indeed, both were used in the phrases in Task Nine. The answer to this question depends on how you refer to your work. You have two choices:

1. Referring to the type of *text*—paper, article, thesis, report, research note, etc.
2. Referring to the type of *investigation*—experiment, investigation, study, survey, etc.

If you choose to refer to the type of text, you must use the present tense. If you write, "The aim of this paper was to . . . ," it suggests that you are referring to an original aim that has now changed.

If you choose to refer to the type of investigation, you can use either *was* or *is*. However, there is an increasing tendency to choose the present, perhaps because it makes the research seem relevant and fresh and new. The "safe rule" then is to opt for the present.

Completing an Introduction

There are a number of elements that can follow the purposive/descriptive statement. While these elements are typically needed in longer texts, such as theses, dissertations, or long and complex RPs, they may not be necessary in short RPs. We briefly review each in turn.

Secondary Aims or Features

Sometimes a second sentence is necessary to complete Move 3a. Here, for example, is the Almosino Move 3.

M	[11]The present work extends the use of the last model to
O	asymmetric, body-vortex cases, thus increasing the range
V	of flow patterns that can be investigated. [12]In addition, an
E	effort is made to improve the numerical procedure to accelerate the convergence of the iterative solution and to get a
3	better rollup of the vortex lines representing the wake.
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These secondary statements are often introduced by such language as

In addition, . . .
Additionally, . . .
A secondary aim . . .
A further reason for . . .

Stating Value

You may also want to consider whether you want to mention at this stage anything about the contribution your research will make. Of course, you will do this in the Discussion section in any case. Note that Almosino squeezes a value statement into his introduction.

> . . . , thus increasing the range of flow problems that can be investigated.

If you opt for a value statement, it would be wise to be cautious and to use qualifications (see Unit Four).

Task Ten

At present the Feak and Swales draft Introduction (see Task One) simply ends with a Move 3a.

> In the present paper, we report on a preliminary study of sentence-connector position in a sample of twelve published articles.

Would you advise us to add any of the following value statements? What are the advantages or disadvantages of each? If you do not like any of them, can you offer one of your own, or edit one of them to your satisfaction? Work with a partner if possible.

1. In this way, we offer a solution to a long-standing problem in English grammar.

2. It is hoped that this small study will revive interest in a long-neglected feature of academic English.

3. The information presented should be useful to all those teaching academic writing to nonnative speakers of English.

Announcing Principal Findings

There is some confusion as to whether RP Introductions should close with a statement of the principal results. One investigation (Swales and Najjar 1987) found that physicists do this about half the time, but educational researchers hardly ever include such statements. One useful guideline is to ask yourself whether the RP will open with an Abstract. If there is an Abstract, do you need to give the main findings three times: in the Abstract, in the Introduction and in the Results? We think not. If there is no Abstract, you may wish to reconsider. Another suggestion would be to follow standard practice in your field—or ask your instructor.

Outlining the Structure of the Text

A final option is to consider whether you need to explain how your text is organized. This element is obligatory in dissertations, but is only included in RPs under certain circumstances. One such circumstance arises when your text is unusual in some way, such as not using the IMRD format. Another arises if you are working in some new field. Cooper (1985) found, for example, that outlining the RP structure was quite common in computer technology. Ask yourself whether your anticipated readers need to have the organization of the RP explained.

Here is a useful example of a textual outline, well-motivated by the unusual structure of the paper. Notice how it uses a good variety of sentence structures. The paper is about currency rates in the European Common Market and was written by one of our students.

> The plan of this paper is as follows. Section II describes the current arrangements for regulating exchange rates within the EC. In Section III a theoretical model is constructed which is designed to capture these arrangements. Experimental parameters are then tested in Section IV. Finally, Section V offers some suggestions for the modification of the current mechanisms.
>
> (Pierre Martin, unedited)

Task Eleven

Below is a textual outline by another one of our students. Notice how this time it lacks variety. Can you rewrite it?

> The rest of the paper is organized as follows. Section 2 presents the theoretical concept. Section 3 presents the empirical specification, the implementation of the model. Section 4 presents the results of statistical and other computational analyses. Section 5 summarizes the findings and provides a brief discussion concerning the shortcomings of the methods employed. Finally, an appendix presenting the detailed algebraic works is presented at the end of the paper.
>
> (Abdul Malik, unedited)

Task Twelve

Now write, or rewrite, an RP introduction of your own.

Discussion Sections

It is not so easy to provide useful guidelines for writing Discussion or Conclusions sections. (We will not distinguish between these two terms, since the difference is largely conventional, depending on traditions in particular fields and journals.) See what is done in your own field.

The problem is that Discussions vary considerably depending on a number of factors. Not all these factors are understood, but one important one is the kind of research question—or questions—that the study attempted to answer. Another factor that leads to variation is the position of the Discussion section in the RP. By the time readers reach the Discussion, authors can assume a fair amount of shared knowledge. They can assume (if not always correctly) that the reader has understood the purpose of the study, obtained a sense of the methodology, and followed along with the results. Authors can use this understanding to pick and choose what to concentrate on in the Discussion. As a result, they typically have greater freedom than in the Introduction.

Overall, if Results deal with *facts*, then Discussions deal with *points*; facts are *descriptive*, while points are *interpretive*. Effective Discussion sections are similar to effective lectures, which, as Olsen and Huckin (1990) note, are based on points, rather than on facts. Further, authors of Discussions have some flexibility in deciding which of their possible points to include and then which to highlight.

Discussions, then, should be more than summaries. They should go beyond the results. They should be