

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

more theoretical

or

more abstract

or

more general

or

more integrated with the field

or

more connected to the real world

or

more concerned with implications

or applications

AND, if possible, some combination of these.

As Weissberg and Buker note, "in the discussion section you should step back and take a broad look at your findings and your study as a whole" (1990, 160).

We have said that Discussions can be viewed as presenting a series of points. Typically, they are arranged as in table 22.

Move 1 is usually quite extensive, and Moves 2 and 3 are often quite short. At this point, you might want to observe that Move 1 and the later moves seem self-contradictory. Why, you may ask, build up something in order to apparently attack it later? However, if we remember *positioning*, we can see that authors can present themselves very effectively by both

1. highlighting intelligently the strengths of the study and
2. highlighting intelligently its weaknesses.

Indeed, Moves 2 and 3 can also be used to identify and open up future research space for authors and their colleagues. However,

TABLE 22. Discussion Moves

Move 1	Points to consolidate your research space (obligatory)
Move 2	Points to indicate the limitations of your study (optional but common)
Move 3	Points to identify useful areas of further research (optional and only common in some areas)

this is **less** likely to happen, according to Huckin (1987), in areas **here** there is fierce competition for research grants.

Task Thirteen

We have noted in this task nine points we would like to make in the Discussion section of the paper on sentence connectors. They are not yet in order. We believe that they fall in the following categories:

Move 1 (Consolidation)	Six Points (3 results, 1 methodology, 1 centrality, 1 literature comparison)
Move 2 (Limitation)	Two points
Move 3 (Further research)	One point

Into which category does each point fall? Fill in the blanks with the labels. The first one has been done for you. Review the Methods, Results, and Introduction sections of our mini-RP, if necessary (see Unit Seven and Unit Eight Task One). The first one has been done for you.

1. Move 2 (Limitation)
This is a very limited study restricted to a single field.
2.
Position varies from one connector to another (+ example[s]).
3.
Sentence-connectors are quite common in academic writing (average of 2 per page).
4.
Our survey shows unexpected differences in the frequency **with** which individual connectors are used (+ example[s]).

5. _____

Further research in this area might produce materials of greater help to writers, especially nonnative speakers.

6. _____

Our survey shows that 25% of connectors do not occur at the beginning of sentences.

It is important to conduct surveys to establish where connectors actually occur in sentences.

8.

We are not yet in a position to **offer explanations for choices** of connector positions.

Twenty-five percent noninitial seems higher than the grammar books would predict, but lower than Morrow (1989), who found 53% noninitial in an economics journal (although Morrow used a broader definition of connector).

As we can see, the heart of a Move 1 typically consists of statements of results followed by a follow-up of some kind. The follow-up might take the form of examples, comparisons with other work, conclusions that might be drawn, or commentary on whether the results are expected or unexpected.

Task Fourteen

Please write our Discussion section for us. Refer to the Results section before Task Five for details of our study.

Opening a Discussion Section

As we have already suggested, there are many options in opening a Discussion. Consider the case of the following data. We studied Discussion openings in 15 articles from a small U.S. regional journal of

atural history research. We found great variation. Four sections open with the *main results*. This was the largest category, but still less than 30% of the total. Three begin with a *discussion of the literature*. Here are two examples.

- a Graikowski et al. (1986) recovered . . . toxin from . . . and found that . . . suffered 100% mortality when . . .
- b Food shortages, social stress . . . within . . . are causes of dispersal among . . . (Fritz and Mech 1981, Messier 1985, Mech 1987, Packard and Mech 1980).

Two sections start in a more dramatic way by offering a general conclusion.

- c. Apparently, we are witness to the early phases of a classic population explosion.
- d. From this data, it is clear that . . . are not major consumers of commercially important fish-species in . . .

The remaining types of opening occur only once in the sample. We were surprised, for example, to find only *one* opening that reminds the reader of the *original purpose*.

- e. The objective of the survey was to quantify the number **of** . . . within . . .

In another case, the author opens with a *summary*.

- f. This report brings together all known records **of** . . . since 1959.

In another, the authors raise the level of discussion by referring to *theory*.

- g The interrelationship of bird populations and the environment is extremely complex.

One author starts with a comment about *methodology*.

- There is a bias associated with using either ground or **aerial** counts, exclusively.

Another author begins his Discussion section by highlighting the special importance of his *research site*.

- i. . . . is one of the few sites in North America where the presence of a significant number of migrating . . . has been documented.

And in the final case, the author actually begins by discussing the *limitations* of the data.

- j. The census figure of . . . is expected to be an underestimate of the total population of . . .

This small survey shows some of the many strategies that can be adopted for opening a Discussion section. The choice of strategy clearly depends in part on how the authors view their work. We will briefly comment on the last three cases. In *h* the author begins with a methodology critique of previous work, because one of his main points is that he has taken the trouble to "combine both aerial and ground surveys." In *i* the researcher begins by stressing the point that the location of his research site offers exceptional advantages. Finally, take the case of *j*. It might appear that the author of *j* has adopted a very risky strategy, but in this particular context it is not. It soon emerges that carrying out a complete census of this particular species would be very difficult. Therefore, the author presumably felt on safe ground when he opened in this way. Indeed, he can go on to claim that his numbers are much larger than anybody else has so far been able to report.

Task Fifteen

Survey and classify the openings of at least six Discussion sections from a journal in your field. Bring your findings to class.

Language Focus: Levels of Generalization

In the Results sections, statements may be quite specific **and** closely tied to the data.

As can be seen in Table 1, **84% of the students performed** above the 12th-grade level.

Seven out of eight experimental samples resisted corrosion longer than the controls.

On the other hand, in the Abstract or in a Summary section, space restrictions may lead to a high level of generality.

The results indicate that the students performed above the 12th-grade level.

The experimental samples resisted corrosion longer than the controls.

In the Discussion, we usually expect something in between these two levels. One common device is to use one of the following "phrases of generality."

Overall
In general
On the whole
In the main
With . . . exception(s)

Overall, the results indicate that students performed above the 12th-grade level.

The overall results indicate . . .
The results indicate, overall, that . . .

In general, the experimental samples resisted . . .
With one exception, the experimental samples resisted . . .

Limitations in Discussions

We saw in Introduction Move 2s (see page 185-89) that extensive "negative" language was a possible option. In contrast, Discussion Move 2s tend to use less elaborate negative language. The main reason is obvious; it is now your own research that you are talking about! Another reason is that many limitation statements in Discussions are not so much about the weaknesses in the research, as about what *cannot be concluded* from the study in question. Producing statements of this kind provides an excellent opportunity for the

writer to show **that he or she understands how evidence needs to be evaluated in the particular field.**

Task Sixteen

Complete four of the statements in set A. Base two on the mini-RP on sentence connectors and two on studies you have been involved with in your field. Complete at least one statement from B.

A. Limitations of Research Scope

1. It should be noted that this study has examined **only** . . .
2. This analysis has concentrated on . . .
3. The findings of this study are restricted to . . .
4. This study has addressed only the question of . . .
5. The limitations of this study are clear: . . .
6. We would like to point out that we have not . . .

B. Limitations in Conclusions. Below are some typical openings for statements that firmly state that certain conclusions should *not* be drawn.

1. However, the findings do not imply . . .
2. The results of this study cannot be taken as evidence for . . .
3. Unfortunately, we are unable to determine from this data . . .
4. The lack of . . . means that we cannot be certain . . .

We said earlier that Move 2s are optional in Discussions. If you feel it is unnecessary to comment on your work in either of the above two ways, a useful alternative is to place the limitation in an opening phrase.

Notwithstanding its limitations, this study does suggest . . .
Despite its preliminary character, the research reported **here**
would seem to indicate . . .
However exploratory, this study may offer **some insight into** . . .

Paragraph

Paragraph 2

Paragraph 3

Fig. 11. Shape of a longer Discussion

Cycles of Moves

Finally, we should point out that many Discussion sections run through the Move 1-2-3 (or part of it) sequence more than once. Commonly, each cycle occupies one paragraph. Further, the more research questions there are to be discussed, the more this cycling is likely to occur. Such cycling can also occur in Introductions, but it tends to be less common, especially in shorter RPs.

If you wish to write a longer Discussion, follow the shape recommended in figure 11. Begin with specifics and then move towards the more general.

Task Seventeen

Write or rewrite a Discussion section for your own **research**. **If you** are working with others, collaborate with them.

Acknowledgments

Acknowledgments have become an integral part of most RPs. Indeed, one famous professor of our acquaintance reported to us that he always reads the Acknowledgments section of an RP first. When we asked him why, he replied, "Oh, the first thing I want to know is who has been talking to whom." While we do not think that this is

standard reading behavior, it does show that Acknowledgments can be more than a display of necessary politeness.

Acknowledgments occur either at the bottom of the first page, following the Discussion, or sometimes at the end. They provide an opportunity for you to show that you are a member of a community and have benefited from that membership. Here we list some of the common elements in Acknowledgments.

1. Financial support

Support for this work was provided by (sponsor).

This research was partially supported by a grant from (sponsor).

This research was funded by Contract (number) from (sponsor).

2. Thanks

We would like to thank A, B, and C for their help . . .

I wish to thank A for his encouragement and guidance throughout this project.

We are indebted to B for . . .

We are also grateful to D for . . .

3. Disclaimers (following element 1 or 2)

However, the opinions expressed here do not necessarily reflect the policy of (sponsor).

The interpretations in this paper remain my own.

None, however, is responsible for any remaining errors.

However, any mistakes that remain are my own.

4. Other versions

An earlier/preliminary version of this **paper was presented at** (conference or seminar).

5. Source

This **article** is **based on the first author's doctoral dissertation.**

This paper is based on research completed as partial fulfillment for the Ph.D. requirements at (university name).

Notes

1. We believe that, if permitted, Acknowledgments should be written in the first person—/ for a single author and *We* for coauthors. It is possible to find phrases like "the present authors," but we consider them too formal for this situation.

2. As far as we can see, financial support tends to come first, followed by thanks. Disclaimers seem optional. Mentions of other versions and sources (if used) seem to come either at the beginning or at the end. (But note that, in theses or dissertations, it is customary to open with thanks to supervisors, advisors, committee-members, etc.)

Task Eighteen

Write a suitable Acknowledgments section for one of your pieces of work. If necessary, invent some forms of assistance to expand the section.

Titles

Although the title comes first in an RP, it may sometimes be written last. Its final form may be long delayed and much thought about and argued over. Authors know that titles are important, they know that the RP will be known by its title, and they know that a successful title will attract readers while an unsuccessful one will discourage readers.

What then are the requirements for good RP titles? In general, we suggest the following three.

1. The title should indicate the topic of the study.
2. The title should indicate the scope of the study (i.e., neither overstating nor understating its significance).
3. The title should be self-explanatory to readers in the chosen area.