Research writing tools:
Introductions and Discussions using Swales

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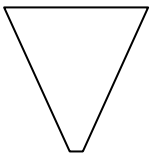
Preface

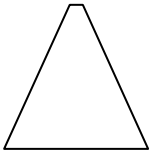
Good research generalises beyond the specific study completed.
Good researchers work at *finding* those generalisations. Swales is a structured process to make it happen.

The Introduction and General Discussion chapters of a research thesis (honours, masters or PhD) form the opening and closing brackets of a thesis. The Introduction draws the reader in a structured way into the project. The General Discussion reverses those steps to reflect on the findings, reveal insights, make connections to the literature and draw the strongest conclusions possible from a thesis. When you're wading through the myriad details necessary to get a project working, seeing the big picture is often not on your mind. Swales and reverse-Swales are structured ways of forcing your writing to come to grips with the wider issues. It's not guiding your reader through the forest – it's guiding them to the right forest in the first place.

Introduction



General
Discussion



Doing the right project

There are two parts to a project: **doing the right project** and **doing the project right**. Both are critical to success.

- A major skill in research is honing in on the right project. Good projects rarely fall into your lap.
- Undergraduate students rarely have experience in choosing or evaluating whether they are doing the right project. Undergraduate curricula generally include many more experiences with doing the project right.

This section takes you through the stages of thinking about the project and honing it to be a good project.

- Good research addresses **important** questions. But not just any important question will do. Reinventing the wheel is not good research. Nor is failing heroically on an insoluble problem.
- The right kind of question is one that can be investigated using the resources and methods available for the project, including the time and skills of the researcher.

Background context

- Understanding a project’s context is essential to designing an effective project plan.
- Preplanning at the beginning provides a solid foundation for the writing process at the end.
- Preplanning can be learned and accelerates the process of learning research skills.
- One of the core skills of a researcher is matching the methods of a project to a good research question. Like many aspects of research, it is a skill that can be learned, and develops over many projects.

Question or methods first?

- Some projects start with the question, and select appropriate methods. Others start with the methods and find appropriate applications. Most are somewhere in between some aspects of the research question and the methods determined at the outset and then refined during the project.
- Many aspects of the preplanning are hidden in the early stages of project proposal. When you join a project, you need to make the background context explicit.

Know your project

When you take on a project, find out why it is important. Find out what is generally known about the topic. Find out what specific projects have been done already both in your research group and in the wider research community. Identify the gaps that need addressing. There will be many ways to address those gaps. Think about what they are, and understand why your project is targeting the gap that it is, and why it is taking the approach it is. Succinctly state the specific aim of your project. Find out what methods are to be used if known, or learned if they are new. Itemize the resources needed and check them against those available. Take inventory of the skills needed for the project, and match them against those you have, and those you will need to develop.

Swales: the short version

Introductions a la Swales

Move 1. Establish field
- Assert centrality
- State current knowledge

Move 2. Summarise previous research

Move 3. Prepare for present research
- Indicate a gap
- Raise a question

Move 4. Introduce present research
- State purpose
- Outline present research

Notes
- The story goes that Swales examined hundreds a scientific papers and the same structure appeared in all the good papers. Swales wrote two books and several papers on writing.
- Source: transcribed from a handout given by Peggy Nightingale at a writing workshop in 1992.
- For a more expansive set of questions explaining the Swales structure, see Defining the thesis theme
- Typically, students come across Swales through a class, workshop or in the process of writing an introduction in collaboration with someone who uses it.
- Swales' structure often makes little sense until personalized to a person's own work, and even then, often not until the second or third paper.
- However, once you 'get it' it can rapidly improve the writing process, both in speed and quality of writing up your own research and in reading other’s

Defining the thesis theme

First read Doing the right project. This template is based on Swales.

0. Title. Give the project a working title
For some projects the title is straightforward and anchors the project. This case tends to be the norm when the project is close to the development end of "research and development". For other projects, the title evolves with the work, often starting out general and ending up targeted at the specific findings.

Tip. To construct a working title, list 5-6 terms that are central to the project. Then choose at most three terms and make a statement out of them. Then read the title and dispassionately reflect on what a project by someone else with that title is likely to be about. Refine the title until any mismatch disappears.

1. Understand the wider context and importance of the project (Swales Move 1)
a. State the general topic and make a claim about why it is important.
b. Describe what is generally known about this topic.

2. Summarize previous research (Swales Move 2)
a. State the core ideas in the literature and structure them in a logical sequence.
b. Draw conclusions from the literature review by summing up the relevance of the literature review for the project and listing the informed decisions that need to be made.

3. Prepare for the current research (Swales Move 3)
a. List the gaps. That is, given all the research reviewed in Step 2, what is left to be done? An accurate summary of this situation is one of the critical aspects of a project. Are there gaps related to an area that has not been studied, or to a new method that needs developing?
b. List possible methods for addressing the gaps. For a large project, usually at least five different approaches are possible. Understanding the breath of questions that could be addressed is a major step in understanding why your project is addressing the gap that it is.
c. Select a gap and a methodology for addressing it. A gap can be selected because new technology, theoretical tools or methods have recently become available. It can be constrained by length of time available for the project or by resources available.

The gap is frequently large. By appreciating that many approaches would be valid, you can see what aspects you will be able to address with your chosen methodology, and what will be outside the scope of the project. Don't confuse the gap with your research plan (which is the next Step). It is conceivable that someone else could address the same gap using the same general methodology but design a different specific plan.

4. Research plan (Swales Move 4)
a. State the purpose of the research. In an empirical study, the hypothesis is stated here. Make the aims as specific as possible.
b. Outline the methods to be followed. A timeline is frequently useful in this section.

Note on Sources: An early version of this document was used in the Computer Science Department's "Guide for Students and their Supervisors", 1994. It was originally adapted from Peggy Nightingale's description of Swales' Structure of an Introduction. This Version was updated for the ITEE CIS Research students in 2005.

General Discussion

A discussion should make the strongest claim that can
be supported by your data and no stronger

A discussion section draws out the *implications* of your research. It is much more than a summary. It brings out the relevance of the specific research to the big picture of the field. For experienced thesis examiners, research quality is revealed in the discussion sections throughout a thesis and also in the General Discussion chapter. [Use "General Discussion" to distinguish this chapter from the micro discussions throughout the thesis]

Reversing the steps through the Swales Moves from the Introduction makes a good first draft for a discussion. It usually helps to start with bullet points of issues that need to be made. Get the logic of them tight before coating them with sentences. Using a structured process forces your brain to think about all the difficult issues that you didn't want to think about, or didn't know to think about, or didn't really care about, as you did the actual empirical part of the research.

Think of the Swales Introduction as a set of open brackets. The reverse-Swales discussion provides the closure for each of those brackets. As you wrestle with the issues in a discussion, it frequently makes you rethink the issues in the introduction, and requires elaborating some sections, reducing others, or reconceptualising whole chunks. If you get the introduction right, the discussion will map neatly onto it. Any flaws in the logic of your introduction will be revealed in writing the discussion and vice versa. You can iterate between introduction and discussion until you have a watertight argument. This is not a vague process – every paragraph in the introduction is one of those opening brackets, and the discussion section needs a corresponding closing bracket.

Reverse-swales structure for a discussion goes as follows:

Move 4b. How did the plan work out?
It's tempting to say everything worked exactly as planned, but in research there's always some surprises, difficulties, new insights etc. This section is often a mini summary of the major results, but goes beyond a restatement to indicate what else was discovered. At this stage, think in terms of (i) content and (ii) methods.

Content relates to the subject area. Clear, concrete, specific. *Methodology* relates to how the studies were done using both established and new techniques. Frequently, research reveals much about methods - what methods were highly effective, which ones were difficult to apply and why? What were the dead ends and why? Dead ends are important in a thesis as they stop others from re-inventing square wheels. But such descriptions should be brief. In one thesis, two years of negative results were summarized in a single sentence. Such sentences have considerable punch. Under the methods section, consider what advice you would give someone following in your footsteps about the practical aspects of doing research in this area.

Move 4a. What is the impact of the body of results on the Aims?
These are the specific issues that were targeted in the plan. If you didn't separate the Aims from the Plan in the Intro, you'll have trouble working out what to say here that isn't a rehash of 4b above.

Move 3b. How general are the results?
ie How do they impact on the major question(s) that were raised? (The difference between 3 and 4 is that 4b concerns specific aims. 3b is global to the field.) Getting this claim exactly right is the heart of an excellent discussion. It is also often the hardest part of writing the thesis.

A discussion should make the strongest claim *that can be supported by your data* and no stronger. Note that things that were already known before you began the research cannot be part of that claim. Nor can things that are intrinsically true. (If you're really struggling with Reverse Move 3, complete Reverse Move 2 then come back to 3 with a fresh idea of the literature).

Move 3a. What's the impact on the gap that was identified in the Intro?
The gap is global, vast and spans the field as a whole. The questions raised in 3b were many and varied and your research addressed a small selection of them. In the 3a part of the discussion, you show how that small part helps to fill the global gap in some small (or not so small) way. Again, think about both content and methods. If this section is not crystalising out clearly, consider the following exercises

- This section is like an elevator pitch where you're talking to someone you want to give you a job - generic, high level, gets the point across in global terms. What's your 30 second pitch? use those ideas.
- Explain the significance of your research to half a dozen people who know nothing about it. Listen to your words - write them down!
- Talk to an angry voter and justify why the Australian Govt has spent X years of your scholarship funding these results - what was the gap in the field when you started and what difference does or could your research program in the broadest sense make to the field or to industry in future years, ie where is it leading? etc

Move 2. How do your results impact on the literature (again content and methods)?
For every major issue in the lit review (usually every paragraph in Chapter 2), what is the significance of your results? What would you be able to tell those researchers in the light of your research?

As an exercise: If there is no relevance, consider deleting that paragraph from the literature review. Why was that reference included? If there was a reason, put it into words. If there was no good reason, delete it from the literature review.

The Move 2 part of the discussion is a can opener to ways of thinking that are frequently unfamiliar. This is where you really deepen your understanding of the issues in the field.

Move 1b. If your research has created new knowledge that impacts on claims made at 1b in the intro, succinctly summarize those results here.

Move 1a. Situate your research in the initial global context.

Notes
It can help to start the brainstorming process for intro and discussion using two columns on a whiteboard, and talking it through with someone who is familiar with the field. The coherence of the logic is the goal at this stage. Identify and highlight the strengths, and recognise and isolate weaknesses. Every point should exactly slot into place by the time you're finished.

As an approximate guide, for a PhD I would expect this stage to take 2 sessions of 3 hours each at a white board for a straightforward discussion, and up to several weeks for a complex one. Plus transcribing and thinking time for the bullet points and checking the logic (up to 8 hours for each whiteboard session).

Conclusions and Further Work

Conclusions: What is the thesis-of-the-thesis? The major complaint of examiners is that there is no "thesis", ie, No point that is being argued for. Think about the argument structure of the thesis. What were your premises? What were your empirical results? What are you concluding? Missteps in writing conclusions include "concluding" something that was already true at the start of the research, or conversely claiming something that would be nice if it were true, but is not supported by the data.

Further work: should be 2-3 global points of things that you would start working on immediately. If an honours student started working on one of the further work suggestions, what would they be? This section should be 1/2 page if possible, 2-3 pages max. The length of the further work section is often inversely proportional to the success of the results. For theses with many negative results, the further work section is often used to outline an extensive proposal for what would (with 20/20 hindsight) have been a good approach. For good results, the further work section is most useful if it is modest, and is frequently used to define the scope of the project. It can be used as a way of gently explaining to examiners and other readers why a piece of work that seems a logical extension is beyond the scope of the current thesis. Your particular thesis may not need one at all.