

7

Thesis Writing

Developmental Objectives

By applying the strategies, doing the exercises and following the procedural steps in this chapter, you should be able to:

- Orient yourself to thesis writing in your discipline at your level of degree.
- Manage your project more efficiently by writing early and writing often.
- Avoid unnecessary work by settling typography and formatting decisions early.
- Think through the nature and value of your contribution to research so as to convey this to readers, which is particularly important with a doctorate.
- Understand a broad range of standard academic expectations of thesis writing – both shorter and longer theses – so as to develop more rigour in your writing.
- Identify strategies for dividing up the text and incorporating a thesis statement, structuring chapters in different ways, gaining overall thesis control, and developing the thesis abstract, introduction and conclusion.
- Organize a thesis writing group as a mutual support and learning forum.

Some of the most reasonable questions students ask are the most difficult to answer. Questions like these:

'What am I supposed to be doing when I write a PhD?'

'What is so special about thesis writing?'

'What's the difference between a Master by Research and a PhD?'

'What does an original contribution mean?'

'Do I have to make an original contribution in my Master's thesis?'

'What's required of a shorter thesis?'

'How is a [shorter] thesis different from a long research essay?'

While there are no simple answers to questions of this type, I hope that the discussions within this chapter will leave you in a better position to provide your own answers.

I consider a shorter thesis as roughly between 10,000 and 25,000 words, and a longer thesis as roughly between 60,000 and 100,000 words. As this division is somewhat arbitrary, scan the chapter to see what might be relevant to you. Where there is no distinction made between shorter and longer theses in the discussion, I mean the advice to apply generally.

Prior considerations

To ease the writing of a thesis, certain preparatory issues need attention early in the degree course rather than later; others are applicable just prior to producing the first *full* draft of your thesis.

SOME INTELLECTUAL PROPERTY ISSUES

With institutions increasingly driven by commercial interests, intellectual property has become a prominent and somewhat complex issue, which may impact on writing and presenting your research:

- Familiarize yourself with your institution's intellectual property policy.
- Seek independent advice from a body in your institution akin to a Legal and Copyright Office if you are uncertain about the implications for your situation, or approach other relevant authorities for advice on how best to proceed.

At a most basic level in terms of communicating your research, these are some situations in which you may need to exercise care:

- If you are to sign any contracts for funding, perhaps industry contracts, take care to protect your intellectual property rights. Know exactly what you are signing away. Who gets the money? Is all of it to go to you, some to your supervisor, or other individuals or institutions? And who owns what in terms of the knowledge you will generate? Are there likely to be any constraints, under the contract, on including in your thesis all knowledge generated by you?

- If you think your research is likely to have commercial value, then investigate up-front how to protect your interests – ask your supervisor or a dean of graduate studies about the appropriate body with which to consult.
- Take care in putting thesis material on the Web without protection. You do not want somebody appropriating your original ideas or data, which has been known to happen.

As a researcher working on a team project, it is unwise to sign away intellectual property rights (for example, on data generated) without careful consideration of benefits and losses to you.

ORIENTATION TO THESIS WRITING

Orient yourself early on to what a thesis looks like in your discipline by reviewing two or three recently passed theses in the degree for which you are now studying. Copies of longer theses could be kept in your department, in one of your institution's libraries, and/or on your institution's website. Even if copies of shorter theses are not kept, your supervisor or some other member of department may have been given personal copies by students which they can loan you. Ask your departmental secretary or supervisor to advise you on how to obtain copies for review, or, as a last resort, key in 'digital theses' or 'digital dissertations' to access online libraries:

- Students in your discipline may be producing different types of theses, such as case studies or topic-based research, so select those that approximate your type of research. Even then you could find that the same types of theses have quite different structures.
- If your thesis is to be a set of published articles, then you may need to review practices for bringing the papers together as a coherent whole, perhaps inclusion of a general introduction, a new literature review and/or methodology chapter, linking between chapters and a general conclusion.

If your thesis is to take the form of a set of published articles, review the whole of Chapter 9.

While every thesis is unique, as yours will be, by reviewing passed theses you can generate ideas about aspects of style and structure, scope of coverage,

quality and depth of analyses and so forth. (It is unwise to view these models as *ideal*, however; a pass does not necessarily mean perfection.) You will need to avoid getting caught up in the interesting content (so easy to do). Keep focused on how writers go about the writing – the composition processes. The idea is to get a feel for what constitutes a thesis at your level of study in your discipline.

Exercise: reviewing passed theses

As you review passed theses, engage questions of this type:

- Can you work out from the table of contents page the underlying logic for the structural divisions in the thesis, into parts, chapters or whatever?
- What do writers do in introductions or conclusions? What *types* of information do they include? Do they use sub-headings?
- How do they orient readers to the discussions to come – review the introductions of specific chapters and check between sub-divisions.
- Is there a literature review chapter or not? Or is there a substantial review of the literature in the introduction?
- Does a theoretical or methodology chapter seem to be mandatory or optional?
- What level of analysis, discussion or argument seems to be appropriate at your level of study?
- How much detail seems to be included in the writing of, say, ethnographic or results chapters? Quickly review research objectives and questions in the introduction to see the extent to which the writer has been guided by these in selecting detail for inclusion. You might also take a look at how writers conduct analyses of their data, the level of rigour, sophistication, etc.
- What sort of material is put into appendices (if you think you will need these)?
- How do writers title tables, graphs, figures, photographs, maps, diagrams, etc.? How do they refer to these in their discussions? Do you notice anything special about their preparation in terms of scales, legends, lettering, etc.?
- What do the bibliographies suggest about the coverage of the topic?
- What is the overall presentation like? For example: How wide are the margins? What line spacing is used? What referencing style is used and how are longer direct quotations distinguished in the text?
- Are there any other features of style and structure useful for you to scrutinize?

Having oriented yourself to what a thesis *is*, now activate strategies to ease the path towards that goal, the end product of all your research and writing efforts.

MANAGING THE PROJECT THROUGH WRITING

Writing skills atrophy if unused, which is a definite hazard when writing longer theses. It is not enough to take notes from your reading or to keep lab records, though these activities are indeed important. Do try to ensure that, from as early as possible in your degree, your research efforts issue in written outcomes that are sustained pieces of writing.

**WRITE EARLY
AND WRITE
OFTEN.**

Figure 7.1 presents a period breakdown for a 3-year research degree (no coursework), with suggestions on the types of writing possible in each period. Do what suits you best though. For example, it might be more appropriate to write a methods section of an experiment early on, or perhaps write up test results produced early, or attempt thematic analysis of a literary text being used in your research.

Analytical reading reports Like all students, you will be reading the literature – and sometimes there is an enormous amount to be read. Consider writing analytical reading reports (a few pages or so) when you complete a particular block of reading for your thesis. You can begin writing these very early on in your research.

Your purpose in producing these reports is to fully assess the strengths and weaknesses of the small body of literature, perhaps only three or four articles, you have just finished reading, just as you would in a full literature review (see ‘The literature review’ in Chapter 6). These reports should be written as properly developed analytical writings, with clear paragraph structure and a coherent line of discussion (see ‘Developing texts’ in Chapter 4). The advantages of doing these reports are several:

- They ensure you practise your writing.
- They help you to sort out what you think about the reading, force you to process carefully the material being read. The act of writing is a counter to vagueness in terms of understanding both your sources and the ideas you are developing from them.

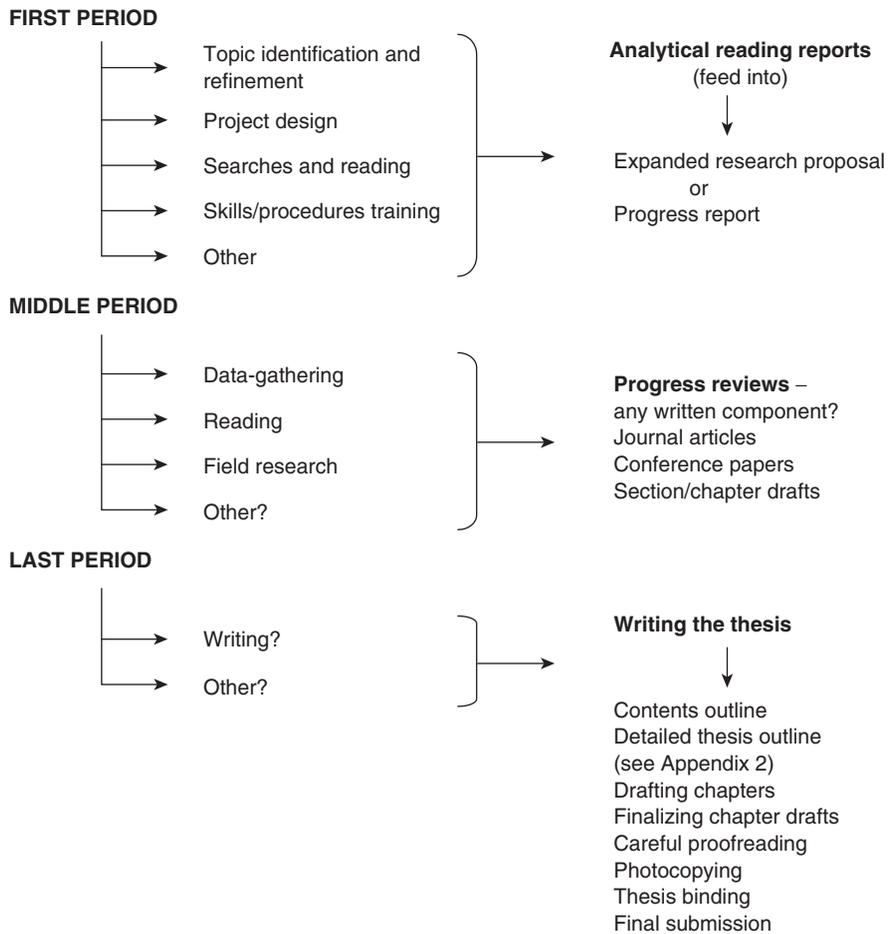


FIGURE 7.1 Managing the project through writing

- They can feed into the writing of a substantial literature review if this is required.
- They are a useful base from which to discuss with a supervisor your progress, your ideas, and any uncertainties or difficulties you are experiencing in your research.
- They can minimize the (sometimes) daunting effects of beginning the writing of a thesis.
- They are especially useful if English is not your first language, as they allow supervisors and academic skills or writing staff to identify early what you need to work on to improve English language and writing in your course/disciplinary context.

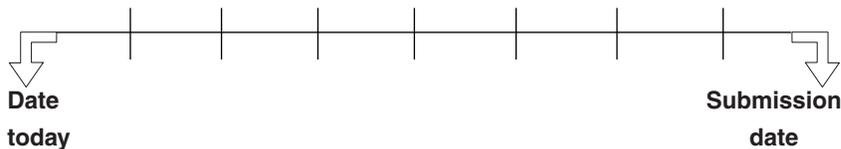
SETTING UP A THESIS WRITING SCHEDULE

When you begin to write a first *full* draft of your thesis, set up a detailed writing schedule that includes time available for reworking chapters in the process of, or subsequent to, producing the first draft.

Exercise: setting up a writing schedule

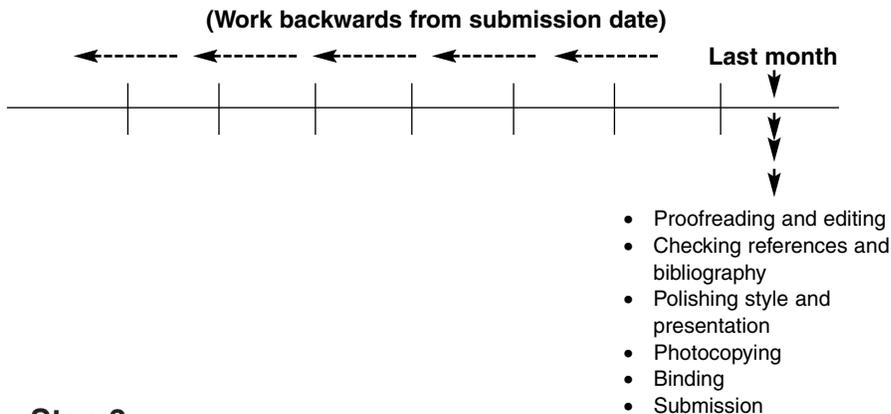
Step 1

Set up a time line that demarcates months to submission and includes an actual submission date, as below (based on 8 months to submission):



Step 2

Now work backwards from the submission date allotting time segments to the different writing tasks (for example, chapter drafts) and activities, as I do with the last month below:



Step 3

Set up a schedule that details dates for submission and return of drafts, revision of the whole thesis, etc. – everything you have to do to complete the

thesis. Discuss the viability of your schedule with your supervisor to negotiate any changes needed to accommodate the supervisor's commitments.

SETTLING ON TYPOGRAPHY AND FORMATTING

Again at the point of beginning your first *full* draft, clarify institutional/departmental formatting expectations if you have not already done so. The few strategies suggested below complement the discussion on 'The mechanics of academic writing' in Chapter 3, which you might review.

- First, find out if there is an institutional document covering the following features for your level of degree: content standard, formatting, presentation, typing and typesetting, font sizes, photocopying, binding and so forth. Or your department may have standardized requirements that your supervisor will know about.
- Margins need to be able to accommodate binding needs. Decide on these in a first full draft as re-setting margins at a late draft can throw out figures, tables, graphs, photographs, etc. that you have incorporated in your thesis.
- Decide on spacing (for example, space and a half or double spacing). Follow usual practices in your discipline. Again, deciding to change line spacing at a late stage can be a nuisance in that figurative illustrations can be thrown out.
- As regards art work, photographs, maps, figures, graphs, tables, etc., check formatting of legends, professional standards of production, appropriate placement of these in the body of your thesis and so forth.

Keep a record of practices settled on (and approved by your supervisor) in a first chapter so that you can refer to this for later chapters; or perhaps you can set up a style template on your computer – ask for help from your local IT support.

Expectations of theses

While your supervisor will advise you as to more specific expectations, there are standard expectations that apply generally across disciplines at any level of thesis writing.

STANDARD EXPECTATIONS

Your final draft will need to evidence at least the following:

- Coherent development of the thesis overall (see 'Whole text development' in Chapter 4).
- Adequate signalling of intentions and embodiment of audience needs (see the next section).
- Evidence that the relevant literature has been thoroughly worked and understood. You may need to write a literature review (see Chapter 6) and/or integrate the material you have read into your own discussions throughout the thesis.
- Logical rigour and sound reasoning in terms of analyses, discussions or arguments (see relevant parts of 'The research essay as formal argument' in Chapter 5).
- (Perhaps) demonstrated knowledge and full critical appreciation of experimental or test procedures, relevant theories, models or methodologies (see 'Treating information critically' in Chapter 3).
- Competent presentation of material. Do make sure the thesis is a scholarly presentation. Use appropriate citation and bibliographic formats as discussed under 'Plagiarism and referencing' in Chapter 3. Proofread very carefully; ensure that references are correct in the text and the bibliography – cross-check these. Check the consistency of legends for tables, figures, graphs, etc. and that these are correct. Check that there is a table of contents page, an abstract and whatever else is required at the beginning, perhaps a list of abbreviations or acronyms if there are a large number in the thesis.

BRINGING EXAMINERS INTO VIEW

Taking care of audience needs is a further standard expectation, and one that can prove something of a challenge for thesis writers. Difficult as it can be to think beyond the sometimes obsessive intellectual processing that is thesis writing, bear in mind that your thesis is a

It is useful to write with examiners in mind, whether you know who these will be or not.

communication with the scholars who will assess it (see also ‘Attending to audience needs’ in Chapter 3 and ‘Engaging the reader’ in Chapter 9):

- Never forget that you are writing for examiners.
- Think positively about examiners – they are not out to get you. But they will be close critical readers concerned to maintain high standards in the research field.
- Regardless of their subject expertise, write as if examiners know nothing about what you are doing and why you are doing it – it is important to demonstrate that *you* have complete control and critical understanding of any subject matter under discussion in your thesis.
- Always respect examiners’ needs by signalling your intentions at appropriate points throughout your thesis.
- It may also be necessary to contextualize your discussions at times to put examiners in the picture, just as the writer in this example does in his lead-in into a lengthy sub-division:

*By the late 1970s, two major problems had become apparent in the forest management sector: tremendous forest destruction and increasing poverty among the local people, including the migrant and native people occupying the forest lands. During this period, there was a growing acceptance that the punitive actions adopted by the national government were ineffective in keeping the marginal communities away from the forest lands. **Consequently, social forestry programs were introduced; these subsequently evolved into community forestry programs, as discussed in the succeeding sections** (my emphasis).*

By the time you approach writing the final draft of your thesis, you have certainly earned the right to a display of confidence:

- During different stages of your research you may have found yourself in awe of your supervisor and other scholars with whom you have worked. It is now time to let that awe settle into collegial respect. As you write, respect *your* knowledge and trust your own judgement.
- Over-familiarity with your research may lead you to feel at this final stage of writing that all you have to say is fairly obvious (students often feel this). But of course, it

was once not obvious to you, and the research you present will certainly not be obvious to your examiners.

- You are in control of the writing, and in being so you have the power to guide your examiners towards the understandings or meanings you wish them to take up as you move through your discussions. After all, at this stage you have become something of an expert, perhaps even *the* expert, on your topic.

Longer theses

Identify any institutional and/or departmental guidelines or policy papers that relate to the writing of your thesis – ask your supervisor, other students, a dean of graduate studies or other appropriate authority about these. Such documents might be guidelines of a type that address general issues of style, formatting and standard expectations, and perhaps also more substantive issues in terms of focusing and structuring your thesis.

FOCUSING AN 'ORIGINAL' CONTRIBUTION

The PhD needs to be seen realistically, particularly if you are researching in a climate that allows only 3-year scholarships, if, indeed, you have scholarship funding at all. So do not make the mistake of pondering too much over the great work you feel you have to produce or the revolutionary contribution you need to make. The requirement is for an *original* contribution, and part of the difficulty lies in that word itself. It is a word that mystifies more than it clarifies, and so needs to be unpacked.

To make an *original* contribution, you need to uncover new knowledge in order to advance knowledge in your field of research.

Exercise: determining the nature of your contribution

I list below a number of activities that involve making an original contribution to research, to advancing knowledge. Identify which of these activities apply to

your research so that you can communicate clearly the nature of your contribution, probably in the thesis introduction. Perhaps you are doing not just one but several of these activities, or making contributions of a type I have not mentioned, in which case, add these to the list:

- Filling a significant gap in the research (could be almost anything).
- Challenging prevailing methodologies, theories or test procedures.
- Continuing an on-going line of enquiry (common in the experimental sciences).
- Developing new experimental procedures or perhaps a model.
- Developing new products, software or technology, perhaps for industry.
- Using established techniques or approaches in a new context (common in area studies).
- Providing extensive new data (common in field research).
- Producing a portfolio of creative work with a shorter accompanying thesis.
- Presenting studio work or performance presentations, as in some arts.
- Writing a biography, as perhaps in History or English.
- Setting up a comprehensive practical study for professional development purposes.
- Doing a comprehensive analysis that issues in new, and important, policy proposals.
- Documenting a language, as perhaps in Linguistics.
- What else?

Now think through the value of your research – why was it important to take up your line of investigation?

WHAT PHD EXAMINERS SAY IN THEIR REPORTS

Although I am focusing on PhD examiners' reports, much of the discussion in this section should be useful for theses other than doctoral dissertations as it opens up the whole topic of expectations of theses. It should also prove useful if your thesis is to be examined by way of a viva or oral. Rigorous practices in research and writing of the type now discussed will aid you in defence of your thesis (see Murray 2003).

The information in this section is taken from examiners' reports (to which I had access) used in a pilot study done by Brigid Ballard (1995). The study analysed examiners' reports for 62 PhD theses. Each thesis had three external

examiners, who were both national and international. The study covered reports from six disciplines – English and History in the humanities; Anthropology and Political Science in the social sciences; and Botany and Zoology in the life sciences.

While this study was a small one, it clearly has generic value also. I am certain that the examiners' comments will echo your supervisor's advice on what to do and what not to do in writing your dissertation. Below I summarize some of the main categories of examiners' commentary.

Overall quality and contribution to scholarship Among thesis qualities most commonly valued was the capacity to **contribute innovatively**. In the life sciences this was often communicated along the lines of an incremental advance on a commonly recognized problem, with summary comments like the following:

'Pioneering work' – 'stimulating' – 'breaks new ground' – 'important and valuable contribution to knowledge' – 'major piece of original research' – 'offers significant and useful insights' – 'advances scientific knowledge' – 'tackled problems difficult though intriguing to scientists'

Similar comments appear for theses in the humanities and social sciences:

'... develops diverse and original methods which should exert an influence on other scholarship in the field.'

'This is a major piece of original research.'

'... a major contribution both to ethnography and to social theory.'

'This thesis is an important contribution to the history of the domestic economy in X [country named], to women's history and to the agricultural history of X.'

'This thesis breaks new ground that will, I think, prove to be significant to the scholarship in the area.'

'As an original contribution to knowledge ... this thesis qualifies twice over.'

In assessing the nature of the contribution, examiners also considered 'justification' for the research undertaken, the importance of the 'questions' being addressed and 'issues' canvassed; the capacity to relate research concerns to those of the broader discipline; and the grounding of the research in the relevant scholarship.

Whether there was a formal review of the literature or not, thorough knowledge and **critical understanding of the relevant literature** was extremely important to examiners, engendering such comments as:

'Takes account of all relevant literature' – 'close critical review of others' investigations' – 'relates findings fully and forcefully to extant literature' – 'judicious use of a wide range of sources'

But, more critically:

'failure to review and take up relevant literature across disciplines' – 'appears not to be fully conversant with the literature'

Evidence of publication in quality journals was highly regarded by examiners in the life sciences in assessing the overall quality of a thesis. Examiners in the humanities and social sciences also considered, and provided advice on publication, either as journal articles or as monographs, but did not attribute the same importance to there being existing publications from the thesis in assessing overall quality.

Scope, viability of topic, breadth and depth of study Examiners were also concerned about the **appropriateness of the chosen topic** for the level of a PhD and the time frame:

'To tackle such a topic is clearly to undertake a task "involving a comprehensive study of a scope and size that could normally be expected to be completed in the equivalent of 3 years full-time study".' [This latter quote is taken directly from the university instructions sent to examiners.]

'The candidate has identified a viable topic, researched it with appropriate techniques and methodology, and reached results with care and clarity rarely accomplished by a doctoral candidate.'

'... although "viable", the topic is also extremely difficult to address.'

Some topics were clearly thought beyond the scope of a PhD, and others not viable:

'Neither the supervisor nor the student seem to recognize that they were tackling a major problem that was probably too difficult.'

'This is a monumental thesis involving, in my view, too much effort for the degree of Doctor of Philosophy.'

'Undoubtedly, the thesis adds an appreciable amount of detail to what is already known ... Yet it is doubtful whether the material is significant enough to warrant a reference to the thesis in any future publication ... It may be that this is not the

candidate's fault. Assiduous though the research has been, it is possible that material of the desired significance is simply not there to be found.'

Examiners also took account of the breadth and depth appropriate for a PhD, sometimes commenting on the scope and quality of the **bibliography** or **list of references** in the process of determination. In one case, a thesis considered inappropriate for the level of the degree did gain a 'pass' recommendation:

'In short, this thesis seems more in the nature of a Master's than a PhD dissertation. But its limits are inherent in its conception, in terms of which it is complete and adequate, and would therefore not be removed by rewriting, however substantial. And since I would be reluctant to fail such a competent piece of work I recommend that on the basis of it the candidate be admitted to the degree of Doctor of Philosophy.'

Research techniques and methodologies, results, discussions, analyses and arguments The importance attributed by examiners in the life sciences to **competence in research techniques** and procedures is evident in the following summary remarks:

'Has mastered a diversity of procedures' – 'high technical expertise' – 'displays competence in the variety of techniques' – 'demonstrates acquisition of the art and techniques of research science' – 'maturity of scientific approach' – 'employed intelligently a wide range of current techniques' – 'used a range of experimental techniques with great effectiveness' – 'data analysed by appropriate statistical methods' – 'well designed piece of research'

But also this:

'Each of the other topics investigated in the thesis are at a low level of technical expertise and not carried through to conclusions.'

Many examiners from the life sciences complimented students on the quality of their data and the **logical rigour** of their discussions. For example:

'Good solid empirical data' – 'data suggests careful observation' – 'careful selection of data for presentation' – 'the logical rigour of the discussions is extremely impressive' – 'logical and systematic throughout'

The more negative comments tended to be of this type:

'... too often prepared to reach firm conclusions in the light of insufficient data.'

'... there are observations in the Discussion that were not mentioned in the Results.'

'... gets caught up in the minutiae of the results and has failed to highlight the significance of many of his findings.'

These reports suggest you need to be realistic about the importance of your results – grand speculations were not appreciated. You will also need to draw out the *significance* of the results in the discussion section, and their *implications*, as doing this was thought essential by examiners.

Examiners of theses in the humanities and social sciences were no less careful in their scrutiny of analyses and arguments, with many praising and detailing evidence of '**critical thought**' (or remarking on the lack thereof). One noted 'the subtlety and brilliance of analysis' in a thesis; others commented as follows:

'The whole thesis is vigorously argued. It is one of the strengths of this work that it repeatedly provokes argument and, indeed, invites debate throughout the text.'

'The structuring of the argument is, indeed, one of the most reassuring and impressive aspects of the thesis.'

'The quality of the analysis is excellent throughout – the present work represents a well researched, well argued study.'

'The author almost always appears aware of alternative explanations and [the] reasoning is frequently ingenious.'

But also:

'The first two models are in danger of functioning as straw men in the argument ...'

There was also this type of comment, which highlights the value examiners attributed to **overall coherence**:

'The connecting discussion throughout the thesis is almost always clear and intelligent.'

'The weakness of the thesis lies in its inability to maintain a common thread of argument throughout what is a very long and detailed piece of work.'

Where **theory** was an important consideration, this too was carefully assessed. One examiner praised the candidate's awareness of 'alternative theories and explanations'; another, the 'theoretical sophistication' of the study; and yet another, the 'creative' and 'rigorous' use of theory in the thesis under examination.

The importance of 'sound' **methodology** and its careful application in context was another vital consideration for many theses, as was 'clear definition of concepts' – one examiner displaying considerable annoyance because of a student's failure to define seminal concepts.

Academic style and presentation Details of style and presentation were consistently referred to in the commentary, with examiners in the life sciences being particularly meticulous about these aspects. Examiners were enthusiastic about 'clarity and simplicity', 'conciseness', a 'succinct' thesis, 'consistency of style', impressive 'flow and cohesion' of discussions, with further comments like this:

'The physical presentation of the material, the quality of the line drawings, charts, and illustrations are of outstanding quality.'

'Let me observe in conclusion that this thesis is not only full of original insights and judicious syntheses but also impeccably written and presented as a material object, which makes the task of reading much more pleasurable.'

There was strong disapproval of 'discursive and unfocused' writing, a 'journalistic style', 'long-windedness', 'frequent repetition' (on several occasions), and labouring the point:

'There is a tendency to "overkill". When the candidate proves a point [the candidate] continues to prove it again and again.'

Some examiners were clearly irritated by excessive numbers of typographic errors and spelling mistakes, many of them meticulously listing these for future correction. Careful proofreading is indeed important.

SUMMARY OBSERVATIONS ON EXAMINERS' REPORTS

- All examiners took careful account of the instructions for examination sent to them in making their judgements, often framing comments regarding assessment in terms of the phraseology of that university's instructions. Do find out what is sent to examiners by your institution if your thesis is to be examined externally.

- Examiners were keen to pass students, and felt bad, and sometimes angry, when struggling to find positive comments to make about a thesis. They did not expect perfection, and sometimes easily accommodated both high praise and strong criticism of aspects of a single thesis. On occasion, more serious criticisms were tempered by examiners making allowances for probable causes of perceived weaknesses in a thesis. Generally, they seemed to see the candidate as an 'apprentice' at the beginning of a career in research, not at an end. (This is despite the fact that many of you will not actually continue with research careers). Mostly, these reports show considerable encouragement and support for doctoral candidates.
- Examiners perceived the role of the supervisor(s) as extremely important, congratulating both student and supervisor on an excellent thesis, and often including the supervisor in criticisms of a problematic thesis:

'The candidate has made use of a broad range of archival and secondary materials, and handled them with a skill and sensitivity which reflect well upon her and the supervision she has received.'

'These matters could have been resolved during the writing stage had the candidate responded to strong supervisory direction. The finished work shows little evidence of pressure upon [the candidate] to condense [the] work through judicious selection of exemplary material ... How far this may be judged to be a failure in the supervision and how far a failing in the candidate (in refusing to respond to guidance) is impossible for an external examiner to assess.'

'More to the point, has a supervisor ever put such questions about [the] work to this very evidently assiduous candidate? Did the supervisor ever challenge [the candidate] to explain ...? The candidate seems in desperate need of challenging discussion of the work.'

- Some examiners thought they were not the best person to examine, or had insufficient knowledge to do so, which highlights the importance of choosing external examiners carefully:
 - (a) 'After reading [this] thesis, I can only wonder why you or the candidate or whoever wanted me to read it as an outside examiner. I say this because I am in such disagreement with the whole thrust of the analysis.'
 - (b) 'As far as I am able to judge the matter – since I am not myself a [member of the candidate's discipline] – the candidate's approach has been thoroughly professional'

- Coverage of the thesis being examined was, in all instances, comprehensive. The 186-plus reports (there were extras because of resubmissions) show that all examiners were diligent and detailed in their assessment of the research and writing on both the levels of the overall thesis and individual chapters. It would seem from these reports at least, that very little escapes their eye.

Shorter theses

Shorter theses can have distinctive topic orientations, which, in turn, will affect expectations of your thesis.

DIFFERENT TOPIC ORIENTATIONS

The issue-driven topic One dominant orientation across many disciplines is the issue-driven topic. In this context, engaging key issues of interest to scholars in your discipline will be central to the development of the discussions/arguments presented in your thesis.

The data-driven topic Or perhaps yours is a data-driven topic, where the accumulation and presentation of new data (for example, through fieldwork, local surveys, interviews, the generation of statistics, participant or non-participant observation, conducting trials or tests) is paramount.

Box 7.1 The data-driven topic will entail critical engagement with relevant issues

A French student is studying linguistics. For her research project, she undertakes a comparative survey of a small group of British students, who are studying French at university while receiving private tuition from her. Her central research question is: *What are the effects of dual contexts of learning on second language acquisition?* The presentation of new data will be fundamentally important in the writing of her thesis. Still, analysis of the data will also involve critically engaging relevant issues.

CASE STUDY Example

It could also be that your interest has led you to improve, even marginally, on an existing model or product by way of a series of practical tests. Data generated by way of these tests might then be used in your thesis to critique that model or product.

The literature review orientation Orienting the topic to a review of the literature also seems to be an attractive option for many shorter projects. In the example below, the writer, signals this orientation in the thesis introduction.

Thesis title:

Community participation: A key element in mother and child primary health care activities

Extract from the introduction:

This literature review aims to present, in the context of health care, a synthesis of the major themes and arguments relating to the concept of community participation and PHC [Primary Health Care] and MCH [Maternal and Child Health Care]. It is acknowledged that there is a wealth of literature on the general concept of community participation; however, this review will be confined to community participation as it relates to MCH/PHC. First, literature on the different theories, practices and approaches to community participation will be reviewed in the PHC context, along with the debate on the vertical/horizontal approaches to PHC. Second, current issues relating to MCH and its correlation with women's participation and health will be reviewed. Third, a framework for further research will be formulated. This will be followed by a summary of the major themes and future directions for research.

There may have been other possibilities available to you. Or it may be that your orientation was decided for you by way of disciplinary expectations. Note though, that regardless of your topic orientation, treating information critically is paramount (see Chapter 3).

ORIENTATION AND PRACTICE

Regardless of the orientation of your thesis, it will need to evidence internal coherence in terms of:

- The focus of the study, your precise topic of investigation, and the topics discussed throughout.
- The objectives, questions or hypotheses that govern the investigation and the discussions presented in the body of the thesis.

It is important to carry through what you say you are setting out to do in your introduction. So ask yourself:

- Does the body of my thesis actually do what I say I will do in my introduction?
- Do the discussions in the body of the text actually meet the research objectives or answer the research questions or engage the hypotheses set up in my introduction?
- Have I justified my choice of methodology (if appropriate), presented a sustained and convincing argument for my approach?
- Does my thesis evidence a coherent line of discussion/argument throughout?
- Have I provided sufficient evidence, and the right kind of evidence, to support discussions and arguments in the body of my text?

A shorter thesis should also be a critical, but not necessarily an exhaustive investigation of a topic. The scope of the study is likely to be limited along the following lines:

- The review of literature will be selective, perhaps confined to essential readings and recent research only that allows you to position your study in the research context.
- Data-gathering is likely to be small-scale and localized. You will probably be working with easily accessible subjects, conducting interviews or tests, doing short surveys, or carrying out manageable experiments.
- Arguments and discussions will necessarily be limited, though logically sound, so that generalizing from findings to other contexts is not likely to be an aim, though speculating about these findings might be warranted.

Structuring a thesis

Structuring or organizing vast amounts of information on the scale of a thesis can certainly stretch you. Strategies presented in the remainder of this chapter are designed to help you with macro-structuring: dividing up the text, overall

structuring, structuring thesis chapters, gaining control of the thesis as a whole, and structuring individual parts of the thesis: the abstract, the thesis introduction and the thesis conclusion. (Review also 'Whole text development' in Chapter 4.)

DIVIDING UP THE TEXT

The thesis text is usually divided along the lines of Figure 7.2, although variations do occur and shorter theses are unlikely to require a statement of originality.

Here I shall discuss briefly the features in Figure 7.2 marked with an asterisk, as these are not covered elsewhere in this book.

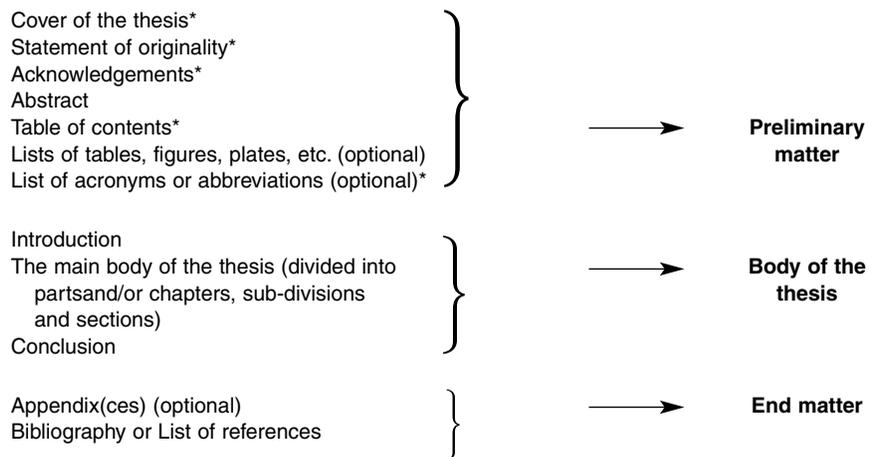


FIGURE 7.2 Basic divisions of a thesis (*see text)

Cover of the thesis The first page of your thesis should provide sequential information of this type:

- The thesis title
- your name in full and
- the month and year of submission

The ordering of preliminary information and wording is likely to be standardized in your institution, so do check.

which is followed by a statement to this effect:

A thesis submitted for the degree of ... (fill in your degree, e.g. Doctor of Philosophy) at ... (fill in the full title of your institution).

or

A thesis submitted in partial fulfilment of ... (where your thesis is only one component of a degree that includes coursework; then continue as above).

Statement of originality As a doctoral student, you will probably need to include a signed statement indicating the extent to which the thesis is your original work: perhaps entirely, or in the case of investigations carried out jointly with others, perhaps largely but not entirely.

Acknowledgements It is usual to thank all those who assisted you in the production of the thesis. Some students also take this opportunity to thank family members and friends for their support.

Table of contents

- On the table of contents pages indicate the page number of the start of each chapter, and perhaps those of sub-divisions or sections within these – practice varies. Include the Appendices and Bibliography.
- Pages of the preliminary matter are usually numbered with roman numerals (i ii iii iv v vi vii, etc.). On occasion though, I have seen pages in the preliminary matter left unnumbered, so review theses in your discipline.
- Consecutive page numbering in arabic numerals (1 2 3 4 5 6 7, etc.) is used for the body of the thesis, from the first page of the introduction to the last page of the thesis.

List of acronyms or abbreviations If there are a substantial number of acronyms or abbreviations in your thesis, then it is useful to include an alphabetical listing of these in the preliminary matter. Regardless of how well known an acronym is in your field, the usual academic practice when introducing it into the text for the first time is to give the name in full, with the abbreviation or acronym in brackets, thus: North Atlantic Treaty Organization (NATO). Subsequent references in the text can then be to the acronym, NATO. Examiners

are unlikely to read longer theses in one sitting, and may forget the meaning of an acronym. If there is no list of acronyms at the beginning of your thesis, on *first usage* in a chapter, write in full even those acronyms you have previously used.

KEY STRUCTURING STRATEGIES

Strategy 1: Capitalize on word length As you approach structuring, first think about word length. Approximately how many words will you need for each chapter, given designated word length? Your sense of this might be rough but thinking about it may prevent overwriting. If you are inclined to overwrite, work from a lower word length in allotting the number of words to chapters. Work on, say, 70,000 for a PhD with an upper limit of 80,000, or 10,000 for a shorter thesis with an upper limit of 15,000. Examiners generally seem to appreciate tighter theses.

Strategy 2: Apply this set of core questions The vitally important set of questions below should inform your research from the outset of your degree, as your answers to such questions are likely to evolve over time. When structuring, activate the set of questions in Table 7.1 at different levels of the writing (for example, the general introduction, individual chapters, long sub-divisions) in order to guide your readers to an understanding of what you are doing and why.

Answering the what/so what questions in Table 7.1 feeds into the development of a thesis statement, as elaborated on next.

Pause frequently when writing to consider that critical question: 'so what?' Keep asking yourself as you write: what are the *implications* of my arguments/discussions?

PROVIDING A THESIS STATEMENT

Pinning down your thesis can be like trying to hit a moving target – difficult. Perhaps it will help to think about it in different ways:

- What do I think my overall argument actually is?
- What is the big message I want to communicate to readers?

A thesis (the physical product) should have a *thesis* (the overall argument advanced in the thesis).

TABLE 7.1 Core questions for structuring at any level of the text

WHAT? (Research focus)	WHY? (Research purpose)	HOW? (Research method or procedure)	WHAT/SO WHAT? (Implications of your research)
<p>What is your 'topic of investigation'? What will you be discussing? What are you going to <i>cover</i> in the thesis? What are the boundaries of your coverage? If you are placing limitations on your coverage there may need to be a special section on scope of the study, which details the nature of these limitations and reasons for them.</p>	<p>Why are you covering this topic? What precisely is your major research objective, or the 'big question' driving your research project? If you are setting up hypotheses, how do these relate to your overall research objectives? Or your intention may be to solve a particular problem, so that you need to produce a <i>Problem statement</i> (see Appendix 2).</p>	<p>How are you going to order discussion of your topics? What precisely are you going to do and in what <i>order</i> are you going to do these things? Why?</p>	<p>What are the main ideas/points you want to make in developing your discussions or arguments? (See 'Developing texts' in Chapter 4).</p> <p>You may be uncertain about these ideas/points until you write a first draft. But, if you are clear about some, jot them down now when structuring.</p>
<p>Now try to identify manageable topics or sub-topics suited to chapter or sub-division headings respectively. Ask yourself: How do these topics or sub-topics relate to each other in terms of my overall research focus?</p>	<p>What are the subsidiary objectives or questions that arise out of your overall objective? Can you identify these clearly? Try listing them for your own clarification? These might prove a useful basis for chapter structuring.</p>	<p>This would involve considering chapter titles and the <i>logic</i> of their ordering within the thesis; at the level of the chapter, sub-division headings and the logic of their ordering within a chapter; at the level of the sub-division, the logic of the ordering of topics for discussion.</p>	<p>Answering the 'so what? is also vitally important when writing. Remember to draw out the <i>implications</i> of your discussions.</p>
<p>(This would seem to be the easiest question to answer, but it can be hard. For example, imagine how your focus and structuring of sub-divisions within a chapter would vary depending on which of these topics you chose to focus on: <i>The politics of the debate on logging rainforests in Brazil</i> or <i>The politics of the economic debate on logging rainforests in Brazil</i>.)</p>	<p>Chapter level: What are the specific objectives of individual chapters and how do these relate to your overall thesis objectives? What are the <i>relations</i> between your overall research objectives and those specific to chapters? And do these seem to form a <i>coherent</i> set of objectives?</p>		<p>Your reader should not be left thinking: 'Well I take your point, and this is all very interesting (e.g. a piece of analysis with good critical insights) but, so what? Why is it important for you to be telling me all this?'</p>

- What is the overall point I am trying to make that underpins what I say throughout my thesis?
- Why should somebody want to read my thesis? What is different/important about it?

Your thesis is your answer to that big question driving your research, or to the problem at the heart of your research. Even a rough, working thesis can help guide your early structuring efforts. Confine your thesis statement to a single short sentence, no more than two or three lines. Pin the statement above your work desk and/or place it permanently on your computer so that you see it every time.

Put a *working thesis* into a header so that it turns up at the top of each page of your draft. This is a useful way to refine it as you write and remind yourself that each chapter should somehow be contributing to development of a thesis.

MY THESIS is that:

(This always takes the form of a big general assertion – a statement)

The example below constitutes a thesis statement, in this case as laid out in the introduction:

I will argue that X's [country named] poor record of environmental law enforcement and compliance by industries cannot be explained solely by reference to specific aspects of environmental law, but rather, is a result of the very nature of X's social, political and legal system.

Everything done in this shorter thesis (the product) was meant to advance the above thesis (the argument).

Chapter structuring options

Often PhDs have as many as eight or nine chapters; a shorter thesis might have about four. Word length will affect the number of your chapters, but so too can the principle of structuring used, the type of research and so forth. There are many different approaches to structuring chapters, four of which I include here for discussion.

It could be that there is a preferred basic structure in your discipline, which should take precedence over anything I have to say in this section. Or perhaps your supervisor will refer you to one of the useful resources that target structuring and writing theses in cognate disciplines, such as that by Perry (2004) on marketing and related fields.

A SCIENCE MODEL

If you are researching in the experimental sciences, you will likely use some variation of the following model in structuring core chapters: *Introduction, Materials and Methods, Results, Discussion*. The model also suits other research contexts, for example if you were conducting tests or reporting on investigations or tests, collating data and presenting findings, and then drawing out the implications of your findings.

Review 'Experimental or technical reports' in Chapter 6, where I discuss in some detail expectations of the different sections of this type of structural framework.

This might be called a science model of structuring, though certainly not all science theses evidence this modelling, and disciplines other than those in science use the structure.

THE ILLUSTRATIONS-BASED MODEL

Some students have reported the value of taking this particular approach to structuring, which might be just the model for you. First they process their data, producing different sets of illustrations (for example, tables, graphs, photographs, figures, bar or pie charts, etc.) for each chapter. They then consider the order in which they want to present the illustrations in a chapter, and structure accordingly.

This is a model in which a great deal of intellectual effort is expended before the writing of each chapter begins. Some research that is heavily data-based will certainly lend itself well to this type of structuring.

A 'PHOTOGRAPHIC' MODEL

Another approach to structuring chapters is what I call the '*Photographic* model'. Figure 7.3 presents a table of contents outline with the structure figured at right to illustrate this approach.

Introduction

Chapter 1: Theurgy and Orthodoxy in the Western Tradition

- I. Yeats and Magic
- II. Eliot and Orthodoxy
- III. Levelled Consciousness, Mysticism, and Conceptual Methods

Chapter 2: Critical Constructs: Identity and Contrast

- I. Theosophy, Philosophical Rationalism, and the Art of Imagination
- II. Occultism and the Celtic World of the Poet-Magician Yeats
- III. Yeats's Method of Conception: the Dionysiac and the Apollonic
- IV. Absolute Idealism and Eliot's Early Method of Conception
- V. Catholicism, Hulme's Imagism, and Eliot's Art of Criticism
- VI. French Symbolism, Modernism and the Sceptical Outlook

Chapter 3: Masterful Images

- Crossways* (1889)
The Rose (1893)
The Wind Among the Reeds (1899)
In the Seven Woods (1904)
From The Green Helmet and Other Poems (1910)

Chapter 4: Sensation and Thought

- Poems Written in Early Youth*
Prufrock and Other Observations (1917)

Conclusion

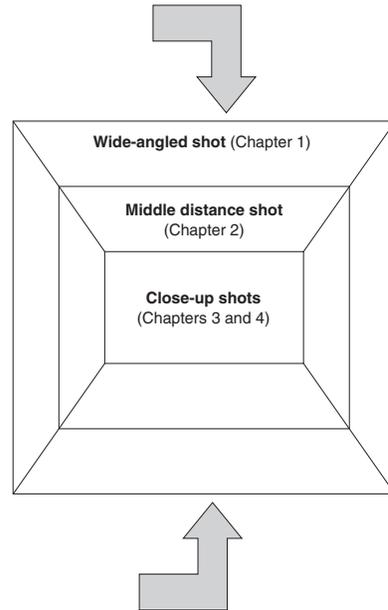


FIGURE 7.3 A Photographic model of structure

Chapter 1 provided a broad overview (*wide-angled shot*) of the two distinct traditions of Western supernaturalism to which the two poets inclined, and the conceptual implications of their different preferences. There was then a move in Chapter 2 to a *middle distance shot* of the conceptual tie-in of these two traditions with other areas of the Western metaphysical tradition, which in turn were linked to the literary movements attracting the two poets as well as the types of literary criticism they espoused.

Chapters 3 and 4 then zoomed in for *close-up shots*, detailed analyses of the early poetry to show how each poet's conceptual framing of reality was influenced by the different traditions of Western supernaturalism to which they held.

The Conclusion then built on these four chapters to show how changes in the poetic output of each poet mirrored progressively changing attitudes to their preferred forms of Western supernaturalism.

A SEQUENTIAL MODEL

Your research might be of the type that easily lends itself to the sequential model of structuring chapters, where there is an underlying logic to the sequencing of chapters. In Figure 7.4 historical chronology – moving successively from landmark changes pre-contact through landmark changes occasioned by European contact to the present – is the underlying principle of a structure that has both parts and chapters, as well as sub-divisions, which I have omitted from the Figure for reasons of space.

Table of Contents

Introduction

PART I. THE PRE-CONTACT PERIOD (C. 1200BC TO 1770)

Chapter 1. The Formation of Tongan Society:
Development of the Ancient Modes of Production

Chapter 2. The Emergence of Centralised Power:
The Transition to a Feudal Model of Production

PART II. THE EUROPEAN CONTACT PERIOD (1770–present)

Chapter 3. Taufa-ahau's Land Reform:
The Creation of an Independent Class of
Small Land Holders

Chapter 4: Capitalist Penetration: The Transition
to Mixed Modes of Production

Chapter 5: 'Internationalisation': The Transition
to a Dependent Capitalist Mode of Production

Conclusion

HISTORICAL CHRONOLOGY

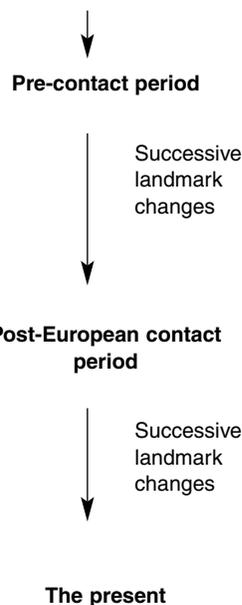


FIGURE 7.4 A sequential model of structuring

If there are no disciplinary requirements for thesis structuring, be creative and experiment, perhaps coming up with more than one likely structure to

discuss with your supervisor. Let your research objectives determine the best structure for your thesis. It could be that your chapter structure will evolve from central themes covered in your research, or the seminal issues you need to engage, as happened in the example discussed in the following section under 'Visually mapping core chapters', which was a case study type thesis.

Gaining overall thesis control

Different strategies are now suggested for gaining control of the overall structure and development of the thesis.

VISUALLY MAPPING CORE CHAPTERS

As a first step, you may find it useful to visually map core chapters on paper, or with a computer. Take a little time to study Figure 7.5, which is an example of a student's successful attempt at doing this as he set out to determine the logical relationships among his thesis chapters. His topic was: *The legal/policy framework for integrating indigenous peoples in protected area management in X [country named]*.

Each fundamental issue in the central triangle – governance, sustainable use and recognition of property rights – was covered independently in successive chapters (Chapters 4, 5 and 6). These were the chapters analysing data from the case studies. In each case, there was analysis of the dichotomies pictured in the relevant circles: the balancing of property rights preservation and biodiversity conservation in terms of 'Governance;' the compromise of practices and policies in terms of 'Sustainable use;' and the reconciliation of national and local perspectives in terms of the 'Recognition of property rights.'

Chapter 7 then provided a comparative analysis of the implications of these three issues and Chapter 8 expanded the discussion to determine an appropriate policy framework that would allow for (a) Sustainable Livelihood, (b) Secure property rights and (c) Effective Governance. (The first three chapters of the thesis, not included in the above model, covered the introduction, theory and methodology, respectively.)

BRAINSTORMING THE TABLE OF CONTENTS

Do attempt a solid table of contents outline before writing your first *full* draft, even though it will need some reworking on completion of the writing. A table

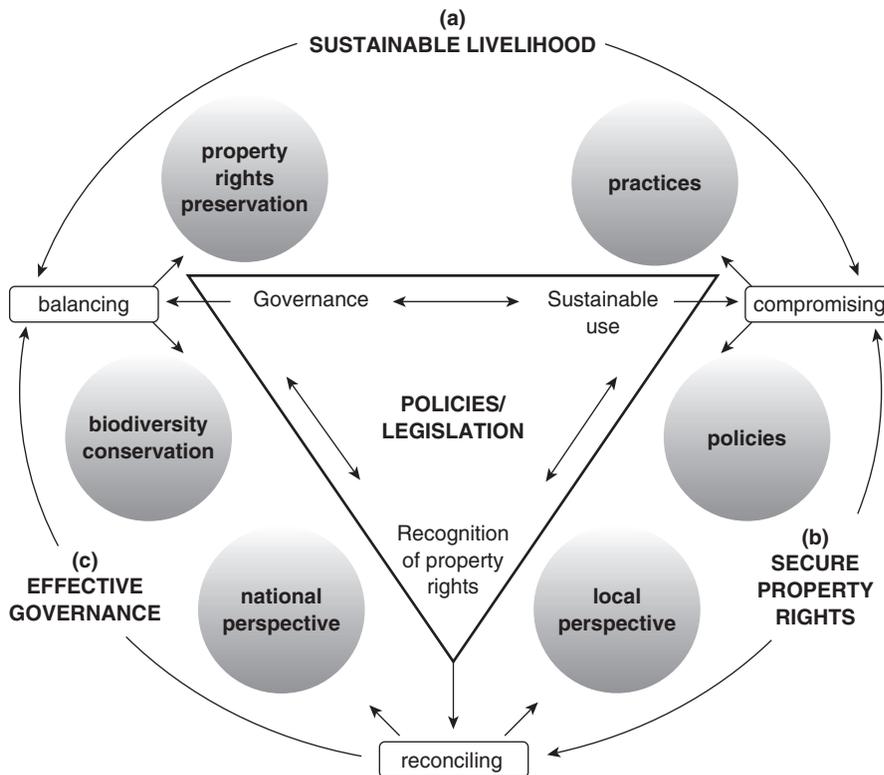


FIGURE 7.5 Computer modelling of thesis chapters

of contents outline is a useful guide as you move through the writing of different chapters, which you may not necessarily want to write in sequence.

Exercise: building a table of contents

The purpose of doing this exercise is to determine the *logical* relations among the different parts of the thesis, not just to work out what you want to cover (see also 'Sequential outlining' in Chapter 4).

Step 1

First, start to build your table of contents outline as follows, while taking into account thesis word length:

Introduction:

What is your topic of investigation? What problem are you tackling, what are your research objectives or questions? Why is it an important topic of investigation? What contribution do you expect to make to the field of research (if relevant)? What sub-divisions do *you* need in your introduction? (Mock up titles of these if you can.) You do need to be able to answer these questions as clearly as you can. Some supervisors require that their students produce a full, rough draft of the introduction; others are happy with these questions being answered in dot point form.

Chapter 1 (title?):

First sub-division (number and/or title?)

Second sub-division (number and/or title?)

Further sections within the sub-divisions
(numbers and or titles?)



Any ideas you
want to jot
down while
drafting?

(Continue with this format throughout the table of contents outline)

Step 2

Now apply the set of core questions – What? Why? How? What/So what? discussed above – to determine the *logic of relations* among the parts. This will show:

- How the foci and objectives of the different chapters fit in with your overall research focus and objectives as laid out in your thesis introduction.
- Whether the order in which you have placed your chapters, and sub-divisions (and further sections) within different chapters, is best after all – whether they evidence a logical flow.
- Whether *main ideas* (if you know them) you wish to bring forward in the different chapters are likely to contribute to the coherent development of a thesis or unifying point of view.

Discuss your outline with your supervisor. Make any suggested adjustments, and then move on quickly to the writing itself; spend no more than two or three weeks on this task.

PRODUCING A DETAILED THESIS OUTLINE

Some students and supervisors do not find that a table of contents provides enough detail or sufficient information to assess the overall coherence of a thesis. In that case, you could produce a more detailed thesis outline. While

students find doing this difficult (a lot of hard thinking is involved), they consider it well worth while.

Box 7.2 Students report many benefits from producing a detailed thesis outline

CASE STUDY Example

One group of research students approaching the thesis write up were encouraged to produce a detailed thesis outline. Doing this, they said, had '*reduced anxiety*' and '*increased confidence*':

- This was because they now had a stronger sense of '*how the whole thing hung together*', to quote one.
- Or as another student commented: '*The best thing about the detailed thesis outline exercise for me was that I was able to concentrate totally on the bits [of the thesis] I was writing because I sort of knew how everything fitted in.*'
- And another had this to say: '*My table of contents was pretty good but I still didn't know where I was really going with the argument until I did the detailed thesis outline. It helped me sort out my argument – what I really wanted to do with my chapters. It was great.*'

Appendix 2 contains an example of such an outline. This outline was produced by a doctoral student who already had a rough full draft of the thesis (approximately 90,000 words). However, I have done the exercise often with students beginning to write their first full draft or with those who have come unstuck in the middle of writing a draft.

The purpose of this exercise is to communicate, as best you can, *what* you are doing, *why* you are doing it, *how* you will go about this, and the argument you wish to present:

- at the level of the whole thesis and
- at the level of individual chapters.

While the writing is rather formulaic, it is meant to be. You can shape introductions to chapters more creatively when you come to write them, while still communicating clearly foci, objectives and procedure, and parts of your argument.

Writing specific parts

This section looks specifically at the writing of the abstract, the thesis introduction and the thesis conclusion.

Developing the abstract

For longer theses, the abstract is usually around one to three pages in length and for shorter theses, about a page, though do be advised by your supervisor. The abstract usually covers:

- What you did in your research.
- Why you did it – your objectives or aims.
- How you approached your topic, your methodology and/or theoretical framework if relevant.
- What your findings were and reasons for them.

Practices in writing abstracts can vary, though. I have noticed, for example, that abstracts for PhD theses in Mathematics tend to focus solely on main findings, as typified below:

There are two main results contained in this dissertation. The first result is a description of an algorithm for the computation of polycyclic presentations for nilpotent factor groups of a given finitely presented group. This algorithm is a generalisation of the methods employed in the p -quotient algorithm [reference] to possibly infinite nilpotent groups. The second is a method for the computation of the Schur multiplier of a group given by a polycyclic presentation and a method for the classification of the isomorphism types of Schur covering groups for finite soluble groups. Both Algorithms can be treated in a similar context, namely forming central downward extensions of polycyclic groups.

The abstract, often left to the last minute to dash off, is actually important in that it is used by other researchers to decide whether or not they will take the trouble to view your thesis in full, which might be the only avenue for accessing your research if you do not publish. Avoid a poorly constructed PhD abstract, which is also there for everyone to see in such international directories as

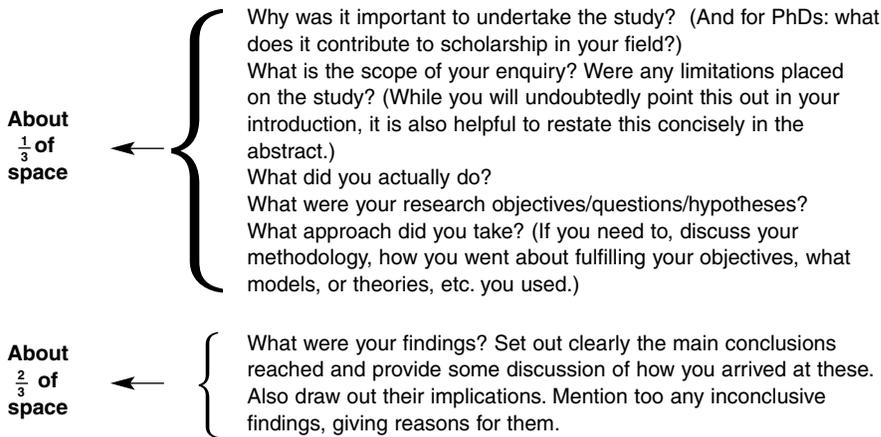


FIGURE 7.6 Core questions for structuring an abstract

Dissertation Abstracts. Consider the set of core questions offered in Figure 7.6 and take up what is appropriate for you.

Often about one-half to two-thirds of the abstract is reserved for discussion of findings/conclusions and their implications for past and future research, though again, confirm usual practice in your discipline.

The thesis introduction

The purpose of your introduction is to introduce readers to the research presented and discussed in the body of your thesis: to the foci and parameters of your research, justifications for choices made, thesis procedure and so forth. While considering the following issues, bear in mind that the introduction is functionally significant in shaping reader-expectations of what they will find on reading your thesis.

Align what you say you will do in the introduction with what you actually do in the body of your thesis.

THE ISSUE OF LENGTH

Length may not be an issue for you. Still it may be wise to discuss length with your supervisor before writing the introduction.

CASE STUDY
Example**Box 7.3 Supervisors can have definite ideas about the shaping of a thesis introduction**

One supervisor rejected his PhD student's introduction of 30-plus pages, saying an introduction should be about 'eight pages and should cover context, issues and method in that order'. So the student re-wrote to those instructions. He initially established the context of his research by providing dense background information; he then identified the key issues in the process of defining his research objectives; finally he provided a conventional chapter-by-chapter description of the thesis procedure.

TIMING THE WRITING OF AN INTRODUCTION

If you have produced a well thought-through table of contents or detailed thesis outline, it should not matter when you write your introduction. Still, supervisors frequently recommend that students write an introduction prior to producing a first full draft, even though this will eventually need to be re-written, or tidied up, in order to accommodate changes made during the writing process.

FOCUSING AN INTRODUCTION

Deciding what information to include in the thesis introduction and what to include in the introductory sections of individual chapters can prove challenging. This is primarily a matter of scale, as shown in Table 7.2.

The set of questions below is designed to help you further focus your introduction. (Engage those relevant for your type and length of thesis, and include additional ones if needs be).

Your overall thesis objectives (or questions), which can be distinguished from the specific objectives you have in particular chapters, should be broad enough to embody the latter.

- What is your topic of investigation, your research focus?
- What questions are you asking? Or what are your hypotheses, objectives or aims? Can you formulate these clearly? Do you need to provide a problem statement as well (see 'Sample of a detailed thesis outline' in Appendix 2)?

TABLE 7.2 Information scale for the general and chapter introductions

Thesis introduction	Chapter introductions
<ul style="list-style-type: none"> • The purpose of the thesis introduction is to orient the reader to the research presented in the body of your thesis • The introduction should include all information necessary to prepare the reader, to put the reader in the picture as regards the specifics of your research project: what the thesis focuses on, the context of the study, the research questions or objectives driving the investigation, the methodology applied, the argument you intend to present, etc. • It may be necessary at times to reserve more detailed discussion of issues etc. for specific chapters and signal where these will be discussed in greater depth 	<ul style="list-style-type: none"> • Chapter introductions perform a similar orientation function in that they introduce the reader to the foci, aims, procedure and argument of <i>each</i> specific chapter, and provide any other necessary reader information for that chapter

- What is your *thesis*, that is, the underlying argument connecting all the parts? Can you state this clearly?
- Do you need to justify the *scope* of your study? You may need to tell your reader precisely what you are covering and what you are not covering and why, perhaps to offset potential criticism for not having done something you never intended to do.
- Why is the research you have undertaken important? Can you demonstrate its centrality? Or how is your study different from others done in the research field? What contribution will *your* research make to knowledge? (This may be conveyed through context, the next point.)
- How much context, background information, should you provide (this can be extensive in some theses, even up to 20 or more pages)? What might you include here, and why? Consider the *relevance* of what to cover in terms of your research objectives, your thesis aims.
- Should there be a formal literature review in the introduction (sometimes used to provide context), or elsewhere, or not at all?

- Do you need to explain your methodology or experimental procedure, or provide a discussion of the theoretical framework of your thesis here or in a separate chapter, or not at all?
- Should you include a chapter-by-chapter outline of your thesis? If not, what other method might you use to convey the procedure of your thesis? How will you indicate what you are going to do and in what order you will do these things?
- Are there any other questions relevant to *your* research or disciplinary needs that you want to add?

The thesis conclusion

Conclusions have varying degrees of importance in the overall structural scheme of individual theses. Some theses do not have formal conclusions because the final chapter proves a natural point of closure, given the structural design. Most do, however, and many supervisors and examiners consider it imperative that there be one.

Your conclusion may be fairly short and straightforward, as much discussion of findings has taken place in the individual chapters. Or it may be long and complicated, and very demanding to write in drawing out conclusions of individual chapters and providing detailed discussion of these.

It is not usual to introduce new material into your conclusion. The student in this example did consider it appropriate to do this, but only for the purpose of bringing the reader up to date:

A model of the middle-ground which integrates the research findings introduces a conceptual framework to consolidate the study. This chapter then summarises the research findings and reflects on the process of the research through an analysis of each of the study's aims. Lastly, I metaphorically 're-visit' each case study in order to bring the reader up to date with news and events that have occurred since completing fieldwork at each site (my emphasis).

Now consider the following points. (If your conclusion is to take the form of a general discussion that draws the whole study together, also review the strategies for writing a discussion in 'Experimental or technical reports' in Chapter 6.)

Fix this idea firmly in your mind: my reader wants to know what I think about my findings.

PROCESSING FINDINGS

Merely listing or repeating your findings from various chapters – Chapter 1 shows, Chapter 2 shows, etc. – gives no insight into the meanings you attach to these findings. Not only do you need to draw together all findings into a coherent whole, you need to think about the weight and significance you attach to specific findings in terms of your research objectives or questions. When drafting your conclusion, refresh your memory by returning to those objectives/questions, as laid out in your introduction.

Not all findings will be equally important, so think about them in terms of a scale of significance. Ask yourself:

- What do I consider most important about my findings in general and why?
- Which findings seem to be of greater or lesser significance and why?
- Are there any specific findings to which I want to draw particular attention and why?
- Is there anything unusual about any of my findings needing special mention and why?
- Has my methodology or anything else affected my interpretation of findings and is this something that needs to be discussed (for example, biases inbuilt into the research design)?

By processing thesis findings in this way, you are bringing them into a new set of relations. You might also want to explain what you have found in terms of expected or unexpected outcomes in the process of attributing significance.

DRAWING OUT IMPLICATIONS

Draw out the implications of your findings. In longer theses, it is usual to situate findings in the contexts of past and future research. Ask yourself:

- To what extent do my findings align with those of other scholars, in what precise ways, and if not why not?
- If certain findings suggest a need for further research, what might this consist in and how might such research extend or improve the current state of knowledge in my field?

As a writer of a shorter thesis you may not be in a position to suggest future research, but this does not mean you should avoid thoughtful discussion of implications.

CASE STUDY
Example

Box 7.4 Drawing out the implications of your findings can add zest to a conclusion

A shorter thesis examined the fall of a democratically elected government to determine whether the key actors participating in the downfall had acted within the framework of that country's constitution. The student concluded that they had done so. But in her view, a major *implication* of her findings was that there was perhaps a need for review of the constitution itself in the context of early twenty-first century society. This she aired in the conclusion, giving thought-provoking reasons why she believed such a review might be warranted.

GROUNDING SPECULATIONS

The implications of your research project may be complex and variable, leading you into the realm of speculation. Some findings, for example, might appear to have application beyond the parameters of your research, and they may do. But judicious judgement is called for. Ensure that such speculations are contained within the boundaries of the arguments and discussions developed in the body of your thesis. Keep your speculations grounded; do not let them float free from these boundaries so that they appear wildly improbable or even questionable.

Use the more tentative language (e.g. *it seems, perhaps, maybe or it could be, possibly/possible, it is likely/unlikely, etc.*) suited to speculative uncertainty.

Organizing a thesis writing group

Your fellow graduates can be a great personal and academic resource when writing your thesis. A thesis writing group:

- Is a fruitful learning forum providing opportunity for reflection on the complexities of structuring and developing a thesis, and the sharing of ideas and helpful feedback from peers on your drafts.
- Is a motivational stimulus in providing regular opportunities to share your grievances, frustrations, challenges and, of course, your triumphs with fellow research students.
- Reduces the sense of isolation that you and fellow students may be experiencing.

If there is no existing group of this type in your research environment and you feel it would be useful to form one, follow these procedural steps.

Exercise: organizing a thesis writing group

Step 1

First approach an appropriate authority (for example, a graduate coordinator) to see if you can get hold of an email distribution list for research students in your group. Then send out a friendly email to determine level of interest. To work well such groups do need commitment from those involved.

Step 2

Having determined a sufficient level of interest, then organize a first meeting to sort out conduct of the group. Consider matters of this type:

- Whether you want it to be a students only group in which you will read each other's outlines and drafts, meet regularly to provide feedback on these, and to discuss strategies to address writing challenges, and so forth.
- Whether you want to reserve the possibility of inviting writing experts or scholars to address your group on occasion.
- How often you want to hold meetings, venue for meetings, length of meetings, prior distribution of materials for meetings, whether refreshments will be provided or not, and so forth.
- What organizational protocols you will follow. Usually the organization of such groups is democratic, with members opting to take charge of their own sessions by distributing copies of their draft to fellow students, identifying what specifically they would like feedback on given the stage they have

reached in the writing, and perhaps organizing the procedure for their session. People also like to chat and have a bit of fun.

While you and other students may initially be tentative about critically evaluating each other's work, well-intentioned criticisms will always be welcome, as will more positive comments on a draft.

Summary Comments

- By closely reviewing recently passed theses in your discipline at your level of study, you should gain a strong sense of the standards required of the end product – your completed thesis.
- The hallmark of thesis writing is rigour: rigour in foregrounding and developing a thesis, in attending to audience needs, in treating the literature critically, in referencing source material, in using theory and justifying methodology, in conducting tests or experiments, in analyses, argument and discussions, in the way you present illustrations, and in the overall style and presentation.
- Structuring and developing writing on the scale of a thesis is intellectually hard work. So do try to produce bits of writing regularly throughout your degree that will feed into the thesis.
- Producing a *detailed thesis outline* before proceeding to the writing of a first full draft can alleviate the anxiety and stress associated with writing parts of a thesis without knowing how all the parts relate to each other as a coherent whole.