

1 Ordering the Thesis

● A basic model

The following model is often called 'the basic science structure'. Some arts, humanities and social science theses use this model as well. We suspect that by doing so they are claiming the prestige of scientific research, and making it easy for an examiner to see the 'thesisiness' of the work. They are also following a tried-and-tested formula. If this structure works for you, then you might consider reading no further. However, you may already have been introduced to the science-based structure and found it difficult to apply to your topic, which is why you are now reading this book. The basic model is as follows:

- *Introduction*: Why am I doing this research? What is the problem? What is the research question? What are the hypotheses?
- *Literature review*: What is already known? Where is the gap I will fill? Which issues, contentions, discourses from the literature are relevant to my research?
- *Aims*: What do I hope to find out?
- *Methodology*: How will I proceed? What theory will I use? What is my epistemology? What are my methods?
- *Results*: What have I found?
- *Discussion*: What does it mean?
- *Conclusion*: What is my contribution to knowledge?
- *Recommendations*

Different advice manuals elaborate this basic model. Glatthorn (1998) points out that 'there are many variations to this basic pattern' and considers that, for example, 'in some dissertations the methodology is so implicit in the nature of the inquiry that ... no separate treatment is needed' (p. 124). Murray (2011, p. 144) suggests using the basic or 'generic' model as the starting point in designing a thesis. Swetnam (2003, p. 44) adds that the introduction will additionally answer: 'Who is likely to be interested in it? What is the possible use of the research? What is the locus and focus?' The basic model will work for some students, but the nature of the particular research project and its significance should always take precedence over the formula: that is the mark of a doctoral thesis.

Deciding on the order in which you will present the entire research project is perhaps the foremost decision you will make about the written thesis. Often at the proposal stage and before much writing or research has been done, a contingent contents page will be drawn up as a way of making the project more concrete and tangible. Thomas and Brubaker (2000) suggest that you consider what you would ask if you 'knew nothing about this topic and ... wanted to know about this research' and then think about the order in which you would like to have your questions answered (p. 245). At the early stages, the structure of the written thesis may blurrily overlap with the expected progression of the research project. To some extent this is entirely appropriate because the end goal of the research project is, for most candidates, the finished thesis. Research design necessarily responds to the requirements of the thesis genre, discipline epistemology (which affects methods) and the candidate's deepening understanding of their material.

We do not intend to downplay the complexity of structuring decision-making, but suggest here that what is generally accepted as the basic model of the thesis gives a useful foundational understanding of the expectations of every thesis. Although the diagrammatic use of mind-maps and models can be helpful for getting your head around all the components of your thesis – and we discuss these below (p. 20) – a basic function of structure is to enable clear demonstration that the academic requirements of every thesis have been fulfilled in yours. First, then, a very basic thesis model operates like a simple recipe, showing the essentials that your thesis is likely to have somewhere. Just as you could adapt the general principles of a recipe by adding or omitting some ingredients, use the basic structure as a pattern that you can adapt in different ways while following the underpinning principles.

Thomas and Brubaker (2000, p. 245) suggest a slightly different basic outline that suits a theoretically-based thesis:

- Chapter 1 The Nature of the Problem and its Significance
- Chapter 2 Theory for Interpreting the Phenomenon that is Studied
- Chapter 3 The Research Design for Testing the Theory
- Chapter 4 Data Collection
- Chapter 5 A Report of the Results
- Chapter 6 An Analysis of the Results
- Chapter 7 Implications of the Study's Outcomes

What Thomas and Brubaker label 'Chapter 1' might usually be called 'Introduction' or 'Background'; their logical flow forward maps onto the basic model when this change is made. You can see from these variations that there is a standard forward movement from the background, which might include the work already done in the area, the theories used in the context of the discipline's possibilities, through the methods, to what was found (new knowledge or understanding) and what it means, including ideas for future research. The evident, predictable drive forward gives rise to the truism that each doctoral thesis tells a story.

Readers feel more confident when the thesis obligingly follows their narrative expectations. Although many disciplines prefer more individually-designed structures in journal articles and books, it is possible to find theses within these disciplines that adapt the hard sciences' formulaic language around a set structure: introduction, literature review, methodology, results and discussion. Such adaptation is a defence mechanism, given that some of the so-called 'softer disciplines' experienced years of self-justification before being fully accepted as legitimate scholarly disciplines. Are you an innovator who enjoys risky work, blazing out trails, or someone who prefers the safety of staying on the well-trodden path? If you are anxious about your work being accepted, you could consider using some hard science terms, perhaps even as a contingency plan, at the outset, with the intention of replacing these terms with something cognitively more sophisticated during the process of writing the thesis.

Even the most risk-comfortable researcher, however, should also use the basic model as a checklist for the work which needs to be demonstrated in their written thesis. One very obvious consideration is where the literature will be reviewed. Other approaches to the basic model give different understandings of the components of the topic – how they might fit together and what shifts with the various possibilities – and thus help to establish parameters to the thesis. The order of the moves that the thesis makes should ensure the strongest possible presentation of the research work.

In some disciplines, the basic thesis formulae would look simplistic. However, the work done by these sections of a science thesis will also be done in one way or another by the exegetical thesis. Wisker, giving consideration to arts and humanities theses, proposes that a typical thesis plan is:

title; abstract; preface/acknowledgements; introduction; literature review/theoretical perspectives chapter; methodology and methods explored and explained, including the design of the study; presentation of findings and results (a separate chapter for scientists only); for social scientists, arts and humanities students, the results, or data, are seen as evidence for the argument, findings and claims based on the research, and they appear in a dialogue with such claims, that is, presentation and discussion of results, analysis, arguments, development of ideas based on results – interpretation of findings; conclusions: both factual (what was found) and conceptual (what does it mean? what does it add to meaning and understanding about the area/field/issues?) appendices/statistical tables and illustrations; bibliography. (Wisker, 2008, pp. 281–2)

Even if you use the basic outline as one to resist and work against, we expect that knowing what it declares to be appropriate will help you to produce a more elaborate artifice.

If the science model looks like a workable one for you, perhaps with some adaptation, then the outline of your thesis structure is in place and you can move to the next level of structuring. Rountree endorses taking the path most usually taken, expanding on the metaphor 'thesis as journey' with a vivid inset story:

As we snaked up Ruapehu [a tall snow-covered New Zealand mountain] the guides gave us nifty tips, one of which was to plant your boot in someone else's bootprint to avoid slipping on the glassy virgin snow. It worked. With a thesis too, if you want to cut down on the risk of slipping off track and losing your way, perhaps permanently, it is safer to take the well-trod path – to examine other theses, choose a methodology, structure and style you admire and think will work, adapting it to suit you and your particular project. This sounds like dull advice, but doing a thesis at all is adventurous enough. (Rountree and Laing, 1996, pp. vi–vii)

If following a basic generic thesis structure will work for you, follow the path most commonly taken. Your research topic should provide some adventure even as you follow the well-trod path.

● Mind-mapping and modelling the thesis

Some doctoral candidates find visually-conveyed information especially accessible. You may be familiar with mind-mapping as a way of getting an overview of all of the potential components of your thesis. To mind-map, one begins with a central idea which then spreads out with more ideas that emerge from the central one. More is better. A page covered in radiating nouns can show the topic's most promising connections. The strength of mind-mapping is that it side-steps structuring decisions, freeing up the potential issues, themes, topics and backgrounds to speak of their own accord without your authorial structuring. Mind-mapping allows you to trace through your material from different directions, opening up some of those possible parallel universes mentioned in the Preface. It should also allow you to select which one you will inhabit, and to move on from the chaotic mind-map to a diagrammatic model. The mind-map can be activated as a concept map (Novak, 1998), which adds the verb connections between the nouns of the mind-map. The verbs establish which of the terms *generate* others, which *restrict* or *compromise* others, and so on: the verbs begin to make sense of the geography of the map.

The next stage of the process is to start imposing structure onto the mind-map's insights by making a working diagram of the terms that seem most promising. The diagram pattern may begin with nouns that form the topic of the thesis, but the verbs of the concept map should suggest ways of fitting the ideas together. What geometric shape best accommodates your ideas? Dunleavy (2003) recommends graphic devices such as boxes, lines and arrows to help structure the ideas. These may be developed further to give a geometric shape to your work. Often a grid, like the example that we discuss next, works well.

● The grid with two options

Once you have a diagram, play with it a little for improvements. Davis and McKay (1996) provide a diagrammatic example that involves reorientation from the model of a grid system. Discussing comparison and contrast, they further observe what they perceive to be the two main options of structure: the topic-by-topic approach and the point-by-point method.

In the topic-by-topic approach, sometimes called the divided approach, each topic is discussed separately. This can be represented as follows:

Topic-by-topic structure:

Topic 1
Point a
Point b
Point c
Topic 2
Point a
Point b
Point c

The second approach is the point-by-point method, sometimes called the alternating method. Here the first point is developed for each topic, then the second point for each topic and so on.

Point-by-point structure:

- Point A
 - Topic 1
 - Topic 2
- Point B
 - Topic 1
 - Topic 2
- Point C
 - Topic 1
 - Topic 2

Davis and McKay (1996, p. 60) point out that neither method is inherently stronger than the other. It is simply a matter of which design works best for your material.

This resonates with us, from our own experience and our work with students, because frequently in the arts, humanities and social sciences there is something of a grid between the material discussed and the themes that emerge from it. For historians, the material may be events, or social groups; for literature students, it may be texts; and works of art or schools for art historians. Susan had the experience of making a change half way through her thesis when she recognized that shifting her design 180 degrees would enable her ideas to come through more clearly.

I began my doctorate assuming that the structure would be the same as my Master's thesis structure. There I had a lengthy introduction in which I laid out the social issues I was investigating, the discourse I was joining, and the historical framework for my discussion of four New Zealand women novelists writing around the beginning of the twentieth century. Then each author had a chapter in which I pulled all my evidence from their novels, and I had a short conclusion. So for the doctorate on a medieval motif I assumed I would have one chapter for every manuscript or set of stories framed up with a good solid introduction and conclusion. I didn't even think about structure at all.

But about half way through I realized that the themes, social and political issues feeding the transitive movement of the basic story were more interesting than the manuscripts.

These themes and issues were the reason for my thesis, and were what gave it life and zest. So I decided to totally change my thesis by making the chapter headings about the social and political issues and then cut up what I had written and put each text into the chapter's framework which was a discussion of what the stories meant in social and political terms. For two weeks I was tense as I did a massive cut and paste job, ensuring that I didn't lose the vision I had, nor any of the important passages of writing. The process was satisfying; I felt that it gave me a richer and more meaningful thesis.

For Susan, Davis and McKay's 'topics' become 'texts' and their 'points' become 'themes'. The original running order was structured according to the main works under scrutiny:

Introduction	
Chapter 1	<i>Corcha Laidhe</i>
Chapter 2	<i>Wife of Bath's Tale</i>
Chapter 3	<i>Tale of Florent</i>
Chapter 4	<i>Dame Ragnelle</i>
Chapter 5	Ballard versions
Chapter 6	Arthurian versions
Chapter 7	Spenser's <i>Fairy Queene</i>

The revised structure was thematic:

Introduction	
Chapter 1	Social critical background
Chapter 2	Meaning of spatial: forest and court
Chapter 3	Hunter hunted and beastly bride
Chapter 4	Meaning of sexual transformation

The themes were the reason for putting this particular set of texts together. However, at the outset they were not as transparently clear to Susan as they became a few years in. Only then could she articulate them. The texts were static; the themes, dynamic. The logical development of the idea at the heart of the thesis was to make the important themes more visible in the title headings and chapter-level structure once the diagram was pivoted. This freed the chapters to be more

concrete and work closely with the texts in building that overarching argument. The thesis argument constituted the structural framework rather than a list of primary sources.

In our experience beginning in the most obvious way – working with data separately and later reconfiguring them into thematic chapters – may leave the thesis more productively open. We suspect that Susan's experience in literature may be shared by others in the arts, humanities and social sciences, and that many thesis writers might find other pertinent substitutes for 'themes' and 'points' (or texts and themes) that make this model particularly useful.

● **Broad versus specific fields**

Most thesis writers grapple throughout the entire writing process with controlling the structural placement and delimitation of broad background material. All theses contextualize the original contribution within the appropriate academic framework that often includes the history of the research question or problem, the thought and work accomplished to date, and the acknowledgment of a web of theory or philosophy. Each thesis pulls together several contextual webs, and must link each to the main research question, the thesis at the heart of the thesis. The thesis is also a highly defensive genre. Not only are decisions likely to be explained and defended, but the logic of those decisions needs to be clearly evident.

The work of linking background to research topic is important. Glatthorn (1998, pp. 186–8) supplies a list of questions commonly asked by examiners, which include:

- Why did you choose that particular problem? Why did you not study this other problem instead?
- What exactly were you trying to find out? I'm unclear about the meaning of your problem statement.
- You have reviewed the important literature, but I fail to see what use you make of your review. Can you clarify for me what you learned from the review of literature?
- When you reviewed the literature, why did you decide to review that particular area of study?

- Why did you choose that particular method? Why did you not use this other method instead?
- Can you clarify for me how the particular method you chose relates directly to the problem you have chosen to study.
- Can you relate your findings to other important research in the field? In what specific ways do you think you have made a contribution?

These challenging questions could be avoided at the oral examination by ensuring that background history, literature and methodology are clearly linked to the research question in the written thesis. A reader should not be left unsure of why the study was undertaken, what its intention was, why decisions were made and how the original contribution relates to other studies. The ability to link one's own work to the discipline is essential to establish membership of what Becher and Trowler call an 'academic tribe' (Becher and Trowler, 2001), with the doctoral thesis as the rite of passage entry-point. Examiners pay attention, then, to ensuring that the background to the study is represented clearly and accurately. However, firm linkage risks repetition that can become tiresome to the same reader who will object if the linkage is not clear. A balance needs to be maintained.

Much of the background contextualization will be made in the introduction, frame the discussion section, and be knitted together in the conclusion. It is likely, though, that, as the thesis develops and shifts through its moves, contextualization will need to be re-established within the chapters, perhaps with a little more detail than in the introduction. You will need to decide how much belongs properly in the introduction so that the reader is very clear from the outset about the position of the research within its field, and how much should be kept in specific chapters. One way to make the choice is to ask whether a linkage is tying a broad point or a detailed one to the topic. Some will find it helpful to think diagrammatically. If the thesis were to be drawn as an hour glass, with the broad contextualization at the beginning and the end, and the narrow focus on detail in the middle, would this particular linking point best be drawn as a narrow detail or a broad general link?

Shifting within a chapter from specific close-focus material back to broad general principles will feel dislocated and disorienting. If there is an unavoidable reason for this, it is helpful to signal why you are shifting back out to the general. Your argument needs to be kept clear through your steps and stages between specific and broad.

● The literature review question

You will need to decide where in the thesis you will show that you have critically reviewed the literature (for literature students, the term 'literature' means 'secondary material') and demonstrated your comprehensive understanding of it. In the basic science model, the literature review is given a separate chapter. Packaging the literature discreetly enables an examiner to tick this requirement off the list more easily. It may also be appropriate to use the literature review to identify the gap that your research will occupy, the theoretical framework in which you work, the practical precursors which nestle around your original contribution.

However, by having a separate chapter you risk detachment of the literature from your research. If instead you embed the literature in the thesis as it progresses, it will be apparent that you have discussed only literature which is evidently relevant to your original work. You also give prominence to your own work earlier on, subordinating work that was previous to your ideas and claiming the centre-stage position of the expert from the outset. If you use a referencing system that allows for footnotes, your argument can occupy the space above the floorboards for your argument with a literature review that supports you in the footnotes below your feet. There is something satisfying about compressing the big names in your discipline to prop up your own ideas.

Further, it may be more sophisticated to back-load the literature in what Dunleavy calls the 'opening out' model. Here, a brief review of literature facilitates the set-up, the core of the thesis presents the original work, and an analysis and discussion of the literature occurs at the end of the thesis when its wider implications are explained (Dunleavy, 2003, pp. 59–60).

Dunleavy explains how this avoids the risk of a slow and boring start rehearsing other scholars' work, after which the original work may seem rather less significant (p. 58). We applaud Dunleavy's insistence that a thesis should be interesting right from the beginning – an ideal principle – but appreciate doctoral candidates' concern that even more crucial than the need to be engaging is the need to persuade the examiner that the literature has been adequately reviewed.

For most writers, some of the literature will be discussed at the outset to establish the scope of the thesis, some will be needed in the core chapters, and some may be most relevant towards the end. Some of the foundational, well-known work is likely to be presented as background to the topic; some will be current and vital to specific aspects of the thesis. A literature review remains contingent until the end of the thesis process. Doctoral candidates must write while they are reading at the start of their work, even when they are not sure of the scope of their thesis or the importance of the material they are reading. We cannot over-emphasize the need for a constant relationship between reading and writing. Then, as ideas firm up, the review of literature will probably need refocussing. It is quite usual to work on the literature review towards the end of the process when the chapters are put together in that first whole draft.

● A four-way model

Some thesis guide books make use of a four-way model to envision the generic function of the thesis. Defining these components will not enable you to split your thesis tidily into quarters that cover the moves of the quadrants, but it will give you another conceptual model of thinking about your thesis that is likely to help with structural decisions. Phillips and Pugh (2010, pp. 63–7) boil down the basic functions of a thesis to four crucial components:

- background theory;
- focal theory;
- data theory;
- contribution.

The literature review will provide the background theory. Focal theory requires you to explain with specific detail 'precisely what you are researching and why' (Phillips and Pugh, 2010, p. 65). Data theory establishes 'the appropriateness and reliability of your sources,' the identification of how you might do this being one of your 'professional tasks' (p. 66). An explicit, clear description of your contribution – the original knowledge or understanding that the research produces – is the final component.

You might also consider the main task of your thesis in terms of Dunleavy's (2003) proposition that 'in the humanities and social sciences there are only four fundamental ways of handling long, text-based explanations... These organizing patterns are: descriptive; analytic; argumentative; and a matrix pattern, combining elements of any two of the other three approaches' (p. 63). A descriptive thesis may 'follow the pattern of a storyline set by an external work'; or work chronologically; or 'replicate the pattern' of organizations, legislation or regulations and so on (p. 66). An analytic one imposes categories on the found material (p. 70). An argumentative thesis evaluates found material (p. 71). In concluding this proposition, Dunleavy notes, as we do throughout this book, that 'there is never just "one best way" of organizing a long text' and that different principles will tug against each other (p. 75). However, if you feel that your thesis really is primarily descriptive, analytic or argumentative, or especially if you recognize your own as a mix of more than one of these, you could state this in your methodology (or its equivalent) and overtly discuss how this function of your work affects structure.

● Making use of methodology's moves

Although perhaps less so than previously, for many in the arts and humanities, the term 'methodology' is foreign to working practice, and the idea of overtly describing 'methods' is antithetical. Two of us (Susan and Frances) did not really encounter 'methodology' before we had completed doctorates in literature. In that discipline, it would have seemed flat-footed stylistically to baldly declare one's plan in the thesis itself, even

if it might be written elsewhere in a personal journal or diary as a guide to action.

Retrospectively, however, the term makes sense of work within our theses that we simply saw as theoretical contextualization. Sometimes the conventions of hard science disciplines are helpful for ensuring that the genre requirements of the thesis are not only met, but are also patently demonstrated to the examiner as having been fulfilled. Thinking about what your methodology would look like if you were obliged to come up with one can give focus. Tony recounts the process during his theology doctorate:

Around two years into the project and with a first draft of my thesis almost completed, my supervisor was concerned that, as I turned in chapter after chapter, he could find nothing significantly wrong with what I was doing. (With the wisdom of hindsight, I think what he was intuiting was that, while the individual chapters worked in their own right, something about the whole thing was troubling him.) He arranged for an associate (in the field, but at another university) to read the whole of my first draft, and then the three of us met together.

The advice was that the thesis was interesting, well written and up to the standard of scholarship and originality that would be expected. His one main criticism was that the major moves in my thesis appeared to happen in a somewhat ad hoc manner. What he most missed was something like a 'methodology' chapter near the beginning of my thesis, outlining how I was going to go about responding to my research question, and why I would do it in these particular ways.

I knew the moment he said this that he was exactly right. No further explanations were necessary. I went away and wrote a methodology chapter which greatly helped clarify what I had done, and why. Almost inevitably, this required some re-ordering of my material, some was able to be dumped & a little bit more needed to be added in places, so that I actually delivered in the main body of my research what I had promised in the introduction and methodology.

The other, somewhat broader, criticism was that he felt I needed to background the material of others rather more, and foreground my own ideas. This, he said, was a 'confidence thing'. And I found that doing the major revision in my thesis (outlined above) hugely boosted my confidence in what I was trying to achieve and how I would go about it. With, now, a very strong sense of what the real thesis issue was, the insights I had come up with, and the methodology I had employed to connect these two, I was able more easily to let go of the huge comfort blanket of the ideas of others and place my own ideas more centre-stage.

Tony found that the term 'methodology' prompted him to spell out overtly what he was doing in his thesis in the description of its structure. Once he attempted the task, he was able to see what needed shifting around because this was brought to the surface in his articulation. By thinking of how to describe the 'methodology' by which his own insights connected to 'the background material of others' and 'the real thesis issue', Tony probably added a clarity and sense of focus and purpose to what was a fairly complex, multidimensional thesis.

It might seem strange that one word from a different discipline triggered the solution to the problem of what was not quite working. In fact, it is common for some particular shift in perspective, or lens, to allow insight into solving thesis problems. Although the guide-book approach of offering practical advice has been challenged for its apparent failure to recognize the social complexities of the act of writing in an excellent book on doctoral writing (Kamler and Thomson, 2006), we have worked in this volume on the assumption that some seemingly straightforward strategies prompt a change of lens or perspective to enable movement forward. We acknowledge that writing is a complex social act, requiring multiple evaluative criteria to be met, and entailing the deeply personal and thus potentially emotionally challenging construction of identity and negotiation of deeply meaningful values. One response to the challenges is to consider a series of different approaches in the expectation that somewhere amongst them you may find a way to meet all those criteria and feel that the thesis you submit is a fair representation of your data, your field and yourself.

Another of the fairly practical-seeming parts of the thesis which can do a surprising amount of deep-level work is the contents page. Considering how yours will look should be done as an exercise in thinking about how you will present the argument and the story-line of your research with as much clarity and depth as possible.

● The contents page and its implications

The contents page lists what is to come in the thesis body, so it is primarily a navigational device. However, it also plots the design of the thesis and enables the reader's cognitive work to begin. A good contents page shows immediately what is important and how the bigger thesis is built from smaller arguments. The relationship between parts and whole is visible and, ideally, persuasive. Contents pages that work well are a pleasure to happen upon.

The language of headings will often signal the epistemology. In our teaching samples, Leonelle Wallace begins her cultural studies thesis (1996) in a fairly standard style with 'Introduction: South Pacific', but her second chapter signals wit, linkage between theory and practice, and the inclusion of popular dialect with 'Too Dam Hot: Sexual Encounter in Hawaii on Cook's third voyage'. The socially predicated word play of the second chapter title suggests that maybe the seemingly innocent and strictly geographical 'South Pacific' of the first chapter has shades of Rodgers and Hammerstein's 1949 musical, in which the geographical setting is heavy-handedly laden with naive, but nonetheless erotic, desire.

Although software will build your contents page for you when you have finished writing, we suggest that you keep a draft of what it might look like as a work-in-progress document that will help you see the development of your argument more clearly. Such a document is an anchor-stone that holds you on track when you become engrossed with detail along the way. A comparison of the contents pages of recent theses in your own discipline will probably give a range of options, from the single heading option of Chapter One, Chapter Two, to the triple- or even quadruple-levelled model, often given numbers: I.iii.a.1.

Dunleavy always recommends using two levels only for fear of creating a confusing 'fruit cocktail' effect, where the parts become indistinguishable (Dunleavy, 2003, p. 70). His advice points to a sound middle path. There is room, however, for individual preference. Any of the contents pages that you find in finished theses must be regarded as 'successful', but you are likely to find that some are more persuasive than others, or look more suitable for your own thesis.

The advantages of simplicity are that a single-tiered system may suffice, and will be easy to build, uncluttered and self-assured. Furthermore, when a thesis is exegetical – building its ideas through the writing process itself – it may be important to the integrity of the enquiry that openness at the outset avoids a prescriptive approach. A single-tier approach enables such openness of enquiry: you are not committed by a pre-designed overview to take the enquiry in any one direction and instead you can be steered by the data themselves. However, a single tier of titling may look a little raw, and fail to take full advantage of the opportunity that greater complexity can reveal immediately to the reader regarding the thesis' sophistication and depth. A single-tier contents page does not give away much about what will be in the thesis. This model is the default option – the plain brown wrapping paper approach to the look of your thesis from the outside.

The advantages of complexity are that you may be able to think through the process of constructing the multiple tiers of the contents page and, thereby, get clarity for your ideas as to how they properly fit together, and which ones are more important than others. At one level, liberal titling is simply a courtesy to the reader, enabling them to find what interests them quickly. More importantly, though, subtitles give you handles on the progression of your material throughout each chapter, and make revision a little easier because the layout is more evident. Subtitles force you as a writer to ensure that each section is appropriately confined to the topic of the subtitle. In the final stages before submission you could consider whether your readers need all the subtitles that you have used as writing tools, and remove any that seem too low-level. A plan entails thinking through the larger argument and, with this work done, the task of filling in the material underneath

each heading and subheading becomes relatively straightforward. Attention to detail ensures that you give yourself a plan and thus a map to follow.

Significantly, the system of titling in tiers implies hierarchy. The more complex your design, the more difficult it is to maintain tight control of the hierarchical semiotics of your titling. You risk shutting down your options before you have done all of the thinking and writing that might have produced a richer outcome than the initial contents page plan allowed. You must also take responsibility for establishing a more elaborate system and maintaining it with accuracy. This requires more care and time, and in the end may look cluttered, laboured and uninviting.

One workable strategy is to begin with a single-level system and develop it further once the content has fallen into place, keeping an open mind to the possibility of revision. At the beginning of the thesis process, producing a draft of a contents page may be well down the list of things to do. A working draft gives you another way to think about the overall structure of your thesis, however, so that structure – the bones of the thesis compared to the flesh of content – can be developed simultaneously with reading and data gathering.

Compare theses that are available electronically in your discipline to see what the contents pages look like. First look for what is practical: how many chapters there are, whether or not they are of similar lengths and, if not, whether there is a common pattern amongst the theses you check. For example, does the introduction tend to be longer or shorter than the other chapters? Then look for how much the contents page tells about the content. How many layers of titling does each have? Do the headings make use of metaphor? How dynamic and explicit are the headings? For example, an introduction could be called 'Introduction' (which conveys no specific meaning at all); 'Introduction: Background to Education in Human Geography' (which conveys the broad context); or 'Education in Human Geography: A Social Constructivist Perspective' (which signals the broad context and the author's theoretical position). An examiner is unlikely to criticize a bland contents page that does not convey the argument or story of your thesis through careful use of language. Ideally, you should strike a

balance between something that is so colourful it looks unlike a thesis and something that is empty of meaning, so choose the subtitle levelling and language that best carries the important cognitive drive of your thesis. A reader will subsequently benefit by being able to see from the contents page what the thesis does theoretically and methodologically. The contents page becomes an inviting entry into the thesis.

● Two basic approaches: write first; plan first

This section is a reminder that structuring usually entails a mixture of planning and writing into the topic. Some thesis writers will be able to draft a contents page, work downwards to fill in more subheadings, and finally complete the thesis by fitting their material in between the subheadings. For other students, the processes of thinking and writing are interwoven to the extent that they are virtually the same. Rountree and Laing (1996) suggest that there are two basic approaches to structure. The first is to write first and then highlight the themes that emerge; the second is to get an overall sense of the thesis topic through reading and consideration of data, and write a chapter outline before starting the writing (Rountree and Laing, 1996, pp. 142–4). In part, the approach you use will depend on your discipline and topic, but it probably depends too on your own preferences, your comfort or discomfort with chaos, your eagerness to get going or your desire to wait till you have a good road map. As authors, the three of us found we varied strikingly – but managed to avoid blows – in our personal comfort with planning firmly and fixedly or allowing prose to luxuriate wildly. We also find in our sessions on structure that there are usually students who are adamant that only one of these methods is viable. Yet both methods work well in different circumstances. If you are ever blocked with writing, it can help to move up to the meta-level of planning.

We speculate that the first, rather slower method of working (write first and find the themes), is often the only approach for many students writing exegetical theses. Parry identifies that this is especially the case for humanities students:

In the beginning, and sometimes into the middle stages of candidature, humanities students report that ... the prime concern is to achieve the necessary degree of focus and to develop confidence that the research is headed in the right direction. Here, the stages of starting out and creative development have to take place in tandem because the architecture of the thesis is conceptually constructed ... from the top down. (Parry, 2007, p. 77)

When a thesis is exegetical, how you say things matters very much, and the values inherent in the thesis are constructed through the writing. It would be unduly restrictive to begin with a contents page plan and write into it. We suggest keeping one open as a work in progress that you review regularly and have on hand to discuss with your supervisor, but this may not be anything more binding than a different lens onto your project and a place to develop the lexicon of your headings.

A chapter outline can be a challenge to produce. Some further student thoughts from our survey data on what is difficult about thesis structure were:

- fitting my thesis into a scientific structure when it was exploratory/qualitative;
- being logical;
- being too close to the material;
- piecing together the material as some is chronological and some thematic;
- volume, variety, consistency.

If you write first, you then have the fairly large task of identifying the crucial themes, setting aside what cannot be regarded as central to your thesis (even if it is fascinating, important and valuable) and then finalizing the contents page structure. If you prefer the method of an early outline, you face these challenges at an earlier stage in the process. Even if the contents page must remain hypothetical until most of the thinking and writing is done, efforts to get your head around the project as a whole are generally helpful for enabling writing.

You could consider also the way that people did this work before the benefit of on-screen documents, when writing

material was expensive. It is not a new practice for scholars to need to get their heads around larger projects than can be comfortably carried by natural memory. If you feel it is helpful to develop a mental overview, make use of mnemonic theory from past ages. We suggest that the underpinning principles behind memory techniques – make links between things, use vivid imagery that conjures up associated but perhaps mundane facts – are also worth keeping in mind with the writing process.

● Mnemonic theory: the architecture of the mind

Mnemonic theory has classical roots and was developed in the context of religiously sponsored education in the Middle Ages. On one hand, mnemonic theory provides a set of exercises to practise in order to develop the memory beyond its inherent capacity; on the other, memory development was considered spiritual in a time when education was under the auspices of the church. Your soul was refined as you expanded the material that you were able to internalize and retain. Yet even for the most secular-minded, classical and medieval ideas about self-construction are applicable to thesis writers who need to declare a subjective position.

The term 'soul' can be translated to 'sense of identity', with all of the axiological complexity this implies, in the terminology of academic criticism (Carter, 2009). Perhaps the most helpful aspect of mnemonic theory is that cognitive retrieval is theorized as vitally important to the inherent identity of the individual. You are the sum of the material that you can control mentally. Thankfully, in the twenty-first century, we do not have to commit large quantities of material to memory, but we should be aware that structuring a thesis is partly about the construction of identity: it matters. Three useful pointers to the thesis writer emerge from mnemonics: the use of vivid, concrete images to conceptualize the abstract; the use of mental architecture to conceive of structure; and, most importantly, recognition that the cognitive structuring process is ontologically significant (Carter, 2009).

There is a concrete spatial aspect to the memory techniques. Cicero in *De Oratore* (55 BC) cites Simonides (c. 556–468 BC) as the first to theorize on memory (and he is also the first recorded professional poet). Simonides was employed to poetically praise a wealthy client at a dinner party, but fell out with his mean-spirited patron and was subsequently called outside. As a result, he escaped an earthquake that killed all the dinner guests, rendering them unrecognizable. Simonides was called in to identify as many of the bodies as he could, and found he could remember them by envisioning again the dinner table of sociable faces and seeking those who sat next to the ones he could remember clearly. Following this experience, he theorized that, in order to remember more than you might naturally, you should mentally construct a specific architectural place in which things to be remembered could be tucked away in sequence, connected one to the next so that they might be retrieved (Yates, 1966, p. 17). Vivid images with some association with the idea to be remembered were then inserted at transition spaces in the building: the corners, doorways and stairs.

At a practical level, the place and image model of early mnemonics offers the architectural metaphor of a building with its entrance way, its progression through rooms and corridors and its signposts that direct. Many theses use an apt epigrammatic quotation at the start of each chapter which performs the job of a mnemonic image, possibly memorable – a small gem that stands out from the background. The individuation that James C. Lockhart (1997) achieves with epigrams at the start of each chapter contributes to the sense of his confident authorial control. His opening thesis chapter, 'Motivation, Research Approach, and Problem Statement', comes under the auspices of Oscar Wilde's: 'It is a pure unadulterated country life. They get up early because they have so much to do and they go to bed early because they have so little to think about' (Lockhart, 1997, p. 1). This chapter opens with a consideration of land-based industries as economic entities, but the quotation obliquely ties economics to the rural versus urban and local versus international dichotomies that underpin his topic. In this PhD in international business, the topic is greatly enriched by his wide-ranging epigrams (the rock group Pink Floyd also make an appearance: the well-known exhortation to eat your

meat if you want your pudding), because they make cultural connections and additionally establish the author's wit and expansive possession of how business is enmeshed in social behaviour and cultural values.

The mnemonic model has implications for style. As with architecture, form must follow function, but it may also develop its own unique artistry. The vivid images that mark transition could help to establish the style, conveying cultural and value-laden connections. Although in the linear construction of the written thesis the tour of the imaginary building can be taken in only one direction, the introductory material of the thesis might explain other possible connections between 'rooms'. To sum up, a spatial conceptualization may show how the parts are fitted together to produce a whole that meets the multiple requirements of thesis genre, discipline convention and the establishment of the academic identity that you want to inhabit.

● Mapping thematically

In Chapter 3, we discuss both metaphor and narrative when they are deliberately exploited over the wider thesis for their potential as structural devices. Underpinning both usages are the *themes* that are important to your research. Here we consider some thematic models for organizing your content within the bookends of the introduction and conclusion. It is likely that to some extent your literature review and possibly description of data collection will be chronological, working from the beginning through time to the most recent point. A logical sense of accumulative force is achieved by ordering material from the least to the most important, which may have a sense of working from the external to the internal core. Many studies apply theory to practice and then cycle back to theory again. Old patterns are applied to new material. The general may be used to investigate the specific; previous international study applied to the local. There are many other options, and the ones you choose may be adapted. If you decide that your structure should be organized so that the themes of the thesis govern the systems by which it coheres, one of these may be suitable for your research.

Chronological

The straightforward earliest-to-most-recent ordering has the advantage of simplicity, and is particularly suitable to theses where progression is being studied. It is reasonably likely that even if you have a more complex organization you will work chronologically within some subsections of your work. However, if your thesis content logically fits into an uncomplicated time line, this gives you the equipment to use time as the linking motif. Such linkage will, of course, merely underpin the development of your argument and analyses of what events mean. Davis and McKay observe that: 'The shift from narrating when events occur to arguing that when they occur they produce certain changes is crucial to developing an effective form of analytical writing' (Davis and McKay, 1996, p. 78). They argue that the chronological becomes more meaningful when it is represented as causal: linking the argument development to the time progression is likely to enable the argument to progress logically within a framework constructed of time words.

Least to most important

A sound way to construct an argument is to put forward the second-to-strongest point first, and then steadily work through from weakest to strongest. The advantages of this model is that you interest your audience with something that is reasonably convincing, and then you roll back to the least convincing point, leaving yourself the advantage of gathering momentum as you go. You also finish on the strongest point at your disposal, a powerful rhetorical strategy. For some, instead of generally working chronologically within each section, it is more effective to build an argument based on the strength of each point, and to maintain the sense of momentum forward by working broadly according to this second-to-strongest, then weakest-to-strongest formula. Cohesion can be gained by assuming the linkage of a persuasive dialogic argument.

External to internal

This is a version of least-to-most-important that has a spatial component and a symbolic one. Often, for different reasons, the external is less important than the core. In medieval religious writing, the body is the earthen vessel of the soul; in biological terms it is the internal seed that carries the futurity of the plant. The image of the rose was one that conveyed a sense of each petal following the pattern of the one on its outside, but more perfectly, right through to the tightly curled middle petals at the centre. Philosophically there is a satisfying cultural component to this model, which may allow you to build your content into an envisioned shape that embodies its values. Cohesion is attained through the matching of shape to meaning.

Theory to practice

Many theses begin by establishing theory in the literature review, and apply it to their own case studies, sometimes returning to modify or refine the theory. Grounded theory, in particular, cycles round its processes. In such cases it may be necessary to consider which is most important to the author – the practical application or the development of theory – and to structure accordingly. Often by applying a particular model, such as grounded theory, it is possible to follow specific guidelines that give some direction over the broad outline of the thesis.

Old pattern to new material

A thesis may use a model of enquiry found in previous work and apply it to a new sphere. For example, where a study has found data by surveying a set of participants in one particular location, the same methods might be used to investigate participants in a different place. Sometimes, too, the literature yields possibilities for parts of the data gathering to follow previous models. If you happen to find that this is the case, notice how the model thesis was structured while you are considering how they conducted the research.

General to specific

Literature may show common trends that your thesis investigates in a specific previously unresearched environment. This is the 'macro to micro' model, whereby a small and specific sample is examined to see if what is happening generally applies to this environment or group. It may be that small differences from the general emerge as being the most important features of the area of research studies. In such a case, structure could make use of difference as the organizing principle, working from similarity to difference to put emphasis on the difference found in this study.

Thesis as an hour glass

To some extent, the pattern of general to specific applies to most theses in which the introductory material will survey the literature in order to identify the gap that the thesis will fill. The hour glass is a diagrammatic image of this process: most theses begin broadly as they establish the context of their research question, problem or hypotheses, narrow to their specific topic and work at a close level through the different components before broadening again to contextualize their work within the general field that began the discussion. Critically, once the topic has been focussed down, care should be taken not to spread out to the general again or, if this is necessary, to explain to the reader why the vista has been spread open again.

International to local

A variant is the application of a study founded in international literature that is applied to the local. This is particularly common in New Zealand, where we work, a small country about as far away from almost anywhere else as it is possible to be, whose post-colonial settler identity is constructed around a sense of exile. Research that brings the local into the international discussion steps away from the cultural cringe of parochialism to demand equal significance. We suspect that doctoral candidates from other smaller countries may also be more acutely aware of the staking out of national identity involved in applying an international model locally.

● Ordering the thesis: suggestions for action

First make a mind-map of your thesis by spreading out a good-sized sheet of paper and, beginning at the centre with the central idea, spreading out from there to attach related ideas. Then draw a geometrical model, which might be a triangle, rectangle, or labelled grid, and should include ideas/themes/arguments as well as nouns. Reconfirm this a few times if you are not fully satisfied with your first effort. Keep the model(s) aside for future reference. Put the model that you most favour against the basic structure model. Where in your thesis will be you make each of the moves of the basic science model? Which items in the basic model are most important for your work? You could use a red pen to overwrite the terms of the basic model that are relevant to your diagram, changing the diagram again if this process enables you to see discrepancies and possibilities.

Possibly with your model beside you, overlaid by your thoughts about the functions of the thesis that the basic model provides, begin a draft of a contents page. Look at several recent theses in your own discipline for the options of contents formatting. Develop your own contents page as far as is reasonable and set aside to review in a few months' time. Keep this document alive over the thesis process by reviewing it regularly and changing as your ideas develop. It is something you could show your supervisor to launch a discussion on the development of your ideas.

Move between writing and planning throughout the thesis process. If one becomes difficult, step into the other mode of working. Stay aware of which parts of your writing are broad and general – and, therefore, introductory – and which are specific. Imagine your thesis as a building and consider how the ideas fit together. Think thematically of how your thesis could develop.

● Readerly needs

Some researchers have investigated examiners' comments and questions. Trafford and Leshem (2002) suggest that,

rather than being accepted for your findings, you are passed because of your conceptualization of what they mean, and it is your explanation of the process that matters. Johnston (1997, pp. 340–1) reports on positive comments reflecting examiners' attention to structure, such as 'an important study, carefully and thoroughly designed', 'carefully conceptualised' and 'the first chapter provided an advanced organiser for the reader'. Mullins and Kiley (2002, p. 377) found from interviews with 30 examiners that they were aware that the basic science model of structure was not always the most appropriate choice, but none commented on examining anything that differed radically from it.

You need to consider your reader before you submit. Ask yourself what questions would spring to your own mind if you read a single sentence or two describing your thesis topic. If you were to list what you would need to know to be convinced by such a thesis, or would want to know to establish whether or not the research was of interest to you, in what order would you need the information? What would you expect to be told in the first few pages? If the topic obviously has several dimensions in need of some explanation (as in a thesis that examines three different cultures and compares their response to an economic trend), which dimension seems the most foundational to the entire idea? And then what next?

A reader is likely to have some understanding of the background to your thesis topic, but may not have any knowledge at all about some of the details. If you make some interdisciplinary connections, you need to cater for readers from both disciplines, expecting that they will not have a grasp of the other discipline. You will use structure to build a framework to fit your ideas together accessibly for people with a limited understanding of your material, of your theory, of the epistemology behind your methods and of the values that drive the project.

If you feel that there are a couple of options for the order of your material, talk through the benefits and disadvantages of the options, preferably with your supervisor. You may find that this enables you to see more clearly which one is slightly preferable. Then write down your explanation so that it could be included in your introduction as part of the defensive work of the thesis.