How to succeed in your Master's & Doctoral Studies

A SOUTH AFRICAN
GUIDE AND RESOURCE BOOK

JOHANN MOUTON

How to succeed in your Master's and Doctoral Studies

A SOUTH AFRICAN GUIDE AND RESOURCE BOOK

Johann Mouton

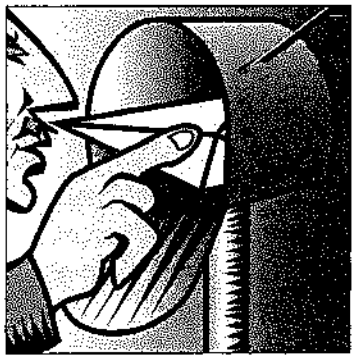
Van Schaik
PUBLISHERS

Published by Van Schaik Publishers,
1064 Arcadia Street, Hatfield, Pretoria

First edition 2001
ISBN 0 627 02484 X

Commissioning editor Eloise Wessels
Editing by Margaret Hittge and Aïda Thorne
Production manager Ernst Schlatter
Cover design by Collage Graphics
Illustrations by Orin Scott
Typography and typesetting in 10½ on 13 pt Amerigo by Pace-Se
Graphics, Pretoria
Printed and bound by NBD, Drukkery Street, Goodwood, Western

Contents

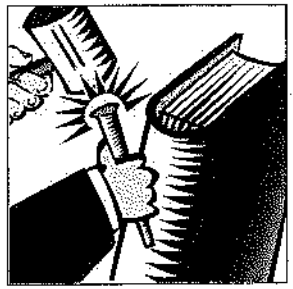


Section 2: Planning your research

Section 3: The research process

Section 4: The research product

Part II: Resource chapters



Preface

This book began to take shape two years ago while I was teaching a course on research methods at the Graduate School of Business at the University of Stellenbosch. I discovered early on in the course that most of the students were so concerned about the requirements of their thesis (or mini-thesis) that a traditional course in social research methodology would not have met their needs. I started adapting the course and gradually incorporated more and more contents relating to the management of research projects. The new focus of the course seemed to be more successful.

Over the past two years, I have had occasion to rework most of my initial ideas and to test them in various classes at the University of Stellenbosch, as well as at other universities and technikons in South Africa. This book represents the first version of this labour. It is by no means the final product as the landscape of postgraduate research in South Africa changes all the time. At the time of writing this preface, new ideas about higher education in South Africa have just been made public and, if implemented, will have far-reaching implications for supervisors and postgraduate students alike. Other changes in the environment are also influencing the way in which we manage our postgraduate students: the internationalisation of higher education, the exponential growth in information and communications technology, and so on.

This book aims to fill some of the gaps in the current literature. As far as I know, it is the first South African text on the management of postgraduate research studies. Although in general terms scholarship is a universal endeavour, it takes place in specific socio-political and geographical settings that give it a particular "flavour". With this in mind, I have tried to incorporate some of the South African conditions in higher education, as well as in research in general, into the text, to make it more useful to South African students. The book also attempts to bring together the various dimensions of project management as it applies to postgraduate research. In this sense, it lies somewhere between standard books on research methods (of which there are many excellent ones) and the higher education literature that concentrates purely on the student in his or her relationship with the supervisor. These studies tend to focus on the organisational, emotional and psychological

2

You and your supervisor

The master's degree and, to a lesser extent, the doctoral degree, are apprenticeship degrees. You are in training as a researcher or scholar working under the guidance and supervision of an established and experienced scholar. The role of the supervisor cannot be overestimated. A good supervisor will help you to make your studies more effective and productive in various ways.

This chapter focuses on the role of the supervisor in your studies and the importance of establishing a good, professional working relationship with your supervisor as early as possible in the research process. The following questions will be addressed:

- What does "supervision" mean?
- What can I expect of my supervisor?
- How do I select the right supervisor?
- What can the supervisor expect of me?
- What are the crucial issues to raise during the first meeting with a supervisor?

- What is a proper relationship between supervisor and student and how does it change during the process?

On the nature of supervision

Numerous studies have shown that the quality of the supervisory relationship is a key factor in the successful completion of postgraduate research theses. There are large variations in this relationship because of differences between disciplines and academic departments, and differences of style amongst supervisors. Another item that determines the nature of the supervisory relationship is the fact that students themselves vary so much. They differ in terms of their degree of independence and expertise in research, maturity, motivation and commitment to postgraduate studies. Some students are able to articulate their needs and expectations clearly from the beginning, which may assist the supervisor in meeting the student's supervision needs. Other students are less clear about the direction of their studies, what they require and how to articulate this. Such students usually need more guidance and support and are only able to work independently much later in the research process. However, there are a number of core functions that characterise the nature of supervision to which we now turn our attention.

To supervise literally means to "oversee". In the case of academic supervision, it means to oversee the successful completion of the postgraduate thesis. What does "oversee" mean? There is widespread consensus in the literature that the supervisory role implies at least four different responsibilities or roles on the part of the supervisor:

- To *advise* the student in the management of the postgraduate project (adviser)
- To *guide* the student through the research process (guidance)
- To ensure that the required *scientific quality* is achieved so that the student has the necessary opportunities to pass (quality control)
- To provide the required *emotional and psychological support* when needed ("pastoral" role)

Not only is the good supervisor required to simultaneously be adviser, expert guide, quality controller and therapist or "pastor", but he or she also has to have the wisdom to know when to take on which role!

Supervisor as adviser

During the initial phases of the postgraduate project, the supervisor is required to advise the student on a number of issues that could be grouped together under the heading of "project management" concerns. This refers to such matters as time management, resources required, funding, access to information, issues of research ethics and institutional requirements. The main point here is to provide the student with sound advice, based on experience, as to how to plan the research effectively and efficiently.

Supervisor as expert guide

The expert guide role is implied by the fact that the supervisor's first and foremost duty is to assist and guide the student through the research process. Both the master's and doctorate are "research degrees" and it is the primary role of the supervisor to help you attain your degree successfully. This role of supervisor focuses on the intellectual or scientific aims of the postgraduate degree. In this sense, the primary responsibility of the supervisor is to guide you in methodological matters, including the development of the research proposal, formulation of the research problem, choice of the appropriate research design and theoretical framework and, finally, through all the technical stages of the research process.

Supervisor as quality controller

The supervisor's role as quality controller is equally important. Two distinct phases can be distinguished here. During the research process, the supervisor provides the student with constructive criticism. When providing comments on draft chapters, the role of the supervisor is to ensure that the quality (scientific and technical) of what you are producing meets generally accepted standards for academic theses. A second phase of quality control begins once the completed thesis has been handed in for examination. During this phase, the supervisor takes on a different quality control function when he has to examine the end product and deliver judgement on the overall scientific merit of the thesis.

Supervisor as pastor

The "pastoral" or therapeutic role involves the supervisor in various forms of emotional and motivational support. The supervisor acts as a sounding board for your ideas, hypotheses and provisional decisions. The good supervisor should also be understanding when private matters impede good progress in a study, when family or professional concerns interfere with the research process. The good supervisor should be able to discern when to listen and provide appropriate emotional support, as well as when to focus on the intellectual challenges of the project.

Research contract

A number of writers on postgraduate supervision have suggested that a kind of research contract be drawn up between supervisor and student that formalises the issues discussed above. Such a research contract signifies that consensus has been reached between them on matters such as the topic, research objectives, research design and methodology, time-frame, schedule of meetings, as well as matters relating to research etiquette (cf. last section in this chapter). It should be obvious from this list that many of the issues referred to here are in fact covered in the standard research proposal. Some writers, therefore, do not advocate that a separate "contract" be drafted, but rather interpret the research proposal as a contractual document (cf. Chapter 4 for further discussion of this point). Either way, it is important that agreement be reached between both parties on all essential issues. Whether it is seen as a "verbal contract" or "written contract" is perhaps less important.

Against the background of our discussion about the four key functions of the supervisor, I have drawn up a list of more specific and concrete things that you can realistically expect of your supervisor.

What you can realistically expect of your supervisor

As *adviser*, you can expect your supervisor to:

- Discuss with you, at the outset, relevant issues of research conduct and ethics, including the consequences of misconduct (such as plagiarism), issues surrounding intellectual property, and the safety and occupational health policy of the department (where appropriate).
- Suggest ways in which you can make the most effective use of your time.
- Make the necessary time available to you for close and regular contact and to structure meetings in the most effective way.

In the role as *expert guide* and mentor you can expect your supervisor to:

- Assist you in the selection of your thesis topic.
- Guide you to the relevant literature – without providing a library service to you!
- Help you decide on a theoretical frame of reference for your study.
- Advise you on the overall goals, objectives and the scope of the project and the eventual development of a research proposal.
- Train you in the use of specific research methods or refer you to courses in research methodology where necessary.

As *quality controller* you may expect your supervisor to:

- Monitor the progress of your work in accordance with an agreed schedule and provide you with constructive (not personal or *ad hominem*) criticism.
- Discuss your progress, or lack thereof, with you at regular intervals. These discussions should cover all aspects of your studies, including any aspect of the research programme, the agreed timetable or deadlines, performance in seminars, performance in prescribed coursework, attendance, interaction with other students or technical staff, and observance of laboratory or other practical guidelines (including occupational health and safety guidelines and procedures).
- Comment on the content and draft chapters of the thesis. At the time of submission, your supervisor will indicate whether the draft manuscript is of adequate academic quality and may be submitted for examination.

In the role of "pastor", you may expect your supervisor to:

- Be alert to your personal strengths as well as limitations and, in particular, to be able to identify situations in which you may require additional assistance.
- Be committed to your studies throughout their duration.
- At all times show interest in what you are doing and be supportive where required.

Selecting the right supervisor

The discussion up to this point should have given you a good indication of what to look for when selecting a supervisor. In the previous chapter we discussed how you should go about identifying good academic and research departments. If you follow the suggestions made there, you will be well on the way to selecting a good supervisor, since it is more than likely that the better supervisors are associated with the better departments. But what are the characteristics of a good supervisor and how do you recognise these characteristics?

In general, the "ideal" supervisor should:

- Have a good track record as a *scholar* or *scientist* in a particular field of expertise.
- Be *experienced* in supervisory practices.
- Show *interest* in your research topic and the envisaged studies.
- Have sufficient *time* available for supervision.

This is indeed the profile of an "ideal" supervisor. Unfortunately, top scholars are very often overcommitted and may not have adequate time for supervision. Similarly, those who are the most experienced and who have a good reputation as a supervisor may attract large numbers of postgraduate students, which could, in turn, leave less than adequate time to devote to individual students.

When approaching a supervisor, not only should you keep the above aspects in mind, but also your own expectations and requirements. If you are used to working fairly independently, you may want to select the best person in the field even though you might not receive as much attention as you want. On the other hand, if you are the kind of person who can only work effectively under close supervision and "rigorous" guidance, you should rather select someone who is possibly not be the best in the field, but who will have enough time to meet with you.

Two good sources of information on potential supervisors are the homepages of academic departments at universities and technikons, which often include the CVs of the staff of these departments, and the NRF's Networking Database, which contains information on more than 2000 academics in the human sciences. It can be found at www.nrf.ac.za/databases/nexus/networking.

Up to this point we have focused on the role of the supervisor and your expectations of a good supervisor. However, it is equally important that you realise that you, as a post-

graduate student, have certain responsibilities and duties as well. We now turn to a discussion of these.

What the supervisor can expect from you

I have clustered what your supervisor may realistically expect of you into four categories:

- Firstly, you have to adhere, at all times, to the *"research contract"* established between the supervisor and yourself. Whether you reached verbal consensus or have documented key agreements (e.g. in a research proposal), your first duty as a master's or doctoral student is to follow the research objectives, design, methodology and time-frame outlined as best you can. This also implies that whenever you deviate from the agreed framework you will inform your supervisor as soon as possible.
- One of the primary responsibilities of the student is to *initiate contact and request meetings* with the supervisor. Advance notice of meetings should be given. Most supervisors also expect meetings to be scheduled around written documents. In the initial phases of your studies this may refer to draft versions of the research proposals. During the more advanced phases, this will include draft versions of the chapters of the thesis. With the exception of the very initial stages in the research process, meetings that are scheduled merely to discuss general matters are usually not encouraged. This does not mean, of course, that the student does not have the right to request a meeting when a serious problem arises during the project.
- You must know and understand all *institutional and formal requirements and rules* relevant to your studies. It is primarily your responsibility to be informed about the rules and regulations of the university or technikon. This refers to all the issues listed previously, including ethical matters, matters of intellectual property rights, the format and style of the thesis, and so on.
- You will be expected to maintain acceptable levels of *interest and commitment* to your studies throughout the degree. I always tell my students that unless they are enthusiastic and excited about their topic and the way in which the project develops, they cannot expect their supervisor to become enthusiastic about it. It is not the duty of the supervisor to maintain the student's interest and commitment in a research topic, but merely to provide support (both intellectual and emotional) when the student encounters specific obstacles and problems.

Each of these categories is elaborated on below. Adherence to the *research contract* entails the following more specific duties and responsibilities:

- Accept responsibility for the research project. Plan and execute the research within the time limits set for the degree and the stages of progress.
- Inform the supervisor of problems affecting the progress of the research as they arise. These problems may include personal, academic and resource problems.

- Take the initiative in raising current and anticipated difficulties and problems with the principal supervisor.
- Provide the supervisor with word-processed, dated thesis drafts that have been checked for spelling, grammar and typographical errors prior to submission. Make sure you allow for enough time between handing in the drafts and your next meeting, as your supervisor will have other demands on his or her time.
- Ensure that you block off sufficient time for the final writing, editing and supervisor's approval of the thesis, in accordance with the timetable agreed upon with the supervisor.
- Accept responsibility for producing the final copies of the thesis, for the content of the thesis, and for ensuring that it meets the institution or faculty's requirements, including the standard of presentation.

Initiating contact and meetings implies the following:

- You are responsible for arranging meetings with the supervisor on a regular basis by mutual agreement, and for using these meetings to raise issues (including ethical or intellectual property issues), to clarify options, to produce proposals, to give notice of any hindrances to progress, to document progress, discuss drafts, and so on.

Being informed about *institutional rules and regulations* entails the following:

- Being aware of the current regulations, policies and procedures that relate to postgraduate research degrees and to postgraduate research training. These documents provide information on a range of matters, including such matters as entry requirements, reporting requirements for supervisors, appeals, conciliation processes, examination requirements, employment restrictions and equity matters.
- Taking responsibility for storing original data safely, recording it in a durable form, referencing it appropriately and abiding by appropriate privacy provisions.

This is a rather extensive list of duties and responsibilities. Again, if you are not sure where and how to get the necessary information on these matters, do not hesitate to ask your department or supervisor. As we indicate in the next section, it is also advisable that some of these issues be taken up with your supervisor during the first few meetings.

The first meeting with the supervisor: laying the ground rules

Conflict and strong disagreements are not uncommon in supervisory relationships, but these can play an important part in the development of the research student's independence. For some students, it is the path to becoming an independent scholar and developing a collegial relationship with the supervisors. Such times will be easier to

cope with if a good working relationship has been established initially and clear ground rules laid down. In this section, a checklist is provided of some common issues that should be clarified in the first meetings between the student and supervisor. Students will rarely have thought these issues through and therefore will need to be given time to consider them before committing to a certain position.

Checklist for the first meeting between supervisor and student

Supervision	**What does supervision mean?**
	What are the stages of the process?
	What are the student's and supervisor's responsibilities?
	What sort of feedback will the supervisor give: how often, how much, what form?
	What sort of feedback does the student prefer or benefit from, find helpful or unhelpful?
	What can be done if there is conflicting feedback between supervisors, consultants or others?
Project management	**What is involved in the development of a research proposal?**
	What research skills, statistical analysis or other technical skills are required for the research?
	Is a research methods course available? How does a student enrol for such a course?
	Who has the ownership of material arising from the research, authorship of papers and so on?
	What is the appropriate length, structure and presentation of the research proposal? (A student should be encouraged to look at other theses or projects in the discipline.)
	What are the stages of the research process? (A rough guide to the time that should be allowed for each stage.)
	What is an acceptable or average time-frame for completion? What are the implications of not finishing within the expected time?
Meetings	**Frequency, duration, structure and location of meetings?**
	What kind of access does the student have to the supervisor apart from scheduled meetings?
	Whose responsibility is it to schedule meetings?

	If someone cannot attend a scheduled meeting, what is the correct procedure to follow?
	How will meetings be structured and what time will be available for such meetings?
Thesis	**The writing process, supervisor's expectations, preferred style, when to begin?**
	What would be a realistic completion date to aim for, given all the information discussed?
	What is required with regard to the editing of chapters?
	What are the requirements regarding basic referencing and the skills required?
	What are the minimum requirements regarding draft chapters?
	What can the student expect in terms of feedback: What time-frames are involved? Will the feedback be in written form? etc.

Research etiquette

Throughout the process of the research project the relationship between supervisor and student invariably changes. The supervisor may find that the initially relaxed and happy student becomes "stressed" and very anxious at a later stage. Initial excitement and high expectations give way to continuous strain and self-doubt. The supervisor should always remember that the postgraduate project is almost certainly the biggest and most important piece of academic work the student has ever undertaken, and may ever undertake. The student's desire for ultimate success and the many problems that appear along the way frequently make life a strain for student and supervisor alike.

Similarly, the student may witness parallel "transformations" on the part of the supervisor. The good supervisor changes from a "overseer", or even a "slave-driver", and becomes more and more of a partner and colleague as the study takes shape and the student makes progress. Being treated increasingly as a peer and an equal scholar is one of the rewarding outcomes of the supervisor/student relationship.

Because there are changes and variations in the relationship, it is extremely important from the beginning to establish a clear understanding of what behaviour is appropriate and what is not. I refer to this as the issue of "research etiquette".

The boundaries of the supervisory interactions with the student should be negotiated early on in the relationship. Well-defined boundaries help students to be clear about where they stand and encourage independent behaviour. It may be necessary to set boundaries for a variety of issues, be they personal or academic. For example, the supervisor should be prepared to analyse a draft of a thesis critically, but will probably not see it as his or her role to undertake the task of editing. The checklist for the first

meeting (provided above) could also be useful for identifying the issues on which agreement needs to be reached. To conclude this section on research etiquette, here are five moral principles that may not guarantee, but will at least encourage, a healthy supervisor/student relationship:

- RULE 1: DIGNITY, RESPECT AND COURTESY

The supervisor should at all times strive to treat the student fairly and with dignity and respect.

Similarly, students should always respect the academic integrity of their supervisor and observe common courtesy when making any requests.

- RULE 2: NO HARASSMENT

No harassment or abuse (emotional, intellectual or sexual) should at any time enter into the relationship.

- RULE 3: ACCESSIBILITY

The supervisor should make enough time available to the student and respond timeously and in writing to any submissions made by the student.

- RULE 4: PRIVACY

The student should at all times respect the privacy and personal space of the supervisor and not make undue demands on his or her time (especially after hours!).

- RULE 5: HONESTY

The supervisor should at all times be honest in his or her comments about the academic quality of the student's work.

The student should always aim to be honest about his or her work, its progress (or lack thereof) or any aspect of the academic endeavour.

Concluding comments: This chapter has covered a wide range of topics that are all in some way related to the issue of supervision. Given the very important role that the supervisor will play in your postgraduate life and studies, it is not accidental that a whole chapter has been devoted this. You should now have a better understanding of the nature and aspects of supervision, the roles and responsibilities of the supervisor and the student, which issues to address during the first few meetings with your supervisor and, finally, some basic rules of research etiquette.

During the first meeting with your supervisor or perhaps even before you initiate contact, you will be trying to identify a research topic and start getting your ideas organised about what to study. The next chapter addresses these issues and gives you some pointers about where to start and where to go to from there.

ADDITIONAL READING

(Note: The references listed below should be read in conjunction with the additional reading given at the end of Chapter 1.)

Aguinis, H., Nesler, M., Quigley, B. et al. (1996). Power bases of faculty supervisors and educational outcomes for graduate students. *Journal of Higher Education*, 67(3): 268–297. The authors discuss the degree to which a faculty can influence students and the power relationships between the supervisors and graduate students. Perceptions of power of the supervising faculty are assumed to influence educational outcomes such as graduate students' satisfaction with the graduate programme and university environment, students' mood and morale, the number of years spent in graduate school before graduating, and future career success.

Bourner, T. & Hughes, M. (1991). Joint supervision of research degrees: second thoughts. *Higher Education Review*, 24(1): 20–34. Describes the theory behind joint supervision, the experience of supervisors who practised joint supervision and possible problems.

Kaunda, L. & Low, T. (1998). Growing our own timber: students and supervisors' perceptions of research at honours level at the University of Cape Town. *South African Journal of Higher Education*, 12(3): 130–139. A study of the factors affecting success at postgraduate level at the University of Cape Town. The study included a supervisor questionnaire that focused on the research process and their experiences as research supervisors. The main finding is that success in postgraduate studies depends largely on the amount and type of assistance from supervisors.

Kruger, E.G. & Van Niekerk, L. (1991). Accompanying research students. *South African Journal of Higher Education*, 5(1): 108–113. The article reviews the role and function of the promoter and the relationship with the research student.

3

Scanning the field of study

Common questions that students ask are: How do I decide on a research topic? How do I generate ideas suitable for research? This chapter deals with these by looking at the different ways in which one develops an acceptable research topic.

Research topics originate in research ideas. Someone has to come up with an interesting and worthwhile idea that requires research. So the first question that we need to address is: Where do research ideas come from?

The origin of research ideas

A first obvious source of ideas is your own experience and reflections about things around you. People who are more aware of what is going on around them, who are more sensitive to their surroundings, are more likely to come up with interesting topics for research. Here are some things you can do to help you develop your sensitivity and awareness:

- Become more aware of current events by keeping up to date with media coverage of worthwhile and interesting phenomena.

- Become more critical of different viewpoints when they are aired and defended by people in your immediate environment.
- Read more, especially semi-scientific literature. More mature students who are already pursuing a professional career are in a good position to do this, being situated in a working environment where various issues are debated in boardrooms, strategic planning sessions, office memorandums, and so on.
- Listen critically to what people around you are talking about. What are the current issues in the political, social, environmental, economic, educational and other arenas?

The individual alone, however, is usually not a sufficient source for the generation of research ideas. Even if you are a reflective and very aware person, you might have to include other potential sources in your search in order to generate a researchable idea. In the remainder of the chapter, we discuss some of the sources and strategies that you could follow in order to do a more systematic review of a field of study.

Your supervisor as a source of ideas

Your first stop for research ideas should be your (potential) supervisor. This is important for at least three reasons:

- Firstly, good supervisors are also good scholars and will have accumulated a wealth of experience in their areas of interest and expertise. Most good scholars walk around with a number of interesting research ideas "in their heads" that they have been considering, but have never had the time to follow through.
- Secondly, even if your prospective supervisor does not have any ideas readily available, he or she should be able to point you in the right direction as far as possible topics and sources of information are concerned.
- Thirdly, some supervisors work according to a model and they only accept students who are willing to work on their research programmes. Although this practice is more prevalent in the natural sciences, it is becoming increasingly popular in other disciplines as well. In such cases, the supervisor specialises in two or three broad research areas and requires his or her students to work within one of these fields. This has an immediate advantage for the student in that he does not have to come up with a totally new idea or research topic, but can immediately "slot into" an existing research programme – usually with a well-defined and relevant topic. The obvious disadvantage is that you are constrained in your own choice and have very little or no freedom to pursue a personal interest.

Scanning South African databases and indices for research ideas

There are a number of databases and indices available that will give you a good first overview of current and completed South African scholarship. Before discussing these,

let us first address the question of which principles you should keep in mind while searching these databases. Useful principles in reviewing a field of study include:

- Make sure that you know something about the source that you are accessing (the database or index): what kind of material is included, what time-frame is covered, and so on.
- Depending on the nature of the study, the date of publication may be more or less relevant. In more empirical studies, one would start with the latest publications and work one's way backwards to a certain date (say the last five or ten years). In more historical studies, one would like to cover everything of value that has been published in that field.
- It is a good strategy to start with review articles in order to get a general overview of a particular topic. Even if a database does not classify the entries under the heading of "review articles", it may be helpful to use keywords such as "review" or "overview" or "survey" when searching on the title field.
- Look for patterns when searching. Journals (even within a specific discipline) tend to publish articles of a certain kind. The top authors get cited more often and their names should appear more frequently in searches. Do not do haphazard or random searching. Organise your searches around themes, subjects or keywords and pursue these searches systematically!

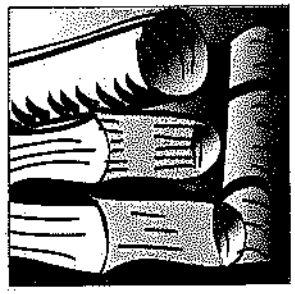
We will illustrate these principles with some examples in this chapter (as well as in Chapter 6 on "The literature review"). Four categories of sources of ideas on South African research are discussed below:

- South African indices (NISC SA)
- South African databases (NEXUS, Healthnet)
- The South African Data Archive
- South African Internet sites

South African indices: NISC SA

The most comprehensive set of bibliographic indices on South African research and scholarship is undoubtedly the range of CD-ROMs and online services provided by NISC SA. NISC (National Inquiry Services Centre) was founded in 1988 and is an electronic publishing company with headquarters in Baltimore, Maryland. There are six NISC branches worldwide, including one in South Africa (based in Grahamstown). Most South African university and technikon libraries have CD-ROMs with a South African interest, which make them an essential first stop for any postgraduate student. Your supervisor, university or funding agency will usually require you to provide evidence that you have consulted local studies in your field of interest. This requirement is normally a condition for two reasons: firstly, to prevent you from duplicating a completed or current study and, secondly (and more importantly), to make you aware of similar studies in your field. In the latter case, references to studies that have similar objec-

4



The research proposal

All institutions require you to develop and present a research proposal of your master's or doctoral studies at some point during the initial stages of your work. As the name suggests, a research *proposal* is a document that outlines how you *propose* to undertake your research studies. The research proposal constitutes a crucial stage or milestone in the research project cycle. Some institutions actually only accept you as a postgraduate student once your research proposal has been accepted by a faculty committee of the university or technikon.

In this chapter the nature and structure of research proposals are discussed and some practical suggestions are also made about what should be done to improve the

chances of your proposal being accepted. However, I do emphasise throughout that the research proposal should be understood first and foremost as a document that embodies the *logic* of your research project. So unless the basic principles of research design and research problem formulation are understood, you will find it difficult to develop a proper research proposal. Separate sections on the nature of research design, research problems and types of research design, are included in this chapter.

Before discussing the nature of the research proposal, I want to draw your attention to three of the resource chapters that should be read in conjunction with this chapter. As a background to the section on research problems, you should first read Chapter 9 on the "Three Worlds framework". A separate resource chapter on "Research designs" (Chapter 10) has been included to assist you in the selection of the right design for your study. And, finally, examples of two (one good and one poor) research proposals are presented and discussed in Chapter 11.

What is the research proposal?

Firstly, the research proposal is a document that outlines your thinking about the research problem. What you wish to study and how it should be done are considered, as well as your approach to the study and what kind of resources you will select. In a nutshell – the research proposal is a *project* planning document and embodies your thinking about the study as you envisage it at the beginning of the project. This implies that the more thought you have put into your proposed research, the better developed, organised and logical the research proposal will be. A proposal, therefore, usually gives a good indication of whether you have done sufficient preparation for the study. As a reflection of your thinking at that time, it tells the supervisor how much you have thought about and considered the problem, whether you have managed to put your research ideas into writing in a clear and unambiguous manner, and also whether you have a good idea of where you are heading with your research study.

Secondly, the research proposal forms the basis for the working relationship between you and your supervisor. In this sense, the proposal is not unlike a *contract* or agreement. You are effectively telling your supervisor what you wish to study and how. Once he has accepted your proposal and has given his approval for you to continue, an agreement has been reached and a kind of contract has been drawn up between the two of you. You agree to undertake the proposed study along the lines discussed and outlined in the proposal. The supervisor, in turn, agrees to provide you with the necessary guidance and supervision to achieve this goal. Although not legally binding, a strong moral commitment is presupposed on the part of both parties. This commitment implies certain responsibilities and duties for both parties. (See the discussion on research etiquette in Chapter 2.)

In a humorous, though insightful interpretation, research proposals have been likened to marriage proposals:

> Well, first of all, a thesis proposal is not that different from a marriage proposal. You make sincere promises, you sweat profusely, you hope the other party says

yes. You get down on your knees and beg. Doing a marriage proposal is in fact good practice for a thesis proposal.

Source: This knowledge originated with Kevin.Knight@F.GP.CS.CMU.EDU

Although many writers have commented on the dual nature of the research proposal, there is no question that it is first and foremost a project planning document. A good research proposal gives the reader a clear and consistent outline of what topic is to be studied, what the objectives of the research are, what type of study will be conducted (the research design), how the research will be conducted (the research methodology), as well as the envisaged time-frame and resources required.

The research proposal should express the research logic for your studies. It is a document that embodies your thinking on the research topic and therefore follows the same logic and principles of research. Before we move on to discuss the detailed structure and formatting of a good research proposal, it is therefore necessary that we devote some time to revisiting the basic principles of the logic of research.

The logic of the research process

I have argued elsewhere (Mouton, 1996) that all empirical (social) research conforms to a standard logic. Irrespective of the kind of study and independent of the methodology used, all empirical projects conform to this logic. I refer to this as the ProDEC framework of social scientific reasoning. "ProDEC" refers to the four elements that are standard in all forms of empirical research: a research *problem* (Pro), research *design* (D), empirical *evidence* (E) and *conclusions* (C). This logic or structure is represented in Figure 4.1.

Figure 4.1 not only shows the basic dimensions of the research project, but also the position or place of the research proposal in the process. The proposal is a document that looks back at what you have done up to this point in your research. It documents what you wish to do by giving the background to and motivation for the study, and how you have developed the research problem statement (Phase 1). It also documents your thinking about the most appropriate research design and the reasons why you have selected that particular design (Phase 2).

The proposal also looks ahead at what is to follow: firstly, by indicating *how* you intend conducting the fieldwork (Phase 3), which is documented under the heading of "Research methodology". Also note that it is standard practice to require a project planning framework or time-frame where you indicate not only the stages to follow, but also the time allotted to each stage and the sequence of anticipated events. Finally, your proposal is also a forward-looking document if you conclude with a possible chapter outline of the thesis (Phase 4).

So to summarise: The research proposal is a key document in that it is both a backward- and forward-looking document. It documents your thinking thus far (primarily about the formulation of the research problem and research design), but also outlines the anticipated events (research methodology, time-frame and thesis structure). This dual nature of the proposal is concretely reflected in the use of the past tense (sometimes the present tense) for the first two phases, and the future tense when writing about the research process to follow.

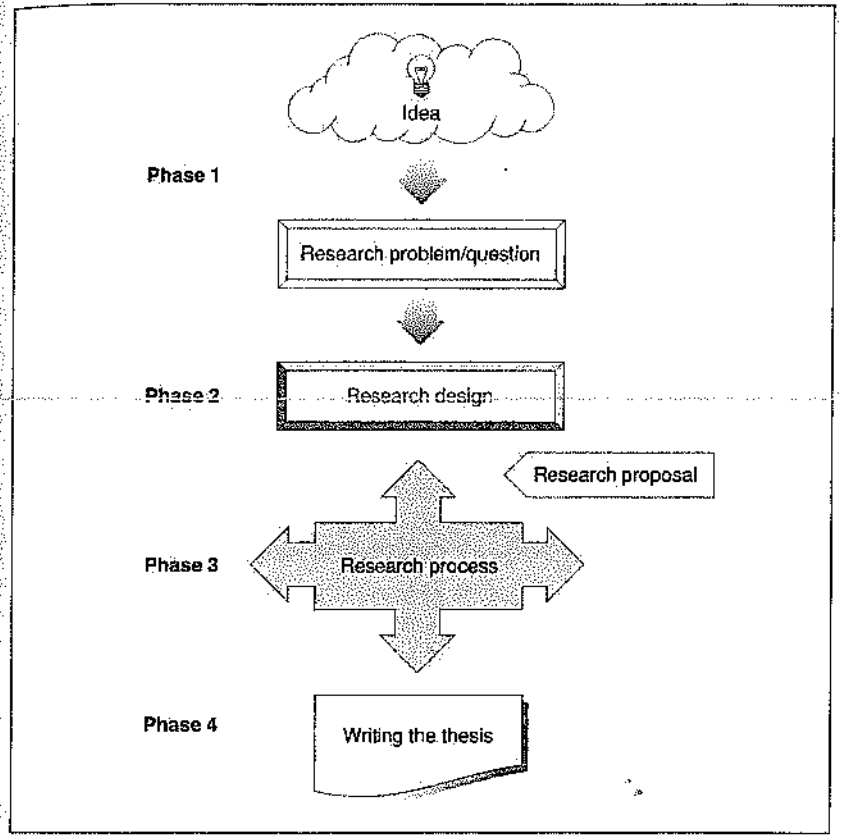


Figure 4.1: The logic of the research process

The structure of the research proposal

Although there are differences between research proposals that reflect differences between scientific disciplines, science cultures (social and natural sciences) and types of research design (empirical and conceptual studies), there is a certain structure or logic that characterises all research proposals. This is simply because the proposal in fact mirrors the basic phases in the research process.

Let us first look at the standard components of a research proposal. Most research proposals comprise the following sections using headings such as those in Box 4.1.

BOX 4.1: GENERIC FORMAT FOR RESEARCH PROPOSALS

- Working title
- Background/rationale
- Preliminary literature study
- Research problem and objectives
- Research design
- Research methodology/methods
- Time-frame
- Outline of chapters
- References

Ignoring the more formal elements such as the title and references for a moment, it is quite easy to show how the remaining elements coincide with the four phases of the research process (cf. Figure 4.1).

Phase 1: From research idea to research problem

The first phase of any research project involves transforming an interesting research idea into a feasible, researchable research problem. This phase is documented in the first three sections of the research proposal:

- The *background/rationale* section should indicate what the general aims of the study are and give the reasons for studying this particular phenomenon.
- The *preliminary literature study* provides evidence that you have done some preliminary reading on your topic. It also shows how you developed your initial ideas, which ultimately resulted in the research problem statement or formulation. Where appropriate, it provides information concerning the theoretical literature on the topic.
- The *statement of the research problem* should be a clear and unambiguous statement of the object of study (the unit of analysis) and the research objectives. The problem statement is sometimes formulated as specific research questions or research hypotheses.

Some supervisors will accept the first two sections (rationale and preliminary literature study) combined into one. However, this does not usually apply to the third section, the research problem. The latter is such a critical section in the proposal that most supervisors require that you address it separately and clearly indicate ***what*** *you will be studying or researching, and* ***to what end*** *(the research objectives).*

Phase 2: The research design

This section in the proposal addresses a key question: What type of study will be undertaken in order to provide acceptable answers to the research problem or questions? In this section you indicate what type of research design will be followed in your study, why you have selected this design and what possible challenges or limitations in the design will require your attention.

Phase 3: The research process

How will you conduct your research? How you envisage conducting your research is discussed under the heading of "Research methodology" (or "Research methods"). This section should include issues such as the following: literature study, sampling or selection of cases, measurement, data collection, data analysis and interpretation.

It is worth pointing out that some supervisors are happy if the sections on research design and research methodology/methods are collapsed into one. In fact, in some cases where the choice of a research design is straightforward and does not require much elaboration (as in literature reviews or non-empirical studies), a section on research methodology only may be regarded as sufficient.

Phase 4: Writing the thesis

When writing the research proposal you obviously do not know exactly how your thesis will be organised or structured. However, some supervisors like you to give an outline of the chapters of the thesis, working on the assumption that such an exercise helps to clarify your thinking. Even if the final contents of the thesis look very different from the outline provided in the research proposal, it does force you to think about the key elements of your thesis and their ordering at an early stage.

In addition to a section on chapter outline, you might also be required to give an estimate time-frame or schedule. Again, the thinking behind this is that it forces you to structure your postgraduate project more concretely, which in turn requires a more disciplined approach to research.

Four steps in transforming research ideas into research problems

In the previous chapter we discussed some sources of research ideas. However, a research idea is just that. It is an idea or a notion about what to investigate. It indicates a broad domain (e.g. "something in the field of business ethics such as corruption in the South African civil service"). The real challenge, however, is to take that idea and transform it into a research problem or research question. In my experience, most students find this a very difficult and time-consuming process. There are a number of

steps that could be followed to speed up this process. In each case, the step is discussed with reference to the research idea of a study on "corruption in the civil service".

STEPS	ILLUSTRATION
Step 1: Read as much as you can about your research idea (the preliminary literature review). The main objective of the first scanning of the literature is not so much to learn about the results of previous studies or what methodologies were followed, *but* to learn about the different ways in which this phenomenon has been studied.	The preliminary literature review could reveal a wide range of studies, for example, studies on the incidence of corruption and whether there is an increase in its occurrence; studies on the attitudes of the general public towards corruption and the appropriate response; studies on the different meanings of "corruption" and whether all types of corruption are equally serious; studies on the causes or reasons behind corruption and whether all cases of corruption should be interpreted as referring to the same phenomenon; studies to evaluate the impact of corruption on the morale in a government department, and so on.
Step 2: Be clear about the unit of analysis, i.e. *what* exactly it is that you wish to research.	The units of analysis of the different hypothetical "studies" referred to vary from studies of the behaviour of individual civil servants ("individuals" as units of analysis), to studies of the attitudes of the general public to such behaviour (again "individuals"), studies of government departments (the impact of high incidence on the "culture" or "morale" of a department), studies that look at actual cases of corruptive acts or behaviour ("social actions" or "events" as units of analysis).
Step 3: Be clear about the objectives of your research. What are the general aims or goals of the study? (What do you wish to find out or establish through your research?) Also give the specific objectives.	Again it is obvious that the research objectives of the examples are very different. The aim of the study on the incidence of corruption over time is historical-descriptive; the aim of the study on public opinion towards corruption is also descriptive but of a quantitative overview type (a survey of attitudes); the aim of the study of acts of corruptive behaviour is more qualitative-descriptive, whereas the ethical study on the types of corruption can be defined as having a philosophical-conceptual objective.
Step 4: Ensure that your formulation of the research problem is such that it is feasible (given time, money and other resources), so that you will be able to complete the study successfully.	Different research problem statements have different resource implications. In each of the cases above, you have to ask key questions about the time-frame of the study (e.g. What period will the historical study cover?) or questions about the spatial location of the study (How many and which government departments will be included in these studies? How many cases of corruptive behaviour will be included in the ethical study? What sample of the general public will be deemed sufficient for the public opinion study?).

Following these four steps will help you to focus your research. The first phase of the research process – transforming ideas into research problems or questions – involves a gradual and progressive focusing of the research problem. The image of focusing is very appropriate. In the same way that you focus your binoculars to bring a visual object clearly into your vision, you also focus your study through successive steps of clearer definition, clarification, and so on. Each of the steps contributes to this process of focusing in its own way.

The preliminary literature review helps you to demarcate your field of study by showing you how other scholars have approached the object of your study (Step 1).

Identifying the unit of analysis that you wish to study is another form of focusing within a broad domain of study (Step 2).

Clarifying the research objectives is the third step in focusing your research. Through the formulation of very specific research questions or research hypotheses, you now "zoom in" on those aspects or variables of the unit of analysis that you are really interested in (Step 3).

The final step in focusing is the "resource check". Given the constraints of time, money, infrastructure, etc., it is rarely the case that a master's or doctoral student can cover a topic in any comprehensive fashion. You usually have to delimit the time-frame of the study (e.g. study corruption events since 1995), or the geographical boundaries (studying corruption in one province rather than in all provinces), or draw a sample from a population (the public opinion study) (Step 4).

In the remainder of this section, each of the key elements of the research problem statement is discussed in more detail: the unit of analysis, the distinction between research problems and social or real-world problems and the kind of research questions that are typically asked.

Units of analysis: the object of study

The unit of analysis refers to the *what* of the study: what "object", "phenomenon", "entity", "process" or "event" I am interested in investigating. When this object is an object in World 1 (a real-life "object"), we talk about empirical research problems. For

example, whenever I study human behaviour, historical events or social programmes – all "objects" in World 1 – I am busy with empirical research. When this object is an object in World 2, we talk about conceptual or non-empirical problems. For example, if I am interested in understanding trends in the scientific literature, I will be studying (as "objects") the ideas and writings of other scholars in World 2. Similarly, studies that focus on constructing theories and models, analysing concepts or reviewing the body of knowledge are all non-empirical studies. The units of analysis in each of these cases "reside" in World 2. (Note: The distinction between "World 1" and "World 2" is extensively discussed in Chapter 9.)

A table that lists the more typical "entities" or units of analysis in World 1 and 2 might help you to understand this very important distinction (Box 4.2).

BOX 4.2: WORLD 1 AND WORLD 2 OBJECTS

World 1 objects	World 2 objects
Physical objects (matter)	Scientific concepts or notions
Biological organisms (living organisms) and processes	Scientific theories and models
Human beings (individuals or groups)	Scientific methods and techniques
Human actions and historical events	The body of scientific knowledge or literature
Social interventions (programmes or systems)	Scientific data or statistics
Cultural objects (art or literature) and technology	Schools of thought, philosophies or world-views
Social organisations (political parties or clubs) and institutions (schools, banks or companies)	
Collectives (countries, nations or cities)	

Research problems and real-life problems

Before discussing the different types of research problem or question, it is quite important to be able to distinguish between real-life problems and research problems. I have found that students often confuse these two categories. Very often, when specifying the research objectives or research questions for their study, students (and even experienced scholars) quite often confuse Worlds 1 and 2.

Real-life problems occur in World 1. They are the social, political, economic and health-related problems that we encounter in everyday life, such as poverty, unemployment, disease and illness, crime, violence, corruption, financial mismanagement, bankruptcy, insolvency, scholastic failure and many more. How do we solve World 1 problems such as crime and unemployment? The answer: only through *action*, through an

active intervention in the real world. In order to address the rising crime rates, we need to change the course of events that are causing crime (such as high unemployment) through an intervention such as job creation schemes or skills development programmes. Real-life problems are only solved through human action.

Research problems implicitly or explicitly embody a research question, such as: What are the causes of crime? Which factors in society are conducive to criminal behaviour? Or, once one has intervened in order to reduce crime, we could ask: Has a crime prevention strategy been successful? In order to answer these questions, we require *information*. Research *always* involves some form of information gathering and analysis; some process through which information, in whatever form (data, documents, interviews, speeches, diaries, questionnaire responses, test scores) is first gathered, then analysed and finally interpreted. So a research problem is not "resolved" through "action" within World 1, but through "action" in World 2, namely the practice of research.

How does one go about deciding on the objective of the study once one has a good idea of the unit of analysis? One way to approach this is to try and formulate your research problem in the form of a research question. The next section shows how this could help you come up with a clear and focused research problem, and discusses the types of research question that are most often encountered in research projects.

Research problems as research questions

We often formulate research problems in the form of questions as a way of focusing the research problem. An initial distinction should be made between empirical and non-empirical questions. An empirical question asks something about World 1; it addresses a real-life problem. To resolve an empirical question, we either have to collect new data about World 1 or we have to analyse existing data. Non-empirical questions are questions about "entities" in World 2, for example, questions about the meaning of scientific concepts, questions about trends in scholarship or about the plausibility of a new scientific theory. In this case, we are asking questions that can be resolved without recourse to World 1, but rather an analysis of the body of scientific knowledge in World 2.

Empirical and non-empirical questions

Empirical questions pertain to the following:

Question type	Question	Examples
Exploratory questions	What is the case?	What are the critical success factors of a profitable company?
	What are the key factors?	What are the distinguishing features of a good leader?

Question type	Question	Examples
Descriptive questions	How many? Are *x* and *y* related?	How many people died of Aids in South Africa last year? Is there a correlation between parental support and scholastic achievement?
Causal questions	Why? What are the causes of *y*?	What are the main causes of malnutrition in a rural community? Is smoking the main cause of lung cancer?
Evaluative questions	What was the outcome of *x*? Has *P* been successful?	Has the new TB awareness programme produced a decline in the number of reported TB cases? Has the introduction of a new refrigeration technology led to more cost-effective production?
Predictive questions	What will the effect of *x* be on *y*?	What effect will the introduction of a new antibiotic have on population *P*?
Historical questions	What led to *y* happening? What were the events that led up to *y*? What caused *y*?	What caused the demise of socialism in Central Europe during the late 1980s? What led Nato countries to decide to start the aerial bombing of Kosovo?

Non-empirical questions involve the following:

Question type	Question	Examples
Meta-analytic questions	What is the state of the art regarding *x*? What are the key debates in domain *x*?	What is the current state of research on environmental ethics? What are the key debates in current business risk studies? What are the leading positions/paradigms in research on structural adjustment programmes in developing countries?

Conceptual questions	What is the meaning of concept *x*?	What is the meaning of "sexual harassment"?
Theoretical questions	What are the most plausible theories or models of *x*? Which are the most convincing explanations of *y*?	What are the most widely accepted models, definitions or theories of "competitiveness"? What do competing theories say about the effects of stress on productivity?
Philosophical/ normative questions	What is the ideal profile of *x*?	What is meant by an equitable educational system? Do animals have rights?

Selecting the appropriate research design

Once you have formulated the research problem, your next step is to select an appropriate research design. Put simply: What kind of study will you be doing? What type of study will best answer the question that you have formulated? Before looking at some of the more common types of research design, it is important that you clearly understand the notion of a "research design".

A research design is a plan or blueprint of how you intend conducting the research. Researchers often confuse "research design" and "research methodology", but these are two very different aspects of a research project. Perhaps the easiest way to distinguish between them is by way of an analogy.

An everyday example – building a house – will clearly demonstrate the differences. The building of a new house starts with an idea. Say a newly wed couple is contemplating building their first house. Discussing what they want, they exchange ideas: ideas about the shape, the size, the number of bathrooms, the style and other aspects. They then bring in an architect and try and describe their ideas to him in great detail and "what they have in mind" (ideas live in our minds!). The challenge for the architect is to visualise these ideas and transform them into a design or blueprint of the house. After the architect has shown the blueprint or design to the couple, it may go through a number of changes until they are satisfied that the design on paper fits their ideas. Once this phase is complete, a building contractor is appointed who takes the design as the point of departure and starts constructing the house.

The building of the house, then, consists of the systematic, methodical and accurate execution of the design. In the process of constructing the house, various methods and tools are used to perform different tasks (laying the foundation, bricklaying, plastering, and so on). Finally, at the end of the process, the building inspector certifies that the house has been built in accordance with the submitted design.

By this time, the similarities between building a house and doing your postgraduate research studies should be evident. We can summarise them as follows (Figure 4.2).

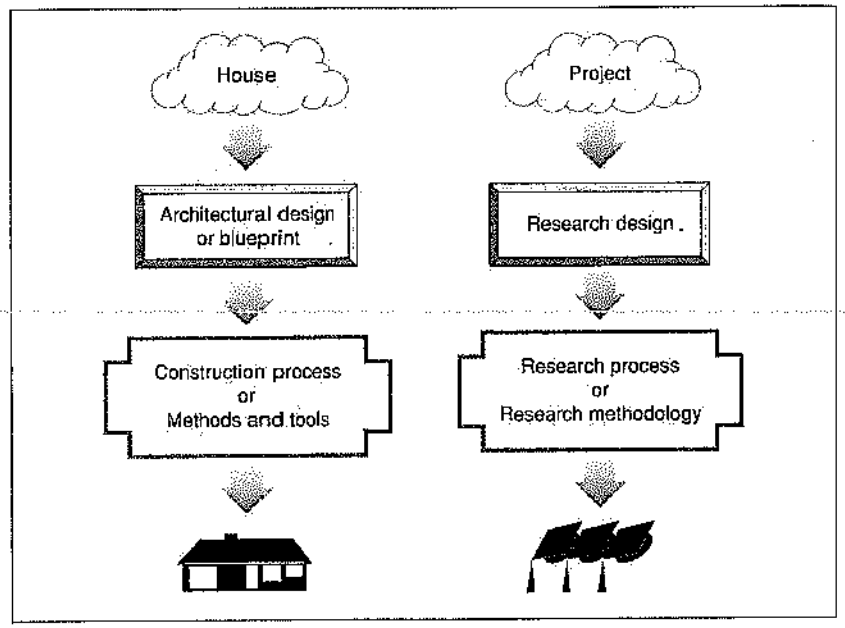


Figure 4.2: A metaphor for research design

We can summarise the differences between research design and research methodology as follows:

Research design	Research methodology
Focuses on the end product: What kind of study is being planned and what kind of result is aimed at?	Focuses on the research process and the kind of tools and procedures to be used.
Point of departure = Research problem or question.	Point of departure = Specific tasks (data collection or sampling) at hand.
Focuses on the logic of research: What kind of evidence is required to address the research question adequately?	Focuses on the individual (not linear) steps in the research process and the most "objective" (unbiased) procedures to be employed.

Research designs are tailored to address different kinds of questions. When we attempt to classify different kinds of studies, different design types, it is not surprising that we do so according to the kind of questions they are able to answer. A broad classification of the main design types is presented, and a detailed discussion of all of these designs, together with extended reading suggestions, is given in Chapter 10.

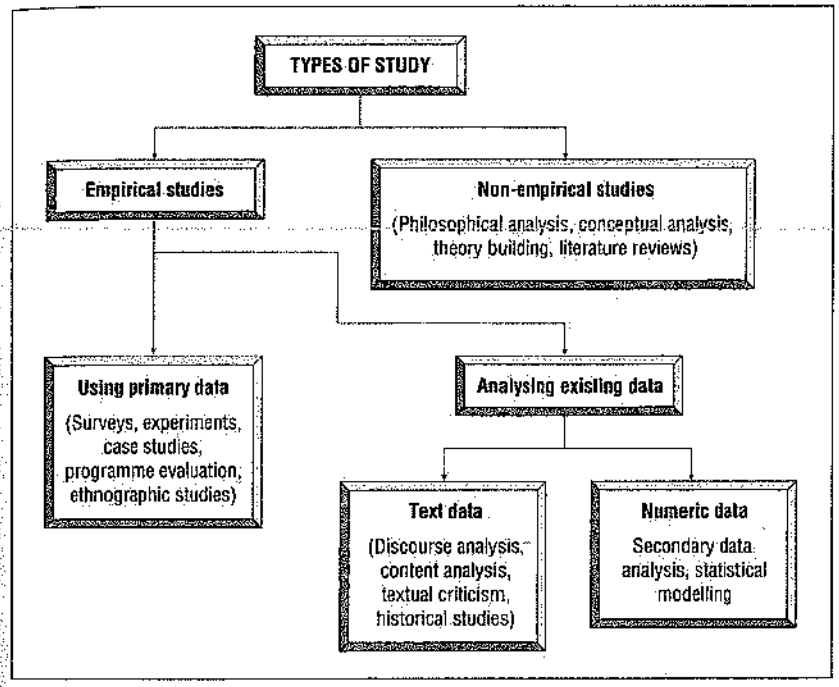


Figure 4.3: A typology of research design types

This concludes our section on research design. The aim of this section has been to clarify the concept of "research design" and present you with an overview of the main design types, in order to assist you in the selection of the appropriate design for your study.

The remaining sections of the research proposal – research methodology, time-frame/project planning and chapter outline – are not discussed separately in this chapter since separate chapters are devoted to each of these topics. The whole issue of research resource management (including time planning) is addressed in the following chapter. The stages in the research process are discussed in Chapters 6 ("The literature review") and 7 ("Conducting fieldwork"), whereas the structure and organisation of the thesis are the subject of Chapter 8. I would therefore recommend that you read

through these chapters before finalising the research proposal, as this will give you a good idea of what to include in the proposal document.

Formal aspects of the research proposal

This chapter is concluded with a list of the more formal aspects that need to be taken into consideration when you develop and finalise your research proposal. These formal considerations refer to matters of language, formatting and length.

Language

The research proposal is a scholarly or scientific document. This means that it has to conform to the style and format required by academic institutions. Your university or technikon may have a guide in which some of these rules are listed. If not, you can follow the suggestions made in Box 4.3.

BOX 4.3: LANGUAGE AND STYLE IN PROPOSAL WRITING

Sentences

In general, try to keep your sentences simple and short. It is not necessary for a piece of writing to be difficult in order to be properly academic. To keep your reader's interest, vary the length of your sentences. Sentences that are too long or complex invariably confuse the reader. Such overly lengthy sentences may have to be read more than once, sometimes over and over, until they no longer make any sense. It never hurts to make your meaning quite clear. Not everyone has the time to unravel long, unwieldy, jargon-filled sentences.

Linking devices

Some conjunctions used to link ideas within and between sentences have become rather overused, particularly in an academic context. The most obvious are *therefore*, *moreover*, *furthermore*, *hence* and *thus*. It should almost always be possible to link sentences using a logical flow of ideas rather than conjunctions, but on the rare occasions that internal logic is not enough, the words *and*, *also*, *but*, *so* and the occasional *therefore* or *however* should be more than adequate. Spend some time thinking of alternatives to these so that your writing does not become repetitive and stereotyped.

Scientific jargon

Technical terms or jargon should be kept to a minimum. If it becomes necessary to use a word that you think the reader might not understand then you should give a brief explanation, either by supplying clues about the meaning of a word throughout the sentence or by placing the definition in brackets.

Variation and the use of pronouns

A common problem in academic writing is a lack of variation, with writers using the same nouns over and over throughout the text. This soon becomes very monotonous. Make good use of variants and pronouns to ensure that your writing is more interesting.

Spoken vs written language

Spoken, informal language is often inappropriately used in proposals, which should contain more formal writing. The most common examples of this are the words *get*, *like* (for making comparisons) and *all* (as in "all (of) the books"). Some synonyms for *get*, depending on the context, are: *obtain*, *gain*, *acquire*, and *find*. *For example* can often be used in place of *like*.

Grammar

Almost all of us, whether English is our mother tongue or not, have problems with grammar at some time or another. In our haste to get our ideas down on paper, we are often more concerned with content than form, with the result that we end up making mistakes. Some mistakes are easily discovered during proof-reading, while others are not so easy either to spot or correct. If grammar is a problem for you, and you will usually know if this is the case, then you should be honest and try to do something about it rather than submitting a substandard piece of work. There are some simple things you can do to help yourself:

- Write short sentences as recommended above. The longer a sentence is, the more complicated the grammar becomes, and the more likely it is that you will end up making mistakes.
- Ask colleagues or friends to proof-read your work. This will help with grammar problems, as well as any gaps in your reasoning. You may have known what you meant when you wrote something down, but part of the explanation may still be in your head and not on paper! A good proof-reader will help you sort this out. Alternatively, consult a professional editor or proof-reader if you feel that you need more help than your colleagues can provide.
- Spelling: More than anything else, bad spelling irritates supervisors. Often it is your typing rather than your spelling that is at fault, but whichever it is, if you do not correct mistakes or take the time to check your spelling, it creates the impression of a hastily put together proposal. Alternatively, your supervisor might conclude that you could not be bothered to use a spell-checker or dictionary, and are therefore a sloppy worker. Either way, you are not making a good impression on someone who is going to decide whether or not to supervise your research!

Formatting

A proposal needs to conform to the formatting requirements of your home institution. This includes aspects such as:

- Typeface (e.g. Times Roman, Arial)
- Font size (11 pt, 12 pt)
- Line spacing (single spacing, double spacing)

It also means conforming to the guidelines about section headings. Most institutions have very specific rules about these and you need to follow them meticulously, even if you do not agree with specific rules.

Finally, a proposal that has many spelling errors and grammatical mistakes makes a very poor impression. With the easy availability of spell-checkers and grammar-checkers in most word-processing software, it is absolutely essential that your proposal document be neat and error-free. If you are not very proficient in English, then it is also essential that you ask someone who has English as his or her mother tongue or a professional language editor to read through your document before submitting it to your supervisor.

Length and balance

There is no standard length for a research proposal. Even within institutions and between departments, you may find differences. However, more often than not, one finds that proposals have a minimum length of approximately 4–5 pages and a maximum length of 10–15 pages. The golden rule is to ensure that you abide by the requirements of your home institution.

Another consideration when constructing the research proposal is the question of "balance" or "proportion". By this I mean the proportional lengths of the main sections in the proposal. A good proposal is well balanced; it has the right proportions! Let me illustrate.

If your proposal is five pages in length, then each of the main sections (background, problem statement, research design, etc.) should have a length proportionate to each other. A background section of three pages in a five-page proposal is out of proportion to the total length and makes the document poorly balanced. Similarly, the section on research methods cannot just be a short paragraph of ten lines. Too long or too short sections invariably distort the balance of the proposal, and mean that too much or too little information is provided in specific sections.

Although there are no fixed rules about the "ideal" balance of a well-structured proposal, I usually suggest a format along the lines outlined below to my students:

BOX 4.4: THE WELL-BALANCED PROPOSAL

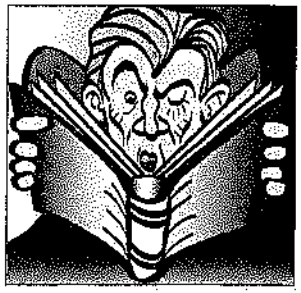
Sections	Suggested length
Background/rationale	¾ page
Preliminary literature study/theoretical framework	1 page
Research problem and objectives	¾ page
Research design	½ page
Research methodology/methods	¾ page
Time frame	½ page
Chapter outline (optional)	½ page
List of references	½ page

Concluding comments: This rather lengthy chapter has been devoted to the construction and structure of the research proposal. Examples of two proposals with some annotation are included in Chapter 11. Having read this chapter, you should now have a better idea of what is involved in putting together a well-constructed, logical and clear research proposal. You should bear in mind the fact that the research proposal is not merely a document that is required by the university or technikon for formal reasons, but it also becomes the basis of your further project planning and execution. A well-designed research proposal is your road map for the further steps in the research process and is therefore an essential tool for the successful management of your postgraduate studies.

One consequence of a well-constructed proposal is that it makes explicit the resources you will require to complete your study within a reasonable time-frame and cost. In the following chapter, we turn to these more concrete resource issues and make suggestions about how you could manage this process effectively.

6

The literature review



- **The importance of the literature review**
- **Strategies for searching the literature**
- **Towards more effective reading of the literature**
- **The criteria for a good literature review**
- **How to organise your review of the scholarship**
  - *Chronologically: by date of study*
  - *By school of thought/theory/definition*
  - *By theme or construct*
  - *By hypothesis*
  - *By case study*
  - *By method*
- **The number of references**

There are two ways of looking at the literature review: either as a study on its own, which some people prefer to call a "literature study", or as the first phase of an empirical study. Either way, it is essential that *every* research project begins with a review of the existing literature. There are a number of very good reasons why a literature review forms an essential component of any study and these are discussed in the first section below. In the remainder of the chapter, ways of gaining access to the literature are discussed, and some tips on how to read the literature more effectively and efficiently are given. The criteria for a good literature review are then discussed and, finally, an overview of different principles according to which you can organise your information when writing up your literature review is provided.

The importance of the literature review

Let me begin with a somewhat controversial statement. The term "literature review" does not, in fact, encapsulate all that we intend to convey by the term. When you

embark on your study, one of your first aims should be to find out what has been done in your field of study. You should start with a review of the existing scholarship or available body of knowledge to see how other scholars have investigated the research problem that you are interested in. Your interest is, therefore, not merely in literature (which sounds as if it refers merely to a collection of texts), but in a body of accumulated scholarship. You want to learn from other scholars: how they have theorised and conceptualised on issues, what they have found empirically, what instrumentation they have used and to what effect. In short, you are interested in the most recent, credible and relevant scholarship in your area of interest. For this reason, the term "scholarship review" would be more accurate!

One reason why I prefer to talk about a review of the existing scholarship is that the term tells you more about what you are looking for. The accumulated scholarship in any discipline or field of study refers to the following elements (here using research on poverty as my example of a field of study):

- Definitions of poverty
- Different theories, models and hypotheses in the field of poverty research
- Existing data and empirical findings that have been produced by previous poverty research
- Measuring instruments (questionnaires, scales and indices) that have been developed to measure the extent or scope of poverty

So, when we talk about reviewing a body of scholarship (a literature review), we are in fact interested in a whole range of research products that have been produced by other scholars. There are a number of reasons why a review of the existing scholarship is so important:

- To ensure that one does not merely duplicate a previous study.
- To discover what the most recent and authoritative theorising about the subject is.
- To find out what the most widely accepted empirical findings in the field of study are.
- To identify the available instrumentation that has proven validity and reliability.
- To ascertain what the most widely accepted definitions of key concepts in the field are.

One could add one other, very important, practical reason:

- To save time and avoid duplication and unnecessary repetition. A good review of the available scholarship not only saves you time in the sense that it helps you to avoid making errors and duplicating previous results unnecessarily, but also because it provides clues and suggestions about what avenues to follow.

In the following section, some strategies that you could follow in making your review of scholarship more effective are discussed.

Strategies for searching the literature

What are the main sources of information that you need to access and where do you locate these resources? Table 6.1 summarises the main types of information source or database that you might require for your study, as well as how and where you can find them.

Table 6.1: Types, location and access points of the main sources of information

Type of information source	Location	Means of accessing the source
Books, monographs, conference proceedings, reference materials	Library books	Library catalogue
	South African titles	SACat on SABINET SA Studies CD-ROM
	Overseas titles	Bookfind WorldCAT Internet search engines and directories
Journal articles	South African journals	Index to South African periodicals (available on SA Studies CD-ROM or online)
	Overseas journals	General and domain-specific indices (cf. Chapter 13 for an extensive list)
	Online journals	Internet
Newspapers, magazines, reports	South African media	SAMedia
		Internet
Theses and dissertations	South African theses	SA Studies
	Overseas theses	Dissertation Abstracts International

A variety of bibliographic tools have been developed to assist you in the identification of the literature that you need for your research. The library catalogue (originally card catalogues but nowadays usually computerised) remains an important and essential first stop for most research students. Library catalogues always have been, and still are, very good tools for accessing the monograph holdings (books, anthologies and theses), but are less helpful in finding journal articles. This is why many indices (indexes) and abstracting services (such as the Social Sciences Index) began producing bibliographic

indexes and citation indexes to help scholars find detailed information in the thousands of journals published worldwide. Beginning in the late 1960s, publishers began making the records from these print indexes available for searches through computer terminals (online searches). More recently, advances in information storage and specifically compact disc technology, have made a third search methodology, namely CD-ROMs (compact disc read only memory), possible. This means that in addition to printed catalogues, indexes and abstracts that are available online, you can also search on a growing number of CD-ROMs in your field to access the whole range of resources available (cf. Chapter 13). Incidentally, it is worth mentioning that because of the large storage capacity on CD-ROMs, it is now possible not only to put bibliographic databases or indexes on such discs, but also full-text documents such as the *Encyclopaedia Britannica*.

Figure 6.1 summarises the main categories of search tools that are available to you.

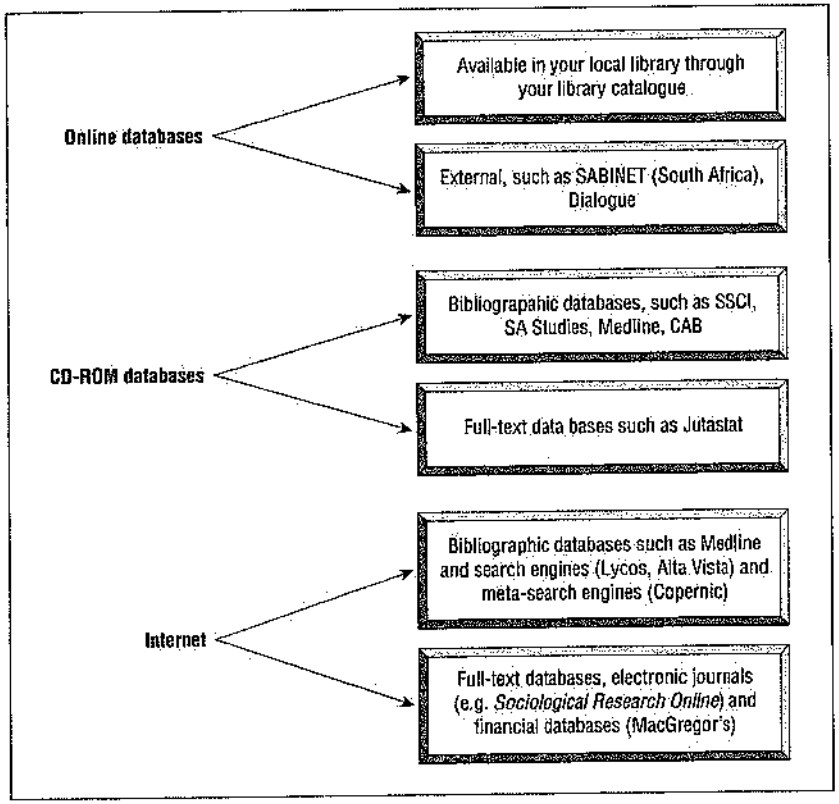


Figure 6.1: The main categories of search tools

Towards more effective reading of the literature

Here are some practical tips to assist you when reading the literature.

Tip 1: In most types of research (with the possible exception of historical studies) you should start with the most recent sources and work your way backward. One of the advantages of this retrospective reading is that it is easier to reconstruct debates and discover how later studies built on earlier studies.

Tip 2: Always read the abstract or summary of an article first before starting to read the whole article. Other good clues to the usefulness of an article are the headings and the references in the list of references at the end. When taking out a book, use the table of contents and preface or introduction as the exploratory entry point before embarking on reading the whole text. Remember that book reviews are equally good starting points.

Tip 3: A well-structured article should have a clear introductory section, as well as a concluding summary section. The introduction and summary of an article should tell you quickly enough whether it is worthwhile to proceed or whether you should stop reading at that point.

Tip 4: Once you have established that an article or chapter in a book or other source is relevant to your study, you should continue to read it in-depth and systematically. If it is well structured, you might be able to identify the logic and line of reasoning of the author quite quickly. In other cases, you might find that the reasoning is dense, convoluted, complex and requires serious deciphering! In order to make sense of what the author is trying to convey, I find it useful (in both cases) to visualise the main arguments put forward by the author. I make notes, draw diagrams – anything to help me reconstruct the argument. A good rule is: Unless you can reformulate the gist of an article in your own words, you probably have not understood it completely.

The criteria for a good literature review

Here are some criteria that you should apply when putting your literature review together:

- It should be *exhaustive* in its coverage of the *main aspects* of the study. It is obviously impossible to do a review that includes every single article or contribution ever written on a particular topic. The mere speed at which scientific publications are generated would make such a goal unattainable anyway. However, the supervisor may expect the review to be exhaustive in terms of its coverage of the main aspects or themes of the study.
- A good review is *fair in its treatment of authors*. Never presume that you know a body of scholarship so well that you cannot learn from the next article. Never approach a study with a pre-set interpretation. Always aim to do justice to the author's arguments and reasoning before starting to criticise the article.

- A literature review should be *topical and not dated*. Although there are big differences in the publication cultures of human and natural scientists, it is hardly ever acceptable just to consult older studies. In some natural science disciplines, a coverage that goes back five years might be adequate. In some human science disciplines, there might be classical or so-called seminal studies that may be quite old but which need to be included in your review. Always consult your supervisor and ask his or her advice in terms of the time period that you should cover.
- A literature review can normally *not be confined to Internet resources*. There is a real temptation amongst students nowadays to draw most, if not all, of their sources from the Internet. The bulk of scholarship, however, is still published in standard scientific journals and books and these should be your first stop.
- A good literature review should be *well organised*. A review of the literature does *not* mean that you merely cover the information sources and then summarise them one after the other. As we will see in the next section, a literature review is not a mere compilation, or summary, or listing, of information sources. This is why your search of the literature must be structured and logical. So how should you structure your review? In short, it should be based on the research problem under study. The key concepts in your research problem statement and in the detailed research questions that you ask, are your guides to your bibliographic search. However, as every experienced scholar will tell you, the literature review is not simply driven by your research questions, the opposite also applies: the more you read the more clarity you get, which often leads you to change the formulation of your research problem. It is truly an interactive and a cyclical process.

How do you know when to stop reading? When do you know that your review of the literature is adequate in terms of coverage? When have you reached "saturation" point?

- When you have a repetition of references and authors
- When no new themes or viewpoints emerge
- When secondary reviews, commentators or book reviews confirm what you have found so far

How to organise your review of the scholarship

There are a number of ways to organise your review of the literature. By "organise" I mean how you structure the results of all your reading. For example, if you have consulted 30 or 40 sources (articles, reports, chapters in books, etc.), how do you structure and present the results of your reading? There are at least six possible ways that we will discuss here:

1. Chronologically: by date of study
2. By school of thought, theory, definition
3. By theme or construct
4. By hypothesis
5. By case study
6. By method

1. Chronologically

A chronological presentation is perhaps the most basic and least structured way of presenting the results of your reading. You would start by discussing the older studies and presenting the main findings of such studies, and proceed until you end with the latest research. Although I do not particularly like a merely chronological presentation of the literature review (mainly because it means that the student has not been able to extract more general themes or topics), it sometimes is the only way of making sense of the literature. This is often the case in studies of an exploratory nature where very little has been written, and in empirical studies where little or no theory exists. Under such conditions, it might be the only way that you can structure the discussion.

Using a chronological structure on its own is different from using it together with another method of organising the literature, as is shown below.

Example

In a South African study (Watson et al., 1991) that aimed to test and validate the factor analytic structure of a career decision scale, the authors structure their literature review chronologically. They begin their discussion with the original development of the Career Decision Scale in 1976. They then discuss an adapted version of the scale for high school students by Hartman and Hartman in 1982. This version was further refined in 1983. Finally, they discuss the most recent research on the scale (studies conducted in 1988) before they proceed to discuss the results of their own research. The organisation of the literature by date makes sense because it clearly documents the development of the scale over time: from its initial development, through various versions of refinement.

2. By school of thought, theory or definition

The aim of theoretical and conceptual studies is to review and discuss the most relevant and appropriate theories, models or definitions of a particular phenomenon. In many empirical studies, a review of the most pertinent theoretical positions or schools is seen as the first step in the research process. A review of such theoretical positions forms the theoretical framework for the empirical study, usually by deriving hypotheses from one or more of the accepted theories or models.

In both cases the literature review should be organised around the theories or definitions. There is no single rule that would dictate such an organisation. Some options are:

- To organise the theoretical schools in chronological order from the oldest or most established to the most recent. Such an approach has the advantage that you can show through your discussion of such theories or schools of thought how the debates originated and developed up to the contemporary state of affairs.

- To organise the theoretical frameworks or definitions in such a manner that you discuss the position that you will adopt in your study at the end. This means that you begin by discussing those theories or definitions that you believe are inappropriate or have been discredited by recent scholarship. This is then followed by a discussion of the position(s) that will form the frame of reference for your study.

Example

In a study on the effects on children of exposure to political violence, the author (Gibson, 1993) reviews different theoretical perspectives concerning the effects of violence on violent behaviour. In this discussion the review is organised according to the behavioural approach, the interactionist school and psychoanalysis. This approach is quite common in theoretical and conceptual studies where there are established theories or paradigms.

3. By theme or construct

Your literature study can also be organised around a theme or key construct in the study. What the key constructs or central themes of studies are, is usually immediately evident from the formulation of the research problem. In many such studies the aim is not to test a theory or to review theories but rather to find a classification or typology, or just a clear definition of the key construct in the study. Organising the review of the literature according to a theme or construct is more prevalent in exploratory studies (both quantitative and qualitative).

Example

In a study of the factors that can promote creativity in small and medium business enterprises in South Africa, Maas et al. (1999) organise their literature around the key construct of "creativity". Their literature review begins with a brief reference to the main theoretical schools on creativity (but this is not discussed further). They then argue that a number of authors identify four common elements in most definitions of creativity. These elements are the characteristics of the creative person, creative processes, an environment that can promote creativity, and manifestations of creativity. Using this "classification" they proceed to discuss each of the four elements (or themes) in more detail. On the basis of these elements they produce an operational definition of creativity: "Creativity is the accomplishment of new, useful developments as a result of the interaction between an individual and his or her environment." This definition forms the basis of a conceptual model used in an empirical study.

4. By hypothesis

In empirical studies where there is an established body of empirical results, it is quite often the case that debates rage over the best explanation or hypothesis for a set of findings. Various hypotheses might have been formulated and subjected to empirical tests. It might also be that the debate is basically about the correctness of one of two competing or rival hypotheses. It is then common that the author would have reviewed all the relevant, and especially the most recent, studies and shown what the evidence is in favour of each hypothesis. The "hypotheses" then act as the principle according to which the literature is organised.

Example

In a recent study of self-fulfilling prophecies (i.e. prophecies where a perceiver's false belief led to its own fulfilment), the authors (Smith, Jussim & Eccles, 1999) examine whether such prophecies accumulate, dissipate or remain stable. Research in this area over time has established a number of competing hypotheses as being plausible. These are the accumulation hypothesis (this hypothesis states that a self-fulfilling prophecy process, once triggered by a perceiver's expectations, continues so that targets conform more and more to the perceiver's original expectations); the dissipation hypothesis, which argues that such prophecies dissipate over time, and the stability hypothesis, which claims that such prophecies are simply maintained over time. The review of the literature, where very precise and clear hypotheses are established in the body of scholarship, is then organised around each of the hypotheses.

5. By case study

In studies where the units of analysis are large groups, such as collectives (countries, nations, regions, cities) or organisations (companies), it is not unusual to find reviews of the literature organised around instances or cases of such collectives or organisations. It is even more prevalent when the aims of the study are more exploratory and descriptive, rather than explanatory or evaluative. In studies of this kind, the aim of the literature review is usually to provide examples – across a wide range – of the phenomena which may illustrate or demonstrate a certain point.

Example

In a study of the rise of Islamic fundamentalism in Africa, Serpa (1992) analyses its political impact throughout Northern Africa. The study as a whole is meta-analytic in nature and is organised by country (Egypt, Tunisia and Morocco) as the most obvious way of discussing the topic.

6. By method

Although not very common, studies that focus on the different methods used to investigate a specific phenomenon may use the different methods or techniques as the organising principle, for example, where the aim is to compare more quantitative approaches (surveys or field experiments) with more qualitative approaches (such as case studies or narrative studies). It then makes sense to organise the literature according to the different methods and show how each method produces a different (or perhaps even similar) set of results compared with the other.

Example

In a study of the methodological issues in measuring sexual behaviour, Gribble et al. (1999) focus on the problem of reporting bias. The main research question revolves around the use of interviewer-administered questionnaires (IAQs), compared with self-administered questionnaires (SAQs). Their review of the literature is then organised according to studies that have used the different methods, and the differences in results obtained.

The number of references

Students often ask me how many references are regarded as adequate for a master's or doctoral study. My reply is that it depends first and foremost on the kind of study that you do and also the field or discipline. Different research designs have different implications as far as the literature review is concerned. In meta-analytic studies, where the primary aim is to review the literature, it is likely that you will end up with a very long list of references. Similarly, in theoretical and conceptual studies, as well as in more historical and textual studies in the humanities, extensive bibliographies are not uncommon. On the other hand, studies that have a very specific empirical focus tend to have more moderate reference lists. The more applied and problem-driven a study is (as in many programme evaluation studies), the less likely you are to need an extensive review of the body of scholarship.

Another factor that determines the "size" of the literature review is whether you are doing a master's or doctorate. Given the emphasis on theory development and the requirement that you make a contribution to the body of knowledge at doctoral level, it follows that doctoral studies normally have larger bibliographies (3 or 4 times larger) than master's studies of a similar type. And, finally, there is no doubt that disciplinary differences are important determinants of the size and scope of literature reviews (although these aspects are also correlated with the type of design). Studies in the humanities and languages often require extensive reference lists, whereas the more experimental and clinical disciplines (such as chemistry or physiology) have more limited lists. This is because the natural sciences in general work with more recent scholarship (of the last year or a few years) compared with the human sciences, where it is

quite often still valid or even essential to refer to so-called classical or seminal sources, even if they are centuries or decades old. The fact that you might have to refer to so many older sources is in itself a reason for having a more extensive bibliography.

In a quick review of 100 master's and doctoral theses in the University of Stellenbosch library, my research assistant found the following range of numbers of references for the different science cultures (Table 6.2).

Table 6.2: Average number of references per study per discipline

	Master's		Doctorate	
	Range	Average	Range	Average
Humanities	20–540	170	150–670	380
Social Sciences	20–220	93	150–580	320
Health Sciences	28–215	100	25–380	200
Natural Sciences	16–140	96	34–275	172
Engineering	20–156	70	24–210	110

A number of trends emerge from this review:

- It is clear that those disciplines which are more orientated towards historical, textual and conceptual studies (Humanities) have more extensive reviews of the literature. The more empirical disciplines, as well as the more applied sciences (e.g. Engineering), do not produce such lengthy reviews.
- Doctoral studies have more extensive literature reviews on average than master's studies, with the ratio ranging between 2 to 1 and 3 to 1.

These trends or "principles" are summarised in Figure 6.2.

I must stress that the trends presented above should be approached cautiously. They constitute very general rules of thumb that should only be used as guidelines and reflect my own personal view on what constitutes the minimum or average number of references for studies of these kinds. Your supervisor may have very different views on these matters and it is advisable that you discuss this with him or her before finalising your review of the literature!

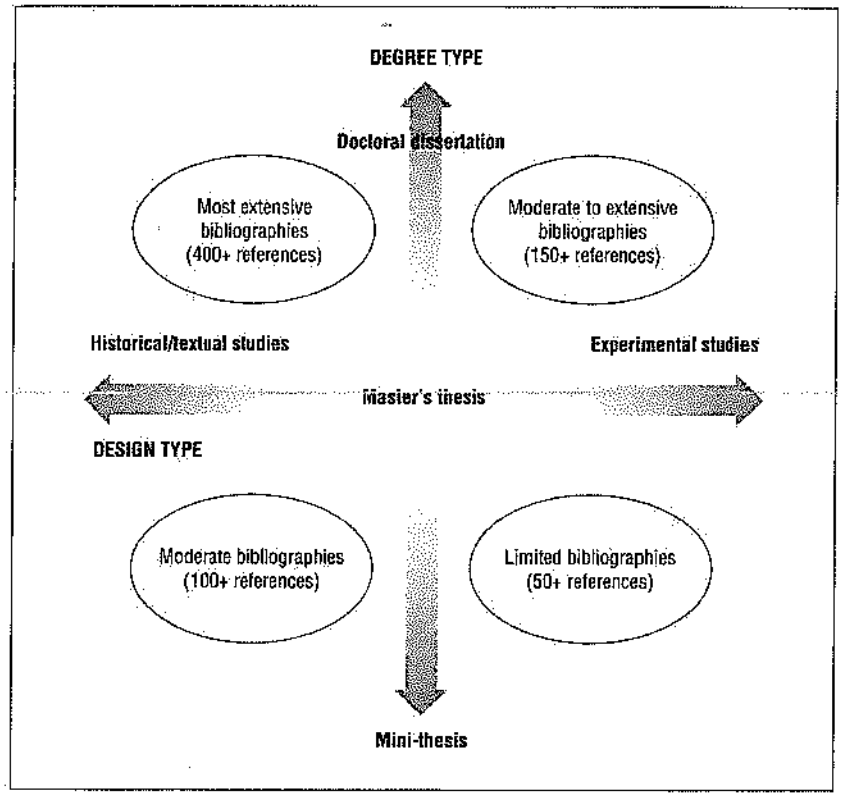
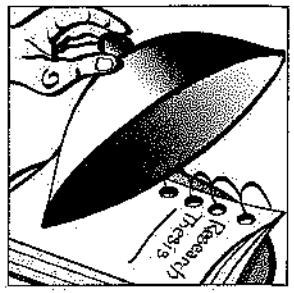


Figure 6.2: Trends regarding the average number of references in postgraduate studies

8

The research thesis



Your studies should ultimately culminate in the writing of a thesis or dissertation. This is the final hurdle to be cleared and sometimes poses the biggest problems for the first-time researcher. Even if you are competent and experienced in all the other skills required to be or become a good scholar, few people master the art of writing scientifically overnight. To put together a coherent, logical, clear and persuasive argument, because that is the literal meaning of "thesis" or "dissertation", usually involves repeated practice, many drafts, and a great deal of effort and even frustration.

In this chapter, three aspects of thesis writing are discussed:

- The logic of a thesis (How to construct a persuasive argument)
- The structure of a thesis (How to organise the evidence in a coherent and systematic manner)
- The rhetoric of a scientific thesis (How to write in an academically acceptable manner)

The more technical aspects of thesis writing, especially questions of referencing, are addressed in Chapter 14.

The logic of the thesis

The thesis (or dissertation) is the final embodiment of your research project. It is the documentation of your thinking, the decisions that you took during the research process and, even more importantly, it is a reconstruction of the *logic* of your research. I have argued elsewhere (Mouton, 1996, Chapter 26) that the logic, i.e. the principles of reasoning, of the research thesis is the logic of *validation*. It is the act of advancing and clarifying arguments, reasons and evidence for reaching certain conclusions. Your thesis culminates in a final chapter or two in which you present the final conclusions; where you state your findings, and sometimes make specific recommendations. These findings will vary according to the key research questions and objectives of the study and can be grouped as follows:

- *Empirical findings:* You have made new factual discoveries or confirmed the existence of previously hypothesised phenomena.
- *Descriptive findings:* You present evidence of interesting and significant patterns in existing or new data, or new trends in existing or new data (survey studies, correlational studies).
- *Causal findings:* You show that a causal link exists between two or more variables.
- *Theoretical findings:* You present a new explanation (hypothesis), model or theory to account for existing or new observations.
- *Interpretive findings:* You advance a new interpretation or reading of an existing text or set of texts (typical in hermeneutic, historical or text-based studies).
- *Evaluative findings:* You provide evidence for the successful outcome, benefits or impact of certain interventions (drugs, clinical methods, programmes).

In all of these cases, your argument should follow a similar logic: you have to show that your data (in whatever format) support your conclusions or findings. This means that your thesis has to adhere to the following three rules of scientific evidence:

■ OBJECTIVE EVIDENCE

Is the evidence "scientific", i.e. objective and systematic as opposed to anecdotal, selective or arbitrary? Have you taken the necessary steps to ensure that your evidence is based on good sampling techniques, proper conceptualisation and operationalisation, reliable data collection and error-free capturing and editing? (See previous chapter on fieldwork.) Although all studies invariably contain some amount of error or bias, the aim of science (and the art of scholarship) is to minimise error as far as possible (see also Mouton, 1996, Chapter 17).

■ APPROPRIATE EVIDENCE

Is the evidence relevant to the research problem? The evidence that you collected should address your research problem and research questions (or hypotheses) head on. It is not uncommon for researchers to collect evidence (information or data) that is irrelevant to the research problem. This happens in cases where the researcher has not

formulated a clear and focused research problem, resulting in a kind of shotgun approach to data collection. Rather collect more data than is required than run the risk of having too little data, even if some of it is redundant!

■ THE WEIGHT/SUPPORT OF THE EVIDENCE

Is the evidence sufficient or strong enough to support the weight of the conclusions that are drawn from it? Your conclusions and interpretations are only as strong as the quality of your evidence. It is not uncommon for scholars to exaggerate their findings in their eagerness to impress their audience (and especially their supervisors). One may find that a researcher makes claims that exceed the weight of the evidence. Put differently, the evidence is not sufficient to carry the weight of the conclusions.

More specific examples of common errors in scientific reasoning are discussed in Box 8.1. It should not come as a surprise that this discussion on the rules of evidence in scientific reasoning brings us back to the basic logic of the research process, as discussed in Chapter 4, i.e. the logic of *problem, design, evidence* and *conclusions*. This logic should be mirrored in the structure of your thesis in the following manner:

Logic of research	Logic and structure of the thesis
Research problem	*Chapter 1:* Background chapter that presents the reasons for selecting the particular problem, the rationale for the study, as well as a statement of the research problem.
	Chapter 2: Summary of the review of the literature that basically presents the most authoritative scholarship on the research problem.
Design	*Chapter 3:* Discussion of the research design and methodology followed in your study in order to investigate the problem as formulated above.
Evidence	*Chapters 4 ff.:* Presentation and discussion of the data or information collected and analysed in the study.
Conclusions	*Chapters 6 ff.:* Final chapters in which the main conclusions of the study are summarised, discussed and interpreted, and – where appropriate – recommendations are made for further research and practice or policy.

Before discussing the structure of the thesis in more detail, it is worth dwelling for a moment on the forms of scientific reasoning and common errors in reasoning, or so-called fallacies. There are basically three types of reasoning that you could employ when writing your thesis. These are deduction, inductive generalisation and retroduction. I will discuss each type in more detail using an example of a recent study (Box 8.1).

BOX 8.1 EXAMPLE OF FORMS OF REASONING

The following example was extracted from an article by Moore, S.M., Kennedy, G., Furlonger, B. & Evers, K. (1999) on "Sex, sex-roles, and romantic attitudes: finding the balance". This article was published in an electronic journal: *Current Research in Social Psychology*, 4(3): 124–134.

Aim of study

The aim of the current study was to explore sex differences in romantic attitudes or beliefs through investigation of the contribution of sex roles as well as biological sex. The issue of whether there are male/female differences in romantic beliefs, style, or attitudes has already been heavily researched but no unequivocal pattern emerges. (p. 125)

Some background

Sex or gender roles are characteristics, behaviours and interests defined by a society or culture as appropriate for members of each sex. In Western society, traditionally appropriate sex roles for men have been as worker, breadwinner, head of the household and leader in the community, activities assumed to require so-called masculine personality traits such as assertiveness, confidence, bravery and independence. In classic sex role theory, these "instrumental" traits were seen as the opposite to stereotypically feminine, expressive traits such as warmth, nurturance, dependency and cooperation, traits more suited to feminine sex-typed behaviours of child rearing, responsibility for family relationships and household duties. (p. 126)

Theory and hypothesis

Sex role theory implies that positive attitudes toward non-sexual expressions of love (as are typically reflected in "romance" scales) are more likely to be associated with traditionally feminine (expressive) traits than with traditionally masculine (instrumental) traits. *Following this, the major hypothesis of the study was that there would be sex role differences in romantic attitudes. Individuals (not just females) high on stereotypically feminine traits were hypothesised to have stronger romantic attitudes than individuals (not just males) high on stereotypically masculine traits.* (p. 127)

Sample and methodology

The participants comprised a convenience sample of 252 adults, including 84 third-year psychology students from a university in Melbourne, Australia and 168 members of the general community recruited by the students. There were 98

males (38,9%) and 154 females (61,1%) in the sample. A three-part survey was constructed to measure sex roles, romantic attitudes and demographic characteristics of the subjects. Part A of the survey comprised the Bem Sex Role Inventory (Bem, 1974), which consists of 60 self-descriptive, personality-characteristic adjectives designed to measure psychological masculinity and femininity as two independent variables. ... Part B comprised the Romantic Attitudes Rating Scale (RARS) designed by Pederson and Shoemaker to measure attitudes and beliefs about romantic love. ... Part C of the survey measured demographic variables, including age category, gender, country of birth and relationship status. (pp. 128–129)

The survey was administered to students in social psychology laboratory classes. Each student recruited two additional participants outside of class time as part of the requirement for completing the laboratory programme. In order to increase the age range studied, students were requested to recruit at least one participant over the age of thirty years. All participants were informed of their right to withdraw from the study and that all individual data would be anonymous and confidential. (p. 129)

Discussion of findings and hypothesis

Within the limits imposed by the study (including the use of a convenience sample and some measures with low to moderate reliability), mean scores on the romance scales indicated that romantic attitudes were strongly endorsed. Issues of concern and communicating with a loved one were particularly affirmed, closely followed in popularity by behaviours interpreted as demonstrating love, measured by the subscales Expressions, Sensitivity/Spontaneity, and Romancing. Participating in day-to-day activities together, as reflected in the Togetherness subscale, was judged as less romantic than the other dimensions (especially among those already in relationships), but these activities were nevertheless assessed as more romantic than neutral. (p. 131)

As hypothesised, sex roles were associated with romantic attitudes. Specifically, for the most part individuals with strongly endorsed psychological characteristics classified as traditionally feminine (e.g. warm, loyal, sensitive to the needs of others, understanding) were more romantic than low feminine individuals, regardless of sex. Men and women, who scored high on masculinity (traits such as self-reliance, independence, assertion and ease in decision-making), so long as they were also high femininity scorers, were just as romantic as traditionally feminine women. (p. 131)

Discussion of "unexpected" findings

Overall, males with a relative balance of masculine and feminine traits (androgynous and undifferentiated) showed stronger romantic attitudes than men who were sex-typed (masculine) or cross sex-typed (feminine). The most romantic females were, however, the most feminine with respect to their psychological

traits. Their level of masculinity was irrelevant to whether they supported romantic attitudes. *One possible explanation* for these differences may be that psychologically feminine males hold a marginal status in today's society and could feel threatened by admitting to romantic feelings. *Alternatively, these results could suggest* that men's assessment of their psychological femininity is tempered by their assessment of their psychological masculinity, while women view these dimensions more independently. (p. 132)

Deductive reasoning

Deductive inferences or deduction involves drawing conclusions from premises (other statements) that necessarily follow from such premises. The conclusions in a deductive argument are already contained (explicitly or implicitly) in the premises. The most common forms of deductive reasoning in science are the following:

- Deriving hypotheses from theories and models: The deductive derivation of research hypotheses from a theory or model
- Conceptual explication: When the meaning of a concept is clarified through the deductive derivation of its constitutive meanings

In our example in Box 8.1, there is a clear deductive inference when the authors derive their research hypothesis from a theory on gender roles. The statement of the theory is as follows:

> Sex role theory implies that positive attitudes toward non-sexual expressions of love (as are typically reflected in "romance" scales) are more likely to be associated with traditionally feminine (expressive) traits than with traditionally masculine (instrumental) traits.

The research hypothesis (deductively derived from the theory) is:

> Following this, the major hypothesis of the study was that there would be sex role differences in romantic attitudes. Individuals (not just females) high on stereotypically feminine traits were hypothesised to have stronger romantic attitudes than individuals (not just males) high on stereotypically masculine traits.

The use of the phrase "following this" is already an indication that a deductive inference is being made. Other phrases that usually indicate that deductive reasoning is being formulated, are "on the basis of the aforementioned", "hence", "thus", "therefore", "this leads to ...".

Inductive generalisation

Inductive generalisation (or simply "generalisation") involves applying inferences from specific observations (such as a sample of cases) to a theoretical population. Any form

of statistical inference in which you generalise from a sample to the target population is a form of inductive generalisation. In everyday experience, we commonly generalise from small numbers of observations to a general population or set of events.

Our extract in Box 8.1 is, in fact, not a very good example of inductive generalisation. The authors undertook the study amongst a very specific university sample (Social Psychology students at an Australian university). Furthermore, the sample drawn was a convenience sample (therefore a non-probability sample), which seriously limits the general application of the findings. Any conclusions drawn about the validity of these findings for a larger population, for example, "all Psychology students at Australian universities" or "all students at Australian universities" would have to be interpreted very cautiously. However, the principle is fairly obvious: whenever one draws a sample from a target population and then, once the results are available, generalises from the sample to refer back to the population, one is employing inductive generalisation.

Retroductive reasoning

Another form of inductive inference involves using inferences from observations or data in order to construct or "infer" an explanation of such observations. It is also referred to as "inference to the best explanation". This is a common form of reasoning (also in everyday reasoning). On the basis of observations that we have made, and perceived patterns and trends in the observations, we "think up" an explanation or hypothesis that would explain the observed events. The creation of hypotheses that provide plausible accounts and explanations of observed events and data, involves retroductive inferences.

Our research example in Box 8.1 provides a good example of retroductive inference. In their discussion of the results, the authors point out that:

> Overall, males with a relative balance of masculine and feminine traits (androgynous and undifferentiated) showed stronger romantic attitudes than men who were sex-typed (masculine) or cross sex-typed (feminine). The most romantic females were, however, the most feminine with respect to their psychological traits. Their level of masculinity was irrelevant to whether they supported romantic attitudes.

The question is how to explain these differences between males and females. They continue by suggesting two possible hypotheses or explanations:

> *One possible explanation* for these differences may be that psychologically feminine males hold a marginal status in today's society and could feel threatened by admitting to romantic feelings. *Alternatively, these results could suggest* that men's assessment of their psychological femininity is tempered by their assessment of their psychological masculinity, while women view these dimensions more independently.

This is a typical example of retroductive reasoning – observations have been made and certain trends detected (differences between males and females concerning romantic

feelings) that were not predicted by the theory. The researchers then postulate two possible explanations that might account for these differences. Whether these explanations or hypotheses are credible or plausible is in some sense left to the reader (and future research!).

Having discussed the three common types of scientific reasoning, it is perhaps appropriate to conclude this section with examples of "poor reasoning". Some of the more common fallacies in scientific reasoning are listed in Box 8.2, together with a short description of each.

BOX 8.2: COMMON FALLACIES OF SCIENTIFIC REASONING

Unsupported generalisations: Always ensure that you have enough evidence (empirical, experimental, documentary) to substantiate your conclusions. Students very often generalise beyond the range of the evidence that has been presented. Avoid using words such as "all" and "every" unless you are certain that there are no exceptions.

Appeals based on authority: Claiming that your view is supported by an expert is not always sufficient or appropriate, and only useful if the person or "authority" quoted is generally recognised as an expert in the field.

Impressing by large numbers (the bandwagon argument): Large numbers alone do not tell enough. Claims made on this basis need to be evaluated on their own merits because statistics can be misleading. For example, claiming that "75 out of 100 patients who used this therapy are still alive" does not tell the entire story.

Affirming the consequent or the "post hoc" fallacy: This faulty reasoning results from a misunderstanding about what causes an event. For example, if you ate cereal for breakfast and then the phone rang, it would be wrong to assume that the phone rang because you ate cereal.

False analogy: This occurs when you compare a number of cases on the basis of a few similarities and then conclude that they are similar in other respects as well. For example: South Africa and Zimbabwe are both African countries with developing economies, therefore, they must be similar in other respects (political history) as well. Often the dissimilarities between the cases outweigh the similarities. All relevant characteristics of the cases have to be taken into account.

Circular reasoning: This is when you try to prove a point by just returning to the point itself. An example of this might be: "Stress leads to unproductive behaviour because it is so tedious." "Unproductive" and "tedious" are very closely linked in meaning, so no new information is provided.

Ad hominem reasoning (attacking the person): This directs attention away from the argument at hand by attacking the personality of the individual involved. The per-

son arguing ignores the issue and instead turns the focus to the credibility of his or her opponent. "Not only does Candidate X support abortion, but he's also been married four times."

Non sequitur reasoning: *Non sequitur* means "it does not follow", and it refers to conclusions that do not have logical connections to the evidence provided. In other words, you are assuming a connection between events that are disconnected and unrelated. "Violence in movies has a bad effect on children; therefore, no one should see violent movies."

Red herring argument: This is when the person arguing brings in a side issue that has no relevance to the point being made. For example: "She is a good doctor; she drives a great car and is really fun."

This concludes our discussion of the logical issues involved in the construction of a thesis. In the following section, we examine how you should go about organising and structuring your research material.

The structure of the thesis

Whereas the "logic" of your thesis refers to the principles of reasoning that are employed in the construction of your main arguments, the "structure" refers to the way in which you plan and organise it so as to present your case in the strongest possible manner. Remember, your aim is to convince the reader (and especially your supervisor) that the evidence that you present provides overwhelming support for the conclusions that you draw. Your supervisor will be persuaded that a strong case has been made when, after reading your thesis, he or she concurs with your argument, i.e. with the way in which you have developed the research problem statement, the way in which you have collected and analysed your evidence (experimental, historical, documentary, survey, etc.) and the conclusions that you have drawn on the basis of the evidence.

It is often suggested to students that they draw up an outline of the thesis before embarking on writing up their research. An *outline* of the thesis should contain the "story line" or core reasoning that will be followed. In fact, some supervisors believe that an outline of the final thesis should take shape as early as the development of the proposal (see Chapter 4). Box 8.3 contains some ideas on the use of outlines in the development of your thesis.

BOX 8.3: USING OUTLINES

Using an outline can help you organise your material and discover connections between pieces of information that you were not aware of when you first conceived the plan of your thesis. It can also make you aware of material that is not

really relevant to the purposes of your thesis, or material that you have covered before and should therefore be removed.

A *draft or working outline* could consist of an informal list of topics and subtopics, organised by chapter, which you are thinking of covering in your thesis. Your supervisor might even require that a draft chapter outline be submitted at the beginning of your research. Such an outline is useful because it not only helps you to clarify your thoughts, but also helps the supervisor in his or her assessment of what you are trying to accomplish. Such an outline might reveal that your thinking has not crystallised sufficiently, that you are attempting to cover too much, or that the design that you propose is inappropriate for the stated research problem. The draft outline is usually revised as you progress with your studies. The reading of more literature, the accumulation and analysis of empirical evidence and further discussions of your findings with your supervisor may lead to adjustments to the outline. It remains, however, a useful and essential conceptual frame of reference that brings coherence and structure to your work!

A *final outline* should enhance the organisation and coherence of your thesis. When you reach the point of starting the final write-up of your ideas, it is still advisable to work around a final outline. In most cases, this could be the final version of the "draft" or "working" outline.

An outline is not unlike a map of uncharted terrain. It provides you with direction and perspective. An effective outline will map out the journey you (as well as your reader) will take, and a satisfactory conclusion will wrap up the sequence of ideas in a nice package. The format of the final outline can vary. It can be written as a *topic outline*, in which you use only short phrases to suggest ideas, or as a *sentence outline*, in which you use full sentences (even very brief paragraphs) to show the development of ideas more fully.

When we talk about the "structure" of a thesis, we have at least three levels of structure in mind: first, the *overall* structure of the thesis; second, at the *chapter* level, and third, at the *paragraph* level. A generic format at each level with the key "elements", as well as a brief description of what each of these implies, is presented here.

Structure at the thesis level

The discussion here takes the typical empirical study (especially in the social, business and applied natural sciences) as frame of reference. I would contend that other types of design (such as literature reviews, textual studies and philosophical analyses) would still conform to some of the principles discussed below. The main differences relate to the chapters on empirical findings, where non-empirical designs, such as those mentioned above, would not involve reference to fieldwork practices (outside or archival and library-related activities).

Table 8.1: Generic format for the structure of a thesis

Preliminaries	
Title page	Your title should be short, clear and to the point. My rule: if it is longer than two lines it is probably too long!
Acknowledgements	It is common practice to acknowledge the contribution of everyone (especially the supervisor) who made a significant contribution to your thesis, as well as those people who supported you during your studies.
Summary/abstract	Most universities require a summary of the main objectives of the study, the design and methodology followed, as well as the key findings and recommendations. Ensure that you follow the guidelines about style and length.
Table of contents	Your thesis should have a detailed "table of contents" with accurate page numbers.
List of tables/list of figures	It is standard practice to have separate lists of all tables and figures/charts in your thesis.
Chapter 1: Introduction	
Developing the idea for the thesis and motivation for the study	Begin by contextualising the study. Relate how you came to decide on this topic and its relevance and importance. What are the main reasons (theoretical, empirical, practical) that led you to decide on this topic?
Deriving the research topic from preliminary reading	Show how your preliminary reading in the literature led to a refinement and focusing of your initial ideas. Reconstruct the development of your ideas by showing the gradual clarification of the research problem.
Identifying and articulating the research problem, question or hypotheses	State the overall aims and goals of the study as they crystallised during your preliminary reading and thinking about the problem. Formulate the specific research objectives of the study through the specification of key (concrete) research questions and/or research hypotheses.
General indication of the research design and methodology	At this stage it is appropriate to present a rough indication of the design, plan or structure of your study and the methodology that you followed in addressing your research problem.
Outline of remainder of thesis	Conclude your first chapter with an outline of the rest of the thesis. Discuss briefly how your thesis will unfold and indicate the main topics that you will discuss in each of the remaining chapters.

Chapter 2: Literature review/theoretical framework	The chapter on the literature review in an empirical study usually also contains the theoretical framework that has informed the study.
Introduction: demarcating the literature covered	It is advisable to begin this chapter by indicating what literature has been covered and how you decided to demarcate the scholarship to be included in your review of the literature.
Key concepts defined (where necessary)	All research involves certain key concepts around which the study is built. Such key concepts need to be defined as early as possible in the study.
Discussion of literature that you have read	Present the literature that you have read in an organised and structured manner (see Chapter 6 for principles of organisation). Be fair in your treatment of authors. Avoid repetition or merely compiling lists of summaries without integrating your readings into a coherent text.
Conclude the chapter with a summary of the main conclusions or findings	The chapter should end with an overview of the main conclusions you have reached on the basis of your review of the literature. These conclusions are essential because they would have informed and influenced the empirical part of your study.
Chapter 3: Research design and methodology	This chapter documents the design and methodology followed during your fieldwork (see Chapter 7).
Hypotheses, conceptualisation, definitions, key variables	Begin by defining the research hypotheses (where appropriate) and the key concepts and variables that formed part of the study. Show how such hypotheses were arrived at (derived from existing theories or borrowed from other empirical studies), which definitions of variables were chosen and on what grounds.
Issues of measurement	Discuss the instruments used in the measurement of the key variables of the study. Actual copies of instruments should be appended.
Sample design and sampling methods	Explain the sample design, the sampling techniques employed and the criteria used in the choice of sample size.
Data collection methods and fieldwork practice	Give full details of the data collection process, including gaining access to the subjects, data collection techniques and procedures used, dates and settings of data gathering.

Data capturing and data editing	Describe procedures used in capturing and editing data, post-coding procedures, measures to minimise error, etc.
Data analysis	Describe the rationale behind your selection of data analysis procedures as well as the actual procedures used.
Shortcomings and sources of error	It is usual to end this chapter with a discussion of the quality of data collected by highlighting shortcomings, limitations and gaps in the data.
Chapters 4 ff.: Results: presentation and discussions	The chapters that follow document the results of your fieldwork and may be organised into one or more chapters, depending on the nature of the study, the research objectives, the complexity of the research design and the amount of data collected.
Sample profiles	A discussion of the sample and its characteristics is essential in order to understand the nature of the findings. Some supervisors may prefer the sample profile to be included in the previous chapter (methodology).
Presentation of results (tables, graphs)	Describe and summarise the main results that you obtained using tables and other visual devices (graphs, figures, plots).
Discussion of results by hypothesis or theme	Discuss the main trends and patterns in the data with reference to the hypotheses or research questions.
Concluding interpretations	Draw your discussion together by interpreting the main findings. Highlight the main results – both positive and negative.
Chapter 5: Conclusions and recommendations	Your concluding chapter is perhaps the most important in your thesis because it presents the end product of your endeavour.
Summarise and discuss salient points	Discuss the main findings that you have obtained in your study by drawing together the results from the previous chapters.
Interpret results in terms of literature or theory	It is essential that you now show how your results and conclusions relate to the literature and theory in this domain. You do this by showing the connections between your results and the literature reviewed in Chapter 2.

Discuss gaps, anomalies and/or deviations in the data	Discuss any anomalies and surprising results. Show whether your results confirm or deviate from the expected and give reasons for the latter. Be honest about ambiguities in the data. It is often impossible to explain all the results within one consistent theory or framework.
Make larger significance of results explicit	Show the larger relevance and value of your study. Also show where there are still gaps and uncertainties that might require further scholarship.
Policy and other recommendations	In some types of study, it is common practice to conclude with recommendations regarding further research, the implementation of findings, and possible policy implications.
List of references (not bibliography)	A bibliography is a complete list of all sources consulted. A list of references includes only those sources that you explicitly refer to (and quote) in your text. Make sure that you know which of these options is required by your supervisor.
Appendices • Questionnaires/ scales • Covering letters • Ethical documentation	You may be required to append various kinds of documents, depending on the kind of study and the rules or preferences of the institution or supervisor. (In order to save space, it is not uncommon for documents such as those listed in the left-hand column to be included using a smaller font size.)

Structure at the chapter level

Table 8.2: Generic format for the structure of a chapter

The triad	The principle that chapters should ideally exhibit a threefold or triadic structure has been implemented in this book.
Introduction (outlining the main sections of the chapter)	*Example:* Chapter 2 The chapter begins with a section that introduces the main topics of the chapter and the sequence of the topics.
The *body* (organised logically and economically)	The body of the chapter is made up of six sections ranging from the nature of supervision to research etiquette.

The *summary* (brief review of main arguments or points made in the chapter)	The chapter concludes with a summary that reiterates the main points made in the chapter. The final paragraph links the current chapter to the next one by mentioning the topic to be covered in the next chapter and briefly stating why it should follow the current chapter.
The crucial role of *bridging* sentences and paragraphs	In order to assist you (and the reader) in following the main points of your argumentation, it is imperative to have bridging sentences (backward- and forward-looking) and bridging paragraphs in your chapter. A number of constructions are commonly used to alert the reader to the relationship between sentences or paragraphs that follow on the previous ones. Because of the importance of this point, a list of such constructions is summarised in Box 8.4 below.
The logic of *section headings* – your headings should mirror the logic of the argument	A well-structured chapter will exhibit logical and systematic section headings. Since a section heading "embodies" the core idea or topic of that section, it is reasonable to expect that a well-designed and organised chapter will have "logical" section headings. In fact, a good test for this is to take the chapter contents and inspect the section headings on their own: you should be able to reconstruct the main themes and arguments of the chapter. At the very least, the chapter contents should give you a good idea of what you can expect when reading it.
No dangling subsections	Since each section (and subsection) should ideally explore *one* and only one main idea or theme, it does not make sense to have one subsection, e.g. 1.1 – 1.1.1 – 1.2 The subsection (1.1.1) is referred to as a dangling subsection. Since there is no 1.1.2, it makes no sense to divide the main section (1.1) and the heading should just be eliminated. It is only when there is a second, related theme that you wish to introduce under section 1.1 that it would make sense to move to 1.1.1 and then also 1.1.2.
Too many levels become confusing	Some texts recommend not having more than four levels of subsections (e.g. 1.2.1.2). The number of levels you use will clearly depend on the nature of the study, as well as the length of the chapter. It is unlikely that a short ten-page chapter would need to have more than two or, at the most, three levels of subsections.

There are many ways in which you can link sentences and paragraphs (explicitly signal their relationship to your findings) so as to ensure a logical flow of reasoning. Box 8.4 lists some of the more common "devices" or strategies in this respect.

BOX 8.4: LINKING DEVICES

Elaboration: After making a particular point, one sometimes wishes to elaborate and draw out the implications of what has been said so as to make it more understandable and also more persuasive to the reader. In these cases, we would use linking devices such as: *more specifically*, or *this (also) implies that …*

Example from Chapter 4: *In a nutshell – the research proposal is a project planning document and embodies your thinking about the study as you envisage it at the beginning of the project. This implies that the more thought you have put into your proposed research, the better developed, organised and logical the research proposal will be.*

Reaffirmation: In some cases we may wish to repeat an argument or point made, especially if we believe that it is central to our overall argument. Reaffirming the point is a way of repeating it but in slightly different terms. Words and phrases such as the following indicate that we are about to reaffirm the previous point: stated differently, in other words, in short, etc.

Example from Chapter 5: *In order for you to be able to organise your master's or doctorate, you need to know what this involves. You have to understand at the beginning what volume of work is entailed by postgraduate studies. Stated differently, you need to have a holistic approach to your studies.*

Conclusions: After a lengthy set of arguments or having presented the evidence for a particular point of view, one wishes to indicate that a (summarising) conclusion is about to follow by linking constructions such as: *therefore, hence, thus, it follows that, then* and *consequently.*

Example from Chapter 4: *The challenge for the architect is to visualise these ideas and transform them into a design or blueprint, of the house. After the architect has shown the blueprint or design to the couple, it may go through a number of changes until they are satisfied that the design on paper fits their ideas. Once this phase is complete, a building contractor is appointed who takes the design as the point of departure and starts constructing the house. The building of the house, then, consists of the systematic, methodical and accurate execution of the design.*

Contrasts: Having argued in favour of a particular point of view or position, it is good practice to also present opposing and contrasting views. This is indicated by the use of such constructions as *however, on the other hand, conversely* and *in contrast.*

Example from Chapter 6: *The key concepts in your research problem statement and in the detailed research questions that you ask are your guides to the bibliographic searches that you undertake. However, every experienced scholar will tell you that the literature review is not simply driven by your research questions, the opposite also applies: the more you read, the more clarity you get, which often leads you to change the formulation of your research problem.*

Structure at the paragraph level

Table 8.3: Generic format for the structure of a paragraph

Triad at the paragraph level A paragraph is a sequence of related sentences that carry and develop a single idea. This main idea can be implicit but is most often found explicitly in a key sentence. A paragraph is a cohesive unit if all of the sentences support the main idea or key sentence, and the paragraph is coherent if all the sentences are linked to the preceding and following sentences.	Without oversimplifying the matter, one could argue that a well-structured and logically coherent paragraph consists of three elements: 1. A lead-in or main sentence that makes the topic of that paragraph explicit. 2. The core sentence or sentences in which you elaborate on the main topic or point made in the first/key sentence. 3. A concluding sentence that summarises the argument of the paragraph.
Building a paragraph around a single, core idea.	A well-structured paragraph is built around one central idea or topic. Unless you adhere to this rule, you run the risk of attempting to construct a paragraph that makes too many points requiring multiple evidence and a complex logic.
Start the paragraph with a lead-in or main sentence.	Example (taken from Chapter 2): *Numerous studies have shown that the quality of the supervisory relationship is a key factor in the successful completion of postgraduate research theses.*
The next sentence(s) elaborates on the main idea.	Example: *There are large variations in this relationship because of differences between disciplines, academic departments and differences of style amongst supervisors. Another "factor" that determines the nature of the supervisory relationship is the fact that students themselves vary so much. Students differ in terms of their degree of independence and expertise in research, maturity, motivation and commitment to postgraduate studies. Some students are able to articulate their needs and expectations clearly from the beginning, which may assist the supervisor in meeting the student's supervision needs. Other students are less clear about the direction of their studies, what they require and how to articulate this. Such students usually require more guidance and support and are only able to work independently much later in the research process.*

Bring your paragraph to a logical close with a summarising sentence. It is even better if this sentence not only summarises the points made in the paragraph, but also (explicitly or implicitly) looks ahead to the next paragraph and in this way provides a link to that paragraph.	Example: *However, there are a number of core functions that characterise the nature of supervision to which we now turn our attention.*

The rhetoric of the thesis

In the final section of this chapter, we focus on the principles of style, content and form in scientific writing. Academic or scientific writing is different from everyday, conversational speech and informal writing (such as writing in your diary or writing a letter to someone else). It is a form of technical writing, with its own specific vocabulary (jargon) and set of rules: some explicit, others implicit. It is, therefore, not surprising that most new and inexperienced scholars take time to master the "art" of scientific writing. Like most skills, it improves with practice. The more you write, the easier it will get!

Here are some general rules of scientific writing that you may find useful when starting to write up your research. I have compiled these twelve rules from a number of different sources (see "Additional reading" at the end of the chapter).

Rule 1: Write clearly, simply and to the point.

Some students believe – mistakenly – that writing scientifically means writing long and complex sentences. In their eagerness to impress they resort to using unnecessarily flowery words, scientific jargon, exaggeration and other rhetorical devices that merely serve to detract from the meaning of the sentence. Do not use words or phrases that are redundant. Do not repeat yourself. In general, try to keep your sentences simple and short. It is not necessary for a piece of writing to be "difficult" in order to be "academic".

In order to help keep your reader's interest, it is certainly a good idea to vary sentence lengths throughout any piece of writing, but sentences that are too long invariably confuse the reader as they have to be read more than once, sometimes many times, and the flow of the writing is then interrupted, confusing the reader. It never hurts to make your meaning quite clear in simple sentences: not everyone has the time to unravel long, unwieldy, jargon-filled sentences.

Mauer (1996: 382) has good advice:

> Sentences are meant to convey meaning – they are not treasures to be retained at all costs. A sentence that confuses the writer is bound to confuse readers as well. Be ruthless about your own writing. Change it until it says exactly what you intend it to say.

Rule 2: Use positive constructions.

A common mistake made by inexperienced writers is to use negative constructions. Such constructions are invariably more difficult to understand than positive constructions. Compare the following two sentences:

> I do not agree that a convenience sample does not bias the results of a survey.
>
> I agree that a convenience sample biases the results of a survey.

The second sentence, which is positively phrased, is both clearer and shorter, and therefore conveys the meaning of the writer much better than the first sentence.

Rule 3: Avoid passive constructions.

Sentences that are written in the passive voice are more difficult to understand. Avoid phrases such as "It was found that ..." or "The design that was decided upon ..." or "The analyses conducted revealed ..." The insistence on using the passive voice has its origins in an old-fashioned (positivist) approach to scientific writing which claimed that such an approach makes the text more neutral and objective. Nowadays it is perfectly acceptable, and even encouraged, to let the author speak! There is nothing wrong with "I found that ..." or "I decided upon a design that ...". This does not mean that one should not occasionally use the passive voice. In fact, if you have read this book carefully, you will have noticed that I have used both the passive and the active voice.

In the same way that the excessive use of the passive voice becomes boring and presents a false objectivity, the excessive use of the active voice may create the impression of a very self-centred author. The solution lies in finding a balance between these two extremes.

Rule 4: Do not use an indefinite "this".

When you use the word "this" there has to be a clear antecedent. Mauer (1996: 385) uses the following example: "The findings showed that there was a difference between men and women in the completion of the task. This poses a problem." As Mauer points out, the reader cannot be sure whether "this" refers to the findings, the men, the women, the difference, the task, or even the completion of the task.

Even more confusing is the use of "this" at the beginning of a new paragraph. The following example shows why it should be avoided at all costs:

> The choice to use a stratified sample was dictated by the heterogeneous nature of the target population. Based on information obtained from the latest census, it was established that our target population manifests significant differences in language, age, income levels and other demographic variables. By using a stratified sampling design one is able to reduce sampling error without having to resort to very large sample size. Given the high costs of personal interviews, the data collection method chosen for this study, it was not possible to choose a sample size of more than 500 cases.
>
> *This* means that we had to be very careful about the design of the questionnaire so as to ensure that it does not become too lengthy ...

The use of "this" in the example above confuses more than it clarifies. It is not clear to the reader whether "this" refers to the decisions that informed the sampling design or choice of personal interviews or both!

Rule 5: Avoid sexist and derogatory language.

Language that may be construed as derogatory to any group or individual should be avoided as it may be considered abusive. This does not imply that one should necessarily follow every fad and fashion that is politically correct. However, it is important to ensure that, for example, any form of sexist language be avoided at all times. Different writers attempt to avoid a sexist bias through the use of rather cumbersome constructions such as "he/she", "he or she" or "(s)he". This, unfortunately, can make the text much less readable. The best option is probably to rephrase your sentences in such a way that the personal pronoun is not required. Where this is not possible, it is preferable to use "he" throughout and insert a brief statement of your non-sexist intent in the preface, or on the imprint page.

Rule 6: Avoid colloquial (spoken) language.

Spoken, informal language is often inappropriately used in proposals, which should contain more formal writing. Inexperienced scholars often write as they speak. The most common examples of this are words such as get, like (for making comparisons), and all (as in "all (of) the books"). Some synonyms for get, depending on the context, are *obtain, gain, acquire, find.* (A thesaurus is a useful tool for helping you find synonyms.)

Rule 7: Structure and organise your argument.

Before putting your ideas on to paper (or the computer), check that you know what you want to say. Think through the argument and ensure that the sequence and logic are clear and sensible. Map the route of your reasoning by using outlines (see Box 8.3) and refer back to such outlines constantly while you are writing. In addition, if you are constructing a lengthy argument, you may want to summarise periodically, as well as indicate how your argument will proceed in the rest of the writing.

Rule 8: Assess alternative perspectives and rival points of view.

The construction of a persuasive argument also involves taking alternative viewpoints into consideration. As a scholar, you have to show why your reader should accept your

interpretation as opposed to someone else's. This means that you have to consider explicitly, and perhaps even partially accommodate, those arguments that may reasonably be raised against your viewpoint. This has the additional value of making you appear reasonable and open-minded!

Rule 9: Think through the sort of evidence that would be convincing to a competent reader.

Evidence includes both factual evidence, as well as your judgements about such facts. However, it is neither convincing nor adequate to state that something is "just my opinion", or to hold that your opinion cannot be criticised because you are "entitled to it". You must substantiate the basis for your position at every turn in your thesis. The stronger your claim is (e.g. causal claims or evaluative claims about the success of an intervention), the stronger the evidence should be to make it rationally persuasive.

Rule 10: Use linking devices.

An argument, especially in scientific documents, usually involves citing various kinds of evidence (from the literature, your own data, etc.) and showing how all of this adds up to the conclusions you have reached. Throughout this process you must link various sub-arguments and supporting arguments in order to construct a coherent whole. In this way you will ensure that your argument flows smoothly and logically from section to section, paragraph to paragraph and sentence to sentence. Linking devices are important tools for ensuring the logical flow of your reasoning (see Box 8.4).

In this regard, use positive and negative conjunctions judiciously and sparingly, but do use them because they are like signposts that guide your reader through your line of reasoning. They also acts as cues to yourself that highlight the organisation and structure of your argumentation.

Rule 11: Edit and rework your writing.

The advent of word processors and computers has made editing and reworking of texts much easier. It is difficult to be creative and critical at the same time. I find it easier to put my ideas onto the screen immediately and then return to them later and edit, reorder and rewrite. Perhaps you will find that you work best the opposite way round. What is certain, however, is that you are unlikely to produce a finished product in the first draft. All writing, and this is particularly true of academic writing, requires numerous drafts, continuous checking and editing until you (and your supervisor) are satisfied with the end product.

Rule 12: Check grammar and spelling.

I made the point earlier that most scholars and postgraduate students at South African universities do not have English as their home language. Writing in English, especially

"scientific" English, does not come naturally. It requires a great deal of practice. In our haste to get our ideas down on paper we are sometimes more concerned with content than form, with the result that we often make mistakes. Some mistakes are easily discovered during proof-reading, while others, particularly if you are not literary-minded, are not so easy either to spot or to remedy. Most current word processing packages have built-in spell-checkers and grammar-checkers. Get into the routine of applying these facilities after having written the first draft of any text! However, while these tools are useful for initial language screening, they are not foolproof, and your final draft should be subjected to language editing by an expert as well.

Concluding comments: Your thesis is the final milestone in a lengthy process of hard work and intensive scholarship. To a large extent, everything depends on the quality – scientific, linguistic and technical – of the thesis. What are the characteristics of a good thesis? By way of summarising this chapter, I would suggest that a good thesis is one that:

- Convinces your supervisor that what you have done is important and worthwhile.
- Presents the results of your research in a logical, systematic and clear manner.
- Makes a contribution to our understanding of the world and, therefore, needs to be taken seriously.
- And, in the final analysis, is a piece of work that you can be proud of!

The aim of this chapter has been to emphasise three key aspects of quality in thesis construction:

- The logic or principles of reasoning that must be adhered to in order to make a strong case for your ultimate conclusions or findings
- The rules that underlie a properly organised and well-structured thesis or dissertation
- The rules that govern a well-written scientific thesis

A final piece of advice: In my experience, the more you read scientific literature, the easier it becomes to develop the skills and style required of a good scholar. The more you read other scientific writings, and especially if you read attentively and reflectively, the more you learn about proper and acceptable forms of scientific reasoning, different ways of structuring your evidence and also ways of presenting such evidence in the most persuasive and convincing manner.

In all of this, you should never lose sight of the fact that science and scholarship should be fun and enjoyable. There are few things in life as satisfying as the experience of new scientific insights, the discovery of an interesting and potentially significant new theory or interpretation, and the realisation that you have made a worthwhile contribution to our understanding of some aspect of social and natural life.

I wish to conclude this chapter, as well as the first part of the book, with two quotes that embody the philosophy that I believe should underlie all forms of scholarship.

Although both quotes refer specifically to the social and human sciences, I would suggest that the sentiments they express are applicable to all forms of science.

> The objective of the human sciences is the deepening of our understanding of what it is to live a human life (Sullivan, 1983: 304).
>
> The primary intellectual aim of the humanities and social inquiry, quite generally, is to help us to realize what is of value to us in our personal and social lives. What ultimately matters is personal and social progress towards enlightenment and wisdom: all academic progress is but a means to this end (Maxwell, 1984: 73).

ADDITIONAL READING[1]

Kennedy, M.L. & Smith, H.M. (1986). *Academic writing*. Englewood Cliffs, NJ: Prentice-Hall. *Academic writing* examines, analyses and gives exercises for understanding university readings and for writing many types of assignment. The book also discusses how to approach various kinds of essay topics (e.g. compare and contrast).

Lewis, R. & Inglis, J. (1982). *Report writing*. Cambridge: National Extension College. *Report writing* is a clear and concise book that demonstrates an approach to writing effective reports for schools or business. The book contains numerous examples and exercises to help the reader interact with the information.

Mauer, K.F. (1996). The art of scientific writing. In J.G. Garbers (Ed.), *Effective research in the human sciences*. Pretoria: J.L. van Schaik. In an excellent overview of the issues involved in scientific writing, Mauer begins with a discussion of a number of misconceptions about academic writing commonly held by students. He then discusses some general principles of structuring a thesis, techniques for reviewing the literature, some standards for scientific writing and language usage, and concludes with a section on the use and presentation of tables and figures.

Strunk, W. & White, E.B. (1972). *The elements of style*. New York: Macmillan. Although somewhat old, still one of the best books on academic writing. The book includes chapters on grammar, composition, and an especially useful one on word usage.

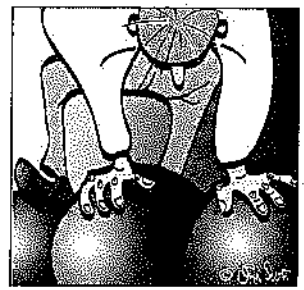
Winkler, A.C. & McCuen, J.R. (1999). *Writing the research paper*, 5th ed. Fort Worth: Harcourt Brace. A very practical workbook on writing research papers and theses. It is particularly strong on matters of style, referencing and systems of documentation. It includes examples of student papers (from the United States) and covers both the MLA and APA bibliographic and citation styles.

1. These have been compiled using the following websites:
   http://www.iss.stthomas.edu/studyguides/bib_writing%20webs.htm
   http://www.athabascau.ca/html/services/advise/ssbib.htm#sec6
   http://webster.commnet.edu/HP/pages/darling/original.htm
   http://www.brint.com/papers/writing.htm

PART II

Resource chapters

9



The Three Worlds framework

Research problems are usually formulated in order to address "real-life" problems: problems in the social and physical world such as stress, unemployment, crime, violence, poverty, and many more. When we talk about defining or conceptualising the research problem, we refer to the process by which someone has identified a real-life problem and "translated" it into a research problem. In order to describe and clarify this and other aspects of the logic of research, we make use of a simple structure – the Three Worlds framework.

This framework, first developed in *Understanding social research* (Mouton, 1996), has proved to be helpful for several reasons:

- To understand the differences in levels of analysis in scientific reasoning.
- To make sense of the differences of "status" between different knowledge claims.
- To understand the interplay between the world of scientific research and everyday life better.
- To help students distinguish between research problems (World 2) and real-life problems (World 1), a distinction that is crucial for developing the research proposal.
- To show how methodological choices (World 2) impact on the way in which we investigate real-life phenomena (World 1).
- To show the links between meta-methodological issues such as philosophical and ethical considerations (World 3) and methodological issues (World 2).

The framework is based on a distinction between three "worlds" (or "frames" or "contexts"):

- World 1: The world of everyday life and lay knowledge
- World 2: The world of science and scientific research
- World 3: The world of meta-science

World 1: The world of everyday life and lay knowledge

Most of our lives are spent in World 1 – the ordinary social and physical reality that we exist in. In this world, we live as ordinary human beings in multiple contexts – the family, the workplace, the school, the church and many more. In the world of everyday life we produce and use knowledge of different kinds. We refer to this as *lay knowledge*: the stock of knowledge that we use in everyday life that enables us to cope effectively with our daily tasks. This is the knowledge that we have acquired through learning, experience and self-reflection. Different terms are used to refer to this body of lay knowledge: common sense, wisdom, experiential knowledge, self-knowledge, insight, practical knowledge, and know-how. We apply our lay knowledge to solve problems, to reach consensus and gain insight into everyday tasks. Such knowledge is essential to being human and enables us to lead a human life.

World 2: The world of science and scientific research

This book is primarily about the world of scientific research. Once you have decided to embark on a master's or doctoral study, you have "entered" the world of science. What, therefore, is distinctive about the world of science and how is it different from the world of everyday life?

Perhaps the most distinctive feature of the scientific enterprise is that the scientist selects phenomena from World 1 (the world of politics, business, social interaction, living things, matter) and *makes these into objects of inquiry*. Although ordinary people in World 1 also occasionally reflect on the nature of things, it is only in the world of science that we subject objects to systematic and rigorous enquiry.

The search for "truth" or "truthful knowledge" is the overriding goal of science. Whereas in everyday life we search for knowledge that will help us cope better with the challenges and demands of each day (a very pragmatic interest), the aim of science is to generate truthful (valid and reliable) descriptions, model and theories of the world. I have referred elsewhere to this as the *epistemic interest* of science (Mouton, 1996, Chapter 7). "Epistemic" is derived from *episteme*, the Greek word for "truthful knowledge". Although it is, of course, not possible to produce scientific results that are infallible and "absolutely" true for all times and contexts, we are motivated, as scientists, to constantly strive for the most truthful and the most valid results.

World 3: The world of meta-science

Human beings continuously reflect on their actions. This is true in World 1, where we regularly subject our own actions and decisions to self-criticism, where we wonder why we decided to do something in the way that we did, and where we reflect on the reasons and justifications for certain actions.

Reflection is even more prevalent in the world of science. As scientists, we have to constantly submit our research decisions to critical reflection (which theory to select; which indicators to use in the measurement of a phenomenon; which research design

to choose, etc.). It is precisely, as Karl Popper has argued, because science is a *self-correcting* enterprise, that we constantly submit our decisions to quality checks in order to attain truthful and valid results.

Over the years, this practice has led to the development of various meta-disciplines, such as the philosophy and methodology of science, research ethics, and the sociology and history of science. These disciplines are referred to as *meta*-disciplines (and located in World 3) because they all involve reflection on the nature of science and scientific research. The word *meta* is derived from the Greek meaning "beyond" or "over" (compare "metaphysics").

Figure 9.1 presents the basic framework with the focus on the three worlds from a perspective of general knowledge production. It also emphasises the different interests or motives that underlie knowledge production in each world (pragmatic, epistemic and critical).

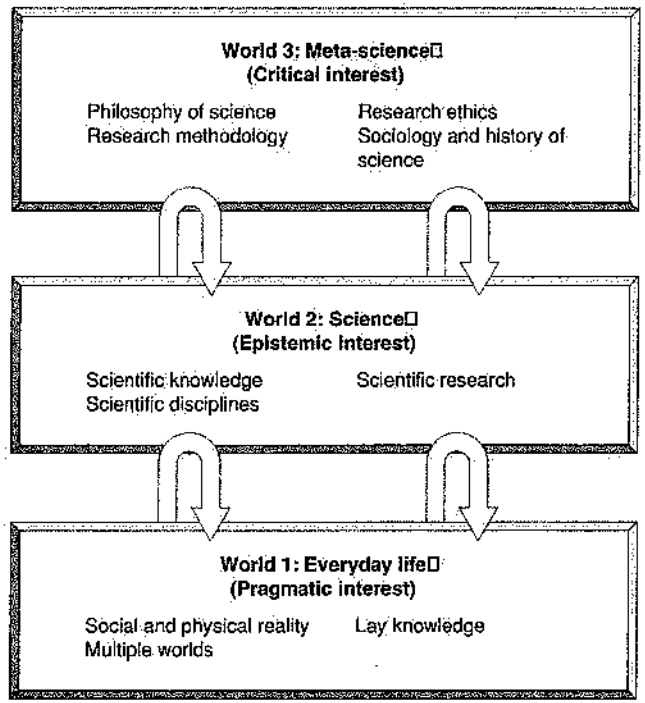


Figure 9.1: The basic framework: the three worlds

Figure 9.2 has a different focus, looking at the three worlds from the perspective of doing research and, specifically, at how to distinguish between research problems in World 2 and real-life problems in World 1.

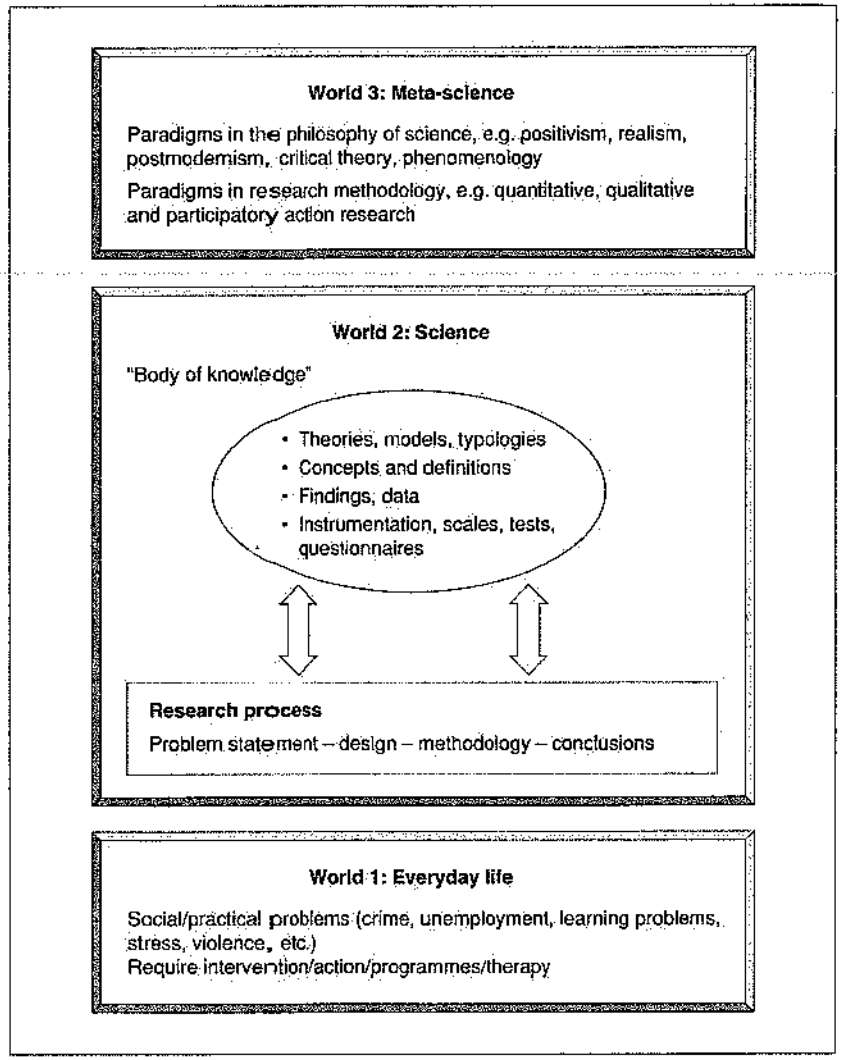


Figure 9.2: The relationship between meta-science, science, and everyday life knowledge (a focus on research problems)

Figure 9.3 shows how the framework can be used (especially in the social sciences) to understand the epistemological and methodological differences between the main research approaches. For example, it shows how a quantitative methodological paradigm has links with certain meta-scientific positions on the one hand, and also how it differs from the other main approaches to World 1 in terms of its "positioning" vis-à-vis real-life "objects".

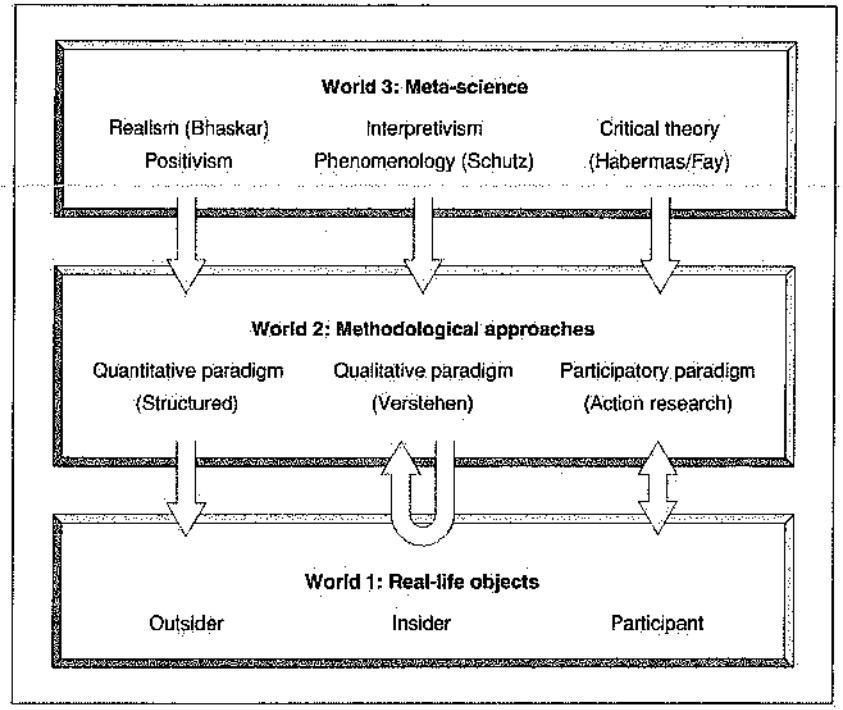


Figure 9.3: The relationship between philosophical paradigms (meta-science), methodological approaches and the real world

Concluding comments: The Three Worlds framework is a tool or instrument that helps to organise one's thinking about science and the practice of scientific research. Like any tool, it has its strengths and limitations. Its strengths, I would argue, lie in its ability to help you make sense of different levels of reflection about the world. In everyday life we reflect in a non-scientific manner about the world around us. In the world of science we enter a much more rigorous and systematic mode of reflection about the world. In meta-science we engage in critical reflections on our scientific endeavours in

order to continuously improve the nature of scientific inquiry. The limitations of the framework are that it might suggest that these "worlds" are self-contained wholes that can operate relatively independently from each other. That would be a mistake. The term "world" should not be taken literally. The threefold distinction between Worlds 1, 2 and 3 is still only an analytical distinction. Other terms such as "modes of reflection" or "frames of reference", which could also be used to make the same point, are more appropriate terms to indicate the interwovenness of these "worlds". In the final analysis, if you find it to be a useful instrument in a better understanding of the nature of scientific practice it has served its purpose.

10

Research design map

Empirical studies

Ethnographic research: participant observation studies
Ethnographic research: case studies
Participatory research/action research (PAR)
Surveys
Comparative, cross-cultural and cross-national studies
Experimental designs (laboratory studies)
Field/natural experimental designs
Evaluation research: implementation (process) evaluation
Evaluation research: experimental and quasi-experimental outcome studies
Evaluation research: naturalistic and empowerment evaluation
Statistical modelling and computer simulation studies
Secondary data analysis (SDA)
Content analysis
Textual analysis/hermeneutics/textual criticism
Discourse and conversational analysis
Historical studies, oral history and narrative analysis
Life history methodology
Methodological studies

Non-empirical studies

Conceptual analysis
Theory-building or model-building studies
Philosophical analysis
Literature reviews

The aim of this chapter is to assist you in the choice of your research design, to make you aware of the advantages as well as the limitations of each design, and to refer you to good additional reading and websites for each design type. Using the typology of research designs presented earlier (in Chapter 4), the research designs discussed in this chapter have been mapped out using the following four dimensions:

- Empirical versus non-empirical studies
- Using primary (new) data versus analysis of existing or secondary data
- The nature of the data: numerical versus textual data
- The degree of control: highly structured (laboratory) conditions versus natural field settings

Cross-tabulating the first two dimensions produces the map in Figure 10.1.

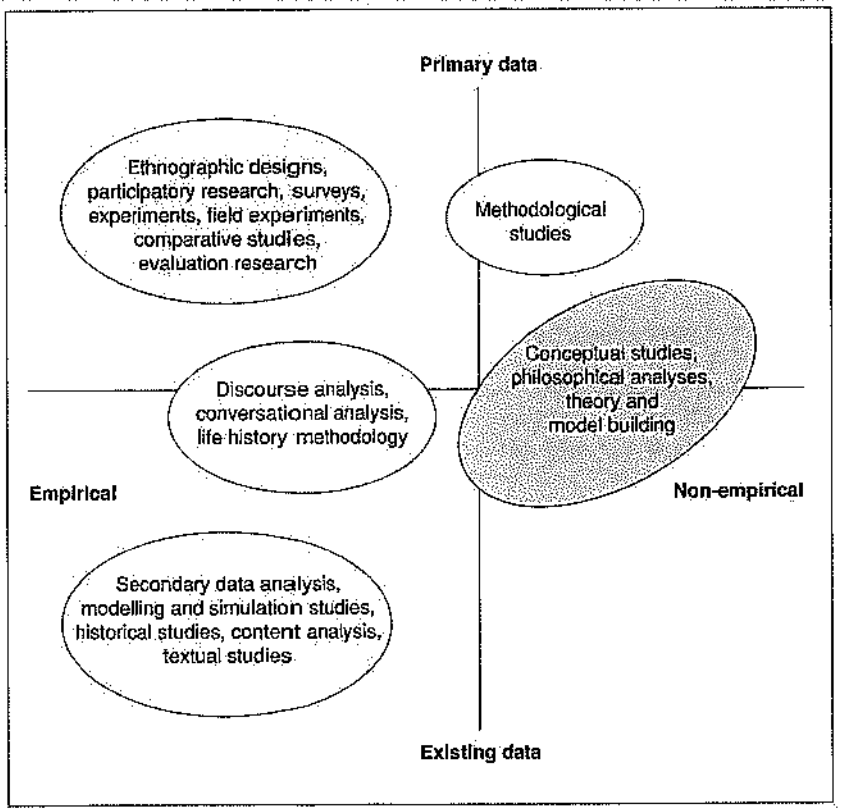


Figure 10.1: Mapping designs (Level 1)

Figure 10.2 is limited to empirical studies only, which are mapped according to the dimensions of primary/secondary data and degree of control. I also separate out clusters of designs focusing on numerical and textual data respectively.

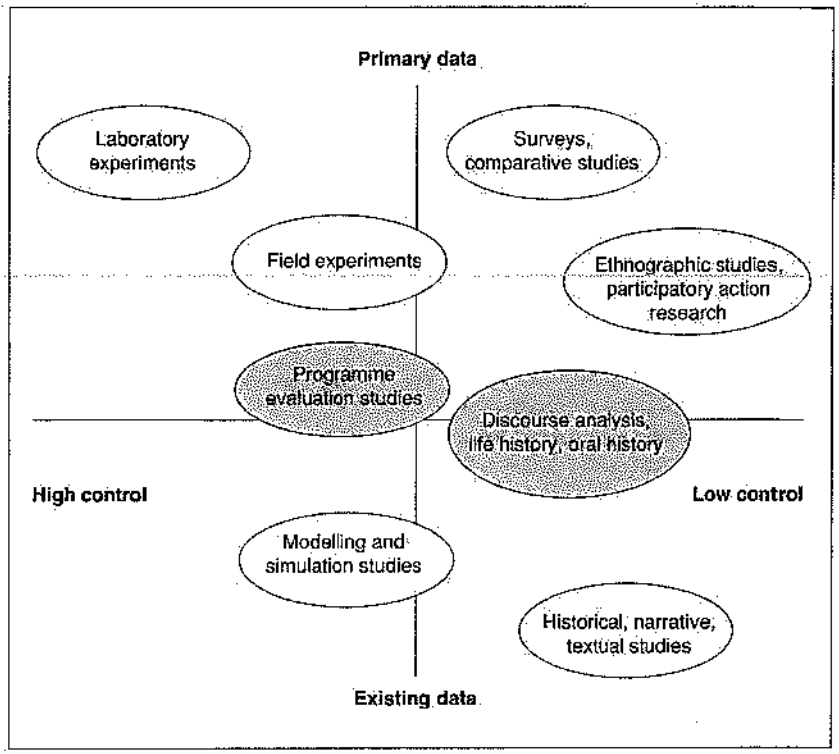


Figure 10.2: Mapping designs (Level 2)

Legend: Numerical data = ☐
Textual data = ☐
Hybrid mixed data = ☐

On the basis of this four-dimensional framework, it becomes possible to categorise each design type more precisely. Summarising the dimensions and the resultant categorisation generates the typology set out in Table 10.1.

Table 10.1: A classification framework of design types

Dimension	Type
Dimension 1: Ranging from empirical to non-empirical (conceptual)	Empirical Non-empirical
Dimension 2: Primary or new data collected versus analysing existing data	Primary Secondary Hybrid
Dimension 3: Type of data, ranging from numeric to textual	Numeric Textual Combination
Dimension 4: Degree of control or structure in design	High control Medium control Low control

Using this typology, I give two examples of how designs are categorised in the remainder of the chapter:

Experiment	Dimension 1: Empirical	Dimension 2: Primary
	Dimension 3: Numeric	Dimension 4: High control
Textual analysis	Dimension 1: Empirical	Dimension 2: Secondary
	Dimension 3: Textual	Dimension 4: Low control

In the case of non-empirical designs, the data type and degree of control dimensions become irrelevant,[1] for example:

Philosophical analysis	Dimension 1: Non-empirical	Dimension 2: Hybrid

In addition to a classification of the *design type*, each design is also discussed in terms of a number of other key issues, as explained below:

1. This also means that the following categories – data collection, sampling and analysis – are not appropriate when discussing these types of study.

Description	A brief definition of the key characteristics of the design
Design classification	Classification of research design in terms of the four-dimensional typology discussed above.
Key research questions	What are the typical kinds of research question addressed by this design?
Typical applications	Examples of where the design is used, and more specific and concrete forms of the design type.
Meta-theory	Which meta-theoretical paradigms (World 3) are most closely associated with this design type?
Conceptualisation/ mode of reasoning	What forms of conceptualisation are followed? What is the role and place of theory in this design? To what extent are research hypotheses deductively derived from existing theories? What is the dominant mode of reasoning?
Selection of cases	In empirical research designs, how are cases to be investigated selected? This refers to the use or non-use of sampling techniques.
Mode of observation	What are typical modes of observation? What are the most common methods and techniques used for gathering data?
Analysis	What are the typical methods and techniques used to analyse data, texts and/or documents?
Strengths	What are the methodological strengths and advantages of this design?
Limitations	What are the most important limitations of this design type?
Main sources of error	What are the most common sources of error or threats to validity associated with this design?
Additional reading and websites	A list of introductory and advanced reading on this design type. In addition, where possible, I have also included references to good websites.

Empirical studies

1. Ethnographic research: participant observation studies

Description/ definition	Studies that are usually qualitative in nature which aim to provide an in-depth description of a group of people or community. Such descriptions are embedded in the life-worlds of the actors being studied and produce insider perspectives of the actors and their practices.	
Design classification	Empirical	Primary data
	Textual data	Low control
Key research questions	Exploratory and descriptive questions.	
More specialised design types	Participant observation studies; field studies; naturalistic research (Denzin).	
Typical applications	Ethnographic studies of communities or cultures. Field studies in natural settings.	
Meta-theory	Various sociological theories (symbolic interactionism; *Verstehen*) and other more humanistic-interpretive traditions (phenomenology; semiotics; cultural anthropology) are intellectually linked to ethnographic research.	
Conceptualisation/ mode of reasoning	Inductive; a-theoretical. Usually no hypothesis – guiding ideas or expectations.	
Selection of cases/ sampling	Theoretical or judgement sampling.	
Mode of observation/ sources of data	Participant observation; semi-structured interviewing (individual and focus group); use of documentary sources.	
Analysis	Analytic induction (Znaniecki); grounded theory approach (Glaser and Strauss).	
Strengths	High construct validity; in-depth insights; establishing rapport with research subjects.	
Limitations	Lack of generalisability of results; non-standardisation of measurement; data collection and analysis can be very time consuming.	

Main sources of error	Potential bias of researcher; lack of rigour in analysis.
Additional reading and websites	Some classical texts on *qualitative research in general* and *ethnography* in particular are Smith et al. (1982), Burgess (1988, 1992) and Silverman (1985). For basic introductory texts to *ethnography*, see Atkinson (1992a; 1992b), Fetterman (1989), Hammersley and Atkinson (1995), Shaffir et al. (1991), Thomas (1993) and Wolcott (1995). Other good references are: Adler (1987), Allan (1991), Aunger (1995), Bailey (1995), Burawoy et al. (1991), Cook (1995), Emerson et al. (1987; 1995), Fielding (1995), Fine (1993), Hammersley (1993), Hobbs et al. (1993), Lofland (1995), MacRea (1991), Maynard (1989), Schwartzman (1993) and Van Maanen (1988). Websites: http://www.nova.edu/ssss/QR/web.html www.ualberta.ca/~jrnorris/qual.html www.irn.pdx.edu/~kerlinb/qualresearch http://www.caqdas.soc.surrey.ac.uk

2. Ethnographic research: case studies

Description/ definition	Studies that are usually qualitative in nature and that aim to provide an in-depth description of a small number (less than 50) of cases.	
Design classification	Empirical	Hybrid data
	Text and numeric	Low control
Key research questions	Exploratory and descriptive questions.	
Typical applications	Case studies of companies or organisations (business studies); case studies in social work research (focus on the family; household; small communities); case studies in political science where countries/nations or regions are studied as cases.	
Meta-theory	Various sociological theories (symbolic interactionism; *Verstehen*) and other more humanistic-interpretive traditions (phenomenology; semiotics; cultural anthropology) are intellectually linked to ethnographic case studies.	

Conceptualisation/ mode of reasoning	Inductive; a-theoretical. No hypothesis is formulated. In some cases certain "general ideas" or "expectations" act to guide the empirical research.
Selection of cases/ sampling	Theoretical or judgement sampling.
Mode of observation/ sources of data	Participant observation; semi-structured interviewing (individual and focus group); use of documentary sources and other existing data.
Analysis	Analytic induction (Znaniecki); grounded theory approach (Glaser and Strauss).
Strengths	High construct validity; in-depth insights; establishing rapport with research subjects.
Limitations	Lack of generalisability of results; non-standardisation of measurement; data collection and analysis can be very time-consuming.
Main sources of error	Potential bias of researcher; lack of rigour in analysis.
Additional reading and websites	The best *introductory texts* are by Stake (1995) and Yin (1994). Other well-known texts are Kohler Riessman (1994), Hamel et al. (1993), Smith et al. (1982), Yin (1993), Rose (1991), Stoecker (1991) and Ives (1986). Studies that look at specific *disciplinary applications* are in education (Binneberg, 1985), psychology (Bromley, 1986), clinical research (Behling et al., 1984), marketing (Bonoma, 1985) and management studies (Lee, 1983). For a more philosophical account of the epistemological foundations of case study research, see Ragin et al. (1992). You will find a comprehensive reading list of case studies in Dufour et al. (1992). Website: www.misq.org/misqd961/isworld/

3. Participatory research/action research (PAR)

Description/ definition	Studies that involve the subjects of research (research participants) as an integral part of the design. Use mainly qualitative methods in order to gain understanding and insight into life-worlds of research participants. Most types of PAR have an explicit (political) commitment to the empowerment of participants and to changing the social conditions of the participants.
Design classification	Empirical; Primary data Textual data; Low control
Key research questions	Exploratory and descriptive or action-related focus. Participatory action research in community and development studies.
Typical applications	Education action research in classrooms and schools.
Meta-theory	PAR has affinities with the neo-Marxist critical paradigm in general and, in education, with the work of Paolo Freire; also more generally with the *new paradigm* approach by Reason and Rowan (1981). Some authors distinguish between a Northern tradition (Whyte) and a Southern tradition (Fals-Borda). These traditions place different emphases on the more critical assumptions underlying PAR.
Conceptualisation/ mode of reasoning	More inductive than deductive; the emphasis on the participants and their world-views; a reluctance to impose any pre-set theory or explanation.
Selection of cases/ sampling	Non-probability selection principles.
Mode of observation/ sources of data	Participant observation; semi-structured interviewing; using documents; constructing stories and narratives.
Analysis	Qualitative forms of data analysis. In certain forms of PAR, the data analysis is viewed as a collaborative effort between the researcher and the participants.
Strengths	Where successful, the PAR involves participation and involvement on the part of subjects, which enhances chances of high construct validity, low refusal rates and "ownership" of findings.
Limitations	The small number of cases and low degree of control affect overall generalisability and possibility of strong causal and structural explanations.
Main sources of error	Researcher effects (overly emotional or subjective involvement); possible manipulation by research participants of research process to serve their own interests.

Additional reading and websites	For an introductory overview, see Prozesky and Mouton (2000). A very practice-oriented South African text by Kathleen Collins (1999) is also worth reading. For other texts see: Akong'a (1991), Argyris and Schön (1991), Bartunek (1993), Chesler (1991), Cornwall and Jewkes (1995), Dugan (1993), Elden and Chisholm (1993), Fals-Borda (1984), Fals-Borda and Rahman (1991), Greenwood et al. (1993), McTaggart (1991; 1994), Rahman (1988; 1991; 1993), Rahnema (1990), Reason (1988; 1993; 1994), Sarri and Sarri (1992), Swantz and Vainio-Mattila (1988), Whyte (1991; 1994; 1995) and Whyte et al (1991). Websites: http://www.ualberta.ca/~jrnorris/actres.html http://www.imc.org.uk/imc/coursewa/alr/research/essentials.htm

4. Surveys

Description/ definition	Studies that are usually quantitative in nature and which aim to provide a broad overview of a representative sample of a large population.	
Design classification	Empirical	Primary data
	Numeric data	Medium control
Key research questions	Exploratory (as in pilot surveys); predominantly descriptive (as in attitudinal surveys and public opinion polls) and causal (or so-called "analytical" surveys).	
More specialised design types	Longitudinal surveys; cross-sectional surveys; panel surveys; cohort studies.	
Typical applications	Organisational surveys; public opinion polls; attitudinal surveys; community-based surveys; needs assessment surveys; tracer studies.	
Meta-theory	Although linked to a more behaviourist or positivist meta-theory (especially by critics) it is more correctly associated with the tradition of variable analysis (Lazarsfeld; Stouffer) and the Columbia school in the 1950s.	
Conceptualisation/ mode of reasoning	Surveys can either be theory-driven (analytical surveys) and aim to test hypotheses, or much more inductive and a-theoretical (exploratory studies; pilot surveys).	

Selection of cases/ sampling	Probabilistic sampling (in the majority of cases), although non-probabilistic sampling (convenience or quota sampling) is often used especially in market research.
Mode of observation/ sources of data	Structured questionnaires; structured telephone interview schedules; structured mail questionnaires; structured electronic questionnaires.
Analysis	Descriptive and inferential statistics. In the analysis of large survey data sets, typical techniques would include tabulations, correlations, regression analysis, factor analysis (for data reduction) and the use of statistical graphics (bar charts, plots, pie charts) for more visual presentation.
Strengths	Potential to generalise to large populations if appropriate sampling design has been implemented; high measurement reliability if proper questionnaire construction and high construct validity if proper controls have been implemented.
Limitations	Lack of depth and insider perspective sometimes lead to criticisms of "surface level" analyses; survey data are sometimes very sample and context specific – this is especially true of public opinion polls.
Main sources of error	Sampling error; questionnaire error; high refusal rates; high non-response; interviewer effects; respondent effects; fieldwork error; data capturing error; inappropriate selection of statistical techniques.
Additional reading and websites	For *introductory and basic texts* on the practice of survey research, see Cox (1995), Czaja et al. (1996), Fink (1995a; 1995b; 1995c; 1995d), Fowler (1995), Hague (1993), Labaw (1981), Oppenheim (1992), Salant et al. (1994), Schuman et al. (1981) and Sudman and Bradburn (1983). For specific texts on *telephone surveys*, see Lavrakas (1993), Frey et al. (1995). On *mail surveys*, see Bourque et al. (1995) and on the use of *computers in surveys*, see Saris (1991). There are now many texts on common sources of error in survey research. The following references cover the area adequately: Groves (1987), Schaeffer (1995), Sudman et al. (1996), Tomaskovic-Devey et al. (1996), Bradburn et al. (1991), Reynolds et al. (1993) and Sanchez (1992). Websites: www.vcu.edu/cppweb/srlweb/survmeth.htm www.fsu.edu/~spap/faculty_html/rcfquant.html

5. Comparative, cross-cultural and cross-national studies

Description/ definition	Comparative studies focus on the similarities and (especially) differences between groups of units of analysis. Such "objects" can include individual organisations, cultures, countries, societies, institutions and even individuals.	
Design classification	Empirical	Hybrid data
	Numeric and textual data	Medium control
Key research questions	Descriptive questions; historical questions; causal questions.	
More specialised design types	Cross-national studies; cross-cultural studies.	
Typical applications	Cross-cultural psychological studies. Cross-national studies in international politics or economics.	
Meta-theory	No specific meta-theoretical tradition, although postmodernist theorists have been very critical of assumptions underlying cross-cultural comparisons.	
Conceptualisation/ mode of reasoning	Both deductive and inductive approaches.	
Selection of cases/ sampling	Probabilistic and non-probabilistic, depending on the number of "cases" selected. If individuals are units of analysis (cross-cultural psychological studies), then normal sampling designs apply. In the cases where countries or political systems or nations are compared (political science), the selection of cases or sampling is done on theoretical grounds.	
Mode of observation/ sources of data	Surveys or use of existing statistics and data.	
Analysis	Statistical methods (surveys), or qualitative and interpretive analytic strategies in the case of textual data.	
Strengths	The logic of comparison approximates causal inferences and allows scholars to attempt stronger causal hypotheses. It also allows for comparison of different theoretical viewpoints across different settings.	
Limitations	Problems in the selection of "appropriate" cases for the purposes of selection, i.e. the degree of comparability of cases. In cross-cultural and cross-national studies, there are the obvious constraints associated with differences in language, culture, symbols, signs, and so on.	
Main sources of error	Small samples; translation errors; measurement error; context effects.	
Additional reading and websites	Useful works on *comparative research methodology* are: Allardt (1990), Berent et al. (1982), Caiden (1989), Hayashi (1992), Kocka (1993), Mace et al. (1994), Mochmann et al. (1993), Namboodiri (1994), Niessen et al. (1982), Ragin (1987; 1991; 1994), Rokkan (1993), Rose (1991) and Scheuch (1990). Good overviews on the issues involved in *cross-national and cross-cultural* research are given in Antonowsky et al. (1989), Drasgow et al. (1988), Henderson et al. (1992), Hughes et al. (1993), Jones et al. (1992), Masser (1984), Miller et al. (1981), Rokkan (1993), Sanders (1994), Triandis (1980), Watkins (1989) and Williams (1984). See also more discipline-based articles on cross-cultural research with reference to communication studies (Bantz, 1993), surveys (Sasaki et al., 1990; Szalai, 1993; Norval, 1984; Burton et al., 1987); consumer research (Durvasula et al., 1993); evaluation studies (Jinkerson et al., 1992); media research (Lonner, 1986); psychology (Sinha, 1990; Retief, 1988; Mauer & Retief, 1987). Website: www.sscnet.ucla.edu/soc/groups/scr/	

6. Experimental designs (laboratory studies)

Description/ definition	Studies that are usually quantitative in nature and which aim to provide a causal study of a small number of cases under highly controlled conditions. High control is achieved through laboratory conditions. The possibility of causal inference derives from the use of randomisation techniques, experimental and comparison groups, and repeated measures over time.	
Design classification	Empirical	Primary data
	Numeric data	High control
Key research questions	Causal questions	

More specialised design types	Latin square design; Solomon four group design; factorial designs.
Typical applications	Applications vary from fundamental/basic experiments (as in the natural and behavioural sciences) to more applied clinical trials.
Meta-theory	In the behavioural sciences (psychology) there is a strong historical link with behaviourism. In general, the underlying epistemological assumptions would be consistent with a realist philosophy of science, especially the assumptions about causality.
Conceptualisation/ mode of reasoning	Strongly theory-driven with hypothesis-testing design predominating. However, experiments that are mainly exploratory ("trial and error") also occur.
Selection of cases/ sampling	Sampling with small numbers.
Mode of observation/ sources of data	Structured observation and physical measurement; psychometric techniques.
Analysis	Mathematical and statistical methods (especially regression and analysis of variance techniques). Small sample size usually dictates using non-parametric statistical tests of significance.
Strengths	The ability to infer causality and test causal relationships.
Limitations	Small sample sizes make generalisability risky. Laboratory settings – especially in the human sciences – create their own artefacts and errors, which also limit the external validity of findings.
Main sources of error	Experimenter error (e.g. experimenter expectancy effects; demand effects), subject error, measurement error, context effects.
Additional reading and websites	The following is but a selection from literally hundreds of available texts on experimental methods: Bausell (1994), Boniface (1994), Christensen (1991), Cochran et al. (1992), Cox (1992), Hicks (1993), Hinkelman et al. (1994), Kirk (1995), Lewis-Beck (1993), McKenna (1995), Ross et al. (1994) and Van den Brakel and Renssen (1994). Websites: http://trochim.human.cornell.edu/tutorial/abrahams/shk16.htm http://trochim.human.cornell.edu/tutorial/belue/belue.htm

7. Field/natural experimental designs

Description/ definition	Studies that are usually quantitative in nature and which aim to provide a broad overview of a representative sample of a large population. Field experiments distinguish themselves from "true" or "classical" experiments by the fact that they occur in natural settings (rather than laboratory or artificial settings). Also, because of practical and ethical concerns, they do not involve random assignment of subjects to experimental and comparison groups.	
Design classification	Empirical	Primary data
	Numeric data	Medium control
Key research questions	Descriptive and causal questions.	
More specialised design types	Quasi-experimental design types: non-equivalent comparison group designs; time series designs and interrupted time series designs; regression discontinuity designs; multiple baseline designs.	
Typical applications	Social experiments; applied research that is aimed at tracking change over time (baseline studies). In the latter sense, there is a clear overlap with some forms of evaluation research.	
Meta-theory	In the behavioural sciences (psychology) there is a strong historical link with behaviourism. In general, the underlying epistemological assumptions would be consistent with a realist philosophy of science, especially the assumptions about causality.	
Conceptualisation/ mode of reasoning	Field experiments in basic science (such as social psychology experiments) are often designed to test hypotheses or models. In more applied social experiments, such as Headstart, the design could be more inductive and a-theoretical.	
Selection of cases/ sampling	Normally probabilistic sampling but without random assignment of subjects to experimental and control conditions.	
Mode of observation/ sources of data	Structured observation; questionnaires; interviews.	
Analysis	Mathematical and statistical methods (especially regression and analysis of variance techniques).	

Strengths	The natural setting of field experiments increases generalisability of results. It also decreases the likelihood of laboratory effects (in the social sciences) such as experimenter effects.
Limitations	Moderate ability to infer causality, depending on complexity of phenomenon.
Main sources of error	Less control of extraneous variables than in experimental designs which, in turn, leads to weaker causal claims. Context effects; measurement error; sampling error and sample size; non-equivalence of experimental and control groups owing to lack of randomisation.
Additional reading and websites	For a brief, but good, overview, see Robson (1993, Chapter 4). *General texts:* Bawden et al. (1992), Beretta (1983), Boruch and Wothke (1985), Burtless (1995), Cook (1979), Dennis (1990; 1994), Dennis and Boruch (1989), Dunford (1990), Haveman (1986), McNeal and Hansen (1995), Riecken and Boruch (1974), Ross et al. (1994) and Van den Brakel and Renssen (1994). Website: http://trochim.human.cornell.edu/tutorial/abrahams/sbk16.htm

8. Evaluation research: implementation (process) evaluation

Description/ definition	Implementation evaluation research aims to answer the question of whether an intervention (programme, therapy, policy or strategy) has been properly implemented (process evaluation studies), whether the target group has been adequately covered and whether the intervention was implemented as designed.	
Design classification	Empirical	Hybrid data
	Numeric and textual data	Medium control
Key research questions	Descriptive questions.	
More specialised design types	Needs assessment studies. Evaluability assessment studies. Programme monitoring studies.	
Typical applications	Programme monitoring; performance measurement.	
Meta-theory	No obvious meta-theoretical paradigm.	

Conceptualisation/ mode of reasoning	Some programme evaluations are completely a-theoretical (so-called black box evaluations) and are aimed at assessing whether the outcomes have materialised. Other exponents have called for so-called theory-driven evaluations (Chen, Lipsey).
Selection of cases/ sampling	Selection of cases is determined by the nature of the intervention and type of process evaluation. It may involve both probabilistic sampling and theoretical selection.
Mode of observation/ sources of data	Multiple methods of data collection. It is common in implementation evaluation studies to utilise all available modes of observation: both structured (questionnaires; tests; scales) and less structured (focus group interviews; individual interviews; participation observation), as well as analysing existing documentary sources (annual reports; field records; participation records; etc.).
Analysis	Combination of qualitative and statistical methods of analysis.
Strengths	Implementation evaluation research is a form of applied research aimed at assessing whether interventions have been well conceptualised and properly implemented.
Limitations	Access and coverage of implementation sites; timing of study (if implementation has already commenced).
Main sources of error	Measurement error; subject effects; researcher effects.
Additional reading and websites	For good introductory texts on programme evaluation, see Freeman et al. (1993), Herman (1988), Posavac (1992), Rossi and Freeman (1993), Rutman (1977), Smith (1990) and Williams (1986). For specific texts on programme monitoring or implementation (process) evaluation, see King et al. (1987), Patton (1979) and Schreirer (1981). On evaluability assessment, see Smith (1989) and Wholey (1981; 1983; 1989). For a comprehensive bibliography up to 1991, see Dekker (1991). Finally, for a one-stop overview of current trends, the best single text is the handbook on programme evaluation (Bickman & Rog, 1998). Websites: www.ucp-utica.org/uwlinks/outcomes.html www.jhuccp.org/r&e/index.stm

9. Evaluation research: experimental and quasi-experimental outcome studies

Description/ definition	Outcome evaluation research aims to answer the question of whether an intervention (programme, therapy, policy or strategy) has been successful or effective. The main aim of outcome or product evaluation studies is to establish whether the intended (and unintended) outcomes of the programme have materialised. This would include immediate or short-term outcomes, as well as long-term outcomes (or the so-called "impact" of the programme).	
Design classification	Empirical	Hybrid data
	Numeric and textual data	Medium control
Key research questions	Descriptive questions; evaluative questions.	
More specialised design types	Outcome or effect studies. Impact assessment studies. Cost-benefit analyses; cost-utility studies.	
Typical applications	Social impact assessment; environmental impact assessment.	
Meta-theory	Behaviouralist and realist meta-theories (e.g. Pawson & Tilley, 1997) are associated with quasi-experimental and quantitative evaluation studies (Cook, Campbell and Stanley).	
Conceptualisation/ mode of reasoning	Some programme evaluations are completely a-theoretical (so-called black box evaluations) and are aimed at assessing whether the outcomes have materialised. Other exponents have called for so-called theory-driven evaluations (Chen, Lipsey).	
Selection of cases/ sampling	Probability sampling methods.	
Mode of observation/ sources of data	All forms of evaluation research usually use all available data collection methods. These could be structured or semi-structured, depending on the specific design type, but more often than not involve all forms of structured and semi-structured methods.	
Analysis	Structured and more quantitative methods such as ANOVA and regression analysis.	
Strengths	Ability to assess causal outcomes and impact.	
Limitations	Context effects; sampling error; measurement error (operationalising and measuring outcome indicators). Sampling error; maturation; history effect; selectivity effects; instrumentation effects; generalisability.	
Main sources of error	The classic texts are Campbell and Stanley (1966) and Cook and Campbell (1979).	
Additional reading and websites	For other useful texts, see Cheetham et al. (1992), Chen (1994), Conlisk (1986), Cook et al. (1986), Greene et al. (1989), Gregory et al. (1992), Horton (1993), House (1984), Lee et al. (1990), Polansky (1994), Reichardt et al. (1994), Sanders (1992), Turpin et al. (1991), Weiss (1987) and Yin (1992). For a comprehensive bibliography up to 1991, see Dekker (1991). Finally, for a one-stop overview of current trends, the best single text is the handbook on programme evaluation (Brickman & Rog, 1996). Websites: www.ucp-utica.org/uwlinks/outcomes.html www.jhuccp.org/r&e/index.stm	

10. Evaluation research: qualitative (naturalistic) and empowerment evaluation

Description/ definition	Qualitative (or "naturalistic") evaluation approaches involve the use of predominantly qualitative research methods to describe and evaluate the performance of programmes in their natural settings, focusing on the process of implementation rather than on (quantifiable) outcomes. Empowerment evaluation is the use of evaluation concepts, techniques and findings to foster improvement and self-determination (Fetterman).	
Design classification	Empirical	Hybrid data
	Numeric and textual data	Medium control
Key research questions	Descriptive questions; evaluative questions.	
More specialised design types	Fourth-generation evaluation (Guba and Lincoln), naturalistic evaluation (Patton), empowerment evaluation (Fetterman).	
Typical applications	Naturalistic and empowerment evaluations are most frequently used in implementation evaluations (rather than outcome evalu-	

	ations), especially where there is a specific focus on formative evaluation. These are also preferred designs when working with developing communities where participation by the participants in the evaluation is desirable.
Meta-theory	Interpretive meta-theories are linked to naturalistic (Patton) and fourth-generation (Guba and Lincoln) approaches to programme evaluation, whereas critical meta-theory is associated with empowerment evaluation approaches (Fetterman).
Conceptualisation/ mode of reasoning	Normally inductive and a-theoretical, which links with assumptions about consultation and participation (naturalistic inquiry).
Selection of cases/ sampling	Case selection mostly consists of "theoretical sampling" in naturalistic evaluation designs.
Mode of observation/ sources of data	Preference for qualitative and participatory methods, such participant observation and semi-structured interviewing.
Analysis	Qualitative and participatory methods.
Strengths	Establishing rapport and trust with research subjects; high construct validity; insider perspective. The collaborative and participatory nature of this design minimises suspicion and distrust of research with a concomitant increase in trust and credibility.
Limitations	The emphasis on naturalistic forms of inquiry makes it difficult to evaluate programme outcomes systematically and rigorously. The result is that strong causal inferences regarding programme benefits and impact are difficult, if not impossible, to make.
Main sources of error	Errors typically associated with naturalistic studies, e.g. observer and interviewer bias, as well as lack of rigorous control (no control groups or randomisation of subjects).
Additional reading and websites	For texts on naturalistic or qualitative evaluation, see Dorr-Bremme (1985), Guba (1987), Lincoln and Guba (1986), Patton (1990) and Tessmer (1994). For texts on empowerment evaluation, see Fetterman et al. (1996), Patton (1997) and Scriven (1997). Websites: Empowerment evaluation: http://www.stanford.edu/~davidf/empowermentevaluation.html Fourth-generation evaluation: http://www.srds.ndirect.co.uk/4th.htm

11. Statistical modelling and computer simulation studies

Description/ definition	Studies that are aimed at developing and validating accurate representations (models) of the real world. In statistical modelling, a specification of a model is constructed through a process of abstraction from what are theorised to be the processes in the "real world". By means of some statistical technique (e.g. regression analysis), the model is used to generate expected values that are compared with actual data. A simulation model can be "run" to produce output, while a statistical model requires a statistical analysis programme.	
Design classification	Empirical	Hybrid data
	Numeric data	Medium (statistical) control
Key research questions	Descriptive questions; causal questions; predictive questions.	
More specialised design types	Statistical modelling: Path analysis; structural equation modelling (Lisrel). Computer simulation studies: Dynamic microsimulation; simulation based on DAI (distributed artificial intelligence).	
Typical applications	Modelling financial data (investment or marketing analysis). Modelling trends in society (including history analysis).	
Meta-theory	No specific meta-theory. However, the epistemological assumption of all forms of modelling would be consistent with a realist theory of the world.	
Conceptualisation/ mode of reasoning	Most forms of statistical modelling and computer simulations that aim to test and validate models have to be very specific about the underlying (theoretical) assumptions. Such studies, therefore, tend to be more deductive in nature.	
Selection of cases/ sampling	Normal probability sampling techniques.	
Mode of observation/ sources of data	Structured modes of observation, such as survey data, census figures, financial and market data, experimental and systematic observational data.	
Analysis	Multivariate statistical techniques, such as path analysis, structural equation modelling and multiple regression analysis.	

Strengths	The ability to model large-scale phenomena and to simplify relationships in order to explain and predict better.
Limitations	Quality of the data or complexity of phenomena does not always allow complete specification of a model.
Main sources of error	Quality of data; underspecification of model; plausibility of assumptions.
Additional reading and websites	For *general introductions to modelling* in science, see Pidd (1996). For texts that focus on *causal modelling* (especially in the social and management sciences), see Alwin (1990), Birnbaum (1981), Blalock (1985; 1991), Gilbert (1981), Hellevik (1988), James et al. (1989), Medsker et al. (1994), Retherford et al. (1993), Simon et al. (1985), Sobel (1996) and Wunsch (1988). For texts on computer simulation, see Gilbert (1995) and Whicker and Sigelman (1991). Website: www.stats.gla.ac.uk/cti/links_stats/software.html

12. Secondary data analysis (SDA)

Description/ definition	Using existing data (mostly quantitative), SDA aims at reanalysing such data in order to test hypotheses or to validate models.	
Design classification	Empirical	Secondary data
	Numeric data	Medium (statistical) control
Key research questions	Descriptive questions. Causal questions.	
Typical applications	Analysis of census data; secondary analysis of survey data; market analysis.	
Meta-theory	Not associated with any specific meta-theory. Epistemological position would tend to favour the use of quantitative analysis, variable analysis and other more positivist and realist assumptions.	
Conceptualisation/ mode of reasoning	Although the researcher in SDA cannot undertake primary analysis, one of the advantages of SDA is that it forces you to be explicit about the assumptions and theory that underlie the data.	

Selection of cases/ sampling	No sampling possible, given that existing data are analysed.
Mode of observation/ sources of data	The primary data for SDA are survey data (cross-sectional, but especially longitudinal surveys) as census information.
Analysis	Standard statistical techniques.
Strengths	Savings in time and costs because of the use of existing data or the possibility of reanalysing previous findings.
Limitations	Secondary data analysts are not able to control for data collection errors and are constrained in analysis by original objectives of the research.
Main sources of error	Errors associated with contextual analysis in multi-level or hierarchical data sets; misunderstanding of original objects of the principal investigator.
Additional reading and websites	For a first overview of the advantages and limitations of SDA, see Procter (1995). The most comprehensive introductory text is Dale et al. (1988). Hakim's work (1981) focuses on British data sources, but also has useful sections on the role of data archives in SDA. Other useful texts are Hinde (1991), Kiecolt et al. (1986), McCall et al. (1991) and Stewart (1993). Website: Given the close link between SDA and data archiving, a good starting point to learn more about SDA trends is the South African Data Archive. It has a complete list of links to other national data archives. You will find it at: http://www.nrf.ac.za/sada/.

13. Content analysis

Description/ definition	Studies that analyse the *content* of texts or documents (such as letters, speeches, annual reports). "Content" refers to words, meanings, pictures, symbols, themes or any message that can be communicated.	
Design classification	Empirical	Secondary data
	Textual data	Low control

Key research questions	Exploratory or descriptive questions.
More specialised design types	Qualitative content analysis. Quantitative content analysis.
Typical applications	Propaganda analysis; analysis of speeches; editorial statements; letters in newspapers; analysis of annual reports.
Meta-theory	No specific theory, although some authors have referred to approaches such as semiotic analysis.
Conceptualisation/ mode of reasoning	Usually inductive and a-theoretical. However, there are examples of content analysis studies that aimed to test specific hypotheses.
Selection of cases/ sampling	Ranges from using probability sampling methods to theoretical sampling.
Mode of observation/ sources of data	The data sources are given, hence the only methodological issues concern the principles and procedures of selecting the data or documents. Content analysis is usually aimed at public documents, especially editorials in newspapers and magazines, advertisements, letters, political speeches, annual reports, and so on.
Analysis	Both qualitative (thematic; chronological) and quantitative (descriptive statistics) techniques are used.
Strengths	The analysis of texts and documents is an unobtrusive (non-reactive) method, which means that errors associated with the interaction between researchers and subjects (such as observation effects) are avoided. Quantitative content analysis is particularly useful for research involving large volumes of text.
Limitations	Authenticity of the data sources; representativeness of texts analysed which makes the overall external validity of the findings limited.
Main sources of error	Selection effects in sampling texts, although sampling techniques are often used. No or little information on intentions and background or original authors of texts seriously limits the interpretation. All content analysis involves the development of coding schemas or systems. A main source of error, therefore, is the inter-rater reliability of such schemas where more than one coder is involved.

Additional reading and websites	The classic texts are Berelson (1952), Holsti (1969) and Krippendorf (1986). Other useful texts are Carley (1994) and Woodrum (1984). For other texts, see Kolbe et al. (1991), Popping (2000), Roberts (1993; 1997), Rosengren (1981), Silverman (1993) and Weber (1990). Websites dedicated to content analysis: http://www.gsu.edu/~wwwcom/content.html http://www.content-analysis.de/

14. Textual analysis, hermeneutics, textual criticism

Description/ definition	Analysis of texts (religious or literary) in order to understand the meaning of such texts.	
Design classification	Empirical	Secondary data
	Textual data	Low control
Key research questions	Exploratory questions; descriptive questions; conceptual (semantic) questions; theoretical questions.	
More specialised design types	Biblical hermeneutics, including historical criticism, reception aesthetics and other forms of theological hermeneutics. Legal hermeneutics. Philosophical hermeneutics (Gadamer, Ricoeur). Deconstruction studies (Derrida, De Man). Literary criticism/feminist literary criticism.	
Typical applications	Exegesis of religious texts. Interpreting literary texts. Analysis and interpretation of art objects (paintings; sculptures; musical compositions).	
Meta-theory	Semiotics; structuralism; feminism; critical theory.	
Conceptualisation/ mode of reasoning	Both inductive and deductive modes of reasoning. Inductive forms of textual analysis are a-theoretical and attempt to generate an understanding of a hitherto unknown or little known text. More often, though, textual analyses attempt to test, reject or validate existing analyses and interpretations. Such forms of textual analyses are deductive in nature.	
Selection of cases/ sampling	Texts are selected on theoretical grounds (research question; objectives of the study).	

Strengths	Plausible and credible interpretations of texts not only shed light on the meaning of the text but also on historical periods, cultural trends and socio-political events.
Limitations	The quality and authenticity of texts are a major determining factor of the quality of the interpretation. Multiple, and sometimes conflicting, interpretations may confuse rather than inform the reader. The contextuality (and intertextuality) of texts may constrain one's understanding thereof.
Main sources of error	Interpretive bias (selectivity and bias in interpreting texts); quality of text sources (e.g. in Biblical hermeneutics); authenticity of documents (debates on authorship); lack of contextual information; intentionalist fallacy.
Additional reading and websites	For general texts on interpretation and hermeneutics, see Bleicher (1980), Lundin et al. (1985), Mitchell (1983), Thisleton (1992). For reference works on literary criticism, see Groden and Kreiswirth (1994) and Makaryk (1993). For a useful electronic article, which reviews the history and different approaches to hermeneutics, see: http://www.ai.mit.edu/people/jcma/papers/1986-ai-memo-871/memo.html **Specific websites** *Biblical hermeneutics:* http://www.geocities.com/Athens/5948/hermeneutics.htm For a useful electronic article on what *deconstruction* is ("Being just with deconstruction"), see: http://www.yale.edu/lawweb/jbalkin/articles/beingjust1.htm On *literary theory and literary criticism:* http://www.cudenver.edu/~mryder/itc_data/postmodern.html

15. Discourse and conversational analysis

Description/ definition	A more recent version of textual analysis, discourse analytic studies, also aims to study the meaning of words but within larger "chunks" of texts, such as conversations or discourses. Discourse analysis is sometimes defined as the analysis of language "beyond the sentence". This contrasts with the types of analysis more typical of modern linguistics, which is chiefly concerned with the study of microlinguistics: the study of smaller units of language, such as sounds (phonetics and phonology),

	parts of words (morphology), meaning (semantics) and the order of words in sentences (syntax). Discourse analysts study larger chunks of language.	
Design classification	Empirical	Hybrid data
	Textual data	Medium control
Key research questions	Exploratory questions; descriptive questions.	
More specialised design types	Critical discourse analysis (CDA); conversational analysis (Harvey Sacks).	
Typical applications	Analysis of everyday conversations and discourses. Analysis of field experimental discourses.	
Meta-theory	The ethnomethodological work of Harold Garfinkel was one of the first theoretical positions associated with the analysis of discourse. The (post)-structuralism of Michel Foucault has been the major meta-theoretical influence on discourse analysis. Harvey Sack's dramaturgical theory informed conversational analysis or CA.	
Conceptualisation/ mode of reasoning	Predominantly inductive: interpreting and making sense of "chunks" of discourse.	
Selection of cases/ sampling	Studies use both sampling methods to select texts and non-sampling methods (theoretical selection).	
Mode of observation/ sources of data	Data are usually collected through interview methods (transcripts) in natural field settings. Otherwise, existing discourses (conversations or speeches) may also be analysed.	
Strengths	By focusing on the larger (semantic) contexts of discourse, these forms of analysis are high on construct validity. Often, texts for discourse analysis are produced through non-obtrusive strategies that reduce reactivity and observation effects. The emphasis on discourse in natural settings also enhances construct validity.	
Limitations	Given that most discursive practices are context-dependent or context-bound, such studies are limited in their generalisability.	
Main sources of error	Lack of generalisability; lack of control over the data production process; interviewer effects where new data are collected.	

Additional reading and websites	Potter and Wetherell (1987) have written a good introduction to discourse analysis and its implication for social psychology. For other texts on discourse analysis, see Bloom et al. (1994), Duchan (1994), Edwards et al. (1993), Fairclough (1995), Forman et al. (1995), Mumby (1993), Potter et al. (1995), Sanders (1994), Sherrard (1991), Smagorinsky (1994), Spencer (1994), Van Dijk (1993) and Wooffitt (1995). For a book devoted to South African studies in discourse analysis, see Levett et al. (1997). Atkinson and Heritage (1984) is arguably the best collection on conversation analytic studies. For other texts on *conversation analysis*, see Boden (1990a, 1990b), Goodwin (1990), Psathas (1995), Sacks (1984), Silverman (1993), Van Dongen (1991) and Zimmerman (1988). Websites: http://www.bible.acu.edu/discourse/bibliogr.htm (contains a bibliography on discourse analysis) http://www.aber.ac.uk/media/Sections/textan02.html For an excellent overview of critical discourse analysis, see the article by Teun van Dijk at: http://www.hum.uva.nl/~teun/cda.htm

16. Historical studies, narrative analyses

Description/ definition	Historical studies attempt to reconstruct the past and the chronology of events.	
Design classification	Empirical	Secondary data
	Textual data	Low control
Key research questions	Exploratory. Historical-descriptive: A narrative analysis attempting to reconstruct the past as accurately as possible. Causal questions: Attempting to reconstruct a chain of events and identifying those events that caused or triggered other significant events (e.g. causes of the Second World War).	
More specialised design types	Historical case studies; narrative studies; event history analysis (and other forms of quantitative historical analysis).	
Meta-theory	Different meta-theories on the nature of historiography and history, ranging from the "naïve" empiricism of the Von Ranke	

	school, the Annales school, Marxist historiography up to post-modernist theories of historiography.
Conceptualisation/ mode of reasoning	Depending on the underlying theory of history or historiography, both inductive and deductive (theory-driven) approaches to historical scholarship are common.
Selection of cases/ sampling	In traditional historical scholarship, the selection of cases is usually determined by theoretical constraints.
Mode of observation/ sources of data	Use of a variety of documentary (official archival and unofficial) sources including personal documents (letters, diaries, autobiographies), registries, public records (birth, marriage, death certificates), and so on.
Analysis	Most commonly, inductive methods (especially retroductive reasoning) in trying to make sense of history.
Strengths	The ability to reconstruct the past through narrative techniques; the emphasis on process and change.
Limitations	Limitations are linked to limitations of the data, the understanding and judgement of the historian; differences in theoretical perspectives which are contradictory.
Main sources of error	Authenticity of documents; principles that underlie the selection of documents; representativeness of documentary sources; accuracy of interpretations; subjective bias.
Additional reading and websites	For general texts on the *historical method*, see Barzun and Graf (1992), Breisach (1994), Brooks (1969), Burke (1991), Cannon (1980), Clubb et al. (1989), Floud (1975), Garraghan (1973), Gottschalk (1969), Kovalchenko (1991), Lavin et al. (1989), Leashore et al. (1985), Reiff (1991), Shafer (1980) and Topolski (1976). For texts on *narrative analysis*, see Cortazzi (1993), Hatch et al. (1995), Josselson et al. (1993), Kohler-Riessman (1993), Miles et al. (1993) and Tonkin (1995). For texts on *oral history*, see Gupta (1995), McMahan et al. (1994), Tonkin (1995), Vansina (1985) and Yow (1994). Website: www.trinity.edu/mlearl/history.html

17. Life history methodology

Description/ definition	Analysis of small numbers of cases (usually of individuals) aiming to reconstruct the life history of an individual. The focus is on the story of the person as expressed and told by the person him- or herself.	
Design classification	Empirical	Hybrid data
	Textual data	Medium control
Key research questions	Exploratory; descriptive; causal questions.	
More specialised design types	The life history; historical biographies; psychological; the diary-diary interview study (Zimmerman and Wieder), the log, the literary diary.	
Typical applications	*In psychology:* focus on autobiographical studies and the use of diaries and letters (Allport, 1942). *In anthropology:* (Gottschalk et al., 1945). *In sociology:* focusing on individuals – originally very much on "deviant" behaviour. Prominent studies done by Chicago school in the 1920s and 1930s on such individuals, e.g. various studies by Clifford Shaw (1930, 1931, 1938). *In history:* reconstructing the life or biography of (great) individuals, focusing on personal documents such as diaries and letters.	
Meta-theory	The original proponents of this methodology traced their ideas back to the pragmatism of Dewey and the symbolic interactionist theories of W.I. Thomas.	
Conceptualisation/ mode of reasoning	Predominantly inductive: working from the data (personal documents). Reconstructing the life history of a person involves mostly retroductive forms of reasoning.	
Selection of cases/ sampling	Theoretical selection; typical cases.	
Mode of observation/ sources of data	In-depth interviewing; autobiographical sketches; analysis of letters, diaries and other personal documents.	
Analysis	Qualitative forms of data analysis, such as grounded theory and analytical induction.	
Strengths	In-depth account and insight into the life-worlds of a small number of individuals; high construct validity; insider perspective. According to Plummer (1983), its main strengths are its emphasis on the subjective reality of the individual, on process and change, and on the totality of the person.	
Limitations	According to Plummer, the main limitations of this type of study are issues related to representativeness (generalisability), reliability and validity, and specifically source of bias (interviewer bias, respondent bias and context effects).	
Main sources of error	Selection effects; Hawthorne effect; interviewer bias and subjectivity.	
Additional reading and websites	I have found Plummer (1983) to be the most accessible introduction and overview of life history methodology. For other texts on *life history methodology* and the use of biographies and autobiographies, see Bertaux (1981), Chambon (1995), Denzin (1989), Hatch et al. (1995), Helling (1988), Le Goff (1995), Mandelbaum (1982), Mann (1992) and Stanley (1993). Website: www.trinity.edu/mlearl/history.html	

18. Methodological studies

Description/ definition	Studies aimed at developing new methods (such as questionnaires, scales and tests) of data collection and sometimes also validating a newly developed instrument through a pilot study.	
Design classification	Empirical/non-empirical	Hybrid data
	Numeric and textual data	High to medium control
Key research questions	Exploratory, descriptive and evaluative questions.	
Typical applications	Developing new measuring instruments, validating existing scales and tests through item-analytic, factor-analytic and discriminant analytic studies.	
Meta-theory	No specific meta-theoretical approach.	

Conceptualisation/ mode of reasoning	Both inductive and deductive modes of reasoning are used. In inductive methodological studies, empirical data are analysed with a view to learning something about the methodological quality of the data. A typical example is exploratory factor analysis, which aims at developing a factor structure from empirical data without a specific theoretical model. Deductive approaches to methodological studies are equally common. An example of such an approach is when a hypothesis or theory about the effect of interviewer race or affiliation is tested on empirical data. Another example is the testing of the factor structure of a scale that was developed in Europe on a South African sample.
Selection of cases/ sampling	Since most methodological studies utilise either experimental or survey design types for the collection of data, common forms of probability sampling would apply.
Mode of observation/ sources of data	Methodological studies are usually done in conjunction with other empirical studies (especially surveys, experiments, comparative studies). However, it is not uncommon to find a methodological study conducted on existing data (SDA).
Analysis	Normal statistical and qualitative forms of data analysis.
Strengths	Methodological studies in the fields of experiments, surveys and cross-cultural studies have produced very worthwhile information about sources of error in empirical research. The most famous have been on interviewer and observer effects (Hawthorne's studies, Rosenthal's studies on experimenter expectancy effects), subject effects (social desirability, demand characteristics, response set effects in surveys). As far as the latter is concerned, ground-breaking work has been done by the Institute for Survey Research at the University of Michigan by people like Seymour Sudman, Norman Bradburn and Stanley Presser.
Limitations	Most of the methodological research in the field of experimental and survey studies has been conducted in the United States. One obvious limitation, therefore, is the applicability of these results to other contexts and countries. Most of the methodological research in the area of cross-cultural research, although done in various countries (including developing countries), is quite dated and its relevance for current research practice is not obvious. Very little methodological research has been done in developing countries, where one often finds specific methodological challenges, e.g. sampling in rural areas, interviewing illiterate populations, and so on.

Main sources of error	Since most methodological studies use data collected through standard design types such as surveys and experiments, they are susceptible to the same sources of error that are found there, e.g. sampling error and measurement error.
Additional reading	Examples of methodological studies are Alwin (1991), Blaikie (1991), De Leeuw (1992; 1993), Lutynska (1980), Molenaar (1991), Saris (1990), Scherpenzeel et al. (1992) and Van der Zouwen et al. (1993). Other sources to consult are Bulmer and Warwick (1993) and Peil (1982) on research problems in developing countries; Sudman and Bradburn (1983) on methodological effects in survey research, and Rosenthal and Rosnow (1991) on experimenter effects.

Non-empirical studies

19. Conceptual analysis

Description/ definition	The analysis of the meaning of words or concepts through clarification and elaboration of the different dimensions of meaning.	
Design classification	Non-empirical	Secondary textual data
Key research questions	Determining the meaning of concepts (semantic questions). Clarifying conceptual linkages through classification and categorisation.	
More specialised design types	Different forms of conceptualisation are linked to various "theoretical" and "philosophical" traditions, such as the analytical tradition, phenomenology, critical theory (neo-Marxism), critical realism, humanism, existentialism and critical rationalism. Within the so-called analytical tradition one finds a variety of forms of conceptual analysis: linguistic analysis, logical empiricism, logical positivism and ordinary language analysis.	
Meta-theory	Current meta-theoretical debates revolve around differences between modernist and postmodernist assumptions and beliefs. Modernist philosophers (as in rationalism, realism and humanism) would approach conceptual analysis very differently from postmodernist philosophers.	
Strengths	Conceptual analysis brings conceptual clarity. Well-structured conceptual analysis makes conceptual categories clear, explicates theoretical linkages and reveals the conceptual implications of different viewpoints.	

Limitations	Poor conceptual analysis leads to conceptual confusion, theoretical ambiguities and fallacious reasoning.
Main sources of error	Conceptual errors include vague and ambiguous definitions, classifications that are not mutually exclusive, errors in reasoning (see Chapter 8) such as affirming the consequent, tautological reasoning, *ad hominem* reasoning, and so on.
Additional reading and websites	For general introductions to the issue of conceptualisation, conceptual analysis and concept formation in science, see De Grolier (1990), Fox (1991), Gerstl (1989), Hammersley (1991), Howard (1987), Jong-Gierveld et al. (1990), Leicht et al. (1992), Lichtenstein (1988), Linton (1989), McDaniel (1978), Medin et al. (1984), Middendorp (1991), Neisser (1987), Orton (1985), Outhwaite (1983), Pawlowski (1980), Riggs (1979), Singh (1991), Smith (1981) and Sowa (1984). For texts that deal with concept mapping, see Keith et al. (1989), Mannes (1989) and Trochim (1989). For a good review of the debate between modernists and postmodernists, see Best and Kellner (1991) and Rosenau (1992). Websites: An extremely useful site is "Philosophy pages" by Garth Kemerling at: http://people.delphi.com/gkemerling/index.htm The Internet Encyclopedia of Philosophy at: http://www.utm.edu/research/iep/. For a brief, but useful discussion on conceptual analysis, see Gilbert Harman's article at: http://www.shef.ac.uk/~pip97af/Doubts.htm

20. Theory-building or model-building studies

Description/ definition	Studies aimed at developing new models and theories to explain particular phenomena.	
Design classification	Empirical	Hybrid data
	Numeric and textual data	Medium to low control
Key research questions	Questions of meaning and explanation; questions of theoretical linkages and coherence between theoretical propositions; questions related to the explanatory and predictive potential or theories and conceptual models.	

More specialised design types	Constant comparative method. Grounded theory approach (Glaser and Strauss). Mathematical model-building.
Typical applications	Theoretical and conceptual studies aimed at developing new models and theories or refining existing theories and models.
Conceptualisation/ mode of reasoning	Building theories or models occurs mainly through inductive and deductive strategies. Inductive modes of reasoning are manifested in statistical model-building where a model is constructed to fit certain empirical data. A variation on inductive reasoning is analogical reasoning, i.e. constructing a model of a phenomenon on the basis of its similarities to another phenomena. Deductive forms of theory construction are much more formal in nature. A set of postulates or axioms is formulated and taken to be true. From these postulates, further theoretical propositions are deductively derived. This process is followed until a comprehensive set of theoretical propositions has been developed that will ultimately be tested against empirical data.
Strengths	Science cannot make progress without theories and models. Through the construction of theories and models we attempt to explain phenomena in the world. A theory is a set of statements that makes explanatory or causal claims about reality. A model is a set of statements that aims to represent a phenomenon or set of phenomena as accurately as possible. Good theories and models provide causal accounts of the world, allow one to make predictive claims under certain conditions, bring conceptual coherence to a domain of science, and simplify our understanding of the world.
Limitations	Theories are ineffective if they make implausible claims on reality, if they make claims that are not testable and vague, or that are conceptually incoherent, inconsistent and confusing.
Main sources of error	In formal theory construction, the most common traps are those associated with overabstract formulations that are so far removed from reality that no empirical validation is possible. In model-building, the main sources of error relate to the assumptions that are made in specifying the model, the quality of the empirical data against which the model will be fitted, and the correct use of statistical and mathematical procedures.

Additional reading	For texts on theory-building and theory construction in the social sciences, see Berger et al. (1989), Chafetz (1978), Dubin (1978), John (1980) and Turner (1989). For texts on causal/mathematical modelling and theory-building, see De Leeuw (1990), Hayes (1984), Horan (1989) and Shye (1978). For texts on grounded theory approach, see Glaser and Strauss (1967) and Rennie et al. (1988). The main meta-theoretical traditions as they impact on social science research are discussed in Mouton (2000).

21. Philosophical analysis

Description/ definition	Studies that are aimed at analysing arguments in favour of or against a particular position, sometimes of a normative or value-laden kind. Studies that develop substantive points of view about the meaning of life (metaphysics), morally acceptable behaviour (ethics) and coherent and consistent forms of reasoning (logic).	
Design classification	Non-empirical	Hybrid data
Key research questions	Questions of meaning, explanation, understanding and normativity.	
Typical applications	There are various "modes" of philosophical analysis. The more prominent types are normative analysis (as in moral reasoning and applied ethics), ideology critique (neo-Marxist), deconstruction (Derrida), phenomenological analysis (Husserl).	
Meta-theory	Current meta-theoretical debates revolve around differences between modernist and postmodernist assumptions and beliefs. Modernist philosophers (as in rationalism, realism and humanism) approach philosophical analysis very differently from postmodernist philosophers.	
Strengths	The strengths of philosophical analysis are varied and follow from the very diverse aims of philosophising: conceptual clarification (analytical tradition), critique of ideology (Marxist and neo-Marxist traditions), developing different metaphysical positions (existentialism, humanism, neo-Calvinism), phenomenological analysis (Husserl, Heidegger). Both at a formal and substantive level, philosophical analysis is an indispensable tool for making sense of our world.	

Limitations	Philosophical analyses sometimes tend to become very abstract and far removed from the concerns of everyday life. Some philosophical traditions have developed very esoteric conceptualisations and idiosyncratic forms of reasoning, which make them rather inaccessible to outsiders.
Main sources of error	Philosophical traditions often tend towards dogmatism and intolerance for other philosophies. Some forms of modernist philosophical analysis fall into the traps of foundationalism and reductionism. On the other hand, some more recent proponents of postmodernism tend towards forms of nihilism and semantic anarchy, which have made them equally susceptible to charges of irrelevance.
Additional reading and websites	For a good review of the debate between modernists and postmodernists, see Best and Kellner (1991) and Rosenau (1992). The debate about the end of social theory is discussed in Mouton (1995). Websites: http://dmoz.org/Society/Philosophy/Philosophy of Language/Philosophical Analysis/ http://www.freedomnet.org/analysis.html See also Jeffrey King's article on "What is philosophical analysis" at: http://www.philosophy.ucdavis.edu/phildept/document/ANALYSIS.HTM

22. Literature reviews

Description/ definition	Studies that provide an overview of scholarship in a certain discipline through an analysis of trends and debates.	
Design classification	Non-empirical	Secondary data
Key research questions	Descriptive questions; theoretical and conceptual questions.	
Typical applications	Critical literature reviews. State-of-the-art reviews. Integrative literature reviews.	
Conceptualisation/ mode of reasoning	A review of the literature is essentially an exercise in inductive reasoning, where you work from a "sample" of texts that you read in order to come to a proper understanding of a specific	

	domain of scholarship. This explains why the "representativeness" of your sources is an important criterion of the final quality of the literature review.
Selection of cases/ sampling	The selection of sources (documents; texts; websites) is driven by the theoretical considerations, such as, the aim of the study, the research questions, as well as pragmatic considerations (time-frame, level of study).
Strengths	A comprehensive and well-integrated literature review is essential to any study. It provides you with a good understanding of the issues and debates in the area that you are working in, current theoretical thinking and definitions, as well as previous studies and their results.
Limitations	A literature review can, at best, only summarise and organise the existing scholarship. Even a critical review of the literature cannot produce new, or validate existing, empirical insights. Although literature reviews often lead to theoretical insights, we still need to undertake an empirical study to test our new insights.
Main sources of error	Selectivity in the sources; unfair treatment of authors; misunderstanding the source; selective interpretation to suit one's own viewpoint; poor organisation and integration of review.
Additional reading and websites	For introductory texts and overview articles, see Bangert-Drowns (1986), Bausell et al. (1995), Dickersin et al. (1992), Durlak et al. (1991), Glass (1981), Hale et al. (1991), Pollock (1993) and Spector et al. (1991). For other more specialised texts and applications, see Bangert-Drowns (1995), Becker et al. (1992), Bruno et al. (1988), Hall et al. (1995), Holbert et al. (1993), Hunter et al. (1991), Johnson et al. (1995), Miller et al. (1995), Patel (1989), Preiss et al. (1995), Rosenthal (1991; 1995), Schmidt et al. (1995), Soeken et al. (1995) and Wolf (1986). For studies on the relationship between meta-analysis and (integrated) literature reviews, see Cook et al. (1980), Cooper (1984; 1989; 1991) and Pollock (1993). Websites: Two electronic articles: one ("The literature review: A few tips on conducting it") is found at: http://www.utlink.utoronto.ca/www/writing/litrev.html and the other "Instructions on preparing the literature review" at: http://anarch.ie.toronto.edu/courses/mie240/literature.html

11

Research proposals: examples

This resource chapter contains two examples of research proposals: one is a rather poor proposal but I regard the other as an example of a good proposal. Both of these were submitted by two of my students for their theses in the M. Phil. Programme in Social Science Methodology. (The first will remain anonymous for obvious reasons.) I have reproduced these examples with minor changes (correcting obvious spelling errors in both, as well as shortening the second proposal somewhat). In both cases, I have provided comments on why I regard these proposals as poor and good respectively. Even if you disagree with some of my comments, it might be useful for you to see how supervisors look at research proposals and what criteria they use to evaluate them. Since both these examples come from empirical social science, I provide a list of additional references at the end of the chapter of sources and websites that have examples of research proposals from other disciplines.

Example 1: A poor proposal

Title An assessment of the availability and distribution of basic and economic services in the rural communities of the Eastern Cape.	
1. Background information	
[1] There is a belief that the rural communities of the Eastern Cape	[1] A very specific claim is made ("there is a belief") which is not substantiated in any way.

have been denied access to basic and economic services. [2] However, the extent of their deprivation is very difficult to quantify, as there is also the existence of poverty. [3] The complex nature of poverty in these areas complicates the matter further in so much that it receives more publicity than the inadequacy of socio-economic services. [4] It has been argued that the rural areas have been greatly marginalised in the past but all has been quiet about the provision of economic services in particular. [5] The implications of this inadequacy could be terrible in the poorest communities whose voice and face cannot be heard nor seen.	[2] The use of "however" is somewhat inappropriate as the second sentence does not stand in direct contrast to the first. Also, whereas the first sentence refers to lack of "access to basic services", the second sentence introduces the very different concept of "deprivation". This immediately creates a gap between the two sentences. [3] A similar problem emerges when the author refers here to the "complex" nature of poverty. Again, no reasons are given for the use of the term "complex", neither is any evidence cited that would explain the nature of the "complexity". [4] Whenever you use the expression, "It has been argued", it is essential that references are cited.
[6] It is alleged that the development organisations are not doing justice to the poorest of the poor, as their services are more concentrated in areas where they are least needed, to the exclusion of the most needy communities. [7] Is it fair to make a judgement and conclude that it is by their choice that there is an inadequate supply of socio-economic services? [8] Are the so-called organisations aware of the challenges they are faced with in the rural communities?	[6] The new paragraph starts with a sentence that introduces a new topic, i.e. the role of development organisations. (Note again the use of "it is alleged" without citations.) The references to the role of development organisations are not clear. Further reading of the remainder of the paragraph does not provide the necessary clarification either. The two questions that are subsequently posed [7 & 8] introduce new topics, which do not follow from the discussion thus far. Assessment: The first section has no clear logic. The reader is none the wiser regarding the motivation for or background to the study.
2. Why is the study conducted?	
[9] The study is intended to measure and assess the availability and the distribution of basic and economic services in the rural communities. [10] It is also my intention to investigate whether the rural communities are satisfied with the services that exist and also the attempts they have made to access the services.	The new section begins with two statements [9 & 10] that formulate the aims and objectives of the study. The heading is therefore inappropriate. Both sentences are not sufficiently precise. Sentence [9] does not contextualise the study in the Eastern Cape, which becomes clearer later on. Sentence [10] contains two different objectives, one aimed at establishing satisfaction with services, and the other aimed at establishing whether attempts have been

	made by these communities to access the available services.
3. Objectives	
[11] The main objective behind this study is to assess whether the provision of services has an effect on the living standards of rural communities, taking into consideration their general welfare and to what extent their supply can contribute to productivity and economic growth.	Sentence [11] is yet another statement of the objectives. Not only does it introduce a number of *new* objectives (relating provision of services to living standards, as well as its relationship to productivity and economic growth), but the sentence is too long and clumsy. Assessment: The different objectives formulated in this and the previous section are not clearly related to each other and also do not follow logically from the background discussion.
4. Value and relevance of the study	
[12] In essence, the socio-economic deprivation is reflected in the denial of basic services, and economic services which is the case in most rural communities. [13] Of great importance is the fact that politicians and economists make generalisations in as far as access to the socio-economic services is concerned and conclude that these communities are the worst sufferers. [14] This should go beyond this generalisation and hence a direct contact with them will not only enable one to judge and assess the extent of this deprivation, but will also ensure that they understand which type of services are available to them before concluding to say that they are irrational and unresponsive to changes. [15] The social-economic deprivation in this area that is former Transkei is not accorded the status it deserves, as the conditions and the state of rural areas are rarely publicised and one would not be surprised to find that even people in this region	It is not clear how the first sentence of the new section [12] addresses the "value and relevance of the study". Only when one reads on does it become clear that the student is arguing that the value of the study will be in providing reliable data that will hopefully correct existing "generalisations" made by politicians and economists. Although this is a valid point, the sentences which explain this [12 and 13] are not well structured. The following sentences [15–18] introduce new topics. Ideally, a paragraph break should have been inserted here. Sentence [15] is one of the longest, most convoluted sentences in the proposal. A better formulation would have been the following: "The extent of socio-economic deprivation in the former Transkei is not sufficiently recognised. This is mainly due to a lack of publicity and information on the matter. It would not be surprising if it is found that the local inhabitants also are not aware of the extent of the deprivation in this area." The remainder of the paragraph once again addresses new issues that do not build on the

are not aware of the extent of absolute deprivation in this area. [16] It has been observed that the government of the Eastern Cape is more keen to provide schools and water in the rural communities, ignoring other services that are very essential in development, which would decrease the dependency of the rural communities on external aid or government. [17] ... Most small towns and rural areas, particularly in the eastern half of the province, are undergoing a period of economic stagnation and in some sectors there is a decline. [18] The agricultural sector in the former homelands has shrunk significantly and the growing dependence on the government services offers little potential for development and self-sustaining economic growth.	first part of the paragraph. It also does not provide any further reasons or arguments regarding the value of the study. It would have been more appropriate to have included sentences [16–18] in the Background section of the proposal.
[19] The study would therefore be of benefit to decision-makers and also to NGOs, which are doing development in the rural areas so as to facilitate service delivery.	The use of the word "therefore" in sentence [19] is problematic. Given the problems in the previous paragraph, it is not clear that the study will in fact be of benefit to decision-makers and NGOs.
5. The research problem	
[20] The dependency of the rural communities on external aid is aligned to a lack or inadequate supply of socio-economic services.	Sentence [20] seems to be an attempt by the student to formulate a hypothesis. A better formulation would have substituted the word "related" for "aligned". However, the main problem is that the reasoning thus far in the proposal does not provide sufficient justification for the formulation of such a hypothesis. The reader is left with the impression that the "hypothesis" is rather ad hoc and not related to any previous research or theory.
6. Analysis of the problem	
[21] The mere observation I have of the rural communities is that they are simply waiting for the government to	The use of "mere observation" in sentence [21] borders on the colloquial. The sentence seems to be a personal observation rather

deliver through the RDP and that there is no initiative on their part. [22] In these the government is regarded as the saviour. [23] The assumption in this regard is that should there be adequate provision of resources, the dependency will cease to exist. [24] The problem is very complex if the culture of poverty is taken into consideration, whereby such communities had been so isolated and marginalised that they feel demotivated, have lost their dignity, esteem and status.	than a scientific claim. The word "these" in sentence [22] has no clear referent. It can refer to "services", "initiatives" or "communities". Sentence [23] introduces a new topic and should have been a new paragraph. It is not clear whether the "assumption" referred to in this sentence is held by the student or by other authors. Sentence [24] again introduces a new topic, not linked to the previous sentences. A rather strong claim is made (regarding marginalisation, loss of dignity and esteem, etc.), which should have been substantiated.
7. Hypothesis	
[25] The lack or inadequate provision of socio-economic services results in dependency.	The formulation of the hypothesis at this point in the proposal is repetitive and inappropriate.
8. Research design and methodology	
[26] A household survey will be carried out.	Sentence [26] is completely inadequate as a statement of the research design. The reader is not given any information on the exact target population, unit of analysis (which households), why a survey design, and so on.
8.1 ***Methodology***	
[27] The purpose of the study would be to provide qualitative and quantitative information on various factors which are hypothesised as being related to the provision of socio-economic services.	Sentence [27] is redundant. It does not add any new information except the rather empty reference to "quantitative and qualitative information".
8.2 ***Choice of research area***	
[28] As the administrative areas have been delineated for the purpose of local tribal authority, two adjacent locations where there are absolutely no services will be used; that is	This paragraph gives a better idea of the geographical area to be covered. It now becomes clear that the student will select four areas: two that have no services, and two where there is some degree of service delivery. This is

Hobeni and Cwebe in Mqanduli. [29] The areas have been chosen because of their distance from Umtata, which used to be the capital town of Transkei, and also poor means of communication. [30] Also another two locations that are very near to Umtata and where there is adequate supply services will be considered – Payne and Corhana.	not bad logic, however, one would expect some reasoning on the benefits of conducting what amounts to a kind of comparative study. One would also need some indication from the student of the criteria that are going to be used to distinguish between levels of service delivery.
8.3 *Data collection*	
[31] Questionnaires will be used in personal interviews and have an advantage of being flexible and ensure that the respondent fairly understands the question and purpose of the study. [32] Also structured interviews with representative groups will be done to obtain reasonable accurate information.	Sentence [31] is unnecessarily long. It contains at least three distinct ideas that should have been formulated separately. It is not clear whether the use of "personal interviews" [31] and "structured interviews" [32] refer to different forms of data collection. The section is inadequate in that it raises more questions than answers, for example: Will interviews be conducted in the mother tongue? Who will conduct the interviews? When will the interviews be conducted? etc.
8.4 *Sampling procedure*	
[33] The choice of the population to be sampled will be greatly influenced by the available data and the size of the population.	Sentence [33] does not provide any information on the target population. In fact, reference to the "available data" and the "size of the population" obscures rather than clarifies the matter.
8.5 *Sample size*	
[34] In considering the sample size, factors such as costs and desired level of accuracy will be taken into consideration. [35] A stratified sample of about 20 households will be selected in each location, i.e. 80 households will be interviewed.	Although sentence [34] states that the sample size will take certain factors into consideration, we are informed in the next sentence [35] that the sample size has already been decided upon. No information is provided on the actual design or sampling techniques (random, cluster, stratified, etc.)
8.6 *Qualitative reliability*	
[36] Every possible precaution will be taken during interviews to explain	Sentence [36] is redundant as it states the obvious. The student does not tell us what she

the objective and background to the survey, and questions will be structured in such a way that there is no prejudice and bias among the respondents.	regards as the most important threats to the reliability of the data (e.g. illiterate population, suspicion of researchers, etc.), neither does she give any specific indication of the strategies that can be followed to minimise error during data collection.
9. Time-frame [37]	
Literature review: 3 months Collection of data: 4 months Data analysis and synthesis: 2 months Documentation: 2 months	I normally expect a slightly more detailed time-frame. For example, key stages in the data collection process, such as gaining access, piloting questionnaires and the actual fieldwork, need to be planned for separately.
10. Bibliography [38]	
1. Swanepoel, H. 1992. *Community development: Putting plans into action.* 2. Bembridge, T.J. 1996. *Baseline study of Upper and Lower Umjika Community, Eastern Cape, South Africa*, May.	The bibliography is both inadequate and sloppy. Neither of the two sources listed in the bibliography is cited in the text. Also, I usually require students to consult at least 15–20 sources for a research proposal in order to ensure that a proper preliminary literature scan is done. The required information (publishers and place of publication) is not included.

Concluding comments: I have deliberately selected a very poor proposal in order to show the wide range of logical errors that students often make when putting together a proposal. I think you will agree with me that this proposal shows that the student concerned had clearly not done her homework. Her first error was to attempt a research proposal without having done sufficient background reading. Her second mistake was not to structure the proposal properly. She did not *think through* the proposal. There is no clear plan or structure. She could have done at least three things to improve her proposal:

- She could have done a more comprehensive and systematic reading of the topic.
- She could have designed a proposal using draft outlines (see Chapters 4 and 8).
- She could have asked other people to read the first drafts of the proposal.

The following is an example of a very good proposal. Although it is a bit too long, it exhibits all the key features that I look for in a well-structured and well-reasoned proposal. My comments, therefore, will be directed at pointing out the features that make it a good proposal.

Example 2: A good proposal[1]

Proposed title "Families of choice" – an ethnographic study of gay and lesbian parenting in the Western Cape.	
Aim	
It is proposed that an in-depth study be done on the parenting experience of gay and lesbian parents. The purpose of this study would be a thick description[2] of gay and lesbian parents subjective parenting experiences.	The fact that the student starts by formulating the general goal of the study instantly orientates the reader. Since a rather technical phrase ("thick description") is used, she has decided to describe it further in a footnote. This is a helpful strategy.
Theoretical framework	
The proposed study will focus on the subjective parenting experience of gay and lesbian parents. Therefore, when *defining parenting*, diverse meanings of "*family*" is appreciated. Although it has been said, "You can't pick your relatives," in fact that is exactly what gay families, in devising a new system of kinship, do. They "choose" their families, retaining the familiar symbol of blood and combining it with symbols of love and choice. It is important to recognise, as Weston (1991) points out, that there is no uniform or normative definition for "gay family" any more than there is for a term like "American family". According to John (1994: 343), in the South African context on the whole, it seems that gay parents are mostly people who lived heterosexual lives before coming out. But, increasingly, gay men and lesbians here have decided to find ways of fulfilling their dreams of having children of their own and "making their own kinds of families".	The first paragraph in this section closely links up with the statement of the goal of the study above. The student explains that the focus of the study is ultimately on the *subjective parenting experiences of gay and lesbian parents*. In this statement of the aims of the study, the term "parenting" is obviously a core concept which requires further clarification. The student undertakes this challenge by first looking at the concept of "family" and specifically as it applies to "gay families" This topic is addressed in the first two paragraphs of this section.

1. This proposal was submitted by Aletia Eksteen, a master's student in Social Science Methodology.
2. Denzin (1989a: 83) describes this term as follows: "A 'thick description' does more than record what a person is doing. It goes beyond mere fact and surface appearances. It presents detail, context, emotion, and the webs of social relationships that join persons to one another. Thick description evokes emotionality and self-feelings. It inserts history into experience. It establishes the significance of an experience, or the sequence of events, for the person or persons in question. In thick description, the voices, feelings, actions, and meanings of interacting individuals are heard."

These families, like all families, come in many sizes and shapes. Some consist of couples without children and others of groups of adults, some of whom may be lovers. Families with children may be headed by a single parent, a same-sex couple, or a multiple-parent-extended-family arrangement. Some lesbian families incorporate biological or, for want of a better word, "fictive" fathers. They are rich and poor, black and white. In other words, except for the fact that one or more members are lesbian or gay, these families cross-cut the same social categories as other families.	
Parenting is a process composed of tasks, roles, rules, communication, resources and relationships (Horowitz, Hughes & Perdue, 1982: 2). Parenting is dynamic, multifaceted, and complex. Individuals, families, and institutions fulfil parenting functions such as nurturing and nourishing a child, and creating an environment in which children can learn skills needed for social participation and acceptance of personal responsibility. Parenting "involves the skilful and creative use of knowledge, experience, and technique".	In the third paragraph, the student returns to the central concept of "parenting" and refers to one definition (Horowitz et al.) that she has found particularly useful.
To conceptualise the parenting experience of gay and lesbian parents, *family systems theory* is useful in explaining family interaction and to help understand their family life. The systems view is quite comprehensive since it includes the elements of society, family, parts of families, persons, and the relationships between these elements at all levels. Cromwell and Peterson (1983) identified the following *levels* from which variables can be drawn. First, there is the *individual* level, a psychological and biological system that functions as the basic level of the larger family system. The next level is *dyadic*, which involves the marital, parent-child, and sibling subsystems within the family. Finally, there is the *family system* itself, which is composed of the individuals and dyads but which is presumed to be "more than the sum of its parts". Cromwell and Peterson suggest that family studies would benefit from incorporating data both from multiple types of measurement technique (e.g. behavioural observations, self-reports, clini-	In the following paragraph she argues that a more comprehensive theoretical framework, such as family systems theory, is required. Her argument is that the systems theory is useful precisely because it focuses on issues of family interaction. The remainder of the paragraph elaborates on Cromwell and Peterson's views.

cal ratings) and from multiple levels of the family system.	
An important proposition derived from systems theory is that systems include *processes* that emerge from the interaction of the parts. These processes are not characteristic of the parts taken individually and, moreover, the processes have lives of their own. For example, instead of explaining the inadequacy of a parent by ascribing it to a personality trait like "homosexuality", systems theory focuses our attention to consider the *relationship interaction* involved. In other words, consideration of either the social context or the participants' personalities will allow only a partial understanding of the complexities surrounding gay parenting. A view of gay parenting, which does not include interaction patterns, will yield only an incomplete picture of what is really happening. To get a complete picture of gay parenting, one has to consider the social context, personalities (individual members) and the relationship interaction (interaction patterns) from which the parenting processes emerged.	The next paragraph introduces a new topic: the importance of processes and interaction patterns in understanding the complexities of gay parenting. The student argues that it is precisely because the family systems theory emphasises the importance of interaction and process that it is a useful tool for understanding gay parenting.
Horowitz (1995: 63) provides a useful framework for examining the parenting process. She described tasks, roles, rules, communication, resources, and relationships as essential components of parenting. Also in conceptualising parenting, she does not tie it to a particular family structure or type. Parenting is examined as a process undertaken with the goal of ferrying children from conception and birth through developmental challenges and life events to adulthood. As a bridge between the conceptualisation of parenting and its application to gay parent families, questions are raised concerning what it takes to parent adequately.	In one of the weaker "logical moves" in her proposal, the student returns to a discussion of Horowitz's views on parenting. A more logical step here would have been to combine and integrate this discussion in the third paragraph of the section where Horowitz is first discussed.
Horowitz's (1995: 44) framework provides a basis for evaluation of gay parent families' functioning. Because there is great diversity in structural composition and context among gay parent families, it is impossible to apply a single criterion for measurement of success. She suggests that "careful	The final paragraph of this section elaborates further on Horowitz's framework and why it will be useful in the proposed study.

assessment of the dimensions of effective parenting is required in order to understand and identify both strengths and difficulties". These dimensions include tasks, roles, rules, communication, resources and relationships, which are critical facets of parenting.	Assessment: Although the overall structure of the reasoning in this section is good (except for the critical comment about Horowitz above), she could have improved this section with a concluding paragraph that clearly summarised her argument up to this point.
Rationale	
Assessing the state of family theory and research, Doherty, Boss, LaRossa, Schumm, and Steinmetz (1993: 16) cited lesbian and gay family research as one of the "major streams of family scholarship that have not yet influenced mainstream family science".	The heading suggests that the student will now discuss her reasons for undertaking this study. As will become clear later on, this is the case, however, she has chosen to present an argument or motivation for the study on the basis of her assessment of current scholarship in this area.
In the *Journal of Marriage and the Family* (Feb. 1995), an article entitled "The families of lesbians and gay men: a frontier in family research" appeared, in which the authors K.R. Allen and D.H. Demo examined the extent to which the family relations of lesbians and gay men are integrated into the family literature. They reviewed over 8000 articles published between 1980 and 1993 in nine journals that publish family research. Their findings show that research on lesbian and gay families is quite limited. For example, in a total of 971 articles published, in *Family Relations*, a journal dedicated to applied family studies, 10 (or 1%) involved explicit study of lesbians, gay men, or issues pertaining to sexual orientation. In the *Journal of Marriage and the Family*, the flagship journal for basic research on families, even fewer studies related to lesbian and gay families. For the above period, a total of 1 209 articles were published in *JMF*, only two of which involved explicit study of sexual orientation or homosexual experience. In the *Journal of Family Issues*, no article explicitly examined lesbian or gay families or issues related to sexual	The first five paragraphs of this section, therefore, review the literature on gay families and gay parenting in particular. The use of a review article in the second paragraph is a good approach and lends support to her final conclusions. The student's review is not a mere summary of the literature or a mere compilation of sources consulted. She clearly engages with the existing scholarship and in the process makes a number of very relevant points. These can be summarised as follows: (1) Within the overall family research literature, the proportion of studies on gay families is quite limited (par. 2). (2) At the same time, more recent literature does show an increased awareness and recogni-

orientation; 14 articles (3,3%) contained related content.	tion of the diversity of family systems (par. 3).
However, there has recently been a greater recognition of the diversity of family systems. The March 1993 special issue *Journal of Family Issues*, "Rethinking the family as a social form", shows some change, containing three articles that mentioned diversity by sexual orientation. Indications are that researchers are beginning to question the adequacy of their concepts, theories and methodological ideas, and address family diversity in a completely new way. White (1992) pointed out some limitations of relying on marital status as a major explanatory variable. Bould (1993) argued that the census definition of the term "familial" obscures many aspects of familial care-giving by failing to recognise ties that are solely emotional while lacking in any legal or blood relationship. Furthermore, Scanzoni and Marsiglio (1993) proposed a theoretical framework for incorporating and valuing a variety of family structures, including that of same-sex couples, a framework intended to replace "the prevailing dichotomy" of benchmark family versus deviant alternative family.	
Families that include lesbian and gay individuals are part of the increasingly diverse family landscape. Lesbians and gay men are involved in family relationships as sons and daughters, as partners, as parents and stepparents, and as extended and chosen kin. In a comprehensive review of research on lesbian and gay families, Laird (1993) observed that only a small core of studies have been conducted on this population, providing brief glimpses of the everyday lives of there families. Three areas comprise the core of our knowledge base to date: (a) same-sex partnership and romantic relationships (e.g. Blumstein & Schwartz, 1983; Kurdek, in press; Peplau, 1991); (b) lesbian mothers (e.g. Lewin, 1993) and, to a lesser degree, gay fathers (e.g. Bozett, 1987b); and (c) the psychological development and social adjustment of children of lesbian and gay parents (e.g. Bozett, 1987a; Patterson, 1992; 1994a). These studies reflect a	(3) Within this new diversified landscape on family structures, the importance of focusing more on gay families is acknowledged (par. 4). (4) Limited attention, however, has been give to this "population". (par. 4) (5) The more recent literature reveals a shift away from a more negative view about homosexuals as "deviant" individuals to a focus on the familial and social contexts of gay persons. (Critical comment: This paragraph could perhaps have been split into two, given that it discusses two different themes.)

needed shift in research literature and public discourse from a deficit stance about "homosexuals as individuals" to a focus on the familial and social context in which lesbians and gay men live (Laird, 1993). Although this body of work forms an important base for beginning to conceptualise how sexual orientation impacts family experiences (Patterson, 1994b), much more work needs to be done in order to investigate the family relations of lesbians and gay men.	
Sexist and heterosexist assumptions continue to underlie most of the research on families by focusing analysis on heterosexual partnerships and parenthood. Lesbians and gay men are thought of as individuals, but not as family members. By ignoring the diverse structures, processes, and outcomes of lesbian and gay families in mainstream family research, family scholars have failed to capitalise on opportunities to contribute to new theoretical understandings of families.	(6) The fifth point made above is further elaborated upon: the necessity of studying gay people within their familial structures.
Laird (1993: 295) commented as follows: "In spite of the fact that gay and lesbian families constitute a significant percentage of American families, the gay family has been virtually invisible in the family therapy field. This invisibility, which undoubtedly reflects a society-wide reluctance to link the construct of 'gayness' with that of 'family', for the same-sex family, more than any other family form, challenges fundamental patriarchal notions of family and gender relationships. Such notions assume the primacy of heterosexual coupling."	
In an attempt to address the above research needs, the proposed study will focus on the parenting experience of lesbians and gay men, to whenever possible, encourage people to describe their worlds in their own terms, in other words "to get an insider's view of reality."[3] Most studies of "minorities", including many done by gay or lesbian researchers, start from a majority perspective, comparing and searching for "difference", measur-	The student now starts to tie her reasoning thus far together and provides a clear statement of the rationale of the study. Against the background of her literature study, she formulates two very good reasons why a study such as the one that she proposes is necessary: (1) There is a general lack

3. McGuire (1982: 19) refers to this position as "*methodological empathy*, which differs from sympathy in that it is not necessary to agree with a perspective in order to understand it."

ing the population of interest against some accepted norm and describing how it is different, exotic, or deviant. In carefully assessing the dimensions of effective parenting, I propose to identify both differences and similarities, as well as strengths and difficulties of these "families of choice". Horowitz (1995: 65) states: "Clinicians, educators, researchers, and policy makers have a responsibility to recognise the challenges faced by single parents and work for social change that will foster successful parenting for the sake of the children." I would like to apply this to the proposed study, by taking responsibility as a researcher to work for social change that will elucidate successful parenting by gay parents for the sake of their children.	of scholarship in this area; (2) there is also a need to study gay parenting from the perspective of the actors themselves and not to adopt an outsider view. This last point provides the student with a very logical bridge to the following section: a discussion on methodology.
Methodology	
According to Laird (1993: 284), most of the studies on lesbian and gay parenting are quantitative in nature, frequently using personality or self-assessment measures, exploring one or more characteristics of the couples or individuals of interest, and/or comparing this population to other populations. Furthermore, other sources such as clinical case reports, journalistic accounts, oral histories and indigenous accounts, culture and kinship studies, and qualitative parts of larger survey studies give us brief glimpses into the everyday lives of gay and lesbian families. Laird (1993: 320) argues that what the family research field needs at this stage are "detailed, wholistic accounts of the daily lives of gay and lesbian families, studies that might reveal the complexity, the richness, the diversity of their lives". Against the above background, it is proposed that the present study be conducted within the qualitative paradigm. One of the major distinguishing characteristics of qualitative research it the fact that the researcher attempts to understand people in terms of their own definition of their world. In terms of Becker's distinction, the focus is on an insider-perspective rather than on an outsider-perspective. By utilising a qualitative approach, an attempt will be made to understand the gay par-	The central argument of this section consists of a defense of a qualitative approach to gay parenting. The student's argument contains the following main theses: (1) Current studies on gay parenting are predominantly quantitative in nature (par. 1). (2) More qualitative approaches will provide us with insights into the everyday lives of gay and lesbian families and do this in a holistic fashion. (3) It is proposed that the study will follow a qualitative approach. The strength of the qualitative paradigm are that it (a) studies people in terms of their own definitions of the world (the insider perspective), (b) it focuses on the subjective experiences of individuals, and (c) it is sensitive to the contexts in

ents' experience, from the subjective perspective of the individuals involved, because the complexities, richness and diversity of their lives can only be captured by describing what really goes on in their everyday lives, incorporating the context in which they operate, as well as their frame of reference.	which people interact with each other.
Research design and methodology	
Unlike experiments and surveys, in which the elements of the research design – hypothesis formation, measurement, sampling – are specified prior to data collection, design elements in qualitative research usually are worked out during the course of the study. A qualitative approach has the potential to supplement and reorient our current understanding of family complexity. Against this background the research design of this study (ethnographic study on lesbian and gay parenting) will be presented in fairly broad terms at this point. Firstly, a *literature study* involving current literature on the subject of gay and lesbian parenting is required. Following this, *observation* "keeping on target, while hanging loose"[4] is necessary to familiarise oneself with the topic and to generate ideas and themes that can be explored later in the research process.	The specific design selected is an ethnographic study with an emphasis on participant observation. The remainder of the section is devoted to a rather detailed discussion of the methods to be followed in the study.
Selection of cases	
As pointed out by Bailey (1987: 95), the use of routine sampling procedure is impractical in the study of so-called "deviant subcultures" where many respondents may not be visible. In a homophobic society such as South Africa (Glanz, 1988) lesbians and gay men are a hidden population, and the parameters of the population cannot be known (Weinberg, 1970), and neither a random nor a representative sample can thus be drawn. Given this	I strongly support the student's use of the phrase "selection of cases" rather than "sampling" as a heading for this section. It is much more appropriate in ethnographic studies to refer to the *selection* of one's cases rather than using the term *sampling*. The latter term presupposes a

4. Rubin and Rubin (1995: 42–43) explain this as follows: "You cannot plan the entire design for a qualitative project in advance, because the design changes as you learn from the interviewing. But you can begin the work with a rough and tentative design, talk with potential interviewees, sort out initial ideas, refocus the research, and decide with whom else to talk and about what. At this point, you can write a research proposal describing the object of the research, explaining its importance, and presenting what you have already heard."

obstacle, it is proposed that an attempt will be made to obtain as broad and heterogeneous a sample as possible by accessing participants through various existing channels such as *COGS* (Cape Organisation for Gay Sports) and *OLGA* (The Organisation for Lesbian and Gay Action). The minimum requirement for an individual's inclusion in the sample will be the recognition that such a person is homosexual, and currently raising children.	more structured design (such as surveys and experiments) and probabilistic methods of selecting cases.
During the observation stage, key role-players and gatekeepers in the gay community, in other words, people known by the gay community who have an established social network which can be utilised, will be identified. The contact persons for gay organisations and sport activities can also be utilised to identify participants, as can the newsletters that are sent to their members. Another valuable source will be to access participants through advertisement in South Africa's gay newspaper, *Exit*, and magazines such as *Outright*. People willing to participate in the project will also be identified by informal contacts and friendship networks. It is envisaged that around 20 participants will be used for the sample.	In her discussion of the observation stage, the student shows that she is aware how difficult access to a natural setting, especially in sensitive research, might be. She indicates the strategies she will be using to gain access to gay families. This discussion again shows that she has given a great deal of thought to her proposed research.
Data collection techniques	
The use of the following data collection techniques may be anticipated at this stage: *1. Observation* A period of time will be spent with gay and lesbian parents who are raising children at the moment, to gain first hand experience of the phenomena in the field (e.g. spend a week/weekend with gay couple or single gay parent). Comprehensive field notes will be documented throughout the period and broad questions will be asked, phrasing initial questions in an open way to hear what the various conversational partners think before inadvertently narrowing down the options for questioning. *2. Interviews* This study will utilise *qualitative interviews* as described by Rubin and Rubin (1995: 31); their	A rather detailed discussion of the different data collection methods and techniques follow. It should be kept in mind that the proposed study forms part of a master's programme in Social Science Methods, which has a particular emphasis on methodological reflection. One would not normally require this amount of detail and discussion in a standard thesis. Once again the student shows that she has reflected on her methodology and choice of tech-

model of qualitative interviewing emphasises the relativism of culture, the active participation of the interviewer, and the importance of giving the interviewee voice. It is anticipated that use will be made of *individual cultural interviews*,[5] which focus on the norms, values, understandings, and taken-for-granted rules of behaviour of homosexual parents. In combination with the above, *individual topical interviews* which are more narrowly focused on a particular event or process, and are concerned with what happened, when and why, will be used to gain information from the conversational partners involved in the study about their parenting experiences. According to Rubin and Rubin (1995: 31), in practice these cultural and topical styles are often mixed in a single interview, the researcher may alternate between listening for nuanced cultural meanings and asking about events. "You can mix topical and cultural interviews because they share the underlying assumptions that guide all qualitative interviewing." All the interviews will be audio-taped if permission for this can be obtained. These recordings will be transcribed verbatim and the resulting texts analysed. In cases where permission for tape-recording is not granted, extensive notes will be taken. In combination with the above *individual qualitative interviews*, it is proposed that towards the end of the data collection stage, *focus group interviews* will be held. These interviews will be used in order to obtain opinion or attitude at another level, (e.g. group consensus or disagreement on relevant issues of parenting). Denzin (1989b) indicates that groups create their own structure and meaning and a group interview provides access to their level of meaning, in addition to clarifying arguments and revealing diversity in views and opin-	niques, and can substantiate her decisions with references to literature on research methods.

5. Rubin and Rubin (1995: 195) define it as follows: "*Cultural interviews* are about learning how people see, understand, and interpret their world. In cultural interviews, the researcher spends most of the time listening to what people say rather than posing detailed and focused questions. Most of the thinking about what to follow up on is done between rather than during the interviews. By contrast, *topical interviews* are focused on subjects that the interviewer has chosen, involve more active questioning and rapid exchanges, and are more concerned with matters of fact and less concerned with eliciting shades of meaning than cultural interviews are. Most of the follow-ups are done within rather than between the interviews."

ion. It can also serve to assist the respondent to re-evaluate a previous position or statement that is in need of "amplification, qualification, amendment or contradiction". In other words, the group interview is proposed as a source of validation, (e.g. interviewing together respondents who have previously been interviewed separately), as well as bringing me closer to the "truth" by the adding of embellishing interpretive data. Each group will consist of 8 to 10 parents. *3. The use of documentation* Documentation such as magazine articles, newspaper and media reports, and information available on the Internet will be collected and integrated with the data obtained, in an attempt to add any other nuances that might reside in these sources. The documentary sources will be compared with data already gathered, and then added as new information to the present study where they can be of use. The data from all the available sources that were utilised during the research process, will be integrated and collated, to conclude the data collection stage.	
Data analysis	
The data will be analysed using the approach of Rubin and Rubin (1995: 226–227), they describe it as follows: "Data analysis begins while the interviews is still underway. This preliminary analysis tells you how to redesign your questions to focus in on central themes as you continue interviewing. After the interviewing is complete, you begin a more detailed and fine-grained analysis of what your conversational partners told you. In this formal analysis, you discover additional themes and concepts and build toward an overall explanation. To begin the final data analysis, put into one category all the material from all your interviews that speaks to one theme or concept. Compare material within the categories to look for variations and nuances in meanings. Compare across the categories to discover connections between themes. The goal is to integrate the themes and concepts into a theory that offers an accurate, detailed, yet	As in the previous section, the student discusses her data analysis approach in some detail. In addition to discussing her analytical strategies, she also indicates that she will use specific software that aids in computerised qualitative data analysis.

subtle interpretation of your research arena. The analysis is complete when you feel that you can share with others what your interpretation means for policymaking, for theory, and for understanding the social and political world." The above process will be assisted by making use of available computer-aided software for the analysis of qualitative data, which will be used as a "tool" to aid in the management of textual data, for the storage and retrieval of information, as well as other functions that these programs (NUD*IST or ATLAS/ti) offer.	
Time-frame and resources	
Time-frame – because it is impossible to anticipate all the potential stumbling blocks, when doing qualitative research, one has to make time allowances for the unexpected that might intervene, for example: gaining access to the setting can be problematic, personal circumstances may intervene, etc. Time allocated for the different stages in the research process, will therefore be presented in fairly broad terms at this point: 1. Literature study (1 month) 2. Data collection • Observation (2 weeks) • Interviews (4 months), including transcription and preliminary analysis 3. Final analysis and interpretation (2 months) 4. Integrating results and writing the report (1 month)	The time-frame takes into account the fact that qualitative studies are usually less structured than, for example, surveys. This means that one should allow for changes to the scheduling. Although some of the time periods listed in the time-frame might seem too short (e.g. literature study), the student could argue (with some justification) that she has done a substantial study of the literature already. I would also be concerned about the 2 months allocated to analysis and interpretation, as well as the one month for writing the final thesis. A more realistic time-frame would probably allow double this time for these activities.
List of references	(Not included here, to save space.)

ADDITIONAL READING

The following texts contain useful discussions of the development of research proposals: Booth et al. (1995), Locke et al. (1998), Neumann (1991), Preece (1994) and Sharp & Howard (1996).

The following websites have interesting discussions of research proposals, as well as examples of proposals.

- The NRF website on research methods has a special section devoted to the writing of research proposals, including examples of proposals especially within the context of applying for NRF funding: http://www.nrf.ac.za/methods/guide.htm. A related site is the YENZA, which is jointly managed by the NRF and the Adamastor Trust. It has worthwhile information on research methodology. There is a dedicated section on research proposals at the following address: http://www.nrf.ac.za/yenza/research/ proposal.htm
- Bill Trochim's webpage has a section on problem formulation and concept mapping that relates to the construction of a research proposal: http://trochim.human.cornell.edu/kb/probform.htm
- The University of Mississippi has a nice graphical representation of the "flow of scientific research" with useful links at: http://www.olemiss.edu/depts/general_library/lip/SciResearch.html
- An article "Hints on preparing research proposals" can be found at: http://www.aas.org/grants/hints.html
- A proposal writing short course offered by *The Foundation Center* at: http://fdncenter.org/onlib/shortcourse/prop1.html
- A site that is worth visiting is that of the EPA (Environmental Protection Agency) in the United States. It has a page on "How to enhance a grant proposal" at the following address: http://www.epa.gov/seahome/grants/src/msieopen.htm

12

Understanding basic computer terminology

How does a computer work?
The microprocessor
RAM and ROM
Storage: hard disks and CD-ROMS
Input and output devices
What is the Internet?
The TCP/IP protocol
What is the Web?
What are search engines?
What are meta-searchers and web crawlers?

The computer has become an indispensable tool in research. We have discussed some of the basic functions performed by computers in Chapter 5. In this chapter we discuss some basic computer-related terminology that you might come across. It always helps to have some understanding of the environment in which you work!

How does a computer work?

Personal computers first appeared in the late 1970s. One of the first and most popular personal computers was the Apple II, introduced in 1977 by Apple Computer. During the late 1970s and early 1980s, new models and competing operating systems seemed to appear daily. Then, in 1981, IBM entered the market with its first personal computer, known as the *IBM PC*. The IBM PC quickly became the most popular personal computer. Other companies adjusted to IBM's dominance by building IBM clones, computers that were internally almost the same as the IBM PC, but cost less. Because IBM