A Manifesto for Social Research

The approach to social research taken in this book deviates in a number of ways from conventional wisdom and the views of social research expounded in many standard texts on the subject. Rather than leave the reader to discover these differences in the body of the text, I am setting them out here as assertions.

1 Social research is about answering research questions.

2 Three types of research questions can be asked: 'what', 'why' and 'how'.

3 All research questions can be reduced to these three types.

4 Social research can also address one or more of the following purposes: exploration, description, understanding, explanation, prediction, intervention (change), evaluation and impact assessment.

5 'Why' questions are concerned with understanding or explanation. 'How' questions are concerned with intervention. All other purposes involve the use of 'what' questions.

6 Hypotheses are possible answers to 'why' and some 'how' questions. They are normally expressed as statements of relationships between two concepts. Hypotheses direct the researcher to collect particular data.

7 'What' questions do not require hypotheses. Nothing is gained from hazarding an answer to a question that simply requires a description.

8 Research questions are answered by the use of four research strategies: Inductive, Deductive, Retroductive and Abductive (see Blaikie 2007).

9 The major characteristics of the research strategies are as follows: the Inductive strategy produces generalizations from data; the Deductive strategy tests theories by testing hypotheses derived from them; the Retroductive strategy proposes causal mechanisms or structures and tries to establish their existence; and the Abductive strategy generates social scientific accounts from everyday accounts.

10 When a research project includes a variety of research questions, more than one research strategy may be required to answer them.

11 Because research strategies entail different ontological and epistemological assumptions, they may only be combined in sequence.

12 Hypotheses are used mainly in the Deductive research strategy as part of the process of theory testing. While the testing of hypotheses commonly involves the use of quantitative methods, it need not do so. The Deductive strategy can also use qualitative methods, in which case hypothesis testing is more in terms of a discursive argument from evidence.

13 The Abductive research strategy may use hypotheses in the course of generating theory, but in a different way to the Deductive strategy. These hypotheses are possible answers to questions that emerge as the research proceeds, and are used to direct subsequent stages of the research.

14 The hypothetical models of possible causal structures or mechanisms that are developed in the Retroductive research strategy are not hypotheses. The researcher's task is to establish whether a postulated structure or mechanism exists and operates in the manner suggested.

15 Social science data normally start out in qualitative form, in words rather than numbers. They may continue in this form throughout a research project or be transformed into numbers, at the outset, or during the course of the analysis. Ultimately, research reports have to be presented in words. When numbers are used, they need to be interpreted in words.

16 The use of tests of significance is only appropriate when data have been generated from a probability sample. These tests establish whether the characteristics or relationships in a sample could be expected in the population from which it was drawn. Tests of significance are inappropriate when non-probability samples are used, and are irrelevant when data come from a population.

17 As methods of data collection and analysis can be used in the service of different ontological assumptions, there is no necessary connection between research strategies and methods.

18 Methods of data collection can be combined, in parallel or in sequence. However, it is only legitimate to combine methods in parallel when they are used with the same or similar ontological assumptions. That is, data generated in the service of different ontological assumptions cannot be combined, only compared. It *is* legitimate to combine methods in sequence, regardless of their ontological assumptions. In this case, it is necessary to be aware of the implications of switching between assumptions.

19 Case studies are neither research designs nor methods of data collection. They constitute a method of data selection, and, as such, require particular procedures for generalizing from the results produced.

20 The results of all social research are limited in time and space. Hence, making generalizations beyond a particular time and place is a matter of judgement. While quantitative data from a probability sample can be statistically generalized to the population from which the sample was drawn, this type of research is in the same position as any other when it comes to moving beyond that population.

I trust that you will find the following arguments in support of these assertions to be both stimulating and convincing.

1

Preparing Research Designs

Chapter Summary

- A *research design* is a private working document that is prepared by a researcher or a research team before a research project is undertaken. It incorporates all the decisions that need to be made and provides justifications for these decisions. This should ensure that the decisions are consistent and it exposes them to critical evaluation. These decisions include:
  - the selection of the research problem and the researcher's motives and goals for investigating it;
  - the research question(s) that will address the problem and the purposes associated with it/them;
  - the choice of research strategy (logic of enquiry) to investigate each research question and justifications for these choices;
  - elaboration of the ontological and epistemological assumptions on which the research will be founded;
  - an outline of the research paradigm or paradigms within which the research will be conducted;
  - an elaboration of relevant concepts and theory and how they relate to the research process;
  - if relevant, a statement of the hypothesis or hypotheses to be tested, or an elaboration of the mechanisms to be investigated;
  - a discussion of data sources, types and forms;
  - a discussion of methods for selecting data from these sources;
  - an outline of the methods of data collection, reduction and analysis to be used;
  - and a discussion of the problems that might be encountered and the limitations of the design in its ability to answer the research questions.
- In contrast, a *research proposal* is a public document that is used to obtain necessary approvals for the research to proceed, including from an appropriate ethics committee, or for research funding applications. It addresses different audiences from a research design. While it includes many of the components in the associated research design, some of these may be presented in a different form. In addition, it will include the following:

  - a statement of the aims and significance of the research (rather then researcher's motives and goals);
  - some background that will justify the need to address the research problem;
  - a budget and justifications for each item in it;
  - a timetable for each stage of the research process;
  - a statement of expected outcomes and benefits;
  - identification of ethical issues and how they will be handled;
  - and an indication of how the findings will be communicated to relevant audiences.

Introduction

The ultimate purpose in exploring the issues and processes covered in the following chapters is to facilitate the preparation of a detailed research design. In order to understand these processes, I shall begin by setting out some guidelines for the structure and content of a research design and compare this with the requirements for research proposals. While *research designs* and *research proposals* overlap considerably in their requirements, they are intended for different audiences. There is also likely to be a sequence to their development; the former informing the latter.

A *research design* is a technical document that is developed by one or more researchers and is used by them as a guide or plan for carrying out a research project. Decisions that need to be made at the beginning, or soon after some exploratory work has been completed, are stated, justified, related and evaluated. The aim is to:

- make these decisions explicit;
- spell out why they have been made;
- ensure that they are consistent with each other; and
- allow for critical evaluation.

In postgraduate[1] research, a research design is a working document that may be the outcome of courses in research methodology and methods, and the dialogue between student and supervisor/adviser. It should be the constant point of reference and guide throughout the research. If it is necessary to make changes as the research proceeds, or if it is necessary to allow some elements of the research design to evolve in the course of the research, this will happen in the context of the initial set of research design decisions. Amendments will need to achieve the same consistency between the research design elements.

Research proposals have different purposes and audiences. They can be used for:

- making public presentations and receiving feedback;
- obtaining official approval from appropriate university authorities for the project to proceed, including endorsement by a human ethics committee; or
- applying for research grants.

While research designs involve making and reporting a range of choices about *what* is to be studied and *how* it will be studied, research proposals require much more emphasis on *why* the research is to be conducted, including what it will contribute to knowledge and/or practical outcomes, and *why* it has been designed in a particular way. Where research funding is applied for, a proposal needs to state *what* funding is required for each aspect of the research and *why* it needs that level of funding.

Because research proposals have a number of purposes, they can be prepared in a number of versions. In addition, some information may be in a different form to that of research designs, and additional details may be required. A research proposal may be less technical than a research design, in that it may not include all the details of the decisions and justifications related to each design element. When a research proposal is intended for public presentation, it may include more details on it. Hence, it is likely to be a longer and a more discursive document than a research design. On the other hand, an application to a committee for approval of the project may be much briefer, and may emphasize the justification for the research and the more technical aspects of data sources, collection and analysis. An application for research funds may be similar to an approval version, but will usually require a detailed budget and justification for the various categories of expenditure.

Before proceeding to outline the requirements for research designs and, to a lesser extent, research proposals, I must point out that I am trying not to be prescriptive (although I certainly have been with my own students!). Rather, I offer two frameworks that will no doubt need to be adapted to local requirements and practices. In some situations, maybe only one document is required; in other situations, the distinctions between them may be drawn differently. My purpose is to identify the many elements that should be considered, and about which decisions may need to be made, in planning social research.

Two other important points need to be made at this stage. The first concerns the common view that social research consists of a set of linear stages. These stages commonly include the formulation of the problem, the statement of hypotheses, the development of measuring instruments (e.g. an attitude scale or a questionnaire), the selection of a sample, the collection of the data, the analysis of the data, and the preparation of the report (see e.g. Bailey 1994; Babbie 2004; Kumar 2005). I believe that such conceptions are not only simplistic but are also inappropriate for certain kinds of research.

In much the same way, the process of designing social research may also be represented as a linear sequence of decisions. While some of the diagrams used in this book could be interpreted in this way, I want to stress that, in practice, the preparation of a research design is likely to involve many iterations, and, like many types of research, is a cyclical rather than a linear process. Because the elements of a design must be intimately related, the process of making any decision will have an impact on other decisions. For example, early decisions may need to be reviewed and changed in the light of problems encountered in making later decisions, and decisions may need to be changed when the design is reviewed for consistency. In short, a complex process is required to make the various decisions consistent and compatible.

The second point is concerned with the view that all research design decisions need to be made before the research begins in earnest. In my view, every effort should be made to do this. The discipline of having to confront and make the decisions will be beneficial in the long run. To avoid doing this could mean losing control of the research, and, ultimately, failure to complete it satisfactorily. However, this ideal needs to be tempered with some practicalities. It is necessary to recognize that research designs differ in the extent to which it is possible to finalize all the design decisions before the major stages of a project commence. In some research projects, what is learnt at one stage of the research will help to determine what will be done at a later stage. Exploratory research projects, and those concerned with theory generation rather than testing, may have this character. Some research projects may require exploratory and developmental work in order to be able to make important research design decisions. In fact, to fail to do this may jeopardize the project. This exploratory work will usually occur at the beginning, but may have to be undertaken later, particularly if unanticipated problems are encountered. Therefore, while it is important to strive for the ideal of a fully worked out research design before serious research begins, the realities of a particular project must be taken into consideration.

It is inevitable that research projects will differ in the time needed to prepare the research design; some research topics are just more complex than others, or may be venturing into relatively uncharted territory. Hence, the time and effort required to produce a research design is usually much greater when a researcher starts a project from scratch, rather than by joining a research team or by picking up a project to which others have already made significant contributions. It seems to be a common feature of postgraduate research in the social sciences that students are expected to, or wish to, define and develop their own project. Consequently, the design stage of postgraduate social science research is more demanding and time-consuming than it appears to be in the natural and physical sciences. In the latter disciplines, students frequently become part of a research team, or make a contribution to their supervisor's research programme.

Research Designs

A research design is an integrated statement of and justification for the technical decisions involved in planning a research project. As already indicated, ideally, designing social research is the process of making all decisions related to the research project before they are carried out. This involves anticipating all aspects of the research, then planning for them to occur in an integrated manner. Designing a research project is the way in which control is achieved.

> To design is to plan; that is, design is the process of making decisions before the situation arises in which the decision has to be carried out. It is a process of deliberate anticipation directed toward bringing an expected situation under control. . . . If, before we conduct an inquiry, we anticipate each research problem and decide what to do before-hand, then we increase our chances for controlling the research procedure. (Ackoff 1953: 5)

This process is analogous to the activities of an architect in designing a building: it involves recording, relating and then evaluating the decisions that need to be made. Careful attention to detail, and a concern with the overall workability of the design, is required. Designing social research involves the same processes. In particular, it is necessary to make sure that individual design decisions are consistent and fit together. These decisions then need to be evaluated critically, and, to do this, the design decisions need to be made explicit. This book is about how to achieve this.

The components of a research design can be organized in many ways. The following framework is presented as an example of what the structure of a research design might look like. (Examples of four different research designs are presented in chapter 8.)

Title

The title or topic of a research project needs to be both concise and informative. It should capture the essence of what the project will be about and where and with whom it will be conducted. It is sometimes useful to divide the statement of the topic into two parts: the first part can refer to the issue under investigation; and the second part can locate the study. (See chapter 8 and the Appendix for examples of the wording of research topics.)

While it is useful to have a clear statement of the topic at the beginning of the research design process, this is not always possible. Not only is the nature of the research likely to be clarified during the course of preparing the research design, but also the best title may not emerge until after the research is completed. Therefore, it is unwise to waste time at the beginning trying to get the wording perfect. As we shall see, it is better to concentrate on stating the research problem clearly, and preparing the research questions and other elements of the design, and then return to the title later.

Research problem

A research problem is an intellectual puzzle that the researcher wants to investigate. The statement of the problem will normally consist of a few concise paragraphs. It may include reference to some literature, such as reports of previous research in the field and related areas, both academic and non-academic, theoretical discussions, official statistics, and, perhaps, newspaper articles. It might be informed by the findings of prior exploratory research.

A research design may set out with more than one problem or a related set of puzzles. As the work on the design proceeds, a choice of the one to be investigated will need to be made. To recapitulate, a research proposal is the product of a developmental process that is likely to involve a number of iterations. While it is important to try to get ideas on the topic clear as soon as possible, as with the title, it is possible that a precise statement of the problem cannot be formulated at the beginning of the design process. It is more likely to evolve as the design develops and may only become clear towards the end of the process. In addition, it is often necessary to make changes to the statement of the problem as the research proceeds (see chapter 2, 'Getting Started').

Motives and goals

The research design is the place where a researcher's personal motives and goals for undertaking the research can be stated. Academic researchers, including postgraduate students, will have personal reasons for choosing a particular topic. Personal reasons might include satisfying curiosity, solving a personal problem, achieving a credential or pursuing career goals. In addition, a researcher may have other more public or altruistic reasons, such as making a contribution to knowledge in a discipline, solving some social problem, or contributing to the welfare of some organization or a sector of society. Making these motives and goals explicit is a useful exercise and is often quite revealing.

Research questions and purposes

Research questions constitute the most important element of any research design. It is to answering them that the research activities are directed. Decisions about all other aspects of the research design are contingent on their contribution to this. In many ways, *the formulation of research questions is the real starting-point in the preparation of a research design.*

Research questions are essential and need to be stated clearly and concisely. They can be reduced to three main types: 'what', 'why' and 'how' questions. It is important to distinguish between these types of questions as they are related to different research purposes. In general, 'what' questions seek descriptions, 'why' questions seek explanations or understanding, and 'how' questions are concerned with interventions to bring about change.

In my view, it is not necessary to state aims or objectives in a research design. Research questions provide a better way of expressing what a research project is trying to achieve. However, aims and objectives have been included in the guidelines for research *proposals* as stating them is a useful way of communicating to various audiences what the research is about. In a research *design*, consideration might be given to listing research *purposes* instead. These are defined in a more technical way and specify what the research is intended to achieve: it may be to 'explore', 'describe', 'explain', 'understand', 'predict', 'change', 'evaluate' or 'assess the social impact of' some aspect(s) of the phenomenon under investigation. Such purposes help to define the scope of a study, and, together with the research questions, provide a clear direction.

Review of the literature

A research design should include a brief literature review. Its major function is to link the proposed research to the current state of relevant knowledge. Many areas of literature may need to be examined, for example, to provide the background and justification for the research, and to select theory, research strategies and methods. However, this section of the research design should *indicate clearly what is known from previous research about each of the research questions, or what could be anticipated in the light of existing social theory.* In the case of research for a thesis, a longer version will need to be produced and will

probably become a chapter on this. Work on this will usually continue through-out the duration of the research. However, only a summary is normally included here.

The research questions can provide the framework for both this brief literature review and the chapter in the thesis; they determine the boundaries of what is relevant. Literature that is unrelated to a research question need not be included. Using this device can save endless hours of directionless activity in libraries.

Of course, consulting previous research and relevant theory may have inspired the project in the first place, or it may need to be consulted to define the research problem and develop the research questions. In addition, the language used to define and discuss the problem, and the key concepts that are used, are likely to be drawn from some theoretical perspective, the work of a particular theorist or a research programme.

Another purpose of the literature review is to find possible answers to research questions, particularly 'why' questions. In other words, we may need to search for possible hypotheses. If hypotheses are considered to be necessary, ideally they should be derived from a theory, either an existing one that will be included in the literature review (and might later form the basis of a separate theory chapter), or one that the researcher has constructed for the research at hand. The latter will normally modify an existing theory, or integrate ideas from a number of theories. There is always the remote possibility that the review of the literature will reveal that answers to all or some of the research questions are already available and that the research project is, therefore, unnecessary. Another topic will then have to be selected. For practical guides on preparing literature reviews see Hart (1998) and Fink (2005), as well as books on writing theses/dissertations, for example, Murray (2002), Kamler and Thomson (2006) and Hartley (2008) (see chapter 3, this volume, 'Research questions and the literature review', p.68).

Research strategies

Research strategies provide a logic, or a set of procedures, for answering research questions, particularly 'what' and 'why' questions. As the social sciences have developed, a number of ways of doing this have emerged.

In my view, the choice of research strategy, or a combination of them, con-stitutes *the second most important research design decision*. The reason for this is that I believe knowledge can only be advanced in the social sciences by using one or a combination of four research strategies, the Inductive, Deductive, Retroductive and Abductive (see Blaikie 2007).

In brief, the four research strategies provide distinctly different ways of answer-ing research questions. They present alternative starting- and concluding-points, and different sets of steps between these points. The Inductive research strategy starts with the collection of data and then proceeds to derive generalizations using some kind of inductive logic. The aim is to describe social characteristics and the nature of regularities, or networks of regularities, in social life. This strategy is essential for answering 'what' questions but rather limited in its capacity to answer 'why' questions.

The Deductive research strategy cannot be used to answer 'what' questions but is used exclusively for answering 'why' questions. Hence, it adopts a very different starting-point to the Inductive strategy and is concerned with explaining some social regularity that has been discovered and which is not understood. The researcher has to find or formulate a possible explanation, a theoretical argument for the existence of the behaviour or the social phenomenon under consideration. The task is to test that theory, by deducing one or more hypotheses from it, and then to collect appropriate data. Should the data match the theory, some support will be provided for its continuing use, particularly if further tests produce similar results. However, if the data do not match the theory, the theory must be either modified or rejected. Further testing of other candidate theories can then be undertaken. Therefore, according to this research strategy, knowledge of the social world is advanced by means of a trial and error process.

The Retroductive research strategy also starts with an observed regularity but seeks a different type of explanation. In this strategy, explanation is achieved by locating the real underlying structure or mechanism(s) that is/are responsible for producing the observed regularity, and identifying the context in which this happens. As structures and mechanisms may not be directly observable, it may be necessary to search for evidence of the consequences of their existence; should they exist, certain events can be expected to occur. Retroduction uses creative imagination and analogy to work back from data to an explanation.

The Abductive research strategy has a very different logic to the other three. The starting-point is the social world of the social actors being investigated: their construction of reality, their way of conceptualizing and giving meaning to their social world, their tacit knowledge. This can only be discovered from the accounts social actors provide. Their reality, the way they have constructed and interpreted their activities together, is embedded in their language. Hence, the researcher has to enter their world in order to discover the motives and meanings that accompany social activities. The task is then to redescribe these motives and meanings, and the situations in which they occur, in the technical language of social scientific discourse. Individual motives and actions have to be abstracted into typical motives for typical actions in typical situations. These social scientific typifications provide an understanding of the activities, and may then become ingredients in more systematic explanatory accounts.

A research design should include a brief description of the research strategy or strategies that have been selected, and justification for the selection in terms of its/their appropriateness for the task of answering the research questions. It is desir-able to make explicit the ontological and epistemological assumptions entailed in the choice of research strategy or strategies, as these have a bearing on how the use of the methods of data collection and analysis will be interpreted (see chapters 4 and 7).

Research paradigms

Explicitly or implicitly, social researchers usually work within the context of a particular set of theoretical ideas and ontological and epistemological assump-tions. Over the past one hundred years or more a number of traditions of ideas

and assumptions have emerged and developed. In the first edition of this book, and *Approaches to Social Enquiry* (1993a), I referred to these traditions as Approaches. They are now referred to as Research Paradigms.

It is possible to conduct social research without making explicit reference to any of the research paradigms I have identified. Whereas choices made between research strategies and methods do not necessarily entail a commitment to a particular research paradigm, the reverse may be the case. In chapter 4, eleven research paradigms are identified, but it is necessary to go to Blaikie (2007) for detailed reviews and critiques.

Concepts, theories, hypotheses and models

Somewhere in a research design a discussion of concepts and theory is likely to be required. This may occur in a separate section (e.g. 'Conceptual Framework' or 'Theoretical Model'), or may be integrated in other sections (e.g. 'Literature Review'). Just what will be required, and how it will be handled, will depend on a number of things, including, particularly, the research strategy or strategies that are to be used.

All social research uses technical concepts; they form the special language of every discipline. Technical concepts are required at the outset of the research design process to state the topic, the research problem and research questions. However, after this, the way they enter into the research process differs, depending on the research strategy that is adopted. A research design may set out with some key concepts, perhaps even with a conceptual framework, and these concepts will become variables through the specification of procedures for their measurement. In other research, only sensitizing concepts will be used at the outset. Technical concepts will either emerge out of an intense examination of lay concepts, or will be created or borrowed to organize qualitative data.

The manner in which theory enters into research is a matter of great controversy and confusion, particularly for novice researchers. A common criticism of some research is that it is atheoretical, that it neither uses nor contributes to the development of social theory. On the other hand, some researchers may wish to argue that descriptive research does not need theory; that measuring variables and correlating them is a purely technical matter. However, I believe that it is impossible to avoid using theory in research. Even descriptive studies, which may be concerned with just a few concepts, cannot escape as all concepts carry theoretical baggage with them.

Social theory enters into social research in many ways. It may be a source of a theoretical language or specific concepts, and of general theoretical ideas or specific hypotheses. The four research strategies entail different views of what constitutes theory and its role in research. Focusing on these four views will help to reduce some of the complexity. The research strategies that are concerned with answering 'why' research questions also differ in terms of whether they set out with a theory to be tested, or whether their aim is to produce a new theory, i.e. whether they are concerned with theory testing or theory generation. Research that is concerned with theory generation may require sensitizing concepts but no hypotheses. On the other hand, research that is concerned with theory testing will require the researcher to borrow or construct a theory before the research begins. In this case, it is desirable to at least do some work on this theory at the research design stage; it can then be stated, its origins and relevance explained, and, if appropriate, hypotheses derived from it.

Hypotheses are tentative answers to certain kinds of research questions that use certain research strategies, particularly the Deductive strategy, to answer them. They are frequently stated in the form of a particular kind of relationship between two concepts. Testing them may involve seeing if the associated variables have the same relationship as that predicted in the hypothesis. However, not all research questions, or all research projects, require hypotheses. They are particularly relevant to the answering of 'why' questions, and perhaps to some 'how' questions, but they have no place in answering 'what' questions. In addition, the stating of hypotheses at the outset is only relevant when research is about theory testing, and they can play quite a different role when the concern is with theory development. The latter may use many tentative hypotheses in the trial and error process of developing theoretical ideas to account for the data at hand, but these cannot be formulated at the research design stage.

Unless a researcher is testing an existing hypothesis, the formulation of good hypotheses requires a great deal of theoretical work. The testing of personal hunches as hypotheses constitutes a much lower level of research activity and should, therefore, be avoided in good-quality research. Such hypotheses usually make very little contribution to the advancement of knowledge because they are not well connected to the current state of knowledge. But, let me repeat, hypotheses are more appropriate to some research strategies than others.

As with theory, the role of models in social research is a complex issue on which there is a diversity of ideas and practices. 'Model' can refer to a conceptual framework, a hypothesized set of relationships between concepts, a hypothetical explanatory mechanism, or a method for organizing research results. 'Theory' and 'model' are often used interchangeably, or even in combination, for example, in the phrase 'theoretical model'. Add the notion of 'modelling', and we have another range of activities and products to confuse the new researcher.

Some research strategies, particularly the Deductive and Retroductive, may require models to be developed at the outset. These may be conceptual models, theoretical models, or hypothetical models of causal mechanisms. Other research strategies, particularly the Inductive, can introduce models at the data analysis stage where they represent the patterns in the data in a simplified form.

This section of the research design is likely to be the most difficult to complete. A broad understanding of the role of concepts, theories, hypotheses and models is required, and, possibly, a detailed knowledge of a range of theories (see chapter 5).

Data, types, forms and sources

It is necessary to give consideration to the context or setting from which data will be collected, and to recognize the differences between them in terms of the nature of the data that they can produce. Data can be collected from four main types of sources, as well as from or about individuals, small groups and many kinds of larger groups. First, people can be studied in the context in which the activities of interest to the researcher occur, where people are going about their everyday lives, in their natural social environment. For example, family interaction may be

studied in a home, or religious rituals in a church, mosque or temple. The size of the social unit studied in this way can range from individuals and small groups, through organizations and communities, to multi-national bodies. These are referred to as *natural* social settings.

Second, a great deal of research studies people in *semi-natural* settings, when they are not actually engaged in the activities of interest. For example, people may be interviewed individually *about* the activities in which they engage in their natural settings. Sometimes data are not particularly about a social setting at all, but may deal with the attitudes and values of individuals. The third context is *artificial* settings. The classical form is the experiment; focus groups, games and simulation research are similar.

Fourth, the wide range of data that do not come from people directly are usually referred to as *social artefacts*. They are the traces or products that individuals and groups leave behind them, directly or indirectly, as a result of activities in their natural settings. People in groups produce statistics and documents and keep records for a variety of purposes, and these may be of use to the researcher. They may come out of natural settings, or be about activities in these settings.

While a research project may draw on data from only one of these sources, the use of a combination of them is common. The choice of data source will normally be incidental to other research design decisions. It is included here to highlight the need to be aware of the consequences of this decision in terms of the number of steps that the researcher can be removed from where the relevant social activity occurs.

At a more concrete level, decisions about data sources are contingent on the researcher's ability to access them. It is vital at the design stage to obtain the approvals that are necessary from the relevant gatekeepers. This may involve getting written permission from some authority to enter a natural setting (e.g. getting written permission from some authority to enter a natural setting (e.g. school classrooms), to conduct interviews in a semi-natural setting (e.g. with members of a work organization) or to get access to some records (e.g. case files on welfare recipients). Of course, some forms of permission have to wait until the time of data collection (e.g. individual interviews with householders).

Before the decision is made about what methods to use to collect and analyse the data to be used to answer the research questions, it is useful to give consideration to the type of data needed and the form in which the data are required. This involves a number of related decisions, although these will not necessarily be made in the order in which they are discussed here.

Three main types of data can be used in social research: *primary*, *secondary* and *tertiary*. Primary data are collected by the researcher, secondary data have been collected by someone else and are used in their raw form, and tertiary data are secondary data that have also been analysed by someone else. Hence, researchers may generate their own data directly from the people being studied. Alternatively, it may be possible to use data from official government statistics, privately compiled statistics, or a previous research project. Sometimes these data may be available in raw form, for example as a data matrix or as interview transcripts, or they may have already been analysed and only be available in tabular or summary form.

Depending on the nature of the research topic and the research questions, a

researcher may have little or no choice about the type of data that can be used. However, the critical issue is the distance of the researcher from the source of data. Each type of data implies a different degree of control by a researcher. The further the researcher is removed from the collection process, the more difficult it is to judge the quality of the data and to ensure that they are appropriate for the project. These matters need to be made explicit in the research design, and the problems associated with the particular decisions, and methods for dealing with them, discussed.

Consideration should also be given to the form or forms in which the data will be collected and analysed. The common distinction used for this is between *quantitative* and *qualitative* data, between data in numbers or in words (and sometimes in images). However, this is not a simple distinction. Data may remain in one of these forms throughout the research process, or they may be transformed from one to the other at later stages. Data may start out as words, be manipulated soon after into numbers, may be analysed numerically, be reported in numbers, and then be interpreted in words. Alternatively, data may start out as words, and then be recorded, analysed and reported as text. Research projects can use data in both forms and they can be combined in a variety of ways. In the case of quantitative data, the levels of measurement, nominal, ordinal, interval or ratio, should be specified for each of the variables to be used as these levels have a bearing on the kinds of analysis that are appropriate.

The reason why it is desirable to give consideration to this issue at the research design stage is to ensure that the methods for collecting and analysing data are selected appropriately, and that the technology, mainly computer hardware and software, is available (see chapter 6, 'Types of Data', 'Forms of Data' and 'Sources of Data').

Selection of data sources

A critical stage in any research is the process of selecting the people, events or items from which or about which data will be collected. This involves the definition of a population of such people, events or items. Some research projects will collect data from a whole population; others will select only certain members or items for study.

Textbooks on social research methods usually discuss data selection in the form of a review of methods of sampling. While data selection is a much broader topic than sampling, one or more sampling methods are frequently used in social research. This is true whether the study uses quantitative or qualitative methods of data collection.

If a decision is made to use a sample rather than a population, it is important to be aware of whether and how the selection process will impact on your ability to generalize the results. Will the selection process use random (probability) or non-random (non-probability) methods? Data from non-probability samples cannot be generalized statistically back to any population. A number of selection methods are available and these can also be used singly or in combination (see chapter 6, 'Populations and Samples').

Whether samples are intended to represent a population, and how this can be

achieved, is a central design issue. However, a collection of people can be studied as the result of a selection process that is concerned with theory generation rather than representativeness.

Regardless of whether probability or non-probability sampling methods are to be used, the method should be elaborated in detail and the choice of method(s) justified. In addition, the source and size of the population or sample needs to be determined and justified. If some other method of selection is to be used, such as case studies, the procedures should also be stated and justified (see chapter 6, 'Selection of Data').

Data collection and timing

Collection and analysis of data are frequently regarded as the core activities in social research. Novice researchers have a tendency to want to launch into data collection as soon as a research topic has been selected, for example, to get on with constructing a questionnaire or to start interviewing. If this book does nothing else, I hope it will temper this practice and show that decisions about data collection and analysis must await many other considerations.

A wide array of quantitative and qualitative methods is available in the social sciences, and there are countless books available on how to develop and use them. These methods include:

- *observation*, ranging from highly structured to unstructured, and from a very detached position to a very involved position;
- *interviewing*, ranging from highly structured to unstructured or in-depth methods, and including both individual and group interviews;
- *questionnaire*, including pen and paper, and electronic forms; and
- *content analysis* of secondary sources of many kinds.

As there are countless texts available that deal with data collection methods, they are not dealt with in this book.

The research design needs to specify clearly the method or methods to be used to collect the data. It is extremely important in quantitative research to decide, before the research begins, how the data are to be collected and to do all that is necessary to prepare for this. This may seem obvious, but it is not always taken seriously. Just muddling through will not do. The same is true for many qualitative studies, although there will be exceptions where some of these decisions may have to be made as the research proceeds. However, as I have argued earlier, this should not be used as an excuse for avoiding careful planning.

If quantitative data are to be collected using an existing measuring instrument, its source should be stated and a copy should be attached. If a measuring instrument needs to be developed, such as an attitude scale or a questionnaire, the process by which this will occur, including any pre-testing and piloting of the instrument, needs to be outlined and justified. In the case of qualitative data, it is important to indicate what method or methods will be used to generate and record them, and to state why these are considered to be the most appropriate.

The time(s) at which data are collected is a critical element in a research design.

Data can be collected at one point in time or at a series of points over time. One of these points can be the present time, while others may have occurred in the past or be planned for some time in the future. Decisions about timing will determine whether the study is cross-sectional or longitudinal, retrospective or prospective, or historical. Experimental research also involves the collection of data at different times. Hence, the role that the timing of data collection will play in the project needs to be stated.

Data reduction and analysis

The final core element of a research design is the specification and justification of the methods to be used to reduce and analyse the data. Methods of data reduction transform raw data into a form in which they can be analysed. This may involve transforming qualitative data into quantitative data by some from of numerical coding, or re-coding existing numerical data into different categories. An example of the latter would be reducing the number of categories to be used, and/or reordering the categories. Coding may also be used to organize and simplify data that have been collected in the quantitative form, for example, by the creation of indexes, scales, factors or clusters. Alternatively, when qualitative data are collected, the processes of reduction and analysis may be integrated with data collection into a continuous and evolving process of theory construction. This will involve establishing categories and doing various kinds of coding.

There is another important stage between data reduction and analysis. Data have to be organized in such a way that they can be transferred into an appropriate database for manipulation by computer. The relevant design decisions here are who will do this and how the cost will be covered. Significant time and expense can be involved in this process. With quantitative data, it is usually a case of keying in responses to a questionnaire or structured interview. With some kinds of qualitative data, it may be necessary to transcribe cassette recordings of in-depth interviews and then format these for entry into a database. It has been estimated that an experienced transcriber, with clear recordings, will take at least three hours to do one hour of recorded interview.

Finally, we come to the choice of methods for analysing the data. If all the other design decisions have been made carefully and consistently, the decisions about the method of analysis should be straightforward. A variety of methods may need to be used, depending on the type of research questions, whether or not hypotheses being tested, and the type of data.

The quantitative/qualitative distinction is most evident when techniques of data analysis are discussed. Quantitative methods can be used for producing descriptions, for establishing associations, and, possibly, causal relationships between variables. They can also be used for making inferences from the results produced from a probability sample to the population from which the sample was drawn. For each of these aspects of quantitative analysis, an array of statistical techniques is available. Just which one is appropriate will depend on the level of measurement used to collect the data, and perhaps the size of the sample. Qualitative methods of analysis can also be used for description at various levels of abstraction (in words rather than numbers), and, more particularly, for theory generation. A

number of techniques are now available for the latter analysis. When data are in the form of text, the methods generally deal with creating categories, indexing or coding documents, sorting data to locate patterns, describing the patterns, generating theories from the data, and validating these theories. For both qualitative and quantitative analysis, appropriate software packages, as well as suitable hardware, need to be identified and their availability confirmed.

I have observed a tendency in many research designs to discuss methods of data collection but to ignore both data reduction and data analysis techniques. At best, a computer program might be mentioned, but just how the data are to be prepared for entry into a database, and what manipulations will be undertaken to relate the data to the research questions, are often not mentioned.

Each method of data reduction and analysis selected should be identified, briefly described and its use justified. The important point is that the decision on methods of analysis needs to be made in conjunction with many other research design decisions, and before the research commences. It can be fatal to wait until after the data have been collected. Not only do the methods of analysis need to be appropriate for the research questions, and also hypotheses if they are being used, but they also need to match the type of data. Hence, a critical issue in research design is to achieve consistency between the type and form of the data, the source of the data, its selection, and the methods of collection, reduction and analysis. The possible combination of choices here can be overwhelming and should be given very careful attention. Finally, the choice of all these methods must make it possible to answer the research questions (see chapter 7).

Problems and limitations

An important step in the preparation of a research design is to stand back and evaluate it. First, it is useful to state what problems are likely to be encountered and how they will be handled. These will include both practical and theoretical problems, such as getting the co-operation of respondents, or knowing what further case studies will be required after the first one. The problems listed here should only be those that cannot be resolved at the design stage. However, getting permission to use a list of names and addresses, or getting access to the research site, are matters that cannot be left to chance after the research commences.

Secondly, it is a good idea for the researcher to make an explicit assessment of the particular strengths and weaknesses of the research design. Research projects usually have their secure and predictable aspects as well as their less secure and uncertain parts. In addition, those parts of the design that require further development as the research proceeds can be identified. If this assessment is done conscientiously, the researcher should be in a position to anticipate possible problems before they arise, rather than inadvertently ending up down a blind alley or falling in a great hole.

Some researchers seem to be reluctant to expose the weakness of their research design for fear that their work will be judged as being inadequate. The reverse is in fact the case. Lack of awareness of both the strengths and weaknesses of a research design can be interpreted as indicating a shallow understanding of research.

Research Proposals

While *research designs* are usually seen by only a few people close to the researcher, *research proposals* are public documents and may be presented in various contexts. Their purpose is to ensure that the research meets the requirements of the discipline and/or the institution in which it will be undertaken. It should communicate clearly and concisely what is to be studied, why it is being studied, and how the research will be conducted. This will normally require less detail than goes into a research design. However, these details are likely to receive close scrutiny. In the case of university research, it is also an opportunity for students to receive some feedback and advice from a wider audience than their supervisor(s)/adviser(s), for example, by a seminar presentation. While this feedback is not always sympathetic, and may produce confusing and conflicting recommendations, it is nevertheless very useful for a project to be subjected to such an examination before it proceeds.

Research funding proposals have different purposes. They are designed to persuade a funding body that the project is worthy of financial support. Committees that are set up for such purposes will look closely at the aims and justification of the research, at whether the design is sensible and feasible, at the budget details and the justification for each item, and at whether the project can be completed with the available resources and in the time allocated. In short, this is a rather different audience to the one involved in obtaining academic or research ethics approval. Hence more than one version of a research proposal may be required.

As the requirements for these and other versions of a research proposal vary considerably in terms of their purpose and local requirements, no attempt will be made here to provide models for each type. Rather, I shall simply identify the areas that normally need to be covered in most types of research proposals. Some sections are common to both research designs and research proposals, but may be given a different emphasis, while others are specific to only one version.

Where sections are shared by both designs and proposals, only the headings are shown. All or most of the following sections are typical of research proposals.

Title

Research problem

Aims and significance

Research proposals usually include a statement on what contribution the research is intended to make, and this will include one or more of the following:

- the development of a particular area of theory or methodology;
- the collection or accumulation of a new body of information or data;
- the development of research methods or techniques;
- knowledge about or understanding of an issue or problem; and/or
- policy and practice in a particular area.[2]

These should be stated in a manner that will make it possible to assess whether, or to what extent, they have been achieved at the end of the research.

The statement of aims is normally accompanied by some justification for pursuing them, i.e. why the topic is worth studying. All social research requires the use of resources, even if it is just the researcher's own time. In the context of postgraduate research, students may need to pay fees, and the university will devote considerable resources to supporting such students. As research resources are scarce, their allocation needs to be husbanded. Funding bodies will certainly want to know what contributions a study is likely to make. This is not to suggest that all research must be able to make immediate contributions to areas of priority established by public and/or private interests. However, good reasons for doing it should be articulated, even if it is just to satisfy the researcher's curiosity.

Background

Some versions of research proposals will normally require a discussion of how the research problem has arisen, who views it as a problem, evidence for its existence, the context in which it occurs and who are the stakeholders. In more theoretical research, it may be necessary to specify where the gap in knowledge exists and why it needs to be filled. In short, a concise review of some of the literature will connect the proposed project with the existing state of knowledge. In my experience, there is a tendency among postgraduate students to devote most of their proposal to a review of the literature. This may include erudite discussions of the ideas of a favourite or fashionable theorist. However, the connection between such discussions and the research project are often not very clear. Therefore, this version of the literature review, unlike that in the thesis itself, should be very concise, although its length will no doubt depend on the type of research being planned and local requirements.

Research plan and methods

The main aim of this section is to communicate to experts in the field, as well as lay audiences, what is to be studied and how the research will be conducted. This needs to include:

- a statement of the research questions;
- reference to theory and hypotheses (if appropriate); and
- an elaboration of the source of data;
- how they will be selected;
- how they will be collected; and
- how they will be analysed.

Whether or not reference is made to the choice of research strategies and paradigms will depend on who the audiences are and a judgement as to whether they will, or will need to, understand the nature and significance of logics of enquiry in social research.

The research design is invaluable for the preparation of this section of the

proposal. If research design decisions have been made carefully, then summarizing them for the research proposal should be straightforward.

In some types of research it may be necessary to discuss how research instruments will be developed. For example, if an attitude scale is required, and if no suitable scale is available, an explanation should be given as to how existing scales might be adapted and supplemented, or a new one constructed, and how it will be pre-tested and/or post-tested for unidimensionality or multi-dimensionality. Similarly, proposed pilot studies should be outlined and their purposes clearly stated.

Budget

Regardless of whether the project is receiving support from a funding agency, a budget is normally required to indicate what funds are needed and how they will be spent. Even in postgraduate research it is useful to anticipate what the costs are expected to be and how they will be covered. In the case where an application for a research grant is to be made, a detailed budget is normally required. The following headings are standard:

- *personnel* (e.g. research assistance, interviewers, coders, data analysts, interview transcribers);
- *equipment* (e.g. major items such as computing, audio recording and transcribing equipment);
- *maintenance* (day-to-day running expenses such as stationery, telephone, photocopying, data storage discs, audio cassettes, interlibrary loans and purchase of reports);
- *travel and subsistence* (to research sites, for interviewing, or to libraries); and
- *publication and presentation expenses* (preparation of the report, printing, graphics, conference attendance, etc.).

Justification of the budget

Applications for research grants normally require justification for the need for and the amount of each item in the budget. Some research funders require the budget items to be prioritized, thus forcing the researcher to be very clear about their relative importance for the successful completion of the project. Where equipment (e.g. computers, software and cassette recorders) and other resources (e.g. personnel for data entry) are already available, and can be used on the project, these should be noted. Bodies that fund academic research usually expect that some costs (e.g. office space and furniture, and some basic equipment) will be covered by the university or research centre in which the researcher is located.

Budget items need to match the details of the research design. For example, if 200 interviews are to be conducted in dispersed locations, then realistic costing of these is necessary, in terms of equipment and consumables, interviewers' time for the interviews and travel to the sites, as well as the cost of travelling. It is here that the flaws in the research design and planning can become evident and will usually be spotted.

Timetable

In order to ensure that a research project is manageable and doable, it is useful to plan the duration of each of the components and stages within the time-frame allocated to it. The major components commonly include the following:

- preparation of the research design;
- review of the literature;
- selection of data sources (including sampling);
- development of the research instruments;
- collection of the data;
- analysis of the data; and
- writing the thesis/report.

Depending on the nature of the research, these components may need to be modified. In the case of research grants, the literature review and research design stages are assumed to have been completed before the application is prepared. However, they may apply in those universities that require a detailed research proposal to be prepared before a candidate is accepted into the programme. Where the development of the research design follows acceptance for candidature, it is desirable to include all stages, even if retrospectively, as the clock will have been running since the time of acceptance.

These components can overlap in time (e.g. the research design and literature review, or data collection and analysis), and some may occur at more than one time (e.g. the literature review) or extend over much of the life of the project (e.g. writing drafts). While it is difficult to be precise about how long each component will take, a realistic estimate should be made. This will help to reveal whether the project as planned can be completed within the time limits, and whether the workload is manageable in each time period. It is useful to do this diagrammatically in terms of a time line for each component.

One component that is usually underestimated is the writing. A good thesis needs many drafts (at least three in my opinion). If insufficient time is allowed for redrafting at the end, a poor product is likely to be the result. Writing can easily take between a third and a half of the total time, and will certainly take at least a quarter.

Some research funding bodies require the specification of definite 'milestones' so that progress can be checked. In these cases, the anticipated completion date for the major research stages (e.g. data collection) would need to be stated. If a project runs over an extended period, for example, two or three years, progress reports may be required at regular intervals. The work actually completed by a particular date can then be compared with the anticipated date in the proposal. Discrepancies may need to be satisfactorily accounted for if funding is to continue. I believe the same practice is desirable in postgraduate research programmes.

Expected outcomes or benefits

It has become a common practice, particularly in publicly funded research, for the anticipated benefits to be stated.[3] Traditionally, academic research has been

about the pursuit of knowledge, which means that in some types of research the real benefits have to be left to posterity to determine. However, in this age of economic rationalism, even academic research may be expected to make some reasonably direct and useful contribution to some field of high priority in the public or private sectors. In the case of applied and policy research, someone other than the researcher may determine the expected outcome. If research funding bodies have their agenda and priorities, an application would need to address these.

Ethical issues

Most social research involves intervention in some aspects of individual and social life. There is always a risk that even asking someone quite innocent questions could be disturbing to that person. It has therefore become normal practice for the ethical implications of a social research project to be made explicit, together with the procedures to be used to deal with them. For research conducted within universities and independent research organizations, it may be mandatory to seek the approval of a relevant human ethics committee. Professional associations in the social sciences, both national and international, now usually have a code of ethics. Members of such associations are expected to abide by the association's code. In some countries, national research bodies also have codes of ethics. For example, the Economic and Social Research Council in the UK provides clear ethical guidelines to applicants for research funds (www. esrc.ac.uk/ESRCInfoCentre/Images/ESRC_Re_Ethics_Frame_tcm6-11291.pdf). Most textbooks on social research methods now have a chapter on research ethics.

The following points are usually included in codes of ethics.

- *Voluntary participation.* Research participants cannot be required to be involved, and, if they agree to, they must know that they have the right to withdraw at any time.
- *Obtaining informed consent of research participants.* This involves informing participants of the nature and purpose of the research, the methods that will be used, what will be required of them, and how the results will be used.
- *Protecting the interests of the research participants.* The research participants' privacy must be protected by ensuring that their anonymity is preserved and the confidentially of the data guaranteed.
- *Researching with integrity.* The researcher must ensure that the research is conducted according to acceptable standards of practice and without fraud, deception or dishonesty.

The Social Research Association in the UK has taken a broad view of codes of ethics by specifying four sets of obligations for social researchers: to society, to funders and employers, to colleagues, and to subjects (www.the-sra.org.uk/documents/pdfs/ethics03.pdf). Their statement also emphasizes the need to avoid undue intrusion in the lives of research participants and to enable the participation in research of individuals and groups who might be excluded for reasons of communication, disability, comprehension or expense.

It is important to note that ethical issues are not the same as the practical problems that the researcher expects to encounter.[4] The latter are dealt with in the next section. However, finding appropriate ways of dealing with the ethical aspects of a project can create practical problems. For example, the need to inform potential interviewees about the nature of a project may increase the refusal rate, and, hence, threaten the researcher's ability to produce useful results.

Scope and limitations

While the scope of a research project should be clear from the research plan and methods, a common requirement for research proposals is to state clearly both what is and what is not included, particularly as far as data sources and selection is concerned. Decisions on these latter matters have a large bearing on how widely the findings can be applied. Compromises inevitably have to be made in order to work within a budget and other resource constraints, and these place limits on the possible use of the findings. While it may not be appropriate to spell out all the problems and limitations that go into the research design, some reference to them may be necessary.

Communicating the findings

It has been argued that one criterion scientific research should satisfy is that it should be made public. It can be argued that researchers have a responsibility to communicate their findings to people who can benefit from them. How this is to be done should be considered as part of the research proposal. Research funding administrators may be keen to know how the researcher plans to do this, and they may be willing to cover or contribute to the costs.

The onus is also on thesis writers to consider ways of making the results of their research known to a wider audience than just those who read theses in university libraries. Following the completion of a thesis, some universities have a requirement that students make a public presentation to the university community and, perhaps, selected outside guests. Of course, traditional methods include conference presentations, journal articles and books. Some research lends itself to reporting in the media, such as newspapers and magazines. Now there are other possibilities in this electronic age.

Some kinds of research, such as applied, commissioned or sponsored research, may have more limited, in some cases even restricted, audiences. However, applied researchers might want to insist on retaining the right to publish at least some of the findings themselves before accepting such commissions.

Conclusion

Having proposed possible structures and content for *research designs* and *research proposals*, the next task is to find out how to prepare them. For the remainder of the book, I shall concentrate exclusively on the preparation of research designs. To set the scene, figure 1.1 presents the core elements and their component
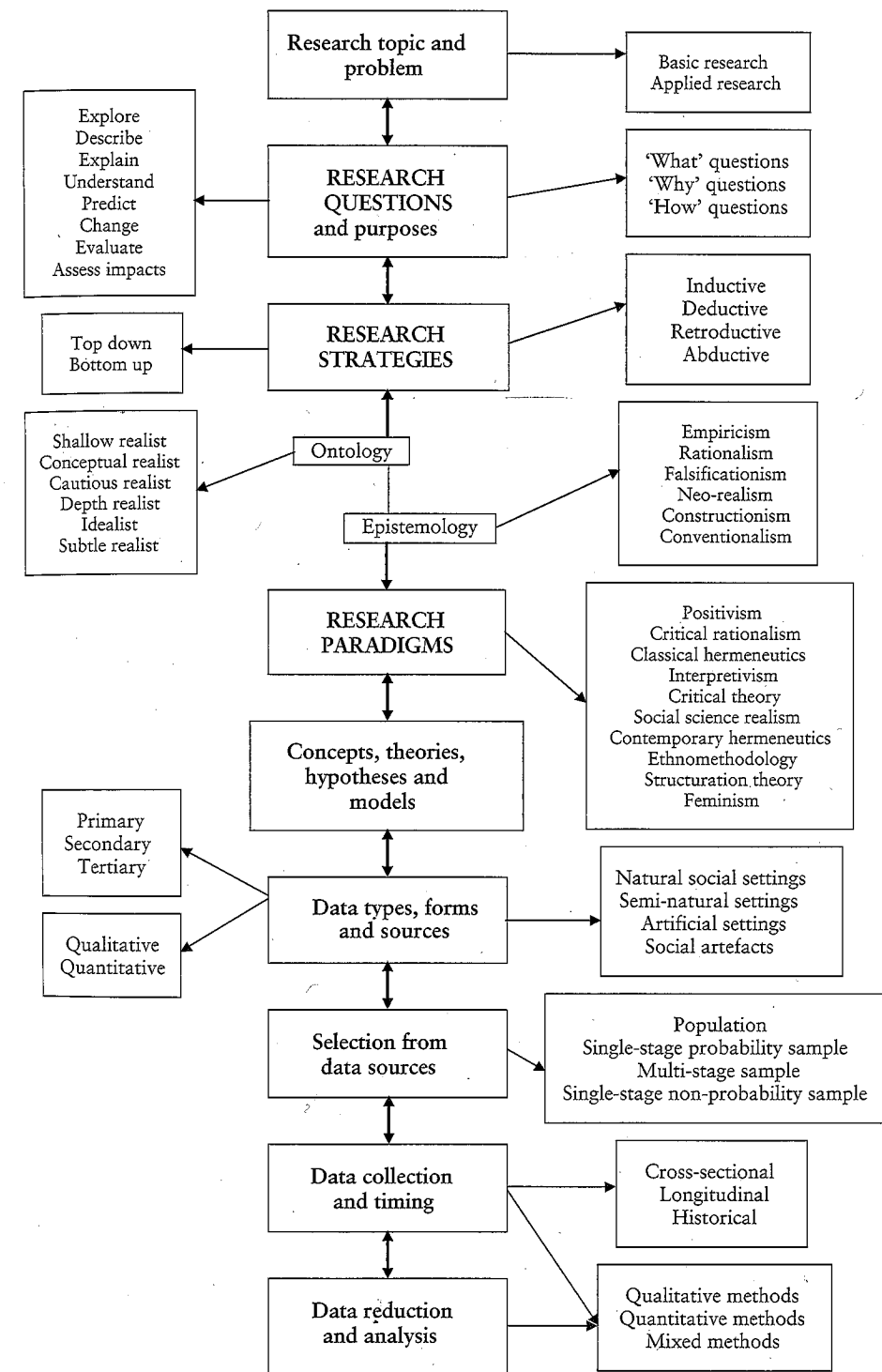
Figure 1.1   Elements of a social research design

choices. While many features of the elements and the choices have already been introduced, the components of the figure will now be elaborated step by step in the following chapters.

It is important to note that the connections between the elements of a research design (the centre column in figure 1.1) are shown with double-headed arrows to indicate that the design process is not linear and is bound to involve movement in both directions. In fact, the figure could have included many more such arrows linking all the core components with each other. While this would have more faithfully represented the iterative nature of the processes of research design, it would have turned the figure into an unintelligible spaghetti of connecting lines.

Further Reading

Punch, K. F. 2006. *Developing Effective Research Proposals*.
    Provides a more detailed coverage of the preparation of research *proposals* than is intended in this chapter. While there is considerable overlap, the author takes a different approach in some areas.
Kelly, M. 2004. 'Research design and proposals.'
    An overview of the structure and content requirements of research proposals.

2

Designing Social Research

Chapter Summary

- The research methods literature abounds with ideas on what constitutes a research design.
- However, many of these ideas are unhelpful as they:
  - deal with limited aspects of a research design;
  - are not mutually exclusive; and/or
  - are not comparable.
- Designing research involves giving consideration to a range of core elements, each with a number of choices, combinations of which lead to a wide variety of possible research designs.
- The basic aim in designing social research is to achieve maximum control over the research process.
- While a researcher's ability to achieve control will vary according to the nature of critical elements in the design, careful planning before the research commences makes it possible to evaluate the suitability and compatibility of the combination of decisions that need to be made; this will help to ensure a successful outcome.
- The preparation of a research design can start with different elements and proceed in a variety of sequences.
- While statements of the topic and research problem need to be produced, they will no doubt be reviewed and possibly modified as the research design evolves and the research itself proceeds.
- An important issue for all researchers is how to regard their relationship with the research participants.
- Various stances are possible, each with its particular ontological and epistemological baggage.
- It is essential to maintain consistency between the stance adopted and the assumptions entailed in the choices made about the research design elements, in particular, the research strategy and the methods of data collection.

Introduction

Social research is the use of controlled enquiry to locate, describe, understand, explain, evaluate and change patterns or regularities in social life. This control is achieved through a series of decisions that are made before the research commences and other decisions that may need to be made in the course of the research. This is not to suggest that complete control of all aspects of the research process is always possible. All eventualities cannot be anticipated, and, in some areas of research, control may be very difficult to achieve. For example, some methods of data collection, such as participant observation, are very unpredictable in terms of how they will develop and where they will take the researcher. However, there are many aspects of research that can and should be planned in advance. The aim is to achieve maximum control over all aspects, where possible.

The main reasons for designing research before it commences are to:

- make the research design decisions explicit;
- ensure that the decisions are consistent with each other and with the ontological assumptions adopted; and
- allow for critical evaluation of the individual design elements, and the overall research design, before significant research work commences.

Without such an overall plan, social enquiry cannot be controlled and the possibility of a successful outcome is severely jeopardized.

This chapter:

- sets the scene for what will follow in the later chapters;
- critically evaluates the common views and classifications of research design in the social sciences;
- presents an alternative view;
- discusses the fundamental requirements of a research design;
- provides an overview of the range of core elements of a research design;
- outlines the choices available for each element;
- reviews possible influences on these choices; and
- discusses the first steps in preparing a research design.

The subsequent chapters deal with the major research design decisions in detail.

Common Views of Research Design

The concept of 'research design' has a range of meanings, from narrow to broad. At the narrow extreme is the experiment, the type of design against which most other designs are regarded as compromises. Concern focuses on how to ensure that an experiment is capable of answering a particular 'why' research question, such that the effect of an independent variable, which is manipulated, can be assumed to be responsible for the observed changes in a dependent variable, the outcome. The design should rule out the possibility that some other features of the experimental situation can confound the independent variable. These design decisions are about the selection of experimental and control groups, the administration of the observations or measurements, and the type of statistical analysis to be used.

This approach to research design is very common in mainstream psychology. Texts on research methods frequently include a number of chapters on experimental methods (see e.g. Labovitz and Hagedorn 1976; Christensen 1988; Davis and Bremner 2006; Elmes *et al.* 2006; Shaughnessy *et al.* 2006; Goodwin 2008). Four criteria are commonly used to evaluate this type of research design: spatial control, temporal control, analysis of changes and representativeness. Spatial and temporal control is achieved by the use of one or more control groups in at least one of which the individuals do not receive the experimental treatment. The experimental and control groups can be made roughly equal in composition either by matching individuals in terms of relevant characteristics, or by assigning individuals to the experimental and control group by a random procedure. Analysis of change is achieved by comparing the individual responses in the pre-test and post-test groups, rather than the overall or average change for the group. Representativeness refers to the need to allocate individuals randomly to the experimental group if it is intended that the results are to be generalized to a wider population (Labovitz and Hagedorn 1976: 56–60).

An example of a broader but very conventional view of research design can be found in Kerlinger and Pedhazur (1973).

> Research design is the plan, structure, and strategy of investigation conceived so as to obtain answers to research questions and to control variance. The *plan* is the overall scheme or program of the research. It includes an outline of what the investigator will do from writing the hypotheses and their operational implications to the final analysis of the data. The *structure* of the research is more specific. It is the outline, the scheme, the paradigm of the operation of the variables. When we draw diagrams that outline the variables and their relation and juxtaposition, we build structural schemes for accomplishing operational research purposes. *Strategy*, as used here, is also more specific than plan. It includes the methods to be used to gather and analyse the data. In other words, strategy implies *how* the research objectives will be reached and *how* the problems encountered in the research will be tackled. (1973: 300)[1]

As Lincoln and Guba (1985) have pointed out, this view of research design requires the following to be spelt out before the research begins:

- the overall plan of the study;
- variables to be included;
- expected relationships between these variables (hypotheses);
- methods for data collection; and
- modes of data analysis.

They go on to suggest that this conventional view is narrower than it needs to be and that a more elaborate set of requirements are commonly used.

- State the problem, including justification for researching it and the objectives to be achieved.
- Outline the theoretical perspective.
- Indicate the procedures to be employed: sampling; instrumentation (operational definitions of the variables); data-analytic procedures (statistical tests to be used to test the hypotheses or answer the research questions).
- Establish a time schedule and 'milestones' to monitor progress.
- Designate agents who will undertake the various steps and tasks in the research.
- Provide a budget; give estimates of resources needed (time, people, funds).
- Indicate the expected end product(s): what the report will look like, including 'dummy tables'; and when the report will be available.

Research design requirements such as these have served countless research projects very well as a disciplined starting-point. However, some styles of research cannot be planned as precisely as this at the outset. Much of the information that is needed to make these decisions will not be known until the research has been in progress for some time. In addition, some of these requirements may not be relevant to certain styles of social research (e.g. specifying variables and their measurement, and using statistical tests). In the context of what they have called *naturalistic inquiry*, and what is more frequently referred to as qualitative research, Lincoln and Guba (1985: 224–5) have outlined why it may not be possible to meet these requirements in qualitative research.

- The focus of the study may change.
- Theory emerges in the course of the research rather than being stated at the beginning.
- Sampling serves different purposes; some samples need not be representative for the purposes of generalizing, but are concerned with the scope and range of information.
- Instrumentation is not about operational definitions but is a 'sensitive homing device that sorts out salient elements and targets in on them' (Lincoln and Guba 1985: 224).
- As the focus of the study changes, so do the procedures.
- Data analysis is open-ended and inductive rather than focused and deductive.[2]
- Statistical manipulations may have no relevance; the task is to 'make sense' of the data and to search for understanding.
- Timing cannot be predicted in advance because of the emergent nature of this kind of research.
- It is difficult to specify budgets precisely for the same reason.
- End products are difficult to specify, as the course of the research is unpredictable. All that can be said is that 'understanding will be increased'.

In short, 'the design of a naturalistic inquiry (whether research, evaluation, or policy analysis) *cannot* be given in advance; it must emerge, develop, unfold' (Lincoln and Guba 1985: 225).

Here, then, are three views of research design: the controlled experiment;

the planned linear stages based on a very quantitative view of research; and the developmental process characteristic of much qualitative research. In short, *experiments, social surveys*, and ethnographic or *field research* are all legitimate approaches to research design. However:

- few social scientists use experiments, mainly because they are either inappropriate or impossible to set up;
- many social scientists use the conventional linear approach to research design even when it is not appropriate; and
- some extreme types of naturalistic research may be as unpredictable as Lincoln and Guba have suggested.

The critical issue here is that the approach to research has to match the requirements of the research questions posed. Many design elements have to be considered in an attempt to answer these questions. As a wide variety of combinations of decisions on these elements are possible, there are many kinds of research designs. While the flexibility of a developmental approach to research design may be attractive, most research, particularly that conducted by postgraduate students, has to meet deadlines and needs some assurance of a useful outcome. Therefore, it is necessary to plan as carefully as possible at the outset, and to review the plan from time to time, as changes may be needed.

The importance of research design in answering research questions has been stressed by de Vaus in his concern with obtaining evidence that is as unambiguous as possible. '[W]hen designing social research we need to ask: given this research question (or theory), what type of evidence is needed to answer the question (or test the theory) *in a convincing way*? (de Vaus 2001: 9). Here, then, is the primary function of research design.

This position has been expressed in a more general way by Yin (2003a). *Research design* refers to the process that links research questions, empirical data, and research conclusions.

> Colloquially, a research design is *a logical plan for getting from here to there*, where *here* may be defined as the initial set of questions to be answered, and *there* is some set of conclusions (answers) about these questions. Between 'here' and 'there' may be found a number of major steps, including the collection and analysis of relevant data. (Yin 2003a: 20)

Common Classifications of Research Designs

Textbooks on social research methods and research design have reduced research designs to a few common types and usually devote a chapter or significant section to each one. Here is a list of common types.

- Experiments
- Social surveys
- Field work/ethnography

- Longitudinal study
- Cross-sectional study
- Case study
- Comparative/historical
- Secondary analysis
- Action research
- Evaluation research
- Impact assessment

(See, for example, Denzin 1970; Labovitz and Hagedorn 1976; Smith 1981; Chadwick *et al.* 1984; Sedlack and Stanley 1992; Bailey 1994; Hakim 2000; de Vaus 2001, 2006; Blaxter *et al.* 2002; Yin 2003a; Bell 2005; Sarantakos 2005; Neuman 2006; Bryman 2008.)

Many textbooks and book chapters confine their attention to only one of these designs. For example: **experiments** (e.g. Campbell and Stanley 1963a, 1963b; Aronson and Carlsmith 1968; Davis and Bremner 2006); **social surveys** (e.g. Rosenberg 1968; Moser and Kalton 1971; Marsh 1982; de Vaus 2002; Babbie 2004; de Leeuw *et al.* 2008; Fowler 2009); **field research or ethnography** (e.g. Burgess 1982a, 1984; Atkinson 1990; Atkinson *et al.* 2001; Hammersley and Atkinson 2007); **case study** (e.g. Gomm *et al.* 2000a; Yin 2003a, 2003b; Stake 2005; David 2006); **action research** (e.g. Winter 1987, 1989; Whyte 1991; Costello 2003; Cooke and Cox 2005; Kemmis and McTaggart 2005; McNiff and Whitehead 2006; Whitehead and McNiff 2006; Somekh 2006; Stringer 2007; Reason and Bradbury 2008; McIntyre 2008; Schmuck 2009); **evaluation research** (Campbell and Stanley 1963a; Cronbach 1963, 1982; Weiss 1972, 1976; Cook and Campbell 1979; Weiss and Bucuvalas 1980; Rossi and Freeman 1985; Guba and Lincoln 1989; Pawson and Tilley 1994, 1997; Stern 2005; Pawson 2006); **impact assessment** (e.g. Wathern 1988; Vanclay and Bronstein 1995; Becker 1997).

Some classifications make a division between experimental, quasi-experimental and non-experimental designs. The latter include social surveys, sometimes referred to as *correlational* designs because they, unlike experiments, cannot establish causation.[3] De Vaus (2001, 2006) has expanded the four commonest types (experiment, longitudinal, cross-sectional and case study) into six types: experimental, panel, retrospective, cross-sectional, comparative/cross-national, and case study.

It has also become a common practice to group these different designs into two broad categories, quantitative and qualitative, with divisions within each category (see e.g. Punch 2005; Neuman 2006), and mixed methods have now been added to these (Creswell 2003, 2009). However, I shall question the usefulness of the quantitative/qualitative dichotomy in this context in chapter 7.

An Alternative View

At best, the concept of research design used in these classifications is very limited and confusing. Of course, social researchers can do surveys and conduct experiments, but surveys are about particular methods of data collection and analysis,

and an experiment is about selecting groups and timing data collection. Similarly, secondary analysis is mainly about sources of data, and ethnography, comparative research, case studies, evaluation research and action research are particular approaches to research that can combine a number of methods of data collection and analysis. Hence, the first problem with these classifications is that each type of research design deals with some elements but none of them deals with them all.

A rare attempt to recognize these difficulties can be found in Chadwick *et al.* (1984). They have classified research designs according to six criteria:

- method of data collection;
- primary objectives (e.g. description, hypothesis testing, evaluation, social impact assessment);
- time orientation (cross-sectional, longitudinal, retrospective);
- whether the data are to be collected to answer a specific research question (primary and secondary); and
- the degree to which the methods impinge on the respondents (obtrusive and unobtrusive).

This view takes us part way to the approach adopted in this book.

The second problem is that the categories are not mutually exclusive. For example, surveys can be used in comparative studies, case studies and evaluation research; and experiments, comparative studies, case studies and evaluation research can use a number of methods of data collection and analysis. The third problem is that the categories are not exhaustive of the aspects of research that they do cover. For example, there are other ways of achieving control over variables, and there are many other sources of data and methods for producing and analysing data than those identified. These conventional categories mask the many choices that need to be considered in preparing a research design.

A research design contains many elements (see figure 1.1) and each element involves a choice from among alternatives. While some combinations of choices may be more common, and others may not be legitimate, potentially, there is a wide variety of possibilities. The resulting combinations of decisions produce a wide variety of actual designs that cannot easily be described by simple labels. For this reason, I do not follow the conventional classifications.

Adopting this approach avoids a ritualistic adherence to recipe book solutions. As a first step in this direction, I will examine in broad outline what any research design should achieve.

Fundamental Requirements

In general, a research design needs to answer three basic questions.

WHAT will be studied?
WHY will it be studied?
HOW will it be studied?

The last question can be broken down into five further questions.

WHAT research strategy will be used?
WHAT ontological and epistemological assumptions will be adopted?
WHERE will the data come from?
HOW will the data be collected and analysed?
WHEN will each stage of the research be carried out?

If these questions are answered satisfactorily, a researcher should be clear about how the research is to proceed. If they are written down in the form of a research proposal, others will be in a position to provide feedback on whether the project is sensible and feasible. In the case of postgraduate research, these others can include supervisors/advisers and academic research committees; for other social research they can include academic research committees, ethics committees, funders, sponsors and potential consumers.

In practice, however, to answer these eight questions, a number of aspects of research have to be addressed and many decisions need to be made. Because of the variety of types of research undertaken in the social sciences, it is not possible to be dogmatic about all the details to be considered in a research design. Nevertheless, some components are relevant to most designs.

Core Elements

I wish to propose a set of core design elements about which choices need to be made (see figure 2.1). Because the elements are connected in complex ways, a choice on one will have consequences for choices on other elements. The research design decisions that novice researchers usually give the most attention are 'data sources' and methods of 'data collection and analysis'. However, before these specific decisions can be made, several others must be considered.

The obvious starting-point in a research design is the statement of the 'research problem' that is to be investigated. Following closely behind is the consideration of two closely related research design elements, the 'research purposes'[4] and the all-important 'research questions'. The latter provide the focus and direction for the study; they are what the study will attempt to answer. Then follows the selection of a 'research strategy' or strategies that will be used to answer these questions, and the ontological and epistemological assumptions that will be adopted, usually in association with a particular 'research paradigm'. The decisions that are made about the 'research questions', 'research strategies' and 'research paradigms' will have a big influence on the decisions about 'data sources', 'data selection' and methods of 'data collection' and 'data reduction and analysis'.

Associated with these last four design elements are three others, the most fundamental of which concerns the timing of data collection. The role of time in a research design is frequently seen as being its defining characteristic. Two elements are concerned with the 'type of data' and the 'form of data' to be used. Choices related to the former are concerned with the proximity of the researcher
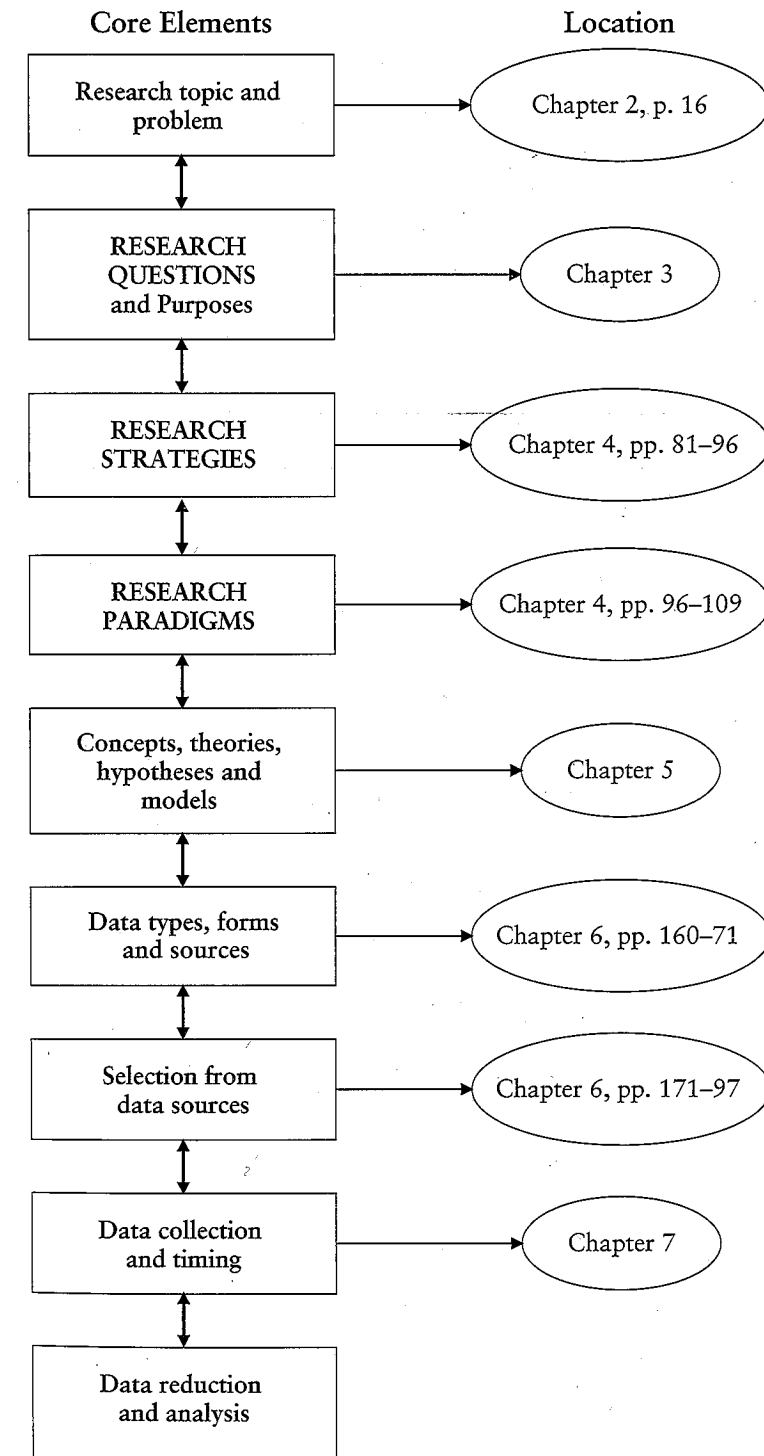
Figure 2.1   Core elements of a social research design

to the phenomenon being studied, and choices in the latter have to do with whether the data will be in words or numbers.

The order in which these core elements are discussed does not follow any particular logic. While the decisions made on the earlier ones may limit the decisions that can be made on the later ones, the process of designing research is spiral or cyclical in nature rather than being a set of linear steps. As the implications of the earlier decisions are explored, they may turn out to be impractical or unachievable. Therefore, the process is likely to require a number of iterations before a consistent and workable set of design decisions can be achieved.

The Ideal and the Practical

As I have argued earlier, all decisions that are concerned with the design of a research project should, if possible, be made before any substantial work has commenced. This *is* possible in studies conducted on topics that have already been well researched and for which there is adequate background information. Such studies may be the next step in a programme of research that has used well-tried methods and for which appropriate published reports are available. However, some studies may require preliminary or exploratory research to establish an adequate background against which choices can be made. This preliminary work may just involve the examination of statistical data, such as that produced in a census, but it may also require some field work, i.e. some contact with the site and the people who are to be involved in the research. In other studies, it may not be possible to make all the choices before the research commences, either because not enough is known about the field or the social context, or because the nature of the proposed methods requires a developmental process to be adopted. The latter involves the making of choices at the beginning of each stage of the research, based on what was learned in the previous stage. The fact that some kinds of research need to be done in this developmental mode is no excuse for failing to make choices that should and can be made at the outset, regardless of the category into which the project falls.

It is possible for researchers to avoid dealing with these choices if they operate within a research community that consistently adopts a particular research paradigm in a taken-for-granted manner. The need for choices will not be evident because those implicit in the paradigm will be adopted without discussion, or, perhaps, any awareness that choices have been made; the assumptions and methods to be used will be regarded as self-evident. Other researchers may avoid the need to examine critically the range of choices by simply adopting methods with which they are most familiar and comfortable, and designing the research project to use such methods.

Making the choices necessary to design a research project requires careful consideration of many factors, from fundamental philosophical and value positions to technical and practical matters. These choices are interdependent. The choice of research question(s), and the way it/they are worded, places limitations on the choices of research strategy. The choice of a particular research strategy may limit the choice of research methods. The choice of a particular method of data gathering

limits the choices of methods of data analysis, and so on. However, choices made in the early stages of the research design process may have to be revised in the light of circumstances that require a change in the sample or methods of data collection. Problems with access to people, organizations or other data sources may require compromises from the ideal design, and these compromises require a revision of other choices. For example, a chain of choices may lead to a decision to use a mail questionnaire to gather data. However, if it is discovered that access to the required names and addresses cannot be obtained in order to draw a random sample and contact respondents, then it may be necessary to use snowball sampling, and in-depth interviews. Therefore, it will be necessary to choose a different method of data analysis, and, possibly, to reformulate the research questions and adopt a different research strategy. Hence, before settling on all the choices, it is usually necessary to go through the design decision sequence a few times in order to deal with the obstacles and limitations that are encountered.

Getting Started

Having now defined the fundamental requirements of a research design, and laid out the range of elements that need to be considered, we are now in a position to begin the task of preparing a research design. The selection of a research topic, and the statement of the problem to be investigated, usually constitutes the first or very early steps in setting out on a research project.

Research Topic and Problem

The starting point for social research is a problem, either *social* or *sociological*. A *social* problem is a state of affairs that is judged by someone, for example a social scientist or a policy-maker, to be unsatisfactory and in need of some form of intervention. A *sociological* problem is a puzzle that a social scientist considers needs to be solved, i.e. explained or understood.[5] Stating the research problem clearly is the first challenge, but it may need to be revised as work on the research design proceeds.

In conjunction with the selection and definition of the problem to be investigated, a statement of the research topic can be undertaken. The topic provides both a signpost and a set of boundary markers: it indicates that the research will follow a specific path; and it defines the territory to be explored. Hence, it is important to state the topic in a way that communicates the general nature of the research. However, while it is useful to try to state the topic clearly and concisely at the outset, it is not uncommon for the initial attempt to be rather vague and imprecise. Until the research design is completed, the researcher cannot be sure just what the project will be like. It may take much thought and reading, a number of trial runs, and even some exploratory research, before a clear and precise topic can be produced. The direction in which the signpost points, and the inscription on it, may change in the course of preparing the research design. In fact, the final version of the topic may not become clear until the time of writing

the report or thesis. Therefore, novice researchers should not be concerned if difficulties are encountered in defining the topic in the early stages. Greater attention should be given to the problem statement.

Here are some examples of research topics.

Environmental Worldviews and Behaviour among Students and Residents.
Age and Environmentalism: a Test of Competing Hypotheses.
Gender Differences in Environmentalism: towards an Explanation.
Motivation for Environmentally Responsible Behaviour: the Case of Environmental Activists.

These topics will be used throughout the book, and, particularly, in chapter 8 where research designs for each one are outlined. They are part of a research programme on environmentalism that I have conducted. (See Appendix for examples of other research problems and topics.)

It is a common mistake to believe that, having stated the problem and defined the topic, the researcher is in a position to commence the project. Even well-formulated problem statements and topics provide very little direction for the design of a project. Something more is required. I argue in chapter 3 that this is achieved mainly by stating one or more research questions.

Influences on the Choice of Topic and Problem

An important aspect of any research project is the reasons why it is to be undertaken. Some social research requires a considerable investment of resources, and, even if this is mainly the researcher's time, justification for doing it is necessary. There are a number of dimensions on which this justification can be made, and these involve motives and goals of various kinds. Most projects will entail several of these. At the same time, there are various factors that can place limitations on the choice of topic.[6]

Motives

In an academic environment, lecturers/professors and students do social research for *personal*, *academic* and *social* reasons. *Personal* reasons include:

- satisfying curiosity;
- seeking credentials and/or pursuing career goals;
- trying to solve a personal problem; and
- pursuing personal interests and commitments.

Academic reasons for undertaking social research centre on making a *contribution to the discipline* or disciplines in which one works. These can include:

- contributing to knowledge in a particular field;
- seeking answers to current intellectual puzzles;

- participating in intellectual debates; and
- developing social theory.

Social researchers working in any context, be it in a university or in the public or private sectors, may wish to make a *contribution to the society*, or to some sector of the society, in which they are located. These motives may include:

- contributing to the solution of a social problem;
- helping some group, community or organization achieve its goals;
- assisting in the development of social policy; and
- contributing to public or private sector decision-making.

An examination of the motives behind the four sample research topics stated earlier will help to illustrate how *personal*, *academic* and *social* motives can be combined. The first of the research topics, 'Environmental Worldviews and Behaviour', was motivated by a personal curiosity about the kind and level of environmental attitudes and behaviour currently adopted by Australians. This arose from reading some of the American literature on environmental sociology. This curiosity was then translated into a desire to fill a gap in knowledge, and, at the same time, to compare the Australian situation with that in the United States and other parts of the world. The main motive for the second topic, 'Age and Environmentalism', was an academic concern to advance our knowledge of why some people have more favourable environmental attitudes and engage in higher levels of environmentally responsible behaviour than others. Of course, this knowledge could also have some practical benefits for the design of environmental education programmes and for groups and organizations that are committed to improving the quality of the natural and built environments. Topic three, 'Gender Differences in Environmentalism', was motivated by an academic desire to make more sense of the rather confused findings in previous research on gender and environmentalism. Are women more environmentally conscious than men, and, if so, what are the nature and origins of these differences? Again, the results of research on this topic could also benefit environmental education programmes, and, perhaps, make a contribution to the ultimate survival of the human race. The fourth topic, 'Motivation for Environmentally Responsible Behaviour', is essentially a theoretical puzzle: why do some people behave responsibly and others not? However, this puzzle is also related to specific social problems, for example, reducing litter and pollution, saving energy, and conserving non-renewable resources. It may be necessary to understand the motivation for environmentally responsible behaviour in those who practise it in order to know what would be necessary to change the behaviour of others. Hence research that is primarily directed towards solving a *sociological* problem can also assist in the solution of *social* problems.

Influences

Motives
 Personal interests and goals
 Discipline contribution
 Social contribution
The literature
Restrictions
 Audiences
 Political
 Funding bodies
 Practical considerations

It is important for researchers to articulate their motives for undertaking a research project, as different motives may require different research design decisions. This articulation will also help to reveal conflicts or inconsistencies in an individual's motives, within a research team, or between the researcher(s) and other stakeholders. It is sensible to resolve these differences before the research commences.

The literature

A major source of influence on the nature and choice of a research topic, particularly in basic or theory-oriented research, is the body of literature on theory and research related to the topic, in both the researcher's discipline and in related disciplines. A research project can be stimulated by the results of previous research and by problems posed by theorists. Even if the topic originates elsewhere, one or other of these bodies of literature is likely to help shape the way the topic and the problem are formulated. Of course, 'the literature' plays other roles in research, as we shall see in due course.

Restrictions

A number of factors can place restrictions on the choice of topic, including: a range of possible *audiences* the researcher has to, or wishes to, take into consideration; the *political* restrictions that may be imposed by authorities such as governments and universities; the types of research that *funding bodies* are willing to support; and practical factors, such as the ability to get access to desired research sites.

Audiences include:

- clients on whose behalf the research is being conducted (whether or not they are paying for it);
- sponsors who are funding the research;
- colleagues;
- scientific communities (particularly the editors of journals);
- employers; and
- potential future sources of funding (Smaling 1994).

Of course, each audience may have different expectations of and different degrees of influence on the design and execution of a research project, let alone what it might find. This is particularly important in the case of applied research as, in contrast to basic research, the researcher may have much less freedom in determining the topic and making other research design decisions. This can certainly occur if the sponsors, the main audience and the major benefactors coincide.

Basic and Applied Research

Motives for undertaking research are associated with the type of research, i.e. whether it is basic or theory-oriented research, or whether it is applied or policy

oriented research.[7] The former is concerned with producing knowledge for understanding and the latter with producing knowledge for action. Both types of social research deal with problems: basic research with theoretical problems; and applied research with social or practical problems. *Basic* research is concerned with advancing fundamental knowledge about the social world, in particular, with the development and testing of theories. *Applied* research is concerned with practical outcomes, with trying to solve some practical problem, with helping practitioners accomplish tasks, and with the development and implementation of policy. Frequently, the results of applied research are required immediately, while basic research usually has a longer time-frame.

Basic and applied researchers have different orientations to their work. Basic researchers are more detached and academic in their approach, and tend to have their own motives. Applied researchers are more pragmatic and change-oriented, and generally have to pursue goals set by others. However, the issue of detachment is rather more complex than this simple comparison suggests. In some research traditions, detachment is considered to be necessary to achieve objectivity. In other traditions, it is claimed that detachment and, hence, objectivity is impossible. It is also important to note that the theoretical and/or political commitments of some researchers, for example critical theorists and feminist researchers with emancipatory commitments, can produce basic research from which detachment is absent. We shall come back to these issues later.

For an example of basic research, I draw on a research project conducted in New Zealand in the 1960s (Blaikie 1968, 1969, 1972). I was curious as to whether the relationship between religion and occupation that Weber (1958) had found in Germany about one hundred years earlier, and that Lenski (1961) and others had found in the United States in the early 1960s, was also present in New Zealand. If this relationship did exist, I wanted to know whether it was the result of the survival of the Protestant work ethic in this colonial outpost. This research clearly had no immediate practical value; it was designed to satisfy academic curiosity and to continue a tradition of research in the United States that was largely inspired by Weber's thesis.

An example of applied research comes from a commissioned study I did with some colleagues in the late 1970s. A developer wished to build houses on a site close to the Melbourne airport. He engaged a firm of architects and planners to assist him. Planning restrictions determined how close houses could be built to the flight paths associated with the runways. This restriction was established in terms of maximum decibel readings, and was shown as a line on a map down each side of the flight path. The developer was concerned about his ability to sell houses if they were built close to the flight path. Would purchasers be willing to live right up to the legal planning limit? If not, how close would they be willing to live? The firm of architects and planners engaged us to answer these questions. The study was done by interviewing residents who were living at different intervals from the flight path in an adjoining location, including some whose houses were built under the flight path before the airport was established there, and before the planning restrictions came into force. The developer would have liked us to draw a line on the map for him, but since people's responses to living close to aircraft noise were very varied this was not possible. We found that people differed

considerably in the extent to which they could tolerate aircraft noise and the possible dangers of living close to an airport. Some people appeared to be willing to put up with aircraft noise if the price of the house was attractive. In the end, the developer adopted a conservative position and left some open space adjoining the planning limit.

In the social sciences, research is often a mixture of basic and applied: some stages of a project may have a basic flavour, while other stages may be more applied. For example, a researcher may be commissioned to assist the managers of an organization to change the organization's culture. After undertaking research to describe the existing culture of the organization, the researcher may then proceed to refine and test a particular theory of organizational change. Only when they are satisfied that this theory is relevant to this particular organization will the researcher proceed to engage in some form of action research that helps the members of the organization to bring about the changes desired by management.

Few if any social research projects are exclusively concerned with advancing knowledge for its own sake. While basic researchers may not be interested in the practical benefits, basic research can eventually produce such outcomes. Implicitly or explicitly, most social researchers appear to have some social issue or problem in mind when they undertake research. The fundamental question is whether the researcher chooses to define the problem and the research project, or whether the problem has been defined by someone else, for example, a sponsor who may also have a substantial say in how the project is to be conducted.

However, it is worth noting that in competitively funded basic research there are usually some constraints on research design. Funding bodies not only have expectations about what kinds of research projects are legitimate or important, but they are also likely to have prejudices about what are regarded as appropriate methods for data collection and/or analysis. In order to obtain research funds, prudent researchers need to take these expectations into account in designing a project, or be well prepared to defend less popular methods.

Researcher's Stance

An important choice that all social researchers have to make is what stance to take towards the research process and participants; what the relationship will be between the researcher and the researched. Elsewhere, I have suggested three basic positions a researcher can adopt: outside expert, inside learner and reflective partner or conscientizer (Blaikie 2007). Here, I want to elaborate these into six possible stances.

The traditional 'scientific' stance is that of *detached observer*. The researcher is regarded as an uninvolved spectator, particularly during the process of data collection. It is argued that the researcher's values and preferences can threaten the objectivity of the research, and, hence, the value of the results. Therefore, detachment is a

Researcher's Stance

Detached observer
Empathetic observer
Faithful reporter
Mediator of languages
Reflective partner
Dialogic facilitator

requirement for producing reliable knowledge. This position is still widely advocated in spite of the many criticisms that have been raised against it.

The second position, the *empathetic observer*, still aims to achieve this kind of objectivity but insists that it is necessary for researchers to be able to place themselves in the social actors' position. Only by grasping the subjective meanings used by the social actors can their actions be understood. This is commonly referred to as *verstehen* (Weber 1964; Outhwaite 1975).

This second position has developed into a third, the *faithful reporter*, in which the researcher's stance is much less detached. The aim is to report a way of life by allowing the research participants to 'speak for themselves'. Thus, the researcher's task is to present the social actors' point of view. To do this, the researcher may have to become immersed in that way of life in order to grasp these meanings. This position is commonly referred to as 'naturalism' and was advocated by sociologists of everyday life (see e.g. Lofland 1967; Blumer 1969; Matza 1969; Denzin 1971; Douglas 1971; and Guba 1978). The researcher is required to study social phenomena in their 'natural' state, to be sensitive to the nature of the social setting, to describe what happens there and how the participants see their own actions and the actions of others. A related requirement is that the researcher 'retains the integrity of the phenomenon'. This means remaining faithful to the phenomenon under investigation by only producing reports in which the social actors can recognize themselves and others. Schütz presented this idea in his *postulate of adequacy*, in which he argued that social scientific concepts must be derived from and remain consistent with lay concepts.

> Each term in a scientific model of human action must be constructed in such a way that a human act performed within the life-world by an individual actor in the way indicated by the typical construct would be understandable for the actor himself [*sic*] as well as for his fellow-men [*sic*] in terms of commonsense interpretation of everyday life. (Schütz 1963b: 343)

In other words, if social actors cannot recognize themselves and their colleagues in the social scientist's accounts, then the latter must have produced a distortion of the social actors' world. This process of checking social scientific accounts with the social actors' accounts is sometimes referred to as 'member validation' or 'member checks' and is a major form of validity checking in qualitative research. However, this process is not without its difficulties.

A fourth position, which rejects the idea of detachment, is an extension of the third. In this case, the researcher becomes the *mediator of languages*, between everyday, lay language and social scientific or technical language (Giddens 1976; Gadamer 1989). Studying social life is akin to studying a text, and this involves interpretation on the part of the reader. The researcher actively constructs an account based on the accounts provided by the participants. This process of construction is not neutral; researchers have to invest something of themselves into their account. Social, geographical and historical locations, as well as the researcher's interests and assumptions, have a bearing on the nature of the account produced. Hence, detached objectivity is seen to be impossible as the author's voice will always be present in the researcher's account (Geertz 1988).

A fifth position is associated with critical theory. The researcher is viewed as a *reflective partner* who is committed to the emancipation of the participants from whatever kind of oppression they are experiencing (Habermas 1970, 1972). Following Husserl, Habermas rejected the 'objectivist illusion' of Positivism, according to which the world is conceived as a universe of facts independent of the 'observer' whose task is to describe them. He accepted the same premise as Interpretivism, that social and cultural reality is already pre-interpreted by the participants as a cultural symbolic meaning system, and that these meanings can be changed over time. Therefore, the process of understanding this socially constructed reality is 'dialogic'; it allows individuals to communicate their experiences within a shared framework of cultural meanings. In contrast, the process in the natural sciences is 'monologic'; it is the technical manipulation by the researcher of some aspect of nature. In the latter, the researcher is a 'disengaged observer' who stands in a subject-to-object relationship to the subject-matter while, in the former, the researcher is a 'reflective partner' whose relationship is that of subject to co-participant (Blaikie 2007: 135–6).

Another version of this fifth position is associated with feminist research and involves *conscious partiality*. Again, the concern is with emancipation, in this case of women. Much more than empathy is involved here. The researcher not only participates in women's struggles but is also expected to be changed by them. This view of research involves the conscientization of both the researcher and the researched (Mies 1983: 126). By conscientization is meant learning to perceive social, political and economic contradictions and to take action against oppressive elements of reality (Freire 1970).

The fourth and fifth positions have now culminated in a sixth postmodern view of the role of the researcher. In this case, the researcher is regarded as another actor in the social context being investigated. Rather than being the 'expert', as in the *detached* position, an *empathetic observer*, or a *faithful reporter*, the postmodern researcher takes elements from the positions of *mediator of languages*, *reflective partner*, and *conscientizer*, and seeks to reduce the researcher's authorial influence on the products of the research by allowing a variety of 'voices' to be expressed. These researchers

> still rely on their understanding of the situation, but they attempt to minimize their authorial bias by letting the natives speak for themselves as much as possible. The aim is to produce a 'polyphony' of voices rather than a single voice, in order to reduce bias and distortion. (Fontana 1994: 214)

The emphasis is on the dialogue between the researcher and the researched. Hence, this position might be described as *dialogic facilitator*.

Clearly, there are incompatibilities between most of these positions, and there is an extensive literature that debates their relative merits. As we shall see in chapter 4, these positions are associated with the four dominant research strategies used in social research. However, before we leave this discussion here, there is a related concept that needs to be discussed, that of reflexivity.

The notion of *reflexivity* is integral to the ethnomethodologist's views on how social actors make their actions and their social world meaningful to themselves and others. Giddens has incorporated this idea into his structuration theory as the

'reflexive monitoring' that social actors need to engage in to maintain continuity in their social practices. For Giddens, *reflexivity* is more than self-consciousness; it involves the active monitoring of the ongoing flow of social life.

> The reflexive monitoring of activity is a chronic feature of everyday action and involves the conduct not just of the individual but also of others. That is to say, actors not only monitor continuously the flow of their activities and expect others to do the same for their own; they also routinely monitor aspects, social and physical, of the contexts in which they move. (Giddens 1984: 5)

There is a growing acceptance of the idea that if reflexivity is an integral part of everyday social practices, then it must also be involved in the 'everyday' activities of social researchers. If the construction and maintenance of social worlds by social actors involves, among other things, reflexive monitoring, then the social researcher's creation of new social scientific knowledge will entail the same processes. In other words, wherever new knowledge is generated through a process of interaction between the researcher and the researched, the social researcher will draw on the same skills that social actors use to make their activities intelligible (Giddens 1976: 157–61).

Recognition of the need for social researchers to be reflexive can be found in the writings of qualitative researchers in general, and ethnographers in particular, as well as among feminist researchers (see Stanley and Wise 1993; Maynard and Purvis 1994). For example, Hammersley and Atkinson have argued that reflexivity implies that

> the orientations of researchers will be shaped by their socio-historical locations, including the values and interests that these locations confer upon them. What this represents is a rejection of the idea that social research is, or can be, carried out in some autonomous realm that is insulated from the wider society and from the particular biography of the researcher, in such a way that its findings can be unaffected by social processes and personal characteristics. (Hammersley and Atkinson 2007: 15)

Similarly, Mason (2002) has regarded *active reflexivity* as one of the essential features of qualitative research; researchers need to be active and reflexive in the process of generating data rather than being neutral data collectors.

> Qualitative research should involve critical self-scrutiny by the researcher, or *active reflexivity*. This means that the researcher should constantly take stock of their actions and their role in the research process, and subject these to the same critical scrutiny as the rest of their 'data'. This is based on the belief that a researcher cannot be neutral, or objective, or detached, from the knowledge and evidence they are generating. Instead, they should seek to understand their role in that process. Indeed, the very act of asking oneself difficult questions in the research process is part of the activity of reflexivity. (Mason 2002: 7)

Earlier, Mason also argued that 'we should be reflexive about every decision we take, and that we should not take any decisions without actively recognizing that

we are taking them' (1996: 165). Therefore, *reflexivity* applies to the process of designing social research as much as to the research process itself.

The difference between adopting a reflexive stance in research and other possible positions is illustrated in the distinction that Mason has made between the three choices that qualitative researchers have in the way they 'read' their data: literal, interpretive or reflexive.

> If you are intending to 'read' your data *literally*, you will be interested in their literal form, content, structure, style, layout, and so on . . . . An interpretive reading will involve you in constructing or documenting a version of what you think the data mean or represent, or what you think you can infer from them . . . . A reflexive reading will locate you as part of the data you have generated, and will seek to explore your role and perspective in the process of generation and interpretation of data. (Mason 2002: 149)

Recognition of the impossibility of detachment, as well as the reflexive nature of social research, poses some difficult philosophical problems with regard to the status of social scientific knowledge. Part of this dilemma centres on different ideas as to whether objectivity and 'true' knowledge are possible. There seems to be a fear that giving up on the possibility of being an objective researcher means that all social research degenerates into the production of competing 'subjective' accounts, the relative merits of which can only be established by political processes. However, Hammersley and Atkinson have argued that a commitment to reflexivity does not imply 'that research is necessarily political, or that it should be political, in the sense of serving particular political causes or practical ends. For us, the primary goal of research is, and must remain, the production of knowledge' (2007: 15). On the other hand, critical theorists and feminist researchers see commitment to the cause of emancipation as an essential part of all social scientific activity. (See Blaikie 2007 for a brief review of these issues, and Hammersley 1992, Guba and Lincoln 2005, and Hammersley and Atkinson 2007 for discussions relevant to social research.)

I have not included the researcher's stance as a research design element as I suspect that adopting a particular stance is something that occurs independently of the research design. Of course, it is possible that an ideological commitment to a particular stance may have an influence on the research topics that are likely to be entertained, and on other design decisions. Having said this, in my view, reflexivity is not really a matter of choice. All social researchers should be reflexive, regardless of the stance they adopt. However, this will be easier for researchers who reject the detached stance.

We now turn to the first of two critical core design elements, the formulation of research questions.

Further Reading

de Vaus, D. A. 2001. *Research Design in Social Research*.
 Adopts a very different approach to research design to the one presented here.

—— (ed.). 2006. *Research Design*.
 A comprehensive set of articles on many aspects of research design from a wide variety of positions.
Flick, U. 2007. *Designing Qualitative Research*.
 A brief introduction.
Marshall, C. and G. B. Rossman 2006. *Designing Qualitative Research*.
 Provides pragmatic, step-by-step guidance for developing and defending proposals in qualitative research.
Punch, K. F. 2006. *Developing Effective Research Proposals*.
 A concise and practical outline.
Silverman, D. 2005. *Doing Qualitative Research*.
 A broad coverage of the design, conduct, analysis, writing up, supervision, examination and publishing of postgraduate qualitative research.

3

Research Questions and Purposes

Chapter Summary

- All research projects are built on the foundation of research questions.
- Research questions define the nature and scope of a research project.
- Research questions can be grouped into three main types, 'what', 'why' and 'how' questions.
- The three types of questions form a sequence for the research process; 'what' questions followed by 'why' questions followed by 'how' questions.
- The importance of answering 'what' questions should not underestimated.
- The developmental nature of a research design should not be used as an excuse to avoid the effort required to formulate appropriate research questions.
- While the process of developing a set of research questions can be the most challenging part of any research project, techniques are available to assist the process.
- Research questions are what the research is designed to answer, not the questions asked of respondents or participants.
- The aim of the literature review is to indicate what the state of knowledge is with respect to each research question, or group of questions.
- Hypotheses are our best guesses at answering 'why' and, possibly, 'how' questions.
- If required, hypotheses should be derived from the literature review, particularly from theory or research results. Sometimes a theory may have to be generated.
- In some research, hypotheses may emerge, and be tested, in the course of the data collection and analysis.
- As an aid to the conception, clarification and classification of research questions, it is also useful to think about a research project in terms of its purposes.
- Social research can pursue eight major purposes: *explore, describe, understand, explain, predict, change, evaluate* and *assess impacts*.
- Many research purposes require 'what' questions. *Understand* and *explain,* and, to a lesser extent, *evaluate* and *assess impacts*, require 'why' questions. Only *change* requires 'how' questions.

- Research purposes are not a list of the activities the researcher is going to carry out: they are concerned with the type of knowledge researchers wish to produce.

Introduction

The use of research questions is a neglected aspect in the design and conduct of social research. This is surprising given that the fundamental purpose of social research is to provide new knowledge about the social world, to answer puzzles about what the social world is like and how it works, and to find ways to solve problems and bring about change. In my view, formulating research questions is the most critical component of any research design. It is only through the use of such questions that choices about the focus and direction of research can be made, that its boundaries can be clearly delimited, that manageability can be achieved and that a successful outcome can be anticipated. Establishing research questions also makes it possible to select research strategies and methods of data collection and analysis with confidence. In other words, *a research project is built on the foundation of its research questions.* However, getting these questions clear and precise requires considerable thought and sometimes some preliminary investigation.

This chapter discusses:

- three main types of research questions;
- the functions of research questions;
- how to develop and refine research questions;
- the relationship between research questions and hypotheses, and the functions of the latter; and
- how research questions can provide a guide and framework for the review of the literature.

As a way of elaborating research questions, consideration is also given to the research purposes behind the questions. Hence, there is a discussion of:

- the nature and range of research purposes that can be pursued; and
- the relationship between research purposes and research questions (see figure 3.1).

The aim of the chapter is not only to argue that research questions are necessary, but also that good research needs high-quality questions. A rare attempt to deal with the issue of the quality of research questions has been undertaken by Campbell *et al.* (1982). They reviewed articles in five journals in psychology, organizational behaviour and management, taking a two-year period for each journal. A list of the research questions was compiled and then researchers were surveyed in the fields covered to see what questions they thought should be asked. Their aim was to find gaps in research and to establish priorities for future research.
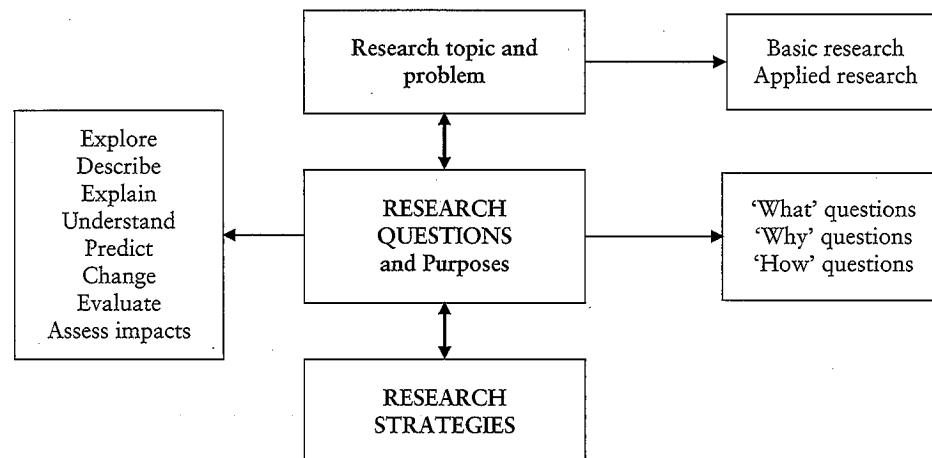
Figure 3.1 Research questions and purposes

Research Questions

Research questions are needed to define the nature and scope of the research. By selecting questions, and paying attention to their wording, it is possible to determine what is to be studied, and, to some extent, how it will be studied. The way a particular research question is worded can have a significant influence on how much and what kind of research activity will be required.

Conventional wisdom suggests that research should be guided by one or more hypotheses. According to this view, in order to get started on a research project the researcher should, first, select a research problem, second, state one or more hypotheses to be tested, and, third, measure and correlate the variables related to the concepts in the hypotheses. However, this procedure is only relevant to quantitative research conducted within the Deductive research strategy. While there is a role for hypotheses in particular kinds of research, they neither provide the foundation for a research design nor are they very useful for defining the focus and direction of a research project. In fact, the ritual of formulating and testing hypotheses can lead to unnecessary and unhelpful rigidities in the way in which research is conducted. In some kinds of research, it is impossible or unnecessary to set out with hypotheses. A much more useful procedure is to establish one or more research questions.

A Neglected Component of Social Research

Few textbooks on research methods give much attention to the formulation of research questions, and some ignore this vital part of the research process entirely. Exceptions can be found in some recent texts on research methods, for example, Hedrick *et al.* (1993); Miles and Huberman (1994); Blaxter *et al.* (2002); Mason (2002); Yin (2003a); Punch (2005); Maxwell (2005); Neuman (2006); Flick

(2006); Marshall and Rossman (2006); Creswell (2007); and Green (2008). It is interesting to note that these books are either concerned with qualitative research methods or include a significant discussion of them.

For example, Flick has argued for the importance of research questions in qualitative research.

> Experience from my own research and even more from supervising and consulting other people in their research has shown how decisive it is for the success of a project to have a clear and explicitly formulated research question. (Flick 2007: 22)

> [A] first and central step, and one which essentially determines success in qualitative research, but tends to be ignored in most presentations of methods, is how to formulate the research question(s). (Flick 2006: 105)

Creswell (2007) has argued that in a qualitative study, research questions are central, not objectives (goals for research) or hypotheses (predictions involving variables and statistical tests). I concur wholeheartedly with Flick's statement and would argue that what he and Creswell say about qualitative research applies to all social research.

Mason set her discussion of research questions in the context of intellectual puzzles that seek some kind of explanation. These puzzles take a variety of forms, depending on the ontological and epistemological positions adopted by the theoretical and intellectual traditions from within which they emerge. Intellectual puzzles then lead to research questions that she regarded as forming the backbone of a research design and as having much greater significance than hypotheses or propositions, particularly in qualitative research. For her, research questions

> should be clearly formulated (whether or not you intend to modify them or add to them later), intellectually worthwhile, and researchable (both in terms of your epistemological position, and in practical terms), because it is through them that you will be connecting what it is that you wish to research with how you are going to go about researching it. They are the vehicles which you will rely upon to move you from your broad research interest to your specific research focus and project, and therefore their importance cannot be overstated. Research questions, then, are those questions to which you as researcher really want to know the answers, and in that sense they are the formal expression of your intellectual puzzle. (Mason 2002: 19–20)

I hope these examples are sufficient to reinforce my argument about the pivotal role played by research questions in social research.

Types of Research Questions

Research questions can be grouped into three main types, 'what' questions, 'why' questions and 'how' questions. I have restricted research questions to 'what', 'why' and 'how' to maintain simplicity and to achieve a correspondence with the three main categories of research purposes: *description, explanation/understanding* and *change* (see figure 3.1).

What questions require a descriptive answer; they are directed towards discovering and describing the characteristics of and patterns in some social phenomenon, for example, categories of individuals, social groups of all sizes, and social processes. They include the following types of questions.

- What types of people are involved?
- What characteristic knowledge, beliefs, values and/or attitudes do they hold?
- What is their characteristic behaviour?
- What are the patterns in the relationships between these characteristics?
- What are the consequences of these activities?

Why questions ask for either the causes of, or the reasons for, the existence of characteristics or regularities in a particular phenomenon. They are directed towards understanding or explaining the relationships between events, or within social activities and social processes. For example:

- Why do people think and act this way?
- Why did these patterns come to be this way?
- Why do the characteristics or social process change, or remain stable?
- Why does this activity have these particular consequences?

How questions are concerned with bringing about change, with practical outcomes and intervention. For example:

- How can these characteristics, social processes or patterns be changed?
- How can they be made to stop changing, or to slow down or speed up their rate of change?

These three types of research questions form a sequence: 'what' questions normally precede 'why' questions, and 'why' questions normally precede 'how' questions. We need to know what is going on before we can explain it, and we need to know why something behaves the way it does before we can be confident about intervening to change it. However, most research projects will include only one or two types of research questions, most commonly 'what' and 'why' questions.

Some research may not proceed beyond one or more 'what' questions. While there may be a strong desire to include 'why' and possibly 'how' questions in a research project, the significance of producing good answers to 'what' questions should not be underestimated. In some fields, and on some topics, little research may have been undertaken anywhere, or recently, or in the context of interest. Before 'why' questions can be tackled, a good description of what is going on is needed. This may be an opportunity to make an important contribution to knowledge. In addition, some social scientists have argued that good description is all that is needed for an adequate understanding of many topics. Certainly, in comparative studies, description is the fundamental task. In short, good description is a vital part of social research.

Some writers have proposed more than three types of research questions. Yin (2003a), for example, has discussed seven types: 'who', 'what', 'where', 'how',

many', 'how much', 'how' and 'why'. However, he does acknowledge that 'who', 'where', 'how many' and 'how much' questions are different forms of a 'what' question. Blaxter *et al.* (2002) have suggested five types of questions: 'how', 'who', 'what', 'when' and 'why'. Similarly, the first four of their questions can all be transposed into 'what' questions: 'what individuals' in 'what places', at 'what time', in 'what numbers or quantities' and in 'what ways'.

Other writers have taken a different approach to research questions. Hedrick *et al.* (1993: 23–32) have identified four types of research questions that are relevant to applied research: descriptive, normative, correlative and impact. Marshall and Rossman (2006) have classified research questions as theoretical, as focusing on particular populations and as being site-specific. These categories relate to the context in which they are examined. While these categories may be useful, throughout the book, I shall discuss only the three types of research questions, 'what', 'why' and 'how'.

The process of developing research questions will inevitably produce a range of question wording similar to that discussed by Yin (2003a: 5–7). However, I believe the discipline of reducing all questions to these three types helps to make the links between research questions and research purposes clear.

Examples of Research Questions

Let us return to the four research topics discussed in chapter 2 and examine some possible research questions for each one.

Environmental Worldviews and Behaviour among Students and Residents

1 To what extent do students and residents hold different environmental worldviews?
2 To what extent is environmentally responsible behaviour practised?
3 What is the level and type of involvement in environmental movements?
4 To what extent, and in what ways, is environmental behaviour related to environmental worldviews?
5 In what ways and to what extent will environmental worldviews and behaviour change over the next five years?

As these are all 'what' questions, the study will have only *descriptive* purposes. It seeks to describe the distributions of environmental worldviews and behaviour in these populations, and the pattern of the relationship between these variables, now and in the future.

Age and environmentalism: a test of competing hypotheses

1 To what extent is age related to environmental worldviews and environmental behaviour?
2 If there are relationships, what are their forms?
3 Why do these relationships exist?

These are straightforward research questions, two 'what' questions followed by a 'why' question. The study wishes to establish the nature of these relationships and to explain them.

Gender differences in environmentalism: towards an explanation

1 To what extent do women hold more favourable environmental attitudes than men?
2 To what extent are women more willing than men to engage in environmentally responsible behaviour?
3 Why do these gender differences in environmentalism exist?

Again, this is a combination of 'what' and 'why' questions seeking descriptions of relationships and explanations for them.

Motivation for environmentally responsible behaviour: the case of environmental activists

1 In what range and types of behaviour do environmentally responsible individuals engage?
2 Why do these people act responsibly towards the environment?
3 Why do some of these people manage to sustain this behaviour?
4 How can the incidence of this type of behaviour be increased?

Now we come to a combination of all three types of research questions. The study seeks to describe environmentally responsible behaviour, and then to explain why people engage in and manage to sustain that behaviour. Then comes the sting in the tail – how to get more people to engage in this behaviour. It will be unlikely that a study of this kind could do anything more than point in the direction of possible answers to this last question, using the answers to questions 2 and 3. But it could also suggest ideas for further research to pursue it. (See the Appendix for examples of different and more complex sets of research questions.)

Developing and Refining Research Questions

The process of translating a research problem into a set of research questions can be the most challenging part of any research project. This is particularly the case when the researcher initiates the project, as is the case in much academic and postgraduate research in the social sciences. However, the problem still exists in research that is commissioned by someone else for problem-solving or policy-related purposes. Organizations or groups that commission research are very often vague about what they want done, and usually need some assistance to clarify the research questions.

It is very rare to commence a project with clearly formulated research questions already provided. This might occur where a researcher has joined a research programme in which the research questions have already been established, or if a

researcher is taking up questions posed in previous research. However, it is much more common in the social sciences to approach a topic or field in which previous research is limited or has used an approach different from the one the researcher wants to use, or considers to be appropriate.

All researchers have to devise their own way of developing research questions. What I offer here is a process that I have used myself and found to work successfully with many postgraduate students. Note that every step may not be required in every project. Creswell (2007, 2009); Maxwell (2005); Neuman (2006); and Punch (2006) offer other techniques.

1 Write down every question you can think of that relates to the research problem The list will include all kinds of questions; some will be seeking descriptions, some explanations, some will be concerned with action, and so on. There is no need to try to achieve any order or consistency in the list; simply record the questions as they arise. One question will usually stimulate other questions; they should all be recorded. This activity may produce a long list. The purpose is to try to expose all the ideas that you have on the research problem, particularly those that may be taken for granted and which later you wish you had been fully aware of at the design stage. No question should be censored, even if it may seem to be marginal, outrageous or impractical.

2 Review the list of questions Once you are satisfied that you have pretty well exhausted all the ideas you have on the research problem, you should review your list. There are a number of strategies for doing this.

• Group the questions under similar themes or topics, if such exist in your list. This is likely to reveal overlaps between questions which will make it possible to eliminate some and to consolidate others. Part of this consolidation can be achieved by developing a single, general or abstract question that summarizes a group of more specific questions.
• Set aside questions that seem to be marginal to the research problem, that *are* too outrageous, or that seem to take you in directions that may be too difficult or too demanding. You can always review these questions later if you decide to change the direction of the research.

3 Separate 'what', 'why' and 'how' questions Within each group of questions, begin to identify those that appear to be 'what', 'why' and 'how' questions. Of course, some studies may be concerned ultimately with only one type of question, for example one or more 'what' questions, or just a 'why' question.

The wording of 'what', 'why' and 'how' questions requires very careful consideration, as the way a question is stated initially can be deceptive: 'what' and 'why' questions can begin with 'How', and 'how' questions can begin with 'What'. For example: 'How are environmental behaviour and environmental worldview related?' This needs be transposed into a descriptive question, as: 'What is the relationship between environmental behaviour and environmental worldview?' or 'To what extent, and in what ways, is environmental behaviour related to environmental worldview?' The question, 'How do some

people manage to behave in an environmentally responsible way?' needs to be transposed into an explanatory question: 'Why do these people act responsibly towards the environment?' The question, 'What can be done to increase the incidence of environmentally responsible behaviour?' needs to be transposed into an intervention question: 'How can the incidence of environmentally responsible behaviour be increased?'

Make sure each question is worded as clearly and as simply as possible and that each one can be identified unambiguously as a 'what', 'why' or 'how' question. Complex questions may need to be broken down into a series of questions. For example, the question, 'What is the incidence of student plagiarism?' would be better broken down into at least two questions: 'What has been the extent of detected student plagiarism over the past five years?' and 'In what types of plagiarism have students engaged?' (See the Appendix).

4 Expose assumptions   Check each question to see what it assumes. Many questions, particularly 'why' questions, presuppose other questions. It is important to expose the 'what' question that must be answered before a 'why' question can be asked, or, perhaps, even formulated.

'How' questions may presuppose both 'what' and, particularly, 'why' questions. A research project may need to examine all three types of questions. Rather than reducing the number of questions on the list, this part of the process may add further questions.

5 Examine the scope of the questions   Now is the time to get practical and ask yourself how many groups of questions, and questions within groups, can be tackled in the project. A judgement has to be made about what is going to be manageable within the time and with the other resources available. There is an inevitable tendency to try to do too much; the questions for the topic on student plagiarism are a good example (see the Appendix). Therefore, it is advisable at this stage to reduce the project to what may appear to be an extremely limited or even trivial set of questions. Such innocent-looking questions usually have other questions lurking in their shadows.

6 Separate major and subsidiary questions   Once the list of questions has been reduced to what appears to be a manageable set, further work can be done on them. It may be useful to separate the questions into two broad categories, *major* questions and *subsidiary* questions.[1] Major research questions are those that will form the core of the research project, the key questions that are to be answered. They may also be stated more abstractly than some of the other questions. Research projects may have only one major research question. However, most are likely to have a combination of major questions: 'what' questions and a 'why' question, or a set of 'what', 'why' and 'how' questions. About five or six major research questions is probably more than enough for any project. Subsidiary questions will include those that deal with background information or issues that are presupposed by one or more major questions that, while being necessary, are not absolutely central to the project. Here is an example of a set of major and subsidiary questions.

Major research question

- To what extent is environmentally responsible behaviour practised?

Subsidiary research questions

- To what extent are household waste products recycled?
- To what extent is buying environmentally damaging products avoided?
- To what extent is public transport and cycling used in preference to private motor vehicles?

In this example, the subsidiary questions can be used to specify categories of environmental behaviour and thus focus the study.

7 Is each question necessary?   As your set of questions begins to take shape, you need to subject them to critical scrutiny by asking of each question: 'Why am I asking this question?' 'Is it related to the research problem?' 'Why do I want to know this?' 'What will I do with the results from it?' 'How does it relate to other questions?' 'Is it researchable?' 'Can I manage all these questions?' This process needs to be taken very seriously and not glossed over quickly. It is very easy to include questions because 'that would be interesting to explore', or 'I would really like to know about that'. This critical examination needs to be ruthless.

A common mistake in drafting research questions is to confuse them with questions used to elicit information from respondents or participants, for example, interview questions, or questions that would go into a questionnaire. Research questions are what you want the research project to answer. Questions you ask respondents can provide the basis for answering research questions, but their style and scope are very different. A wide variety of data may contribute to the answering of any research question.

Many postgraduate students seem to have a desire to do the definitive piece of research on their topic. This is not only an unrealistic expectation for a fully research-based PhD; it is impossible in research for any other kind of postgraduate degree. The problem is most acute for students undertaking a coursework (taught) master's degree in which there is a minor thesis/dissertation/project component. Because of its limited duration, such a research project is very difficult to design.

In short, the number and nature of the questions selected has got to reflect the available time and resources. This is the stage at which the scope of the project is determined, and bad decisions can produce serious problems later.

It is important to recognize that while it is highly desirable to produce a well formulated set of research questions as part of an integrated research proposal or design, this may not always be possible without some preliminary research being undertaken. In addition, what is discovered in the process of undertaking the research is likely to require a review of the research questions from time to time. No research design can completely anticipate how a research project will evolve. It may turn out that some research questions cannot be answered because it is not possible to obtain the necessary data. What the researcher assumed or was led to

believe about the availability of or access to the necessary data may turn out to be wrong. Consequently, the design may require some revision, and part of this may involve a change to one or more research questions. Hence, while it is necessary to be as clear as possible about the scope and direction of the research at the beginning, what the researcher learns in the course of undertaking the research may necessitate some changes. This is simply the nature of research in any discipline.

Research projects differ in the extent to which it is possible to be able to produce precise research questions. This is certainly true of exploratory research, the aim of which can be to provide information to assist in the development of research questions. It might also be argued that some studies that use qualitative or ethnographic research methods involve the researcher in a learning process, of discovering research questions as well as answering them. In these cases, the research questions may evolve in the course of the research. However, even this kind of research requires careful consideration of scope and direction at the beginning in order to ensure that it will be manageable and will have a high probability of successful completion. The developmental nature of a research design should not be used as an excuse for avoiding the effort required to formulate appropriate research questions.

Staying on Track

A common feature of the research process is for the researcher to be deflected or distracted from their original intentions. Many influences may be at work:

- encountering new ideas, for example, in published research, in conference papers or presentations, in previously unfamiliar theory, or in the media;
- discussion with colleagues;
- changing academic fashions;
- changing political agendas; and, more particularly,
- learning that takes place during the course of the research, for example, from observations, from interviews and discussions, and from working with data.

It is very easy to lose one's way and to forget or neglect the original research questions. Changes to research questions should be made only after careful consideration and not by just drifting away from them. One way to counter this drift is to print the questions in large type and display them in prominent places, such as in your regular work space, or in the front page of your field book or journal. They should be read regularly to keep the focus of the research clear.

Research Questions and Hypotheses

As we have seen, it is a common view that social research should be directed by one or more hypotheses. However, in some types of research this is impossible or inappropriate. When hypotheses are considered to be essential, it is not always clear what their role is or where they are to come from. In some traditions of

research, it is expected that hypotheses will be stated very precisely, in the null and directional forms, to facilitate statistical testing. In other traditions, hypotheses are stated much more loosely, and their acceptance or rejection is based on evidence and argument rather than tests of significance. In practice, hypotheses are drawn from a variety of sources, such as hunches or intuition, previous research, discursive argument and carefully formulated theories. While the latter is advocated in some traditions (see the discussion of the Deductive research strategy in chapter 4), their source is frequently vague and their purpose unclear.

Lundberg's early textbook on social research (1942) provides a classical view of the role of hypotheses. He argued that there are four steps in 'the scientific method': the formulation of a working hypothesis, the observation and recording of data, the classification and organization of the data collected, and the production of generalizations that apply under given conditions. In this context, Lundberg defined a hypothesis as 'a tentative generalization, the validity of which remains to be tested. In its most elementary stages, the hypothesis may be any hunch, guess, imaginative idea or intuition whatsoever which becomes the basis for action or investigation' (1942: 9). This view of a hypothesis simply requires the researcher to have a guess at what they think the data might reveal, and then proceed to see if it is the case. So conventional has this view become that the novice researcher feels compelled to make such guesses, even if it makes no sense to do so; one feels naked without a hypothesis for a fig leaf. The fear of not being able to 'prove' their hypothesis hangs like the sword of Damocles over the novice's head; guessing the wrong hypothesis, or the wrong version of it, can be regarded as a disaster. The stress in this tradition of research is on having a hypothesis, not always on where it comes from, what it might be connected to, and what purpose it serves. It is not uncommon to invent such hypotheses after the research has been completed.

Some writers conflate hypotheses and research questions. For example, Mitchell and Jolley stated that research is done to answer questions, but then went on to say that such questions are usually stated as hypotheses (1992: 38). They have quite rightly argued (2007: 52) that research does not begin with variables, equipment and participants, and encourage students to learn how to generate questions and develop them into workable hypotheses. However, in the discussion that follows this injunction, there is no mention of questions, only hypotheses, variables and relationships between variables.

It is my view that *hypotheses are tentative answers to 'why' and, sometimes, 'how' research questions*. They are our best guesses at the answers. But *they are not appropriate for 'what' questions*. There is little point in hazarding guesses at a possible state of affairs. Research will produce an answer to a 'what' question in due course, and no amount of guessing about what will be found is of any assistance; it might even prejudice the answer. Therefore, hypotheses should be reserved for the role of tentative answers to 'why' and 'how' questions, and particularly 'why' questions. While it may not always be possible to produce a hypothesis for such research questions, to do so is to give research a much clearer sense of direction; decisions about what data to gather, and how to analyse them, are easier to make. However, it is important to note that some traditions of research that are concerned with 'why' questions may not set out with hypotheses. In grounded

theory, for example, hypotheses are proposed in response to the patterns in the accumulating data, and they will be tested in a continuing trial and error process, being refined and, perhaps, discarded along the way.

A central issue that researchers confront at the stage of formulating research questions and hypotheses (if required) is what concepts to use and how to define them. How this is handled will depend largely on the particular research strategy or strategies, and theories or theoretical perspectives, adopted. This issue will be introduced in the next section and will be discussed in more detail in the early part of chapter 5.

Research questions and the literature review

A literature review is a customary component of any research report or thesis. Its main purpose is to provide a background to and context for the research, and to establish a bridge between the project and the current state of knowledge on the topic. This review may include:

- background information that establishes the existence of the problem to be investigated;
- previous research on the topic, or related topics;
- theory of relevance to the 'why' question(s);
- research paradigm(s) as a source of ontological and epistemological assumptions;
- methodological considerations of relevance to the selection of a research strategy or strategies; and
- a review and/or elaboration of the methods to be used.

These components of the literature review may end up in various places in the thesis or research report. The first may be part of the introductory chapter; the last two may appear in a methodology and methods chapter; and the fourth may be part of a discussion on the choice of research strategy or strategies. It is the second and third, on previous research and theory, that are particularly relevant to the research questions.

A major dilemma in any research project is to establish what literature to review – what literature is relevant. This can be a daunting and confusing task, particularly for novice researchers. I have observed many students spending an excessive amount of time reading rather aimlessly. Some will not really be satisfied until they have read 'everything', but the problem is to know what to include in 'everything'.

One solution to this problem is to use the research questions to guide and structure the review of previous research and relevant theory. Each question can be used to put a boundary around a body of literature, be it theory, published research or reports. *The aim of the literature review is to indicate what the state of knowledge is with respect to each research question, or group of questions.* In support of this position, Marshall and Rossman (2006: 39) have argued that research questions 'should forecast the literature to be reviewed.'

If hypotheses are used, they should have some connection with this literature. In some cases it may be possible to derive such a tentative answer to a 'why' question from existing theory, or it may be necessary to construct a new theory for the purpose. As we shall see, within the Deductive research strategy, the development of a theory from which a hypothesis or hypotheses can be deduced is an essential part of answering 'why' questions. In the Retroductive research strategy, the literature review may provide some assistance in the construction of hypothetical explanatory models. When the Abductive research strategy is used for theory generation, hypotheses are an integral part of the continuing process of data collection and analysis, of observation, reflection, hypothesizing and testing. However, advocates of this strategy usually argue that research should *not* begin with hypotheses.

Research Purposes

In contrast to the researcher's personal motives and goals for undertaking a particular research project, research purposes are concerned with the types of knowledge a researcher wants to produce. Social research can have a number of purposes, ranging from relatively simple to very complex, and encompassing both basic and applied research. Research can set out to *explore, describe, explain, understand, predict, change, evaluate* and *assess impacts* (see figure 3.1).

A research project can pursue just one of these purposes or, perhaps, a number of them in sequence. For example, a study may set out to *describe*, or it might begin with a descriptive stage and then proceed to *explain* and then to *change*. Basic research focuses on the first five purposes, to *explore, describe, explain, understand* and *predict*, but particularly *describe, explain and understand*. While applied research may include some of these 'basic' purposes, it is particularly concerned with *change, evaluation* and *impact assessment*.

Types of Purposes

Basic research

To *explore* is to attempt to develop an initial, rough description or, possibly, an understanding of some social phenomenon.

To *describe* is to provide a detailed account, or the precise measurement and reporting, of the characteristics of some population, group or phenomenon, including establishing regularities.

To *explain* is to establish the elements, factors or mechanisms that are responsible for producing the state of or regularities in a social phenomenon.

To *understand* is to establish reasons for particular social action, the occurrence of an event or the course of a social episode, these reasons being derived from the ones given by social actors.

To *predict* is to use some established understanding or explanation of a phenomenon to postulate certain outcomes under particular conditions.

Applied research

To *change* is to intervene in a social situation by manipulating some aspects of it, or to assist the participants to do so, preferably on the basis of established understanding or explanation.

To *evaluate* is to monitor social intervention programmes to assess whether they have achieved their desired outcomes, and to assist with problem-solving and policy-making.

To *assess social impacts* is to identify the likely social and cultural consequences of planned projects, technological change or policy actions on social structures, social processes and/or people.

Similar classifications of research purposes have been presented by Marshall and Rossman (2006) – exploratory, explanatory, descriptive and emancipatory – and by Neuman (2007) – exploratory, descriptive, explanatory, evaluation, action and social impact assessment.

In case you might be wondering why *comparison* is not included as a research purpose, I regard it either as a form of description or as a technique for arriving at explanation or understanding, i.e. for theory generation or testing. In fact, comparison is one of the best methods for generating theory, as is evident in grounded theory (Corbin and Strauss 2008). As such, it is not a research purpose but can be a means for achieving such purposes. Therefore, a list of purposes should not include statements like 'To compare the environmental attitudes of university students and logging contractors'. A research project might set out to *describe* the attitudes of each group, and to try to *explain* why they hold particular attitudes. A comparison of their attitudes can be part of either of these purposes.

Explore Exploratory research is necessary when very little is known about the topic being investigated, or about the context in which the research is to be conducted. Perhaps the topic has never been investigated before, or never in that particular context. Basic demographic characteristics of a group of people, or some aspects of their behaviour or social relationships, may need to be known in order to design the study. The relevance of particular research questions, or the feasibility of using certain methods of data gathering, may also need to be explored. Essentially, exploratory research is used to get a better idea of what is going on and how it might be researched. The methods used to conduct exploratory research need to be flexible but are not usually as rigorous as those used to pursue other purposes.

While exploratory research is usually conducted at the beginning of a research project, it may also be necessary at other stages to provide information for critical design decisions, to overcome an unexpected problem, to better understand an unanticipated finding, or to establish which avenues of explanation would be worthwhile pursuing.

In the context of his advocacy of symbolic interactionism, Blumer (1969) gave exploratory research a substantial role. He believed this was necessary to counter the common tendency to move straight into research without an adequate understanding of the sector of social life being investigated. He saw the exploratory

phase as being necessary to sharpen the focus of the research; not as an optional extra, but as an essential part of any project. 'The purpose of exploratory investigation is to move towards a clearer understanding of how one's problem is to be posed, to learn what are the appropriate data, to develop ideas of what are significant lines of relation, and to evolve one's conceptual tools in the light of what one is learning about the area of life' (Blumer 1969: 40). Blumer has left us in no doubt about how essential exploratory research is to the development of a good research design.

Describe Descriptive research seeks to present an accurate account of some phenomenon, the characteristics in some demographic category, group or population, the patterns of relationships in some social context, at a particular time, or the changes in those characteristics over time (Bulmer 1986: 66). These descriptive accounts can be expressed in words or numbers and may involve the development of sets of categories or types.

In practice, the boundary between exploratory and descriptive research is blurred. Descriptive research is more rigorous and is usually narrower in its focus; it should be directed by clearly stated research questions. However, both types of research require the use of concepts and they will be structured by at least some theoretical assumptions.

Explain and understand Explanatory research seeks to account for patterns in observed social phenomena, attitudes, behaviour, social relationships, social processes or social structures (Bulmer 1986: 66–7). Explanation is making intelligible the events or regularities that have been observed and which cannot be accounted for by existing theories. Explanations eliminate puzzles and provide intellectual satisfaction. To explain some phenomenon is to give an account of why it behaves in a particular way or why particular regularities occur. Detailed description can provide the beginnings of an explanation.

Explanations make the obscure plain to see. This is true of both semantic and scientific explanation. Semantic explanation is concerned with the meanings of words and phrases, while scientific explanation seeks the causes for the occurrence of a particular event or regularity. However, making something intelligible is not just a subjective matter.

> There is a difference between *having* an explanation and *seeing* it. In the case of semantic explanation, we do not have one unless and until we see it, but in the case of scientific explanation either the having or the seeing may occur without the other. That an explanation is often resisted when it is first offered is a commonplace of the history of science – men [*sic*] have it, but do not see it. The reverse is characteristic of the sort of explanations occurring in myths, paranoia, the occult 'sciences', and the like. . . . They provide a certain intellectual satisfaction, but it is one unwarranted by the actual state of affairs. Those who accept them only see an explanation, but do not have one. (Kaplan 1964: 330)

I follow the distinction between *explanation* and *understanding* that has been discussed by writers such as Taylor (1964) and von Wright (1971) and,

subsequently, Giddens (1979: 258). The difference between them is a matter of how intelligibility is achieved; by *causal* explanation or by *reason* explanation. Explanations identify causes of events or regularities, the factors or mechanisms that produced them, whereas understanding is provided by the reasons or accounts social actors give for their actions. The latter is also associated with the meaning of an event or activity in a particular social context, either that given by social actors or the meaning that researchers derive from social actors' accounts. Explanations are produced by researchers who look at a phenomenon from the 'outside', whereas understanding is based on an 'inside' view in which researchers grasp the subjective consciousness, the interpretations, of social actors involved in the conduct (Giddens 1976: 55).

The distinction between explanation (*erklären*) and understanding (*verstehen*) has a long history in German scholarship. While some writers (e.g. Winch 1958) have argued that causal explanation is appropriate in the natural sciences and reason explanation is appropriate in the human or social sciences, other writers have argued either that both can be used in the social sciences (e.g. Habermas 1972), or that characterizing the two fields of science as being exclusively concerned with only one of these is inappropriate (e.g. Giddens 1976). The position adopted here is that both explanation and understanding are appropriate purposes in the social sciences, but that they produce rather different kinds of intelligibility.

In both the natural and social sciences, various strategies have been advocated to achieve explanation or understanding, based on different assumptions and the use of different logics of enquiry. These strategies look in different places, and in terms of different factors or mechanisms, for answers to their research questions. In chapter 4, three of these explanatory strategies (the Inductive, Deductive and Retroductive), and one that is used to achieve understanding (the Abductive), are outlined and compared in terms of their relevance to the design and conduct of social research.

Predict   Prediction in research makes claims about what *should* happen if certain laws or mechanisms operate under certain conditions. This needs to be distinguished from prophecy, which makes claims about what will happen in the future (Popper 1961: 128). The possibility of prediction is dependent on the state of knowledge at a particular time.

Prediction can be achieved in two ways: in terms of well-established patterns of association between concepts (as in the Inductive research strategy); or by shifting the emphasis in a theoretical argument (as in the Deductive research strategy). In the case of established patterns, whenever one part of a relationship is present, it can be expected that the other part will also be present. For example, if it has been consistently established that juvenile delinquents come from broken homes, then locating particular juvenile delinquents can lead to the prediction that they will be found to have come from broken homes, or, alternatively, that children from broken homes are likely to become delinquents.

Some writers have argued that the logic involved in explanation and prediction is essentially the same; it is just a matter of where the emphasis is put and what can be taken as given (Popper 1959, 1961; Hempel 1966). This claim is based on the assumption that a set of propositions that has been used as an explanation of an

observed pattern can also be used to predict another pattern. For example, if an explanation has been constructed to explain why the suicide rate is low in a country in which a particular religion is predominant, and if religion has been shown in a deductive argument to be related to suicide rates (as Durkheim claimed to have established), then it is possible to predict that other countries of a similar religious composition will have similar suicide rates (see the discussion of Homans's (1964) reconstruction of Durkheim's (1951) theory of suicide in chapter 4).

Writers who have advocated the Retroductive research strategy (e.g. Bhaskar, 1979) have argued that prediction is only possible in closed systems, perhaps only under experimental conditions. As social scientists have to work in open systems, it follows that prediction is not possible in the social sciences. While explanation in terms of causal mechanisms is possible, there is no scope for prediction because the conditions under which a mechanism operates can never be fully established. As the natural sciences also operate in open systems, apart from artificially controlled experiments, the advocates of this position also claim that prediction is not possible in the natural sciences.

Change   Research that is concerned with change endeavours to intervene in the social world to bring about partial or major changes, either in conjunction with the research itself, or as a consequence of research outcomes. Change can only be achieved with confidence if the actions taken are based on those that a well established explanation or understanding would suggest. However, the process of intervention itself can be used as a learning process. Knowledge of a phenomenon can be developed in a trial and error process, as intervention is conducted in stages. What is learnt from one stage can be used to decide what action to take in the next stage. The outcome can be explanation as well as change. In fact, some philosophers of science (e.g. Popper) have argued that this trial and error process, rather than gigantic leaps into unknown territory, is the only way scientific knowledge can be advanced. Nevertheless, it is possible to distinguish between intervention that is used primarily for the purpose of advancing knowledge, and intervention that tries to change the social world; between purely scientific concerns or essentially social or political concerns; between basic research and applied research.

The 'action research' tradition has the joint purposes of increasing knowledge and changing some aspect of the world at the same time. It differs from more conventional research in that the researcher may take the role of facilitator or resource person who helps a group of people change their own situation from the inside, rather than the researcher adopting the role of outside expert who tries to bring about change by 'external' intervention.

In some research paradigms (e.g. Critical Theory and Feminism) it is argued that change is the fundamental purpose of social science; all other purposes must serve that of the emancipation of oppressed groups. Therefore, while the purpose of *change* may be regarded as an add-on stage in research, it has been regarded by some as being either the only way to generate scientific knowledge, or the only legitimate form of social science.

Hence, intervention research may adopt 'outside' or 'inside' methods; it may be done to a group or community at the researcher's initiative, or on behalf of

someone else, or it may be done in conjunction with, or as a result of, the initiative of a group or community. In the latter case, it is directed towards the goals *they* have defined or have been helped to define. This type of research is usually referred to as 'participatory action research' (see Whyte 1991).

Intervention research can also be done 'top down', thus serving the needs of the powerful, or 'bottom up' by serving the needs of the powerless. Hence, it may be viewed loosely as either 'radical' or 'conservative'. Radical interventionist research is emancipatory research that is designed to improve the conditions of less powerful sections of society and to replace oppressive regimes, and is frequently associated with some version of critical theory (Habermas 1971, 1987; Fay 1975, 1987; Bhaskar 1979, 1986). More conservative versions of intervention research can be found in fields such as organizational change. While some organizational research may be concerned with producing a more humane working environment, and with the welfare of employees, generally the ultimate concern is to bring about changes that will achieve greater productivity and efficiency.

Evaluate Evaluation research, as well as *impact assessment* of various kinds, is concerned with policy and programme development and implementation in particular, and with problem-solving and decision-making in general. It seeks answers to questions posed by decision-makers, not academics. Evaluation research seeks to examine the consequences of the adoption of particular courses of action. It sets out to determine whether a particular policy or programme has been effective in achieving certain policy or programme goals. Evaluation research compares 'what is' with 'what should be' (Weiss 1972: 6): 'The purpose of evaluation research is to measure the effects of a program against the goals it set out to accomplish as a means of contributing to subsequent decision-making about the program and improving future programming' (Weiss 1972: 4).

Two types of evaluation research are commonly discussed: *formative evaluation*, in which built-in monitoring or continuous feedback is used during the implementation of a policy as a basis for helping to improve it; and *summative evaluation*, which is conducted after a policy has been implemented to establish its overall effectiveness in achieving the original goals.

Pawson and Tilley (1997) have identified four main perspectives on evaluation research: the *experimental* (Campbell and Stanley 1963a; Cook and Campbell 1979); the *pragmatic* (Weiss 1972, 1976; Weiss and Bucuvalas 1980); the *naturalistic* (Guba and Lincoln 1989); and the *pluralist* (Cronbach 1963, 1982; Rossi and Freeman 1985). The first on the scene in the 1960s, the *experimental* perspective, used classical or quasi-experimental procedures to try to establish whether change is the result of the planned intervention. In the wake of disappointing results from this first phase, the *pragmatic* perspective became less ambitious and advocated the careful use of any kind of sound research. The *naturalistic* perspective took a different turn and saw evaluation as a matter of negotiation between stakeholders with different interpretations (constructions) of a programme. The *pluralists* called for greater depth and breadth in programme evaluation by examining the way programmes are conceptualized, dealing with both institutional and individual diagnoses of the problem and focusing on outcome effectiveness. Pawson and Tilley (1997) have added a fifth perspective, *realistic evaluation*,

based on scientific realism (see 'social realism' in chapter 4), for which they claim superiority over the other perspectives. They have provided eight rules for the conduct of evaluation research. More recently, Pawson (2006) has taken this approach further in his argument for evidence-based policy.[2]

Commonly used tools in both *evaluation* research and *impact assessment* are *needs analysis* and *cost-benefit analysis*. However, it is because of the deficiencies in cost-benefit analysis, due to its narrow economic focus, that the development of both *social impact assessment* and *environmental impact assessment* has occurred.

Assess impacts Impact assessment (IA) has been defined as '*the process of identifying the future consequences of a current or proposed action*' (Becker 1997: 2). In the case of social impact assessment (SIA), these consequences are related to '*individuals, organizations, institutions and society as a whole*' (Becker 1997: 123). Following the definition of SIA in the United States by the Interorganizational Committee on Guidelines and Principles (1994), Burdge and Vanclay have included cultural as well as social impacts: Social impacts are the consequences of

> any public and private actions that alter the way in which people live, work, play, relate to one another, organize to meet their needs, and generally cope as members of society. Cultural impacts involve changes to norms, values, and beliefs of individuals that guide and rationalize their cognition of themselves and their society. (Burdge and Vanclay 1995: 32)

SIA can be concerned with assessing or predicting the demographic, socioeconomic, institutional, community and psychological impacts of resource development and large-scale construction projects, as well as social or economic policies and programmes (Becker 1997; Bulmer 1986). The tasks of SIAs are to:

- assess and predict potential impacts;
- mitigate and monitor these impacts; and
- audit and analyse the impacts of past actions.

For example, a major road construction scheme may lead to population movements, the fragmentation of social communities, psychological stress and changes in property values. Similarly, a new social welfare policy may lead to disadvantages among groups that it was supposed to benefit. SIA will endeavour to identify the range and extent of such impacts; it can be used to trade off the benefits of the project (e.g. reduced traffic congestion and accidents) against social costs. An important aspect of *social impact assessment* is the relative gains and losses that particular groups in a community or society are likely to experience as the result of a construction project. Some form of compensation for such losses might then be built into the costing of the project (see also Finsterbusch 1983, 1985).

In many ways, SIA has grown out of the related and increasingly significant field of *environmental impact assessment* (EIA). While the latter's primary concern is with the natural and biophysical impacts of major physical projects, it

is now generally accepted that EIA and SIA are complementary and that the latter must accompany the former.

Relationships among Research Purposes

The four research purposes, *explore, describe, explain* and *predict,* can occur as a sequence in terms of both the stages and the increasing complexity of research. Exploration usually precedes description, and description is necessary before explanation or prediction can be attempted. Exploration may be necessary to provide clues about the patterns that need to be described in a particular phenomenon. The sequence, beginning with the description of patterns, and followed by an explanation of why they occur, is central in any form of social research. Description of what is happening leads to questions or puzzles about why it is happening, and this calls for an explanation or some kind of understanding.

The importance of description is often underrated in research, with explanation being seen as the ultimate goal. However, without adequate description there may be nothing to explain; it is necessary to be sure what the patterns or regularities are before any attempt is made to explain them. It has been argued that explanation works 'not by involving something beyond what might be described, but by putting one fact or law in relation to others' (Kaplan 1964: 329). This is known as the 'pattern' model of explanation and is characteristic of the Inductive research strategy (to be discussed in chapter 4). Hence, some forms of explanation, such as pattern explanations, are nothing more than complex descriptions.

There are a variety of views on the relationship between explanation and prediction. It is possible to make predictions without having an explanation of a phenomenon. This kind of prediction relies on well-established generalizations about patterns of relationships between concepts. While some philosophers have argued that these patterns provide a basis for explanation, others have argued that it is necessary to find the mechanism that produces such patterns before explanation can be achieved (see chapter 4). However, the description of patterns or relationships between concepts can be used for prediction.

The purposes of *evaluate* and *assess impacts* share much in common. They, together with *change,* constitute the main fields of applied research. As we have seen, a major distinguishing feature of applied research is that it has a sponsor and/or client. Its goals are either set by the sponsor, or are the outcome of negotiation between the sponsor and researcher, and its outcomes have to address the concerns of the client. While it may be possible to attempt evaluation and impact assessment from an atheoretical point of view, by building on only a descriptive research base and side-stepping explanation or understanding, sophisticated evaluation and impact assessment need to use existing theories. If relevant theories are not available, they will need to be developed. Because applied research is normally done within strict time and resource constraints, there is pressure to take short cuts to avoid these essential components. Good applied research has to draw on well-established theories, because, after all, there is nothing as practical as a good theory.

It is unlikely that the whole gambit of research purposes can be or need to

be tackled in most research projects, and certainly not within the limitations of postgraduate research. Previous research can and should be used as a background to a research project. For example, if good descriptive research has already been done in the field, it may be possible to begin with an explanatory purpose, or if well-established and relevant theories are available, it may be possible to engage directly in the purposes of *change, evaluation* or *assess impacts*. But, to repeat an earlier point, without an adequate descriptive base, it is not possible to begin to pursue the other research purposes.

Research Purposes and Questions

Each of the eight research purposes is related to a particular type of research question. If we take some imaginary social process as an example, the three types of research questions would be associated with the eight research purposes as follows.

Explore	**What** might be happening?
	What people are involved? In **what** way?
Describe	**What** is happening?
	What people are involved? In **what** way?
Understand	**Why** is it happening?
Explain	**Why** is it happening?
Predict	**What** is likely to happen?
Change	**How** can it be made to be different?
Evaluate	**What** has happened? **Why** did it happen?
Assess impacts	**What** have been, or are likely to be, its individual, social and environmental consequences? **Why** have these consequences occurred?

The purposes of *understand* and *explain,*[3] and, to a lesser extent, *evaluate* and assess *impacts,* are the only ones that require 'why'-type questions. *Change* is the only purpose that requires 'how'-type questions. All the other purposes have questions beginning with 'what', or their questions can be transposed into this form. They are, therefore, either descriptive in nature, or involve comparisons between situations in the present, between a present and a past situation, or between a present situation and a desired future. To avoid the confusion that can result from other question wording, for example, pursuing description or explanation with questions that commence with 'how', this three-category classification of questions should be followed.

Further Reading

Andrews, R. 2003. *Research Questions.*
A brief and readable discussion of research questions from the point of view of educational research.