

5

Research Questions and Purposes

5.1 Chapter Summary

- All social research is built on the foundation of research questions.
- Research questions define the nature and scope of a study.
- 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 be 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 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 new theory may have to be constructed.
- In some research, working hypotheses may emerge, and be tested, in the course of the data collection and/or generation and analysis.
- As an aid to the conception, clarification and classification of research questions, it is also useful to think about social research 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 can be either the analytical or the practical goals of a project.

5.2 Introduction

Formulating *research questions* is the most critical component of any research design. It is only through the use of such questions that a *research problem* becomes researchable, 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 *logics of inquiry* and methods of *data collection and/or generation 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 5.1).

5.3 Research Questions

Research questions are essential for defining the nature and scope of 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 type 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 when quantitative data are used with Deductive logic. While there is a role for hypotheses in this kind of research, they neither provide the foundation for a research

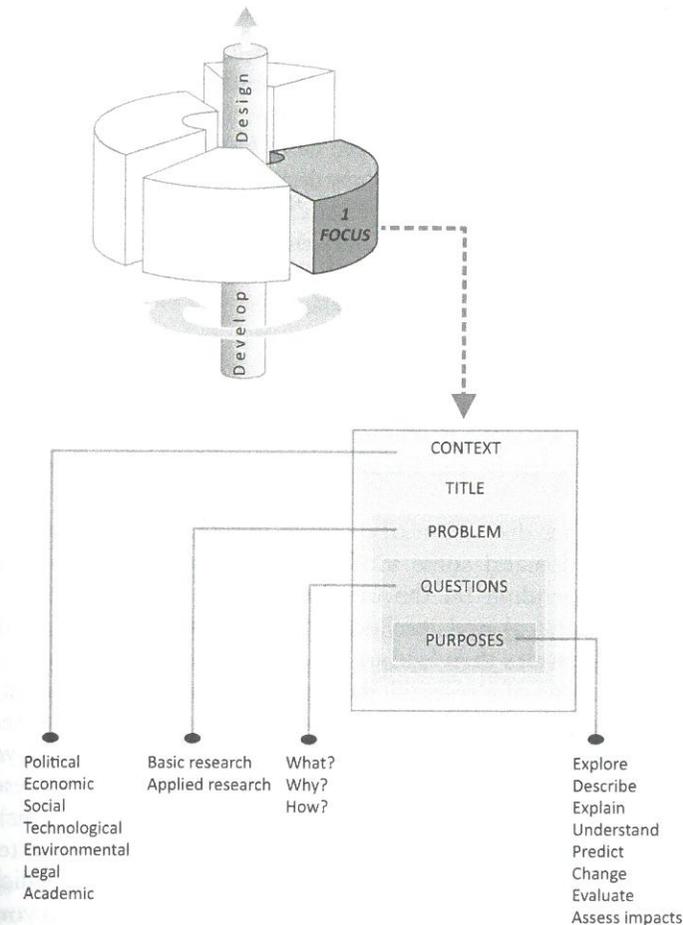


Figure 5.1 Focusing a research design determines its scope

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

Until fairly recently, few textbooks on research methods gave attention to the formulation of research questions, and some ignored this vital part of the research process entirely. Exceptions can be found. See, for example: Hedrick et al. (1993); Miles and Huberman (1994); Blaxter et al. (2002); Mason (2002, 2017); Yin (2003a); Maxwell (2005); Marshall and Rossman (2006); Neuman (2006, 2014); Flick (2006, 2007, 2014, 2015); Green (2008); Punch (2014); Creswell (2017).

It is interesting to note that these books are either concerned with qualitative research methods or include a significant discussion of them. Flick 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 (2017) argued that, in a qualitative study, research questions are central, not objectives (goals for research) or hypotheses (predictions involving variables and statistical tests). We concur wholeheartedly with Flick's statements above and would argue that what he and Creswell say about qualitative research applies to all social research.

Mason (2002) set her discussion of research questions in the context of intellectual puzzles that demand 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 Mason 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).

These examples should be sufficient to reinforce our 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. Restricting research questions in this way, and using them precisely, helps to make it clear what kind of answer is being sought; whether the purpose is *description*, *explanation/understanding* or *change* (see Figure 5.1).

'What' questions require a descriptive answer; they are directed towards describing and describing the characteristics of, and regularities in, some social phenomenon (e.g. categories of individuals, social groups of all sizes, and social processes). They include the following kinds 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 individual characteristics, or social processes, 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 regularities 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 happens 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.

A number of writers have proposed more than three types of research questions. Yin (2003a), for example, 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) suggested five types of questions: 'how', 'who', 'what', 'when' and 'why'. Similarly, 'who' and 'when' questions are really 'what' questions; 'what individuals' and 'at what time'.

Other writers have taken a different approach to research questions. Hedrick et al. (1993: 23–32) 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. However, these categories relate to the context in which they are examined and not to the purpose behind the question.

We restrict our discussion to the three types of research questions, ‘what’, ‘why’ and ‘how’, and believe that *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. To what extent, and in what ways, is environmental behaviour related to environmental worldviews?

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 them.

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 then 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. If there are gender differences in environmentalism, why do they 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 types and intensity 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. Research on this topic seeks to describe environmentally responsible behaviour, and then to explain why people engage in and manage to sustain that behaviour. Then it is concerned with how to get more people to behave this way. It would 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 explore ways to change this behaviour. (See Appendix II 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 challenging. This is particularly the case when a researcher initiates the project, as 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 considers to be appropriate.

All researchers have to devise their own way of developing research questions. What is offered here is a process that has been found to work successfully with many postgraduate students. Note that every step may not be required in every project. Creswell (2003, 2017), Maxwell (2005) and Punch (2016) 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 the 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 that 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 ones.
- 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 concerned with description, explanation/understanding and change. 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 can initially 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 to be transposed into a descriptive question, such 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?' It is useful to try to identify the purpose the question is serving (description, explanation/understanding or change) and then get the wording of the question consistent with this.

Make sure that 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 Appendix II.)

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 study. A judgement has to be made about what is going to be manageable within the time and 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 Appendix II). Therefore, it is advisable at this stage to reduce the project to what may appear to be an extremely limited or even narrow set of questions. Such innocent-looking questions usually have other questions implicit within their intentions and scope.

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. Most research projects 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, but only one may be necessary to address the research problem. 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 study to answer. Questions you ask respondents or participants can provide the basis for answering research questions, but their style and scope are very different.*

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 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 well-formulated 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 changes to research questions, or their elimination or replacement. 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 just the nature of research in any discipline.

Research projects differ in the extent to which it is possible 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, a 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 its scope and direction at the beginning, in order to ensure that it will be manageable and will have a high probability of successful completion. As has been stated many times already, 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 a researcher to be deflected or distracted from their original intentions. Many influences may be at work:

- encountering new ideas (e.g. 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 (e.g. 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 workspace, or in the front page of your field book or journal. They should be consulted 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 logic of inquiry in chapter 6), 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 hypotheses 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 entrenched 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 emphasis 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: 'We do research to get answers to questions. Therefore, to do research, we must start with a research question that can be answered. This question is usually stated as a hypothesis – an idea, a prediction, capable of being disproven' (Mitchell and Jolley 1992: 15). From this, it is difficult to know what research questions are, what role they are supposed to play and how they relate to hypotheses.

In our view, *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, but particularly 'why' questions. The reason for this is that the task of explaining anything is the most challenging in any research; we need some direction as to where to look for the answers to 'why' questions. Hypotheses can provide some direction on what data to gather and how to analyse them. The issue of where hypotheses come is discussed in chapters 6 and 7.

It is important to note that some traditions of research that are concerned with 'why' questions may not begin with hypotheses. In grounded theory (see chapter 7), for example, hypotheses are proposed in response to 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 logic(s) of inquiry, paradigm and theories adopted. This issue will be introduced in the next section and will be discussed in more detail in sections 7.3 and 7.4 of chapter 7.

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 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);
- paradigm(s) as a source of ontological and epistemological assumptions;
- methodological considerations of relevance to the selection of a logic of inquiry; 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 a 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 logic(s) of inquiry. 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 how to determine what literature to review – what literature is relevant. This can be a daunting and confusing task, particularly for novice researchers. Students can spend an excessive amount of time reading rather aimlessly and being distracted in the process. Some may not 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 or published research and reports. *The aim of the literature review is to indicate what the state of knowledge is with respect to each research question.* 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, when Deductive logic is used, the development of a theory from which a hypothesis or hypotheses can be deduced is an essential part of answering 'why' questions. When Retroductive logic is used, the literature review may provide some assistance in the construction of hypothetical explanatory models. When Abductive logic 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 formal hypotheses.

5.4 Research Purposes

In contrast to a 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 5.1).

A research project can pursue just one of these or, perhaps, a number of them in sequence. For example, a study may be purely *descriptive*, or it might begin with a descriptive stage and then proceed to *explanation* 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*. These purposes are now elaborated.

Types of Purposes

Basic research

- To *explore* is to attempt to develop an initial 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 or patterns of association.
- 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 consequences of planned projects, technological change or policy actions on social structures, social processes and/or people.

In case you might be wondering why *comparison* is not included as a research purpose, it can be regarded either as a form of description or as a technique for arriving at explanation or understanding; that is, 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 2015). As such, it is not a research purpose but can be a means for achieving some 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 particular attitudes of each group, and to try to *explain* why they hold those attitudes; a comparison of their attitudes can be part of either of these purposes.

Purposes elaborated

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. 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.

Describe Description is an essential foundation of all social research; without an adequate descriptive base, it is not possible to begin to pursue other research purposes. 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 changes in those characteristics over time. These descriptive accounts can be expressed in words or numbers, require the use of concepts, may be informed by theoretical assumptions, and may involve the development of sets of categories or types.

Explain and understand Explanatory research seeks to account for patterns in observed social phenomena, attitudes, behaviour, social relationships, social processes or social structures. To explain some phenomenon is to give an account of why it behaves in a particular way or why particular regularities occur. Explanation involves making intelligible the events or regularities that have been observed and which cannot be accounted for by existing theories. Detailed description can provide the foundation for an explanation.

We follow the distinction between *explanation* (*erklären*) and *understanding* (*verstehen*) that has been discussed by writers such as Taylor (1964) and von Wright (1971), and, subsequently, by Giddens (1979: 258); it has a long history in German scholarship. The difference is a matter of how intelligibility is achieved; it is the difference between *causal* explanation and *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.

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.

Predict Prediction in research makes claims about what *should* happen under certain conditions. This needs to be distinguished from prophecy, which makes claims about what *will* happen in the future. Prediction is more limited and is only concerned with what will happen if certain laws or mechanisms operate under certain conditions (Popper 1961: 128). Prediction involves time only in the sense that, whenever particular laws or mechanisms operate under the specified conditions, the predicted outcome can be expected. Therefore, 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 is claimed when Inductive logic is used); or by shifting the emphasis in a theoretical argument (as with Deductive logic). 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 placed 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 to explain 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 Blaikie 2007: 72-4 for a discussion of Durkheim's theory of suicide).

Writers who have advocated the use of Retroductive logic (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.

Change Research that is concerned with change endeavours to intervene in a social world to bring about partial or major changes, either in conjunction with the research itself, or as a consequence of research findings. 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. Nevertheless, this kind of intervention needs to be distinguished from intervention that tries to change some aspect of the social world.

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. This type of research is usually referred to as 'participatory action research' (Whyte 1991; Wadsworth 1997a, 1997b, 2010).

In some 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. As such, while the purpose of *change* may be regarded by many 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.

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 'conservative' or 'radical'.

Evaluate Evaluation research seeks to examine the consequences of the adoption of particular courses of action. It sets out to determine whether a 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, 1963b; Cook and Campbell 1979); the *pragmatic* (Weiss 1972, 1976; Weiss and Bucuvalas 1980); the *naturalistic* (Lincoln and Guba 1985); 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. Pawson and Tilley have added a fifth perspective, *realistic evaluation*, based on scientific realism (see chapter 6, 'Critical Realism'), for which they claim superiority over the other perspectives. 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 Inter-organizational Committee on Guidelines and Principles (1994), Burdge and Vanclay (1995) 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, organise 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 rationalise their cognition of themselves and their society. (Burdge and Vanclay 1995: 32)

SIA can be concerned with assessing or predicting the demographic, socio-economic, institutional, community and psychological impacts of resource development and large-scale construction projects, as well as social or economic policies and programmes. 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.

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.

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.

<i>Explore</i>	What might be happening? What people are involved? In what way?
<i>Describe</i>	What is happening? What people are involved? In what way?
<i>Understand</i>	Why is it happening?
<i>Explain</i>	Why is it happening?
<i>Predict</i>	What is likely to happen?
<i>Change</i>	How can it be made to be different?
<i>Evaluate</i>	What has happened? Why did it happen?
<i>Assess impacts</i>	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.

5.5 Conclusion

The central role of research questions should now be clear. They are essential for defining the nature and scope of a study, and for determining what is to be studied, as well as, to a degree, how it will be studied.

All social research can be conducted using just three types of research questions: 'what', 'why' and 'how' questions. 'What' questions seek a *description*, 'why' questions seek either an *explanation* or some form of *understanding*, and 'how' questions are concerned with *change*; in short, 'What is going on?', 'Why has it happened?' and 'How could it be different?'

It can be tempting to ask questions that start with some word other than 'what', 'why' and 'how'; for example, 'who', 'where', 'when' or 'how many'. However, if the purpose of the question is *description*, then it is not difficult to transcribe these examples into a 'what-type' question. Some questions that begin with 'how'

may in fact be 'what' or 'why' questions. For example, 'How did it happen?' may be asking 'What happened?' or 'Why did it happen?'

Therefore, just what form of question is being asked, and how it should be worded, can be clarified by thinking about the purpose of the question, along with the type of knowledge a researcher wants to produce. To the four main purposes – *description, explanation, understanding and change* – can be added *exploration, prediction, evaluation and impact assessment*. However, these additional purposes can all be expressed as 'what' questions: 'What is happening?'; 'What is likely to happen?'; 'To what extent did the programme achieve its goals?'; and 'What are the implications or consequences?'

5.6 Further Reading

Andrews, R. (2003). *Research Questions*.

A brief and readable discussion of research questions from the point of view of educational research.

Flick, U. (2014). *An Introduction to Qualitative Research*.

Flick, U. (2015). *Introducing Research Methodology*.

Both works argue for the importance of research questions and offer some useful advice.

Green, N. (2008). 'Formulating and refining a research question.'

An excellent discussion that draws on ideas presented in this chapter.

Mason, J. (2017). *Qualitative Researching*. Chapter 1.

A brief but highly pertinent discussion of research questions and their relationship to intellectual puzzles.

Punch, K. F. (2014). *Introduction to Social Research*. Chapters 3 and 4.

A detailed discussion of the nature and role of research questions.

PART 2:

FRAMING RESEARCH DESIGN