

# 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 carry out they produce.

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- 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.

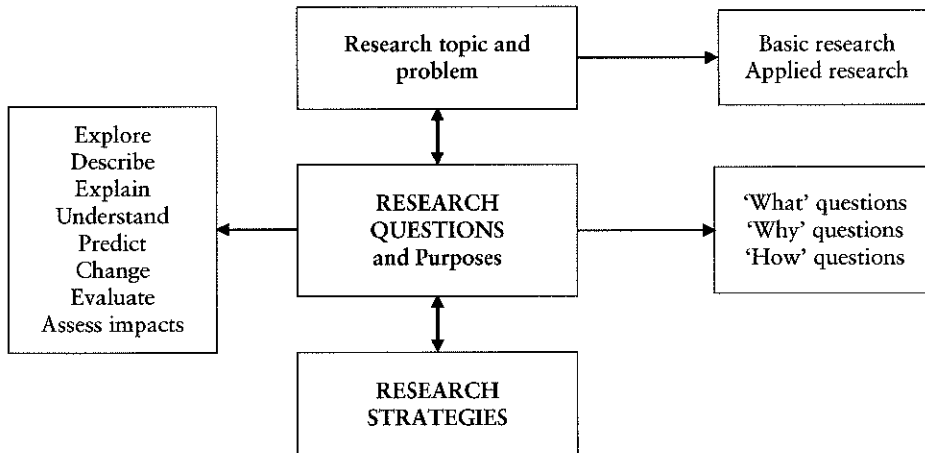


Figure 3.1 Research questions and purposes

### 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

- (1) 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

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(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).

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

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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 more common research is he wants to use

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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 to 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.<sup>1</sup> 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 questions

- To what extent...

#### Subsidiary research questions

- To what extent...
- To what extent...
- To what extent... motor vehicle...

In this example, the major research questions are environmental behaviour...

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*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

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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.'

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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

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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

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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*,

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Commonly used *needs analysis* techniques in cost-benefit analysis of both social and economic development of both social and economic development occurred.

*Assess impacts of development projects* identifying the *impact assessment* (Weiss 1997: 2). In the context of development projects related to 'inclusion and exclusion' (Weiss 1997: 123). For organizational development and organizational change, Vanclay have identified the consequences of development projects.

any public and social development projects relate to one or more aspects of society. Culture and social structure that guide and influence development projects. Vanclay 1997.

SIA can be used to assess the economic, social and environmental impacts of development and policy and programmatic changes.

- assess and predict the impacts of development projects
- mitigate and avoid negative impacts
- audit and monitor the impacts of development projects

For example, in the context of development projects, the fragmentation of property values and the distribution of resources among different groups can be identified. The range of impacts of the project (e.g. the project's impact on the environment, the project's impact on the particular group of people, the project's impact on the construction of a construction project) can be built into the project's impact assessment.

In many ways, the field of *environmental impact assessment* is with

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.<sup>2</sup>

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), Burdige 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. (Burdige 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 (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.

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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.

<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*,<sup>3</sup> 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.

Flick, U. 2006. *An Introduction to Qualitative Research*.

Argues for the importance of research questions and offers 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. 2002. *Qualitative Researching*. Chapter 1.

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

Punch, K. F. 2005. *Introduction to Social Research*. Chapters 3 and 4.

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

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## Concepts, Theories, Hypotheses and Models

### Chapter Summary

- The nature of the research questions, and the choice of research strategy or strategies, will determine how concepts are used, whether hypotheses are used, and the role of theory and models.
- Four traditions represent the ways concepts are used in social research.
  - *Ontological* tradition – concepts identify the basic features of some social phenomenon and the relationships between them.
  - *Operational* tradition – concepts are translated into variables by devising ways to measure them.
  - *Sensitizing* tradition – concepts provide initial ideas of what to look for, and these ideas will be refined as the research proceeds.
  - *Hermeneutic* tradition – concepts that a researcher uses to describe and understand any social phenomenon are derived from everyday concepts and meanings.
- The adaptive alternative seeks concepts that integrate agency and structure, as well as micro and macro-analysis, and social and sociological conceptions, with general theory.
- The four research strategies tend to use concepts in different ways.
- Theory can be regarded as being of two main types – theoreticians' and researchers' – and as existing at different levels of abstraction, ranging from classificatory schemes, through conceptual frameworks to theoretical systems.
- The place of theory in social research has been described in a variety of ways.
  - As occupying the space between empirical generalizations and grand theory, theories of the middle-range (Merton).
  - As producing an understanding of personal troubles and public issues by focusing on the intersection of biography and history (Mills).
  - As occupying various levels of abstraction between data and general theoretical ideas (Turner).
  - As being both inputs and outputs in ongoing cycles of induction and deduction (Wallace).

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- As being generated from data (Glaser and Strauss).
- As being the outcome of a dialogue between research data and unfolding conceptualizations and theoretical reflections (Layder).
- Hypotheses play a limited role in social research, only being relevant to the answering of 'why' research questions with the Deductive research strategy.
- Various types of models are used in social research. They are:
  - abstract descriptions;
  - synonym for theory;
  - conceptual models;
  - theoretical models;
  - analogue for mechanisms;
  - diagrammatic representations; and
  - mathematical representations.

## Introduction

The social science literature is replete with ideas about the role of concepts, theories, hypotheses and models in social research. Some of these ideas have come to be accepted uncritically. For example, many textbooks on social research methods regard the core of social research as being the definition and measurement of concepts, with theories stating relationships between concepts and models consisting of networks of such relationships. Hypotheses are regarded as potential relationships between concepts that can be tested by measuring the key concepts in them and analysing the data so produced. This view is attractive because of its simplicity. However, while it is very common, it is only relevant to two of the research strategies, the Inductive and Deductive, and then it is used differently in each one. Other views also need to be considered.

This chapter examines:

- views on how concepts are used in social research;
- ideas on the nature and use of theory;
- classical and contemporary views on the relationship between theory and research;
- the role of hypotheses and their connection with theory;
- types of models and their uses; and
- the role of concepts, theories, hypotheses and models in the four research strategies (see figure 5.1).

## The Role of Concepts

A concept is an idea that is expressed in words or as a symbol. Technical concepts in any discipline form the language by means of which it deals with its subject-matter. They range in generality from the very specific to the highly abstract, and from the simple to the complex. Concepts are regarded as the building blocks of social theories. Theories, in turn, specify the relationships between concepts

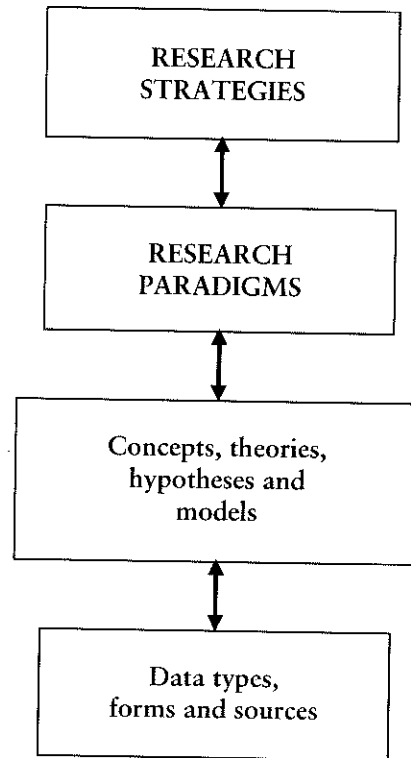


Figure 5.1 Concepts, theories, hypotheses and models

and why these relationships exist. Good theories are supposed to represent what happens in the social world.

A commonly held view of the role of concepts in social research, and their place in social theory, is embodied in the Positivist research paradigm. Blumer (1969) describes this view as follows.

Theory is of value in empirical science only to the extent to which it connects fruitfully with the empirical world. Concepts are the means, and the only means of establishing such connection, for it is the concept that points to the empirical instances about which a theoretical proposal is made. If the concept is clear as to what it refers, then sure identification of the empirical instances may be made. With their identification, they can be studied carefully, used to test theoretical proposals and exploited for suggestions as to new proposals. Thus, with clear concepts theoretical statements can be brought into close and self-correcting relations with the empirical world. (Blumer 1969: 143)

In addition to this role of establishing some kind of link with the social world, Blumer saw concepts as being important in the theoretical framework that sets a context for the research, as being involved in the statement of the research problem, as determining the data that will be collected and how they will be

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categorized, and as being essential in describing the findings (1969: 26). However, he proceeded to scrutinize this view, in particular, to question whether concepts used in this paradigm actually match the empirical world to which they are supposed to refer (1969: 28). His solution was to use sensitizing rather than definitive concepts, a distinction to be discussed shortly.

It is differences in views about the sources of concepts and their definitions that distinguish the research strategies. For example, in the Inductive and Deductive research strategies, it is the researcher's responsibility to select the relevant concepts and to define them before the research commences. However, in the Abductive research strategy, the concepts and their definitions may be derived initially from those used by social actors in the context of the topic under investigation. Technical concepts are derived from these lay concepts by a process of abstraction during the course of the research. Because of these different usages, *we cannot set out with just a single view of the role of concepts in social research.*

In the Inductive and Deductive research strategies, concepts and their definitions have various origins. For example, they may come from:

- a theoretical perspective or research paradigm that is dominant within a discipline or social scientific community (e.g. conflict theory or Interpretivism);
- a specific research programme (e.g. social mobility);
- commonly used theoretical concepts that are given a new definition (e.g. social class); or
- everyday concepts that are given precise meanings.

All of these sources involve the researcher in deciding what concepts and definitions are the most appropriate.

To explore these differences, five traditions in the use of concepts in the social sciences are discussed: the *ontological*, the *operationalizing*, the *sensitizing*, the *hermeneutic* and the *adaptive*. The *ontological* tradition is concerned with establishing the main features of social reality, the *operationalizing* tradition with specifying and measuring concepts to produce variables for a particular research project, the *sensitizing* tradition with refining an initial flexible concept in the course of the research, the *hermeneutic* tradition with deriving technical concepts from lay language, and the *adaptive* alternative with using both technical and lay concepts to link structure and agency.

### The Ontological Tradition

The *ontological* tradition is concerned with establishing a set of concepts that identifies the basic features of the social world, and that are essential for understanding societies, major social institutions or, perhaps, small-scale social situations. Elements of the ontological tradition can be found in the work of classical and modern social theorists. Classical theorists, such as Marx, Weber and Durkheim, each developed a battery of key concepts that provided a view of reality and were used in their theorizing. However, it was a modern theorist, Talcott Parsons, who turned the ontological analysis of concepts into a major

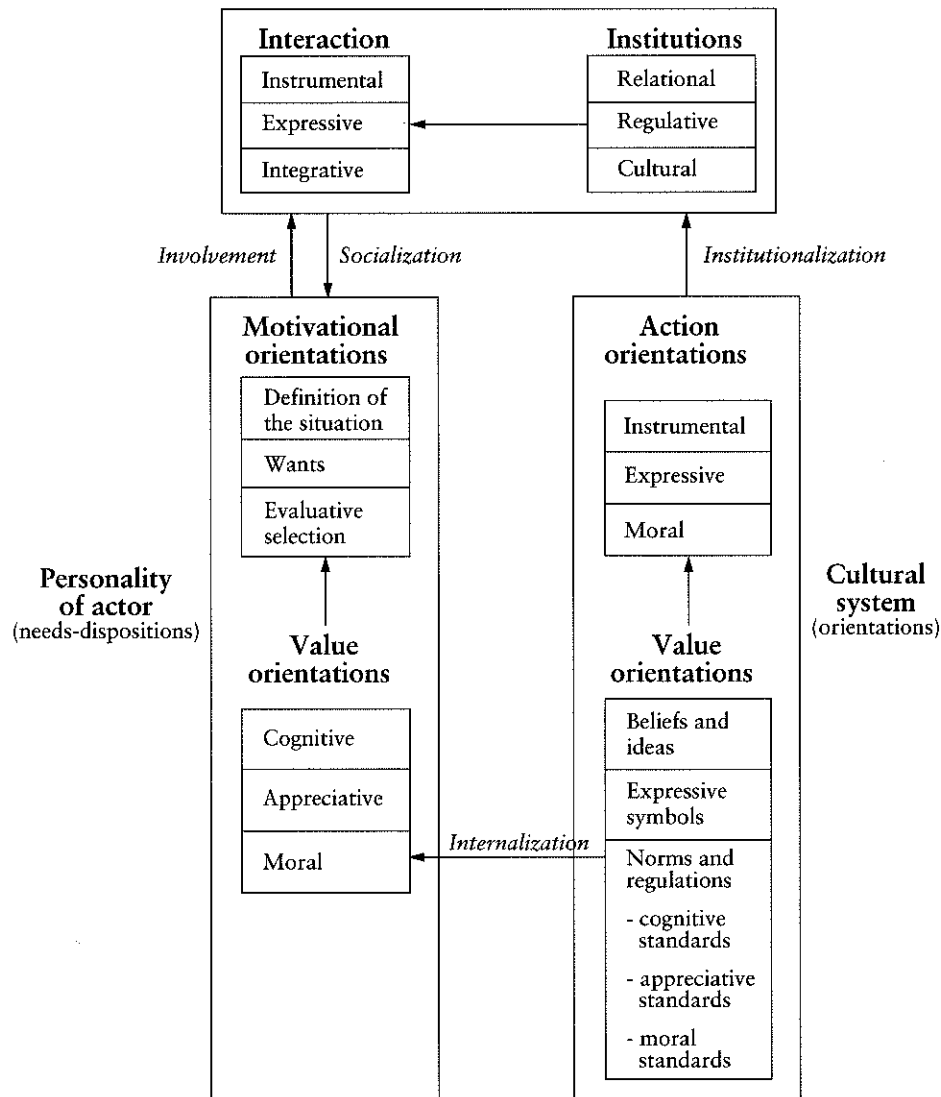


Figure 5.2 Parsons's theory of the system of action (Source: Waters 1994: 145)

preoccupation. A modification of part of Parsons's conceptual scheme will serve as an illustration of this tradition (see figure 5.2).

More recent attempts at theoretical synthesis, such as those by Habermas and Giddens, also include a strong ontological emphasis. Giddens, for example, has reorganized and redefined some of the basic concepts used by Parsons and others (e.g. society, social system, institution, structure), and has arranged them around the concept of 'structuration'. The foundation concepts in his scheme are 'agency' and 'structure', and the interplay of these leads to the process of structuration. While it is not possible to elaborate Structuration Theory here (see Giddens 1979, 1984 as well as: Cohen 1989; Bryant and Jary 1991; Craib 1992; Layder 1994;

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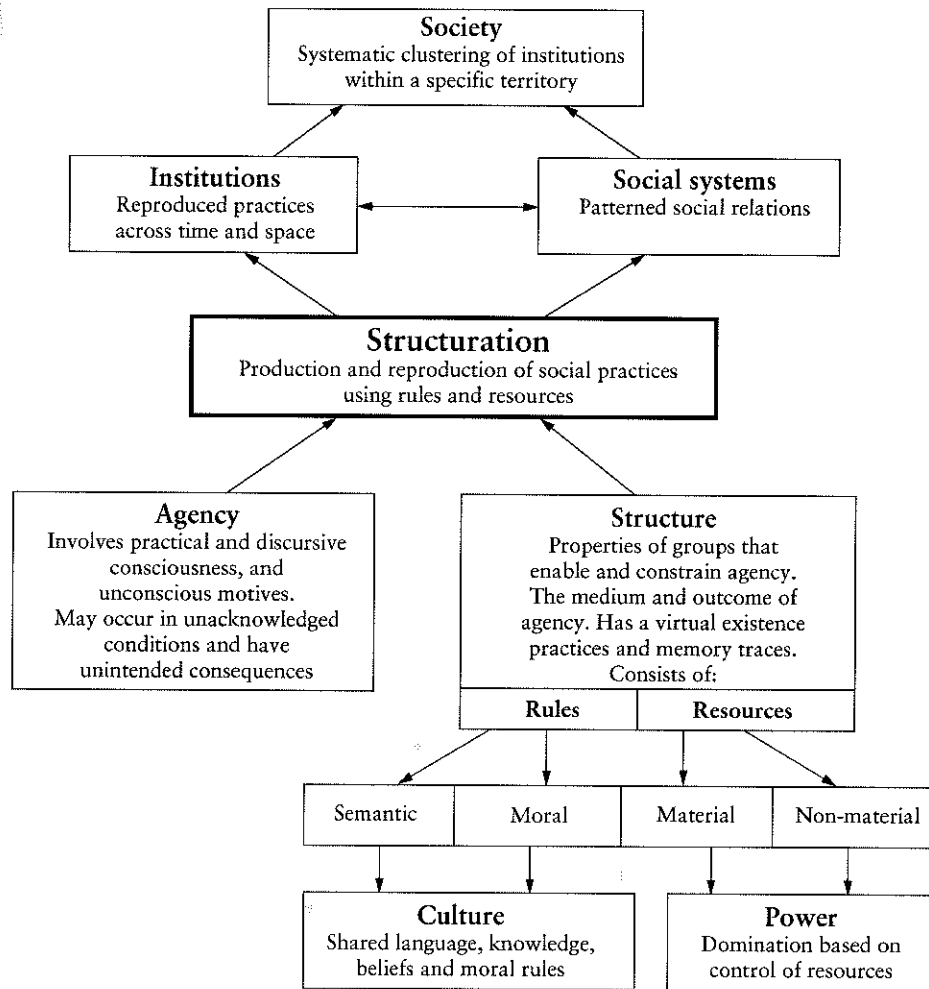


Figure 5.3 Key concepts in structuration theory

Scott 1995; Blaikie 2007), figure 5.3 is my attempt at setting out the relationships between Giddens's basic concepts.

### The Operationalizing Tradition

The operationalizing tradition is concerned with turning concepts into variables, with identifying the key concepts to be used in a particular study, and then defining them and developing ways of measuring them.

From Durkheim on, it has been argued that as concepts are the basic building blocks of theory, they must be defined precisely and consistently. The imprecision of ordinary language must be superseded by a technical use of concepts. This has led to the view that science has two languages (see e.g. Blalock 1968; Sedlack

and Stanley 1992; Babbie 2004; Neuman 2006): one is the language of *conceptualization* and the other is the language of *operationalization* used in quantitative measurement and testing of theories.

The language of *conceptualization* is the language that social scientists use to communicate their theoretical ideas and research findings to each other; it is the language of both abstract theoretical notions and a means of identifying observable phenomena. In the context of a research project, this language is used to identify key concepts and to state relationships between these concepts; to state research questions and hypotheses. Thus, some authors refer to this language as 'theory'. For example: 'Theories are built from concepts [and] . . . concepts are constructed from definitions' (Turner 1991: 5).

Researchers are required to define these concepts precisely in terms of how they will be used in a particular research project. The aim is to maintain a consistent theoretical language, although this is unlikely to be achieved. Turner has certainly adopted an optimistic view on this.

Hence the verbal symbols used to develop a concept must be defined as precisely as possible in order that they point to the same phenomenon for all investigators. Although perfect consensus may never be obtained with conventional language, a body of theory rests on the premise that scholars will do their best to define concepts ambiguously. (Turner 1991: 5)

These meanings are usually referred to as *formal definitions*.

The second language, *operationalization*, is used to transform theoretical language into empirical concepts. This is done by specifying the procedures by which the 'theoretical' concept will be measured, by indicating what will count as an example of, or what will have to change to produce different values for, the theoretical concept, i.e. the indicators that will be used to measure the concept to produce data related to it. These are commonly called *operational definitions*.

The concept of 'social class' is an example of such an abstract concept. Social class might be defined as 'a category of individuals who occupy a similar position in a structure resulting from the distribution of economic resources'. While there are other meanings, this is what social class could mean in a particular research project. Thus defined, the concept might then be measured in terms of the income a person receives from wages or salary. This operationalization relates to only one part of the total economic resources to which an individual may have access, such as interest on savings, dividends from shares, rental income from property, capital gains from property or other assets, a pension or superannuation. To faithfully measure the concept as defined, these and maybe other data would be required. However, the researcher might decide that some sources of income (e.g. capital gains) are too difficult to measure reliably, or that individuals in the study may have little or no idea how much of such income they receive. Hence, operationalization may be kept to something that is readily measured (although experienced researchers will know that obtaining accurate information about a person's annual wages or salary can be far from straightforward).

When a concept can have a number of values, the measurement of it produces a *variable*. A variable is 'a *concept* which can have *various values*, and which is

defined in such a way that it has in a particular situation a certain importance.

A great deal of attention has been given to some of the methods of operationalizing concepts. For example, some of the 'role' kept in mind is the 'right' definition of the concept.

A major difficulty is that they differ in the way they deal with phenomena in the real world (behaviour). They are translated into a common language.

This tradition of defining theory and research concepts in terms of useful concepts and procedures about selecting, measuring, and using data to collect appropriate information many years ago.

'Theory' becomes 'data' . . . are numerous, repeated, and certainly no ground (1959: 66)

The relationship between theory and research is discussed in this chapter.

Blumer was a pioneer in this tradition thus.

'Operational procedures may be given both empirical and theoretical content. The procedure for a particular inquiry may be the use of a particular method. The procedure given operational content by the inquiry for disengaging the concept from empirical reference (1969: 30-1)

He objected to the use of the term 'operational' for the measurement of a concept. He argued that a concept is itself in many ways.

defined in such a way that *one can tell by means of observations which value it has in a particular occurrence*' (Stinchcombe 1968: 28–9). In research that stresses the importance of operationalism, variables are the focus of research activity. ✓

A great deal of attention has been given to the problems of operationalizing some of the major concepts in social science. Debates about defining and operationalizing concepts have sometimes been regarded as a theoretical activity. For example, some time ago, discussions on the appropriate meaning of the concept of 'role' kept many writers busy. The purpose seems to have been to arrive at the ✓ 'right' definition and to somehow persuade others to use it (see Biddle 1979).

A major difficulty encountered in defining and operationalizing concepts is that they differ in their level of abstractness. Some concepts relate to concrete phenomena in specific times and places (e.g. the suicide rate). Other concepts deal with phenomena that span time and place, that are very general (e.g. deviant behaviour). These latter concepts may be difficult to operationalize unless they are translated into more specific concepts.

This tradition of two languages also identifies a particular relationship between theory and research. Theoretical activity is essentially about identifying the most useful concepts and finding the right formal meanings for them, while research is about selecting the best method of operationalizing a concept and then proceeding to collect appropriate data and analyse them. As C. Wright Mills pointed out many years ago, this is a very restricted view of both theory and research.

'Theory' becomes the variables useful in interpreting statistical findings; 'empirical data' . . . are restricted to such statistically determined facts and relations as are numerous, repeatable, measurable. . . . There are no philosophical grounds, and certainly no grounds in the work of social science . . . so to restrict these terms. (Mills 1959: 66)

The relationship between theory and research will be taken up later in this chapter.

Blumer was a major critic of the operational tradition. He depicted the tradition thus.

'Operational procedure' rests on the idea that a theoretical assertion or a concept can be given both empirical reference and validation by developing a specific, regularized procedure for approaching the empirical world. The given procedure or operation may be the use of a test, a scale, a measuring instrument, or standardized mode of inquiry. The procedure 'operationalizes' the theoretical proposition or concept. If the given operation meets tests of reliability the operation is taken as a sound instrument for disengaging specific empirical data. In turn, these data are thought to be valid empirical referents of the concept or proposition that is operationalized. (Blumer 1969: 30–1)

He objected to the idea of measuring concepts by selecting only a limited aspect of the relevant phenomenon and assuming that it reflected all aspects. Take the measurement of intelligence for example. In everyday life, intelligence manifests itself in many ways and is

present in such varied things as the skilful military planning of an army general, the ingenious exploitation of a market situation by a business entrepreneur, effective methods of survival by a disadvantaged slum dweller, the clever meeting of the problems of his world by a peasant or a primitive [*sic*] tribesman, the cunning of low-grade delinquent-girl morons in a detention home, and the construction of telling verse by a poet. It should be immediately clear how ridiculous and unwarranted it is to believe that the operationalizing of intelligence through a given intelligence test yields a satisfactory picture of intelligence. To form an empirically satisfactory picture of intelligence, a picture that may be taken as having empirical validation, it is necessary to catch and study intelligence as it is in play in actual empirical life instead of relying on a specialized and usually arbitrary selection of one area of its presumed manifestation. (Blumer 1969: 31)

As a symbolic interactionist, Blumer argued that an adequate understanding of social life requires recognition of the fact that individuals and groups find their way about by defining and interpreting objects, events and situations that they encounter. The operational tradition either ignores this or takes it for granted as not needing to be considered (Blumer 1969: 133). However, Blumer was not completely against the operational tradition as long as it was only used 'for those areas of social life and formation that are not mediated by an interpretive process' (Blumer 1969: 139). He was also prepared to accept that in areas where interpretation is involved, variable analysis might unearth patterns that cannot be detected by the direct study of people as is required in the interpretive approach to social enquiry. These patterns can then be investigated for the interpretations that lie behind them.

### The Sensitizing Tradition

Blumer's major solution to the deficiencies of the operational tradition was to suggest the use of sensitizing concepts.<sup>1</sup> He argued that in getting close to the social world we discover what social phenomena have in common. However, these similarities are usually expressed in a distinctive manner, with individual and group variations. Therefore, concepts need to be sensitizing rather than definitive in order for a researcher to be able to explore the nature of what is common.

Sensitizing concepts provide clues and suggestions about what to look for. The task is to reshape the concept to identify the nature of common aspects within the diversity of other features. Until this is done, it is premature to impose predefined (definitive) concepts on the phenomenon. A researcher sets out with one or a few rather general and vaguely defined concepts that are needed to provide an orientation to the research problem. Initially, their meaning will be established by exposition rather than by definition. However, as the research proceeds, the meaning of the concepts will be refined to make them more relevant for their purpose.

In their exposition of grounded theory, Glaser and Strauss (1967) referred to theoretical sensitivity as the continual development of theory from data. Grounded theory combines 'concepts and hypotheses that have emerged from

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the data with some existing ones that are clearly useful. . . . Potential theoretical sensitivity is lost when the sociologist commits himself [*sic*] exclusively to one specific preconceived theory' (1967: 48). The notion of *sensitivity* here refers to openness on the part of a researcher to different ideas, to a process of interrelating theoretical insights and data.

Drawing on the ideas of Glaser and Strauss (1967) about grounded theory, Denzin has taken the middle ground with regard to sensitizing concepts. He has argued that within his version of symbolic interactionism, the use of sensitizing concepts precedes operationalization. In fact, he defined sensitizing concepts negatively: 'By *sensitizing concepts* I refer to concepts that are not transformed immediately into *operational definitions* through an attitude scale or check list. . . . The sensitizing approach merely delays the point at which operationalization occurs' (Denzin 1970: 14).

Two points need to be noted here. First, Denzin included the meanings that social actors give to the concept being investigated in order to arrive at his meaning for it. Second, the subsequent *operationalizing* of the concept may be looser and much more diverse than would normally be the case in the operationalizing tradition.

The defining characteristic of the *sensitizing* tradition is that a researcher sets out with a loosely defined concept and then refines its meaning during the course of the research. While some help might be obtained from the people involved in the study, the concept remains the researcher's. Even if another concept is substituted, the concept and its ultimate meaning are based on the researcher's decisions. The *hermeneutic* tradition presents a radical alternative to this view.

### The Hermeneutic Tradition

The *hermeneutic* tradition differs from the *sensitizing* tradition in that concepts the researcher uses to describe and understand *any* social phenomenon (i.e. technical concepts) have their origin in the everyday language of the social actors under investigation, not in the language of the discipline.

Advocates of this tradition argue that, initially, accounts of social life need to be derived from the accounts that social actors give of their activities; the language used by the social scientist must be derived from everyday language. This requires a hermeneutic process in which the researcher tries to grasp the meaning of everyday language by becoming immersed in the relevant sector of the social world (Giddens 1976). As the process advances, the researcher has to mediate between the particular everyday language and some version of the technical language of social science in order to produce concepts that are relevant to the research topic. The process of mediation is akin to the hermeneutic reading of a text; it is a matter of interpretation rather than translation (Gadamer 1989).

While a researcher may need sensitizing concepts at the outset, these must give way to the everyday concepts that social actors use to discuss and relate to this phenomenon. For example, if the topic for investigation is the 'care of the aged', then a researcher has to discover what language old people, their families and

professionals use to discuss the problem of what should be done about old people who have lost the capacity to care for themselves. A range of concepts might be used by different actors in different contexts, and none of these may correspond to the ones a researcher has derived from the literature. The researcher's task is to make sense of this diversity of language by producing a typology, a set of categories (types) that capture the different concepts and their meanings. The labels for such types may be invented or borrowed from the literature, but their meaning will be generalized from those used by the social actors (see Stacy 1983; Blaikie and Stacy 1982, 1984; Blaikie 2007: 97–9).

Hence, the *hermeneutic* tradition also differs from the *operational* tradition in terms of the source of concepts. The *operational* tradition works 'top down' in the sense that it imposes a researcher's concepts on everyday life, the assumption being that the researcher is in a position to judge what concepts will be relevant because of the theoretical model or perspective that has been adopted. In the *hermeneutic* tradition, researchers work 'bottom up' by adopting the position of learner rather than expert. Social actors have to teach the researcher how they understand their world, i.e. what everyday concepts and interpretations (lay theories) they use to make sense of it. By a complex process, researchers can use these lay concepts and methods of understanding as the ingredients for their accounts.

From lay concepts technical concepts can be generated. This may require the invention of new concepts, the adaptation of existing technical concepts, or the borrowing of the latter. In the process, a more general and abstract account than the individual accounts of social actors is produced.

To use concepts as advocated by this tradition is to be reflexive: to allow concepts to evolve through a process of re-examination and reflection. The meaning of a concept does not remain static; it changes as the concept evolves from the data and is applied to them. Whether concepts developed in this way can be applied in other contexts is a matter for investigation. Of course, a researcher has to stop somewhere and freeze the meaning of a concept for a while. The aim of all this is to generate concepts that fit the problem at hand and work to provide useful description and understanding.

### The Adaptive Alternative

Later in the chapter we will encounter an approach to the relationship between theory and research proposed by Layder (1998). As part of this proposal, he discussed the types of concepts that he considers enter into social research.

His primary concern was to establish a link between theoretical concepts and ideas, and empirical materials (data and information), a link that did not give preference or priority to one or the other. The *ontological* tradition is clearly on the theoretical side while the *operational* tradition leans towards the empirical side. In their own ways, the *sensitizing* and *hermeneutic* traditions try to establish bridges between the theoretical and the empirical. However, Layder wanted to go much further by establishing concepts that bridge aspects of individual social agency and reproduce social relations and practices. In other words, he wanted concepts that integrate agency and structure as well as the micro and macro levels

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of social analysis. At the same time, he wanted to blend social actors' conceptions with sociological conceptions.

He saw these concepts as merging 'the subjectively experienced world of research subjects with the analytic and conceptual predilections and directives of the researcher.' These concepts 'are not simply grounded in data of lived experiences or local narratives, but are also anchored to a chain of reasoning and an analytic advantage point which gives their conceptual representation of the behaviour in focus a rather different basis' (Layder 1998: 82).

To achieve this, Layder identified four types of concepts: *behavioural*, *systemic* or structural, *bridging* or mediating, and *general* or theoretician's. *Behavioural* concepts are concerned with individual social agency and with describing the everyday world from an 'insider' point of view. They include types of social actors in particular types of social activities or social settings, types of interpersonal relationships in such settings, and the meanings and interpretations people give to such activities, settings and relationships. 'The point about behavioural concepts is that they directly describe some aspect of a participant's behaviour, predisposition or attitude and include some reference to his or her identity or the quality and meaning of the relationships in which he or she is involved' (Layder 1998: 85).

Layder is willing to allow behavioural concepts to be either member-defined or observer-defined. However, if the latter, they need to be 'subjectively adequate' (Schütz 1963b; Bruyn 1966), 'retain the integrity of the phenomenon' (Douglas 1971) or be relevant to the people involved (Glaser and Strauss 1967). This means that behavioural concepts 'must be recognizable, make sense and be understandable to those who are the subjects of the study (even if not routinely employed by them)' (Layder 1998: 86).

*Systemic* or structural concepts refer to the reproduced social relations that confront social actors as an external reality. They represent

the historically emergent standing conditions of an ongoing society. To say that they are standing conditions does not mean that they are static and unchanging or that they are somehow beyond the reach and influence of human agents. Such things as institutions, language, culture and various forms of knowledge are all susceptible to the transformative powers of individuals and social groups, but they nonetheless confront particular individuals and groups as the products of previous generations. (Layder 1998: 88)

At this point, Layder draws on Giddens's notion of 'duality of structure', that social structures are both constituted by human agents and provide the conditions for social life. They provide the rules and resources that people draw on in their routine social activities, and such activities contribute to the reproduction of these structures through time and space. They are the settings and conditions that constitute the social environment in which social life takes place. Therefore, while the systemic or structural aspects of society are intimately linked with the behavioural aspects, they constitute a second area of attention for the theorist and social researcher.

Layder goes on to argue that a third category of concepts is required as *bridging*

or mediating concepts between the behavioural and systemic. He referred to these concepts as typifications. This notion is derived from Schütz (1963a), although Schütz regarded typifications as being both social (social actors' everyday concepts) and sociological (theorists' and researchers' technical concepts). Layder has confined his use to sociological concepts.<sup>2</sup> He wanted these concepts to be an amalgam, and to have an equal measure of agency and structure, or behavioural and systemic aspects. Because bridging concepts are not defined entirely in terms of everyday social activities, they may not be recognizable to social actors without their sociological meaning being explained.

Layder has proposed that bridging concepts indicate and focus on three broad kinds of phenomena. The first is the linkage between subjective and objective phenomena. Some concepts refer both to subjective behaviour and the objective social conditions in which it takes place. He used the concepts of 'career' and 'emotional labour' as examples. The second kind of concept indicates that certain social actors occupy strategic positions of control and can therefore mediate the effects of systemic aspects on the behaviour of others. Examples are managers and professionals. Third, some concepts characterize the nature of social relations that are influenced by systemic features and also express people's involvements and motivations. Concepts such as 'calculative' or 'alienative' involvement in organizations are examples (Etzioni 1961).

The fourth type of concept is those produced by *general* theorists. Shortly we shall encounter a distinction between *theoretician's* and *researcher's* theories. This fourth type fits in the theoretician's category. We only have to turn to the many books on social and sociological theory to find examples of concepts that have been invented by both classical and contemporary social theorists and that are embedded in their theories of society and social life. The illustrations of the *ontological* conceptual tradition discussed in this chapter provide examples.

Layder lamented the fact that researchers tend to neglect these general concepts, perhaps because they are seen to be unconnected with the 'real' empirical world. He rejected this notion. 'In my view, all general theory is connected with the empirical world in some way. However, . . . general theories differ in terms of their degree of abstraction . . . as well as in relation to the question of how they may be tested or adjudicated' (Layder 1998: 95). He acknowledged that the notion of 'subjective adequacy' has little relevance to general concepts, as they are not meant to be social actors' concepts. Instead, their value has to be judged on the basis of, 'first, the broader context of reasoning in which they are embedded and secondly, their relation to other competing or complementary concepts or theories' (Layder 1998: 95). He argued that researchers need to move beyond the immediate substantive concerns in research and pay attention to the ontological features of social life. This is where theoreticians' concepts and theories come into play.

The research paradigms that were identified in chapter 4, along with the vast body of work of social theorists, provide ontological assumptions and general concepts that social researchers can use to locate their research in existing ways of understanding social life. Just which research paradigms or social theories a researcher chooses to draw on, and how they are used, are the critical issues.

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## Concepts and Research Strategies

There are some connections worth noting between the research strategies outlined in chapter 4 and these five conceptual traditions. The ontological tradition provides a background to all research, although it is less relevant to, and may be rejected by, researchers who use the Abductive research strategy. While Deductivists may find conceptual schemes very useful as a source of variables, Abductivists may resist the imposition of such 'top down' schemes and prefer to generate their own concepts in a hermeneutic, 'bottom up' manner.

It is in the Inductive and Deductive research strategies that the operationalizing tradition has been most evident.<sup>3</sup> In the Inductive strategy, concepts need to be selected, defined and operationalized. In the Deductive strategy, hypotheses are deduced from a theory, and concepts in a hypothesis are measured in order to test whether or not a hypothesized relationship exists. While it is possible to test hypotheses using other methods, this research strategy has been dominated by the operationalizing tradition. It is worth noting that the sensitizing tradition can also be used in these two research strategies, for example, in an exploratory phase when relevant concepts and their definitions are being sought.

The connection between the Retroductive research strategy and the conceptual traditions is rather complex. Strictly speaking, concepts are not operationalized in this research strategy. Rather, structures and mechanisms are hypothesized and discovered by direct and indirect observations and experiments. Of course, to hypothesize the existence of a structure or mechanism requires the use of language; you have to have some idea of what you are looking for. This may involve adopting or adapting an existing concept, or inventing a new one, to identify it. In this regard, it would be interesting to know how concepts such as 'atom' and 'virus' came to be used.

These comments on the Retroductive strategy apply particularly to the *structuralist* version. The situation is rather different in the *constructionist* version, and is similar to that in the Abductive research strategy. It is in this latter strategy that both the sensitizing and hermeneutic traditions are used, but in different branches. Nevertheless, it is the hermeneutic tradition that is most appropriate for genuine Abductive research. This is because the generation of technical concepts from lay concepts is a hermeneutic process.

Aspects of the 'adaptive alternative' provide the possibility for a more sophisticated use of concepts in all traditions of research but, particularly, when the Deductive and Abductive research strategies are used. Linking the hermeneutic tradition and the use of the Abductive research strategy with *structural* and *general* concepts can lead to more productive theory generation. In addition, the incorporation of both *behavioural* and *structural* concepts, and the bridging of social actors' and sociological concepts in the context of general theory, can only lead to more productive theories to test using the Deductive strategy.

Clearly, these five views of the role of concepts in social research are very different. As a result, researchers have to make choices about which tradition or traditions to use, and, in the process, to make sure that their use is consistent with other research design decisions. While the choice of research strategy will have a big influence on the way concepts are used, a researcher may use concepts in more than one way in a particular research project.

## The Role of Theory

One of the most vexed problems for novice researchers is how to use theory in research. Atheoretical research is usually condemned; good research is supposed to involve the use of theory in some way. However, there are many views, and much confusion, about where and how theory should enter into the research process. No doubt, part of the reason for this uncertainty is the fact that the concept 'theory' itself refers to a variety of activities and products.

Like so many words that are bandied about, the word theory threatens to become meaningless. Because its referents are so diverse – including everything from minor working hypotheses, through comprehensive but vague and unordered speculations, to axiomatic systems of thought – use of the word often obscures rather than creates understanding. (Merton 1967: 39)

The problem is what kind of theory to use, and for what purpose. The situation is further complicated by the existence of a diversity of perspectives in social theory, and differences in the ways in which theory is used in the four research strategies.

### Some Definitions of Theory

In order to examine the role of theory in research, we must first be clear about what constitutes social or sociological theory. While the answer to this question may appear to be self-evident, an examination of the literature indicates that there are numerous uses of the concept.

At a general level, theory has been described as 'a heuristic device for organizing what we know, or think we know, at a particular time about some more or less explicitly posed question or issue' (Inkeles 1964: 28), or as 'a "story" about how and why events in the universe occur' (Turner 1991: 1). More specifically, theories 'attempt to answer why and how questions' by 'relating the subject of interest (e.g. riots) to some other phenomena (e.g. heat and crowding)' (Bailey 1994: 41).

Some definitions of theory are even more specific. 'A theory is a set of concepts plus the interrelationships that are assumed to exist among these concepts' (Seltiz *et al.* 1976: 16). 'Sociological theory refers to logically interconnected sets of propositions from which empirical uniformities can be derived' (Merton 1967: 39). 'A theory highlights and explains something that one would otherwise not see, or would find puzzling' (Gilbert 2008: 25).

Therefore, theories provide:

- explanations
- of some aspects of human experience
- that form non-random patterns.

In other words, *social theories are explanations of recurrent patterns or regularities in social life*. They are answers to questions or puzzles about why people

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behave in the way they do in particular social contexts, and why social life is organized in the way it is. In the context of research design, *a theory is an answer to a 'why' question*; it is an explanation of a pattern or regularity that has been observed, the cause or reason for which needs to be understood.

### Types of Theory

Out of this array of definitions of theory it is possible to identify two types in terms of the activities engaged in by practitioners: *theoreticians' theory* and *researchers' theory* (Menzies 1982). This distinction helps us to understand the common complaint that there is a gap between theory and research in the social sciences. This gap refers to the lack of connection between what theoreticians and researchers do, between the ideas discussed in books on social theory and the theoretical ideas that are used in research. Some researchers try to bridge this gap by setting their research within a theoretical perspective. However, the connection is often very tenuous; a perspective may be reviewed in a theory chapter of a thesis and then largely ignored as the research proceeds. Alternatively, an attempt may be made at the end of the research to interpret the results within a theoretical perspective in the hope of staving off accusations of the research being atheoretical. While theory is commonly used in this way, some writers have argued that *post hoc* theorizing is an unsatisfactory use of theory (see, for example, Merton 1967: 147–9).

#### *Theoreticians' theory*

*Theoreticians' theory* is that produced by writers whose aim is to develop an understanding of social life in terms of basic concepts and ideas. Such concepts and ideas are neither derived from social research, nor are they systematically tested by means of research. Their status may be so abstract that they constitute a broad perspective on social life rather than explanatory accounts of it. The *ontological* conceptual tradition discussed earlier in this chapter is an example of *theoreticians' theory*, as is most of the work usually discussed as classical and modern social/sociological theory.

*Theoreticians' theory* can be both at the macro and micro; it can deal with both large-scale and small-scale social phenomena. Theoreticians feed off each other in the sense that much of their work attempts to synthesize and/or build on earlier theorizing.

*Theoreticians' theory* can be examined from a number of points of view.

- *The history of social thought*: developments in the understanding of social life and society (e.g. Barnes and Becker 1938; Bogardus 1940; Barnes 1948; Martindale 1960; Becker and Barnes 1961).
- *The work of great theorists*: original works, plus reviews and commentaries (e.g. Aron 1965, 1968; Raison 1969; Coser 1971; Giddens 1971; Beilharz 1991; Ritzer 2003; Craib 1997; Appelrouth and Edles 2008).
- *Theoretical schools or perspectives*: clustering of classical and contemporary

theorists into schools based on common ontological assumptions (e.g. Cuff and Payne 1979; Ritzer 1980, 2005; Jones 1985; Giddens and Turner 1987; Turner 1991; Craib 1992; Scott 1995; Wallace and Wolf 2006; Cuff *et al.* 2006; Ritzer and Goodman 2007a, 2007b)

- *Theorizing strategies*: the establishment of broad categories of theorizing in terms of both ontological and epistemological assumptions (e.g. Johnson *et al.* 1984; Waters 1994; Blaikie 2007).

As the most relevant aspect of *theoreticians'* theory in the present context is *theoretical perspectives*, only these will be discussed here.

*Theoretical perspectives* provide a way of looking at the social world; they highlight certain aspects while at the same time making other aspects less visible. A shift in theoretical perspective changes the shape of the social world. They provide a particular language, a conceptual framework, or a collection of 'theoretical' concepts and related propositions, within which society and social life can be described and explained. Some perspectives attempt to establish a set of principles that provide the ultimate foundation for social life and a basis for its explanation. In general, theoretical perspectives provide images of society or social life (ontologies), but they do not provide rigorously developed and logically organized theoretical statements (Turner 1991: 29–30).

Classical and contemporary theorists who share similar ontological assumptions and ways of understanding social life are grouped together, and the common elements of their theories abstracted. The concept of *theoretical perspective* is equivalent to the notions of 'general theoretical orientation' (Merton 1967), 'general model' (Willer 1967), 'meta-theory' (Turner 1991), 'foundationalist theory' or 'formal theory' (Waters 1994), and even 'paradigm' (Kuhn 1970; Friedrichs 1970; Krausz and Miller 1974).

Theoretical perspectives are sometimes regarded as paradigms because they include ontological and epistemological assumptions and associated practices for the pursuit of social knowledge (Kuhn 1970; Friedrichs 1970). The advocates of these perspectives differ in the kinds of 'stories' that they tell about social life. They tend to disagree on:

- what topics should be studied (subject matter);
- what the social world looks like and how it works (ontological assumptions);
- what kind of knowledge about human interaction and social organization is possible (ultimate purpose);
- what kinds of questions can be asked;
- what logic of enquiry should be used and how knowledge can be developed (epistemological assumptions); and
- what this knowledge should be used for (objectives) (Wallace and Wolf 2006: 3–13).

Ontological assumptions, which are invariably implicit, include:

- the basic components of social life, including individuals, social processes or social structures;

- how these components are related;
- what human agency is and how it is determined and constrained;
- the degree of individual autonomy and individuality;
- and
- whether human agency is free and unconstrained.

A simple set of overlapping dichotomous categories. This is mainly a descriptive text. See also: 1985; van Krieken 1994; van Krieken 1995. Three perspectives:

- structural-complexity
- structural-complexity
- interpretive (hermeneutic)

Theoretical perspectives are often organized into categories of categories (e.g. Turner 1991, 2007b), in most cases. North Atlantic countries. include categories:

- functionalism
- neo-functionalism
- conflict theory
- rational choice
- Homans, Blau
- phenomenology
- Douglas, Psathas
- ethnomethodology
- symbolic interactionism
- Becker, Denzin
- dramaturgy (Goffman)
- structuralism
- Althusser, Deleuze
- critical theory
- structuration (Giddens)
- feminist theory
- complexity theory

I am sure you will find this and the research on theoretical ideas a valuable logical contribution.



- how these components relate to each other;
- what human nature is like, i.e. whether human behaviour is essentially determined and therefore predictable, or whether human beings are relatively autonomous and create their own social life, thus making prediction difficult; and
- whether human beings are motivated essentially by interests or by values.

A simple set of major theoretical perspectives has been arrived at by using two overlapping dichotomies, structural vs. interpretive and consensus vs. conflict. This is mainly a British way of viewing social theories and has been used in introductory texts on sociology and social theory (e.g. Cuff and Payne 1979; Jones 1985; van Krieken *et al.* 2005; Haralambos and Holborn 2004; Cuff *et al.* 2006). Three perspectives are commonly identified in these texts:

- structural-consensus (Functionalism);
- structural-conflict (Marxism);
- interpretive (Interpretivism).<sup>4</sup>

Theoretical perspectives have been categorized in other ways. A common set of categories can be found in texts from the United States on social/sociological theory (e.g. Turner 1991; Wallace and Wolf 2006; Ritzer and Goodman 2007a, 2007b), in more recent British texts (e.g. Craib 1992; Scott 1995), and in the North Atlantic collaboration by Giddens and Turner (1987). These classifications include categories such as:

- *functionalism* (Durkheim, Malinowski, Radcliffe-Brown, Parsons, Merton);
- *neo-functionalism* (Luhmann, Alexander);
- *conflict theory* (Marx, Weber, Dahrendorf, Coser, Collins, Rex);
- *rational choice and exchange theory* (Frazer, Malinowski, Mauss, Weber, Homans, Blau, Elster);
- *phenomenology* (Husserl, Schütz, Tiryakian, Bruyn, Berger, Luckmann, Douglas, Psathas);
- *ethnomethodology* (Garfinkel, Cicourel, Sacks, Schegloff, Zimmerman);
- *symbolic interactionism* (Mead, Dewey, Cooley, Thomas, Blumer, Strauss, Becker, Denzin);
- *dramaturgy* (Goffman);
- *structuralism and post-structuralism* (Saussure, Lévi-Strauss, Foucault, Lacan, Althusser, Derrida);
- *critical theory* (Adorno, Horkheimer, Marcuse, Habermas, Fay);
- *structuration theory* (Giddens);
- *feminist theory* (Barnard, Smith, Harding); and
- *complexity theory* (Reed and Harvey, Cillers, Bryne, Capra, Urry).

I am sure you will have noticed an overlap between some of these categories and the research paradigms discussed in chapter 4. The emphasis here is on their theoretical idea whereas the research paradigms concentrate on their methodological contributions, particularly reference to logics of enquiry and ontological

and epistemological assumptions. While this distinction between theory and methodology is not always clear-cut, I selected the set of research paradigms from those in which the methodological considerations are particularly strong.

### *The Role of Theoreticians' Theory in Research*

In spite of the division of labour between *theoreticians'* theory and *researchers'* theory, the former, and, particularly theoretical perspectives, have much to offer the researcher. They can provide:

- a way of viewing the social world, including ontological and epistemological assumptions;
- a language with which to describe and explain aspects of the social world;
- general theoretical ideas to set the context and direction for research; and
- possible explanations or tentative hypotheses.

The first contribution overlaps with a key element of research paradigms. Social reality may be viewed as either 'material' or 'ideal' (Johnson *et al.* 1984), or as either 'subjective' or 'objective' (Waters 1994; Ritzer and Goodman 2007b). People's actions may be regarded as the result of either choice or constraint (humanistic vs. deterministic assumptions), and their relationships based either on agreement about norms and values or on different interests (consensus vs. conflict assumptions). Perspectives also include different epistemological assumptions about how the social world can be known. Social reality can be approached from a nominalist or realist epistemology (Johnson *et al.* 1984), or explained in individualistic or holistic terms (Waters 1994). However, such ontological commitments are not always fully recognized or made explicit.

The second role of *theoreticians'* theory in research, to provide a language, facilitates the statement of research questions and answers to them. Like everyday language, theoretical language provides a vocabulary and meanings for concepts. While the meanings may be more precise than in everyday language, they are still subject to multiple definitions and disputes within and between paradigms. There are fashions in theoretical perspectives, and, therefore, in theoretical language. Such language both facilitates dialogue between adherents to a perspective and excludes the outsider. While the relationship between a theoretical language and everyday language is regarded as the most fundamental methodological issue in the social sciences (Bhaskar 1979; Blaikie 2007), it is also a highly contested one.

The third role of theory is an extension of the second. It provides a context of ideas, or a theoretical framework, which is the source of the focus and direction for the research. The review of a theorist's ideas on an issue, such as Marx's discussion of 'alienation', can set the scene for the collection of particular types of data from particular sources, for example, from factory workers who were formerly rural peasants in a developing country. While the theoretical ideas may not suggest specific hypotheses, they provide the inspiration to pursue research in a particular way.

The final role of theory concerns the source of hypotheses. Theory can be used

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either to provide general explanatory ideas to guide research, or, more specifically, to provide possible answers to 'why' questions, i.e. as a source of hypotheses to be tested. The Deductive research strategy has taken the latter to the limit by requiring that hypotheses be logically deduced from a set of theoretical propositions. In this case, a hypothesis is the conclusion to a theoretical argument that provides a tentative answer to a 'why' question. Of course, hypotheses can come from other sources, including previous research.

It is clear that researchers rely on *theoreticians'* theory in a number of ways. However, the extent to which theoreticians use the results of research is much less clear. Certainly, there would appear to be few explicit connections in the literature. The exceptions are the rare cases where a researcher is also a theoretician (e.g. Bourdieu).

### Researchers' Theory

*Researchers'* theory is either theory that produces specific hypotheses to be tested, or theory that is generated in the course of the research. It is possible to construct a composite definition of *researchers'* theory as consisting of:

- a related set of statements
- about relationships between concepts
- with a certain level of generality
- which are empirically testable; and which,
- when tested, have a certain level of validity.

These theories provide explanations of regularities in social life at a level that is directly relevant to research.

Each of the research strategies gives a particular interpretation of this definition. In the Inductive strategy, general statements are related in networks, while in the Deductive strategy, these statements are related logically and have different levels of generality. Although the Retroductive research strategy only requires a description of the generative structure or mechanism, it may require discursive support for their operation. This may take the form of a theoretical argument, but less formalized than in the Deductive strategy. In the Abductive research strategy, theory may take many forms, from tight logical arguments to loose discussions. However, in the end, theories in all four research strategies need to be reduced to statements of relationships between concepts. We will return to these differences between the research strategies towards the end of the chapter.

An important issue for a researcher is where to get a suitable theory. In the absence of a good existing theory, Stinchcombe has argued that you should make them up yourself, a task that he regarded as being manageable even for students: 'A student who has difficulty thinking of at least three sensible explanations for any correlation that he [*sic*] is really interested in should probably choose another profession' (Stinchcombe 1968: 13).

Theory can be used

### Levels of Theory

Another way of approaching the diversity in theoretical activity is to view theory as occupying different levels. Denzin (1970), for example, has slightly elaborated the scheme developed by Parsons and Shils (1951) by proposing five levels:

- *ad hoc* classificatory systems;
- categorical systems or taxonomies;
- conceptual frameworks;
- theoretical systems; and
- empirical-theoretical systems.

These five levels are intended to move from 'mere' description, through patterns of relationships, to explanatory schemes, and then to empirical testing of the theoretical ideas.

*Ad hoc* classificatory systems are used to summarize data. The classes or categories are more or less arbitrary and no attempt is made to establish relationships between them. They are just labels for particular observations or data, and are normally not derived from any theory. For example, students might be classified as 'very bright', 'serious', 'average', 'lazy' and 'dumb', as well as 'older' and 'younger', and 'female' and 'male'. Such classifications are not theoretical but may later be incorporated into a theoretical scheme.

A categorical system or taxonomy moves beyond *ad hoc* classification, although it is still tied closely to a particular context or limited range of phenomena. Now the relationships between the classes or categories are stated. For example, the classification of students into their level of ability and attitude to their work (a mixed classification that would need to be refined into at least two separate dimensions) could be related to their age or gender. Research might then match the relationships with some data, but the activity remains at the level of description.

Conceptual schemes take us to a higher level by presenting a systematic image of the world (as in the *ontological* tradition). These schemes lend themselves to the development of propositions about relationships between concepts, and are intended to apply to a wide range of situations. Some conceptual schemes claim to represent society and its constituent parts (see figures 5.2 and 5.3). A more limited example might deal with concepts involved in predicting 'academic performance': 'level of ability', 'attitudes to study', 'age', 'gender', 'social class background', 'type of schooling' and 'career aspirations'. These concepts could be developed into a scheme of relationships, including some assumptions about causal connections.

Theoretical schemes bring together combinations of taxonomies and conceptual schemes into a theoretical argument. Now explanation is the aim. However, these schemes are likely to be rather abstract and not in a form that can be used directly in research. This requires another step, the establishment of empirical-theoretical schemes that are formulated precisely and in such a way that they can be tested. Hence, only these last two levels in the list can be regarded as being truly theoretical, and only the last connects theory with research.

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Another basis for differentiating between levels of theory is to consider their scope. Again, Denzin (1970) has proposed four main levels: *grand* theories, *middle-range* theories, *substantive* theories and *formal* theories. *Grand* theories, or system theories, present a master conceptual scheme that is intended to represent the important features of a total society. These are often referred to as macro-theories because they apply to large-scale social phenomena. Merton referred to these as 'general sociological orientations' that

involve broad postulates which indicate *types* of variables which are somehow to be taken into account rather than specifying determinate relationships between particular variables. . . . The chief function of these orientations is to provide a general context for inquiry; they facilitate the process of arriving at determinate hypotheses. (Merton 1967: 142)

*Middle-range* theories, a notion coined by Merton, lie between grand theories and empirical generalizations.

[M]iddle range theories have not been logically *derived* from a single all-embracing theory of social systems, though once developed they may be consistent with one. Furthermore, each theory is more than a mere empirical generalization – an isolated proposition summarizing observed uniformities of relationships between two or more variables. A theory comprises a set of assumptions from which empirical generalizations have themselves been derived. (Merton 1967: 41)

Nevertheless, these theories (e.g. a theory of reference groups – Merton's example) are intended to apply to a variety of contexts and research problems. I shall elaborate Merton's ideas on middle-range theories in the next section of this chapter.

The third level referred to by Denzin, *substantive* theories, does apply to specific problem areas such as race relations and juvenile delinquency. Both middle-range theories and substantive theories are stated at a level that a researcher can use. They can also be combined, for example, by using reference group theory as part of a theory of race relations.

Finally, the development of *formal* theory is based on the now contested idea that universal explanations of social life can be developed. While the content may be different in different contexts, the form of these theories will be the same. Simmel, Goffman and Homans were all committed to the idea that the development of formal theory is possible. Homans, for example, claimed that social behaviour could be explained in terms of a few psychological principles. One of his principles was: 'For all actions taken by persons, the more often a particular action is rewarded, the more likely the person is to perform that action' (Homans 1974: 16).

### Relationship between Theory and Research

The relationship between theory and research was a topic of considerable interest in the United States during the 1950s and the 1960s, largely as a result of the

seminal work of Merton (1967), whose views on this first appeared in 1949, and the provocative writings of C. Wright Mills (1959). Merton and Mills lamented the state of the sociological enterprise at that time and proposed their own broad solutions, 'middle-range theory' and the 'sociological imagination', respectively. Towards the end of this period, Willer (1967) elaborated a methodological framework in which the concepts of 'theory' and 'model' were given precise meanings. His work was followed immediately by a spate of rather technical writing on theory construction by, for example: Stinchcombe (1968); Dubin (1969); Blalock (1969); Reynolds (1971); and Hage (1972). Later editions of some of these works (e.g. Dubin 1978), and other contributions (e.g. Chafetz 1978), followed a decade later to consolidate a particular view of the relationship between theory and research.

More recent attempts to link theory and research have done so either in a series of *linear* steps or levels, or in a *cyclical* process used to construct and test theories. Both approaches are used to move from abstract theory to the empirical products of research, or from data to theory. Turner (1991) and Alexander (1982) have discussed the linear view of the relationship, and Wallace (1971, 1983), Lin (1976) and de Vaus (2002) the cyclical view.

I will limit the discussion here to a consideration of Merton's advocacy of middle-range theory, Mills's use of the sociological imagination, Turner's scheme of levels and linear stages, Wallace's proposal to integrate induction and deduction into a cyclical process, Glaser and Strauss's theory generation from data, and Layder's attempts to modify and synthesize the views of Merton and the grounded theorists.

#### *Merton: middle-range theory*

Merton's arguments were directed towards the two unsatisfactory extremes that he had observed in the practices of sociologists about sixty years ago. This is captured in his oft-quoted passage from the beginning of the chapter in which he discusses the various uses of theory.

The recent history of sociological theory can in large measure be written in terms of an alternation between two contrasting emphases. On the one hand, we observe those sociologists who seek above all to generalize, to find their way as rapidly as possible to the formulation of sociological laws. Tending to assess the significance of sociological work in terms of scope rather than the demonstrability of generalizations, they eschew the 'triviality' of detailed, small-scale observation and seek the grandeur of global summaries. At the other extreme stands a hardy band who do not hunt too closely the implications of their research but who remain confident and assured that what they report is so. To be sure, their reports of facts are verifiable and often verified, but they are somewhat at a loss to relate these facts to one another or even to explain why these, rather than other, observations have been made. For the first group the identifying motto would at times seem to be: 'We do not know whether what we say is true, but it is at least significant.' And for the radical empiricist the motto may read: 'This is demonstrably so, but we cannot indicate its significance.' (Merton 1967: 139)

Throughout the history of sociology, the target was theoretical research, embracing theories and methods, not the researcher who was trying to understand the nature of the research process.

[A] large part of the problem is the orientations towards theory. Theories are taken into account in terms of their relationships between theory and research. (Merton 1967: 139)

Merton's solution was to advocate what he called 'middle-range theory'.

theories that are not too abstract and in abundance. They are used to develop a middle-range theory of behavior, social structure, and social change.

He summarized his views as follows:

- 1 Middle-range theory is a theory of hypotheses and generalizations.
- 2 These theories are developed from the works of the sociologists.
- 3 These theories are developed from the behaviour and social structure of empirical generalizations.
- 4 This type of theory is developed from the sociological perspective.
- 5 Total sociology is a theory of Parsons' theory of general theory of social structure envisaged in the social sciences.
- 6 As a result, middle-range theory is a system of social structure.
- 7 Theories of social structure are the work of class and social structure.
- 8 The middle-range theory is a theory of what must be done to understand the edge . . . (Merton 1967: 139)

When Merton's theory was widely and ably criticized, it was clear that it had entered the history of sociology.

Throughout his work on the nature of sociological theory, Merton's main target was theorists such as Marx, Parsons and Sorokin and their concern for all embracing theory. What he wanted was theories that were of use to the researcher who was trying to deal with more practical problems, theories that could be part of the research process.

[A] large part of what is now described as sociological theory consists of *general orientations toward data, suggesting types of variables which theories must somehow take into account, rather than clearly formulated, verifiable statements of relationships between specified variables.* We have many concepts but fewer confirmed theories; many points of view, but few theorems; many 'approaches' but few arrivals. (Merton 1967: 52)

Merton's solution to the excesses of these two contrasting positions was to advocate what he called *theories of the middle range*,

theories that lie between the minor but necessary working hypotheses that evolve in abundance during day-to-day research and the all inclusive systematic efforts to develop a unified theory that will explain all the observed uniformities of social behavior, social organization and social change. (Merton 1967: 39)

He summarized his arguments as follows:

- 1 Middle-range theories consist of limited sets of assumptions from which specific hypotheses are logically derived and confirmed by empirical investigation.
- 2 These theories do not remain separate but are consolidated into wider networks of theory. . .
- 3 These theories are sufficiently abstract to deal with differing spheres of social behaviour and social structure, so that they transcend sheer description or empirical generalization . . .
- 4 This type of theory cuts across distinctions between micro . . . and macro-sociological problems . . .
- 5 Total sociological systems of theory – such as Marx's historical materialism, Parsons' theory of social systems and Sorokin's integral sociology – represent general theoretical orientations rather than the rigorous and tightknit systems envisaged in the search for a 'unified theory' in physics.
- 6 As a result, many theories of the middle range are consistent with a variety of systems of sociological thought.
- 7 Theories of the middle range are typically in direct line of continuity with the work of classical theoretical formulations . . .<sup>5</sup>
- 8 The middle range orientation involves the specification of ignorance. Rather than pretend to knowledge where it is in fact absent, it expressly recognizes what must still be learned in order to lay the foundation for still more knowledge . . . (Merton 1967: 68)

When Merton presented his ideas on middle-range theory, he was, understandably, criticized by the grand theorists. In time, the notion of *middle-range theory* has entered the consciousness of many sociologists and lip-service has been paid

to it by succeeding generations. It has become the flag under which many self-respecting researchers wish to be seen marching. However, research practice has frequently fallen short of Merton's ideal and has tended to become ritualized in the testing of isolated or trivial hypotheses. The linking of research to theory has tended to be achieved through theories being reduced to simple and isolated statements of relationships.

A major critic of Merton's idea of middle-range theory has argued that grand theory and small-scale empirical research are not really at the ends of a continuum, and, even if they were, middle-range theory is not intermediate between them (Willer 1967: p. xiv). Willer has suggested that Merton equated a middle range of generality with the scientific adequacy and testability of a theory. For concepts to be testable, they do not need to be at a middling level of generality, or modest in scope. According to Willer, what they need to be is precise and measurable, and it must be possible to connect them in a meaningful way. He supported Merton's call for testable theory but was critical of him for not providing a methodology for constructing and testing theory (Willer 1967: xvi).

This latter criticism seems to be rather unfair, as Merton had very clearly advocated the use of the Deductive research strategy; he constantly reiterated the need to derive hypotheses from theory. While his ideas on theory testing are consistent with those of Popper, as a practical researcher, unlike Popper, he paid attention to the process of theory generation. His ideas on this may have been too 'woolly' for Willer as they reflect the rather messy process that seems to be inevitable in most research.

What Merton clearly recognized was the complex interplay between theory and data, and he saw research findings as being a major source of stimulus for theory development. His views were made clear in his paper entitled 'The Bearing of Empirical Research on Sociological Theory', a paper that has been given less attention than his statements on middle-range theory. Merton has suggested that: 'Under certain conditions, a research finding gives rise to social theory' (1967: 157). He called this the *serendipity* pattern, 'the fairly common experience of observing an *unanticipated, anomalous and strategic* datum which becomes the occasion for developing a new theory or for extending an existing theory' (1967: 158). The observation of something that is inconsistent with existing theory provokes curiosity, stimulates the researcher to try to make sense of it in terms of a broader theoretical framework, and leads to new observations. 'The more he [*sic*] is steeped in the data, the greater the likelihood that he will hit upon a fruitful direction of inquiry' (1967: 159). However, Merton suggested that it is not the data themselves that provide the stimulation but the application by the researcher of some general theoretical ideas: Therefore, serendipity is not the discovery of a new idea accidentally, but the presence of an unexpected anomaly that excites curiosity and puts pressure on the researcher to think creatively in new directions by matching different theoretical ideas to the situation. This process is at the core of theory generation in the later stages of the Abductive research strategy.

Another stimulus to theory construction that Merton discussed concerns data overlooked by the conceptual framework being used. The repeated recording of these data can stimulate the researcher to extend the conceptual framework to include other concepts. Merton gave the example of how Malinowski observed

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the differences in the way the Trobriand Islanders went about fishing in the inner lagoon, compared to the open sea. This led Malinowski to incorporate new elements into existing theories of magic. The theory was extended by an observant, curious and creative researcher who, recognizing that the existing theory had something missing, used his observations to stimulate the filling of the gap.

A third way in which empirical data affect theory occurs when new research procedures shift the foci of theoretical interest by providing previously unavailable data. However, there is a danger that these new research techniques will divert attention to problems that are theoretically and socially less important.

Finally, Merton has suggested that the process of doing research can lead to the clarification of concepts. He regarded a large part of theoretical work as involving such clarification. He argued that research stimulates this clarification as the result of the need to establish indices of the variables being used, i.e. the need, in the kind of quantitative research with which he was familiar, to find the best, the most precise way to operationalize a concept. According to Merton, it is this pressure to measure concepts that is instrumental in clarifying them in a way that cannot occur in purely theoretical activity.

In summarizing these four ways in which the process of research stimulates theoretical development, Merton suggested that

an explicitly formulated theory does not invariably precede empirical inquiry, that as a matter of plain fact the theorist is not inevitably the lamp lighting the way to new observations. The sequence is often reversed. Nor is it enough to say that research and theory must be married if sociology is to bear legitimate fruit. They must not only exchange solemn vows – they must know how to carry on from there. Their reciprocal roles must be clearly defined. (Merton 1967: 171)

Given that Merton was writing some time ago (his work was first published in 1949 with a major revision in 1957), the reader may be curious as to why so much space has been devoted to his three short articles. The reason is that not only have they been common reference points over recent decades, but they have also provided some practical methodological wisdom that is still very relevant today. The problems with which Merton was wrestling, of how to relate theory and research, and what kind of theory is relevant to research, are matters that still perplex researchers and cause disputes among the proponents of the various theoretical, methodological and research traditions. While Merton's commitment was clearly to the Deductive research strategy and quantitative methods, his view of theory construction shares much in common with that used in the Abductive research strategy. His view of research is not that of a rigid, linear set of stages, but involves the researcher as an active and creative agent in the complex interplay between ideas and data. He was reflecting on his own research experience in attempting to understand important and practical problems, and that is why he objected so strongly to the work of the 'armchair' theorists.

#### *Mills: sociological imagination*

A slightly later attempt to discuss similarly conceptualized extremes in sociology can be found in the writing of C. Wright Mills (1959). Mills lamented the state of

sociology in the 1950s because of the two extreme tendencies that had developed. On the one hand, there was the interest in what he called 'grand theory', and, on the other hand, there was the concern with research methods and empirical studies, what he called 'abstracted empiricism'. He acknowledged that considerations of theory and method are essential to the task of the sociologist, but he argued that these two dominant versions of them were a hindrance to understanding and resolving 'the personal troubles of milieu' and 'the public issues of the social structure' (Mills 1959: x).

Mills divided grand theory into two types, both of which have been discussed earlier in this chapter. The first, in the work of Comte, Marx, Spencer and Weber, tried to develop 'a theory of man's [*sic*] history'. He described this kind of sociology as

an encyclopedic endeavor, concerned with the whole of man's [*sic*] social life. It is at once historical and systematic – historical, because it deals with and uses the materials of the past; systematic, because it does so in order to discern 'the stages' of the course of history and the regularities of social life. (Mills 1959: 22)

The second type of grand theory is concerned with producing a systematic theory of the nature of man and society, as in the work of Simmel and von Weis.

Sociology comes to deal in conceptions intended to be of use in classifying all social relations and providing insight into their supposedly invariant features. It is, in short, concerned with a rather static and abstract view of the components of social structure on a quite high level of generality. (Mills 1959: 23)

Mills was critical of both of these traditions: the first because it can become distorted into 'a trans-historical strait-jacket' into which human history is forced and which is used to predict the future; and the second because it can become 'an elaborate and arid formalism in which the splitting of Concepts and their endless rearrangement becomes the central endeavour' (1959: 23).

Mills regarded Parsons as the leading exponent of the second tradition. To illustrate how this kind of grand theory makes unnecessarily complex what are essentially simple ideas, he reduced Parsons's classic text, *The Social System*, to four paragraphs that take up no more than a page. In fact, he claimed it could be summarized in two sentences – 'How is social order possible? Commonly accepted values.' Mills was simply trying to illustrate what he thought was the limited value that such a theoretical endeavour has in aiding our understanding of the human condition, of the intersection of 'biography and history, and the connections of the two in a variety of social structures' (1959: 32). Another aspect of his criticism was that grand theorists have attempted to produce one universal scheme by which to understand the nature of society and social life. This, he argued, is impossible.

It would be easy to conclude from his damning criticisms that Mills was developing an argument for the use of systematic research rather than grand theory as the central activity of sociology. However, this was not his intention, as he was equally critical of the dominant kind of social research that was conducted in his day. Both, he argued, are ways of avoiding the task of the social sciences, dealing with

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personal troubles and public issues. The former he described as producing a 'fetishism of the Concept' and the latter as leading to 'methodological inhibition'.

For Mills, abstracted empiricism is equivalent to crude survey research, atheoretical data gathered by interview or questionnaire from a sample of individuals. He argued that it is an activity that can be done by administrators and research technicians, although the practitioners like to regard themselves as scientists. The problems selected for consideration, and the way they are formulated, are severely limited by what the practitioners regard as 'the scientific method', which means some version of Positivism. Theory is equated with variables that help to interpret statistical findings, and data are restricted to statistically determined facts and relations. This is the *operationalizing* conceptual tradition discussed earlier in this chapter.

According to Mills, the major characteristic of the abstracted empiricists is that they are methodologically inhibited, and this is what accounts for the thinness of their results. Their concern is with statistical rituals and pseudo precision. Mills did not deny the value of statistical procedures, when they are appropriate, but he argued that there are also other ways of doing research.

In spite of the fact that it is now fifty years since Mills expressed these concerns, what he had to say can still be applied to a great deal of social research. The techniques may have become more sophisticated, and there may be more effort to avoid the appellation of being atheoretical, but methodological inhibition is still rampant. With the advent of postmodernism, 'methodological paralysis' has taken over.

Mills's solution to these extremes was rather different from Merton's. It was not a case of finding some middle ground between the lofty heights of theory and the mundane activities of data collection, but, rather, the use of the *sociological imagination*.

The sociological imagination enables its possessor to understand the larger historical scene in terms of its meaning for the inner life and the external career of a variety of individuals. . . .

The first fruit of this imagination – and the first lesson of the social science that embodies it – is the idea that the individual can understand his own experience and gauge his own fate only by locating himself [*sic*] within his period, that he can know his own chances in life only by becoming aware of those of all individuals in his circumstances. . . . We have come to know that every individual lives . . . out a biography, and that he lives it out within some historical sequence. By the fact of his living he contributes, however minutely, to the shaping of his society and to the course of its history, even as he is made by society and by its historical push and shove.

The sociological imagination enables us to grasp history and biography and the relations between the two within society. That is the task and its promise. (Mills 1959: 5–6)

#### Turner: linear elements

Turner (1991) viewed the relationship between theory and research as being facilitated by a series of levels or steps, from data produced by research, through

theory at different levels of abstraction, to general ideas and assumptions. For him, theory is constructed from several basic elements: *concepts*, *statements* and *theoretical formats*. *Concepts* identify phenomena in the social world, both in everyday language and social scientific or technical language. Concepts need to be defined, preferably in a consistent way by all researchers to ensure that they refer to the same phenomenon (Turner 1991: 5). These concepts can then be formed into *statements* of relationships, and sets of statements constitute *theoretical formats*. Hence, research is seen to proceed in a linear manner, beginning with concepts and moving to theoretical formats. However, the latter have been viewed in a variety of ways. As

- *meta-theoretical* schemes,
- *analytical* schemes,
- *propositional* schemes, and
- *modelling* schemes (Turner 1991: 7–12).

*Meta-theory* is concerned with discerning underlying ontological and epistemological assumptions that a body of theory or a theoretical perspective uses. By *analytical* schemes, Turner referred to conceptualizations of the key properties of and relationship in the social world; they give the social world a sense of order. This is equivalent to the *ontological* conceptual tradition discussed earlier in the chapter.

Turner has divided *analytical* schemes into two types: *naturalistic* schemes and *sensitizing* schemes. *Naturalistic* schemes 'try to develop a tightly woven system of categories that is presumed to capture the way in which the invariant properties of the universe are ordered' (e.g. the work of Parsons). *Sensitizing* schemes are 'more loosely assembled congeries of concepts intended to sensitize and orient researchers and theorists to certain critical processes' (Turner 1991: 10). Apart, perhaps, from some very general concepts, the authors who advocate sensitizing schemes do not assume that they apply across time and space. They accept that as social arrangements are subject to change, concepts and their arrangements may also have to change; they are always provisional. Some writers have argued that *analytical* schemes are a prerequisite for the development of theory to be used in research; that they provide a framework and an orientation to a research problem. Turner, on the other hand, has argued that the *naturalistic* variety may be too rigid and elaborate to stimulate theorizing, and that *sensitizing* schemes may be more useful.

Turner's third type of format, *propositional* schemes, is more directly related to the business of research. A proposition is a statement of a relationship between two or more concepts; it claims that a variation in one concept is associated with a variation in another concept. For example, as Durkheim might have argued, an increase in the level of individualism among members of a group or society is associated with a rise in the suicide rate. Propositional schemes vary along two dimensions, in their level of abstraction and in the way the propositions are organized. Some are highly abstract and do not relate to any empirical instance, while others may simply summarize relations between observed phenomena.

Turner's fourth type of scheme involves the use of diagrammatic or pictorial

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representations of social events or processes. These have been labelled *modelling* schemes and will be discussed later in this chapter.

According to Turner, it is also possible to view theory construction as a movement from one theoretical format to another. He clearly saw the movement between them as occurring in both directions, although his preference was for working from the middle to the ends: 'Start with sensitizing schemes, propositions and models, and only then move on to the formal collection of data or to meta-theorizing and scheme-building' (Turner 1987: 167).

Turner pointed out that the proponents of these formats have engaged in a great deal of debate about which one is the best. He expressed some strong views on the value to the researcher of the various approaches to theorizing just reviewed. At one extreme, he regarded *meta-theory* as interesting but counterproductive. At the other extreme, he rejected the idea of mechanically abstracting theory from empirical findings. While he regarded familiarity with empirical regularities as being crucial to the development of theoretical statements, he argued that a 'much more creative leap of insight is necessary, and so I do not suggest that theory building begin with a total immersion in the empirical facts. I suspect that, once buried in the facts, one rarely rises above them' (Turner 1991: 23-4).

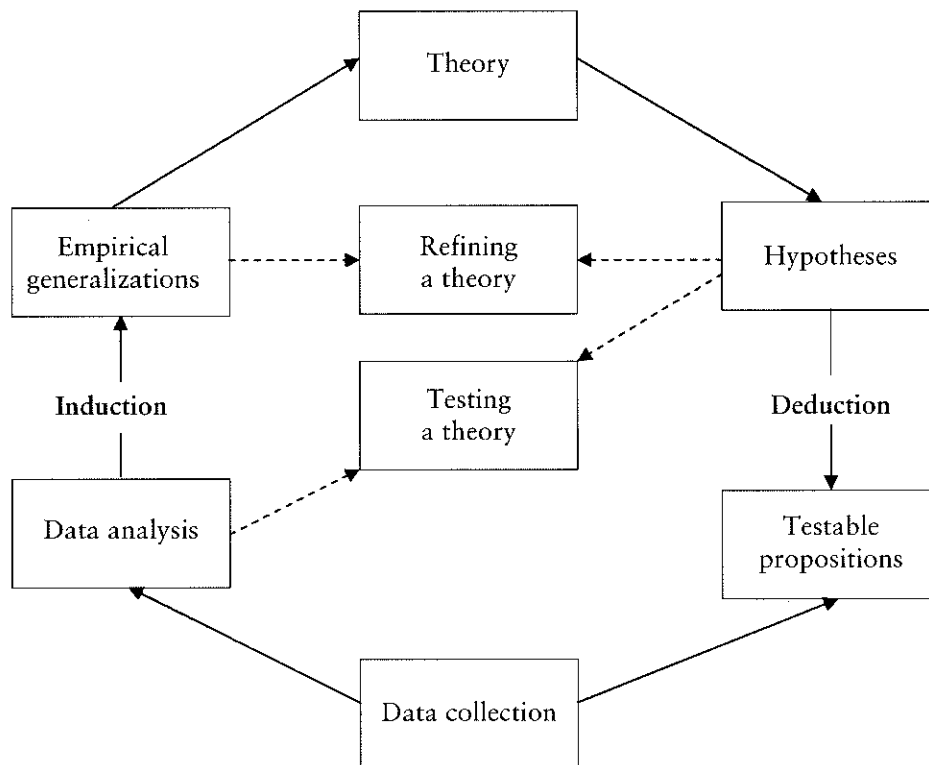
#### Wallace: ongoing cycles

Wallace first developed the idea of research as a cyclical process in his *Logic of Science in Sociology* (1971) and modified it in a later publication (1983). The idea has been taken up by a number of writers (e.g. Lin 1976; de Vaus 2002). Wallace argued that the logics of *induction* and *deduction* should be combined in an ongoing cycle. Or, to put this in my language, the Inductive and Deductive research strategies should be combined to provide an explicit link between theory and research. While these two research strategies can be viewed as presenting opposing logics of enquiry, these authors have suggested that, in practice, theory and research can be combined in a never-ending alternation between induction, deduction, induction, and so on. Hence, the process of theory construction and theory testing are seen to occur in this cyclical process (see figure 5.4).

The starting-point for theory construction could be data collection, at the bottom of the figure, to be followed by data analysis, from which empirical generalizations are derived. According to inductive logic, a new theory is constructed from these generalizations. Further testing could follow.

The starting-point for theory testing is at the top of the figure with the 'theory' box. Hypotheses are deduced, their concepts operationalized, statements of relationships between concepts formed, the data collected and analysed, and the results compared with the original hypothesis (represented by the 'test of a theory' box). In other cycles around this process, the step from 'empirical generalizations' to 'theory' can be used to refine an existing theory. Hence, the process can be used in at least three ways: to generate a new theory, to test a theory, or to refine a theory.

The extent to which researchers follow these processes is an open question; much research is done in less systematic ways than the figure would require. Perhaps researchers who use the Deductive research strategy might benefit from



**Figure 5.4** The cycle of theory construction and testing (Source: Adapted from Wallace 1971, 1983; de Vaus 2002)

recognizing the cyclical rather than linear nature of their kind of research, and for those who use the Inductive strategy it is important to recognize that induction cannot stand on its own as a method of theory development.

The strength of this scheme is the recognition of the developmental nature of theory construction. However, I would argue that the inductive phase of the cycle is much too simplistic a representation of the creative side of research. What should occur is a complex trial and error process, more akin to that used in the Abductive research strategy and by grounded theorists. The other major deficiency of the scheme is that it provides no place for the social actors' concepts and meanings to enter into the process; it uses the ontology of both Positivism and Critical Rationalism, and a combination of their epistemologies.

#### *Glaser and Strauss: grounded theory*

A different view of the relationship between theory and research has been presented by Glaser and Strauss (1967). They shifted the emphasis from the testing of theories to their generation. While recognizing that theories need to be verified, their proposal for this is very different from that advocated by Merton and Wallace, and goes against Turner's views. For Glaser and Strauss, theory

generation and verification are done in a more flexible way.

Grounded theory is a form of deductive theorizing that emerged in research by Glaser and Strauss.

Glaser and Strauss developed their strategy by arguing for a new emphasis in current research, one that de-emphasizes on the one hand the search for 'good' theory and on the other for social research.

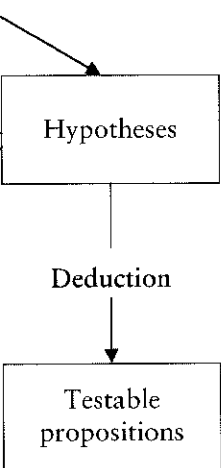
Glaser and Strauss argued that grounded theory will be appropriate for research that both explains and predicts.

In contrasting grounded theory with other approaches to assessing their relationship, Glaser and Strauss have taken the position that grounded theory is divorced from the positivist tradition. The usefulness of a theory is judged by how well it explains a better theory to the extent that it is grounded (Glaser and Strauss).

Hence, theory generation is a process of research, rather than a product. 'Generating a theory' does not only come from the data during the course of the research, but also from ideas that come from the researcher, as is the case with grounded theory. Theory generation is a process that is worked out in relation to the data.

The method advocated by Glaser and Strauss is conceptual categories that are developed through gathering in one social area. This requires the use of grounded theory, which is *not* on the sociology of science, but a careful random sampling of an area, but to develop a theory (Glaser and Strauss).

Comparative analysis is a form of analysis that is *formal*. Substantive analysis is a form of analysis that is *substantive*. Substantive analysis is to a specific social problem, while formal analysis is a higher level of generalization. Substantive analysis is of substantive areas.



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Grounded theory originated in the United States at the time middle-range deductive theorizing was being advocated by Merton. It emerged out of the research Glaser and Strauss had conducted on 'dying patients' (1965).

Glaser and Strauss have offered a radical critique of the Deductive research strategy by arguing that, at the time they were writing, there was 'an over-emphasis in current sociology on the verification of theory, [with] a resultant de-emphasis on the prior step of discovering what concepts and hypotheses are relevant for the area that one wishes to research' (1967: 1-2). They believed that 'good' theory is systematically discovered from and verified with the data of social research.

Glaser and Strauss advocated the use of an inductive process, which, they argued, produces a theory that will fit and work, i.e. its concepts and categories will be appropriate, and it will be meaningfully relevant to, and will be able to both explain and predict, the phenomena under study.

In contrasting grounded theory with logico-deductive theory and discussing and assessing their relative merits to fit and work (predict, explain, and be relevant), we have taken the position that the adequacy of a theory for sociology today cannot be divorced from the process by which it is generated. Thus one canon for judging the usefulness of a theory is how it was generated – and we suggest that it is likely to be a better theory to the degree that it has been inductively developed from social research. (Glaser and Strauss 1967: 5)

Hence, theory generation is seen to be intimately involved in the process of research, rather than being something that precedes or occurs apart from it. 'Generating a theory from data means that most hypotheses and concepts not only come from the data, but are systematically worked out in relation to the data during the course of the research' (Glaser and Strauss 1967: 6). Theoretical ideas that come from other sources are not simply tested during the course of the research, as is the case with the Deductive research strategy, but have to be worked out in relation to the data in a much less formal trial and error process. Theory generation is therefore an ever-developing process.

The method advocated by Glaser and Strauss is *comparative analysis*. As conceptual categories (or concepts) and their properties are generated from data gathering in one social context, their relevance can be explored in other contexts. This requires the use of 'a multitude of carefully selected cases, but the pressure is *not* on the sociologist to "know the whole field" or to have all the facts "from a careful random sample." His [*sic*] job is not to provide a perfect description of an area, but to develop a theory that accounts for much of the relevant behavior' (Glaser and Strauss 1967: 30).

Comparative analysis is used to generate two types of theory, *substantive* and *formal*. Substantive theory is generated in specific contexts and will be related to a specific social process. Formal theory, on the other hand, is generated at a higher level of generality and involves concepts that can be applied to a number of substantive areas.

By substantive theory, we mean that developed for a substantive, or empirical, area of sociological inquiry, such as patient care, race relations, professional education, delinquency, or research organizations. By formal theory, we mean that developed for a formal, or conceptual area of sociological inquiry, such as stigma, deviant behavior, formal organization, socialization, status congruity, authority and power, reward systems, or social mobility. (Glaser and Strauss 1967: 32)

While substantive and formal theories differ in their level of generality, this is only a matter of degree. Glaser and Strauss use the example of the concept of 'nonscheduled status passage', which was generated from the substantive area of dying. Comparative analysis at this level can be made across different hospitals, or with other examples of status passage such as marriage, which may help to illuminate the dying process.

These theories have two elements: conceptual categories and their properties; and hypotheses or generalized relations among the categories and their properties. Categories and properties are concepts indicated by the data and can vary in their level of abstraction. A category stands by itself as a conceptual component of the theory while a property is a conceptual aspect of a category. For example, the category of social loss, which is related to the care of dying patients, was generated by observing differences in the way in which patients of different socio-economic and ethnic backgrounds were cared for. The greater the loss of the person to society, the better the care, and *vice versa*. Nurses were found to develop 'loss rationales' to explain the death of a patient whom they saw as a high social loss, and to help them to maintain 'professional composure' (another category) when facing the person's death. A 'loss rationale' is a property of the category of 'social loss'.

While it is possible to borrow categories from existing theory, provided it can be demonstrated that they fit the data, Glaser and Strauss preferred that new categories be developed. They were aware that borrowed categories can be used to select data that fits the category rather than using data to produce the category. They argued that there are many areas of everyday life for which there are no appropriate categories, and even if borrowed categories are used, their meanings are likely to undergo radical transformation.

As the research proceeds, and categories and properties begin to emerge, possible links between them are likely to suggest themselves. This involves a process of observation and reflection, of trial and error, of on-going comparative analysis. As the process continues, emerging hypotheses may be integrated into a more formal theory, with hypotheses at different levels of generality. The form of the theory is not important; it may be either a set of propositions or a discursive argument.

Glaser and Strauss illustrated these various features of a theory with reference to the concept of 'social loss' (1967: 42).

#### *Elements of Theory*

Category

#### *Substantive*

Social loss of dying patients

#### *Types of Theory*

#### *Formal*

Social value of people

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In summary is not a pre-planned process in which happens next process involves a variety of situations



Properties of Category	<i>Calculating</i> social loss on basis of <i>learned</i> and <i>apparent</i> characteristics of patient	Calculating social value of person on basis of <i>learned</i> characteristics of patient
Hypotheses	The higher the social loss of a dying patient, (1) the better the care, (2) the more nurses develop loss rationales to explain away the death	The higher the social value of a person the less delay s/he experiences in receiving services from experts

The authors used the concept of 'verification' of a theory ambiguously and uncritically; it is not clear whether they are referring to the inductive process of adding support, or the deductive process of testing. In practice, however, they considered the process of generation to also be a process of testing, and that no 'ultimate' critical testing is required. Grounded theories, they argued, are not easily refuted because they are intimately linked to data, but they are likely to be modified and reformulated as the research process continues. The publication of a report on the research is only a pause in the never ending process of theory generation.

The question of how a researcher selects appropriate comparative groups is determined by *theoretical sampling*, a process of data collection that is controlled by emerging theory. It is their relevance to theory generation, not verification, that is important. Initially, the process of data collection and analysis is guided by the research topic or problem (and, more importantly, research questions). However, as the research proceeds, the emerging categories and theory will direct the data collection. The simplest comparisons are made between different groups of the same substantive type (e.g. public libraries in a particular city). The theory generated will apply to these situations. Somewhat more general substantive theory is achieved by comparing different types of groups (e.g. public and university libraries). The scope of the theory can be further increased by comparing different types of groups within various larger groups (e.g. public libraries in a number of major cities within a country). Generality is further increased by making comparisons between countries (e.g. public libraries in major cities in different countries). The question of how many groups should be studied at each stage is not something that can be determined before the study begins as it is heavily influenced by the kinds of categories and hypotheses that emerge. 'The criterion for judging when to stop sampling the different groups pertinent to a category is the category's *theoretical saturation*. *Saturation* means that no additional data are being found whereby the sociologist can develop properties of the category' (Glaser and Strauss 1967: 61).

In summary then, research conducted from a grounded theory point of view is not a pre-planned linear process of testing hypotheses, but rather an evolving process in which what has been 'discovered' at any point will determine what happens next. An understanding of any phenomenon is seen as a developing process involving the collection of a variety of data, by a variety of methods, from a variety of situations. As concepts and insights emerge they will be explored and

'tested' by adding comparative groups to the study until such time as an adequate account or explanation of the problem at hand has been achieved.

Grounded theory, as presented by its founders, has had its critics. I begin with some of my own. First, it has strong empiricist tendencies. 'Facts' and 'data' are treated as being unproblematic; they are simply there to be observed and collected. There is a failure to recognize that observation is always theoretically saturated. Second, the role of the observer is also regarded as being unproblematic, although it is accepted that 'he [*sic*] must have a perspective that will help him see relevant data and abstract significant categories from his scrutiny of the data' (1967:3n). Third, no consideration is given to the problem of meaning or to social actors' constructions of reality. In striving to discover useful concepts, the authors have suggested beginning with 'local' concepts, but these simply designate 'a few principal or gross features of the structure and processes in the situation' (1967: 45). For example, in studying a hospital, concepts like 'doctors', 'nurses', 'wards' and 'admission procedures' might be useful starting points. There is no suggestion that the concepts used by the social actors in the situation, or the meanings they give to them, might serve this purpose, although it is accepted that the meaning of key words constantly used by people might be 'tracked down' in the course of the research (1967: 166). Fourth, the logic of generating theories is claimed to be inductive, but it is much more than generalizing from data. The process appears to have a closer affinity to abductive logic, but without the strong reliance on the social actors' point of view. Fifth, it is accepted that grounded theory will 'combine mostly concepts and hypotheses that have emerged from the data with some existing ones that are clearly useful' (1967: 46). However, Layder has argued that the rejection of general social theory, and the need to generate new theory in every research context, is both a waste of good theoretical ideas and also leads to very fragmented overall theory development (1998: 19, 37, 47).

The original version of grounded theory has since been elaborated by both authors independently (e.g. Strauss 1987; Glaser 1978, 1992, 2001) and in a series of editions by Strauss and Corbin (1990, 1998; Corbin and Strauss 2008). However, the deficiencies just reviewed remain in these later versions. A growing number of sympathetic critics have argued for a social constructionist foundation and the adoption of a more pragmatic approach (see, for example, Seale 1999; Charmaz and Mitchell 2001; Clarke 2005; Charmaz 2005, 2006).

#### *Layder: the adaptive alternative*

A more recent and practical proposal for linking theory and research has been proposed by Layder (1998). It steers a course between middle range and grounded theory, between pre-existing theory and theory generated from data analysis. At the outset, Layder rejected all anti-theoretical and atheoretical approaches in social science. The anti-theoretical arguments have come from strands of postmodernism, feminism and relativism as well as from the anti-formalism of grounded theory and some research with a social problem or policy-oriented focus.

Layder, like me, is committed to the accumulation of sociological knowledge. While rejecting the ideas that there are pure facts from which objective truths can

be derived, and that any social phenomenon is a reduction of ever more complex social phenomena

[A]daptive theory is as the best approach to understanding. It is not formed, simply it is potentially at least. (Layder 1998)

Layder has argued in a neutral manner, it is to control the inquiry process. In this way, collected, and the prior theory.

Layder was critical. First, he rejected the and naive interpretation argued for an underlying components.

Second, this latter between system and context and social, exclusively on one argued that as both independent elements.

Third, the activity is commonly viewed as being on-going manner, but and is much broader both middle-range capitalize on their

Fourth, Layder's stages in the research an outcome as in the aspect of social relations.

Fifth, he rejected the between theoretical and rejected grand theories or meta-narratives. to reserve a place for research process. It such as Marx, Durkheim empirical enquiry and

be derived, and that it is possible to produce one universal, objective truth about any social phenomena, he regarded the purpose of social enquiry to be the production of ever more accurate knowledge and ever more powerful explanations of social phenomena.

[A]daptive theory proposes that greater adequacy and validity should be understood as the best approximation to truth given the present state of knowledge and understanding. It is not a once-and-for-all notion, and in this respect, adaptive theory, fully formed, simply represents the 'latest stage' in the elaboration of theory. It is always, potentially at least, revisable in terms of future research and theoretical developments. (Layder 1998: 9)

Layder has argued that, as it is not possible to engage in research in a theory-neutral manner, it is necessary to acknowledge the use of, to make explicit and to control the inputs from, pre-existing concepts and theory in the research process. In this way, these prior concepts and theory shape the data that are collected, and the theory that emerges from the data can be used to modify the prior theory.

Layder was critical of both sides of many of the key methodological polarities. First, he rejected both naive positivism, with its emphasis on objective knowledge, and naive interpretivism, in its exclusive concern with subjective knowledge. He argued for an understanding of social life based on both objective and subjective components.

Second, this latter polarity is also expressed in a number of other ways, such as between system and life-world, between structure and agency or between social context and social activity. Whereas some traditions in social science concentrate exclusively on only one of these alternatives, Layder, along with others, has argued that as both are intertwined in social life they must be recognized as being independent elements and be given equal weight in social analysis.

Third, the activities of theory-testing and theory-generation, which are commonly viewed as being opposed research activities, should be combined in an on-going manner. Layder's proposal for this is perhaps less formal than Wallace's and is much broader than theory-generation in grounded theory. He has modified both middle-range and grounded theory, to overcome their limitations and to capitalize on their strengths, and has then used them in an integrated manner.

Fourth, Layder rejected the traditional view that theorizing occurs at discrete stages in the research process, say at the beginning as in middle-range theory, or as an outcome as in grounded theory. He has argued that theorizing is a continuous aspect of social research and can occur at any stage in the process.

Fifth, he rejected the opposition between general theory and substantive theory, between theoretician's theory and researcher's theory. Whereas Merton and Mills rejected grand theory, and, more recently, postmodernists have rejected grand or meta-narratives as being irrelevant distortions of social reality, Layder wants to reserve a place for any form of theorizing as possible sources of input into the research process. He has included in this not only the work of classical theorists, such as Marx, Durkheim, Weber and Simmel, who concerned themselves with empirical enquiry as well as conceptual and theoretical frameworks, but also more

abstract theorists, such as Parsons, Habermas, Foucault and Giddens. However, he argued that general theories should be open to revision and reformulation in the light of the results of empirical research. This has certainly not been the case for the latter category of theories, perhaps because they tend to present ontologies of the social world rather than explanatory accounts. It is probably easier to modify explanations, such as Durkheim's (1951) theory of egoistic suicide, than it is to alter an elaborate ontological scheme.

Adaptive theory requires a very flexible approach to the research process both in terms of the order in which activities are carried out and also in their role in the process of theorizing. '[T]he notion of theorizing itself has to be understood as an integral part of the overall research process as well as organically connected to the wider literature and findings of previous research and scholarship' (Layder 1998: 49). While research conducted in this way has to be systematic and disciplined, it also has to use a wide range of resources and be tolerant of a diversity of standpoints.

Layder has set out some practical ideas on how to move from existing concepts and theory to data and how to analyse data with theory in mind. He sees adaptive theory as using both *general* and *substantive* theory as well as *existing* and *emergent* research data. We have already encountered *general* and *substantive* theory. *Existing* data include previous research findings as well as documents, both visual and linguistic. Literature from disciplinary and popular sources, films and theatre, photographs, advertisements and sporting events, all qualify. In short, 'any aspect of social life that is capable of representation in a form which allows it to be offered or referred to as evidence of social trends, customs, habits, types of work or recreation, and so forth' (Layder 1998: 165). *Emergent* research data refers to the immediate findings from a current research project. It can suggest new concepts and theoretical ideas. This is not to suggest that data are somehow pure sources. 'All data is already theoretically saturated either through "contamination" by prior theorizing or through the preconceptions and commonsense presuppositions imported by the researcher (or generations of researchers)' (Layder 1998: 166).

While this view of the constructed nature of data flies in the face of traditional approaches to social research, it is now recognized in more recent traditions. In defending this position, Layder also gets to the heart of his view of the connection between theory and research, which rejects traditional views that consider concepts and theoretical propositions as directly representing reality.

Thus, to speak of the manner in which adaptive theory attempts to capture or fashion an 'organic' connection between theorizing and data collection and analysis is not to imply an essentialist link. Although adaptive theory allows for and indeed encourages a dialectical relation between the formulation of theoretical concepts, clusters and models and their reformulation or revisability in the light of emergent data collection and analysis, there is no implication that this presupposes some kind of pre-theoretical (or epistemologically neutral) basis which is reflected in the term 'organic'. In this sense 'organicism' simply refers to the uncovering of research data and the simultaneous unfolding of conceptualization and theoretical reflection. (Layder 1998: 166)

Reminiscent of Giddens, Layder's approach includes an elaborate and flexible research process. In summary, the

adaptive theory to research by utilizing the junction with the substantive theory that attempts to depict the social world. Adaptive theory is both in relation to the empirical world and the 'order' in emergent or unearthed by the

It should be clear that research. They are then, mainly when hypotheses are not in role in the Abduction of features and/or mechanisms between concepts tested by operational data, and then expected concept by some form

It is extremely rare uses of hypotheses to questions, regardless of whether to establish whether in a probability sample the sample was drawn non-probability sample confirm or refute a statistical significance is only relevant to

2003 for a more detailed If qualitative methods there is no reason and is likely to reflect concepts and categories

Hypotheses also theory. However, the of generating theories of the data, and hypotheses

Reminiscent of Giddens (1976), Layder proposes a new set of rules of method. These include an elaboration of his ontological and epistemological assumptions.

In summary, then,

adaptive theory focuses on the construction of novel theory in the context of ongoing research by utilizing elements of prior theory (both general and substantive) in conjunction with theory that emerges from data collection and analysis. . . . The adaptive theory that results from such an interchange and dialogue always represents an attempt to depict the linkages between lifeworld and system elements of society. . . . Adaptive theory is accretive, it is an organic entity that constantly reformulates itself both in relation to the dictates of theoretical reasoning and the 'factual' character of the empirical world. Prior theoretical concepts and models suggest patterns and 'order' in emerging data while being continuously responsive to the 'order' suggested or unearthed by the data themselves. (Layder 1998: 27)

## The Role of Hypotheses

It should be clear by now that hypotheses play a specific but limited role in social research. They are only relevant when 'why' questions are being investigated, and, then, mainly when the Deductive research strategy is being used to answer them. Hypotheses are not appropriate in the Inductive strategy and have a very particular role in the Abductive strategy. In the Retroductive strategy, it is models of structures and/or mechanisms that are hypothesized rather than statements of relationships between concepts. If quantitative methods are being used, a hypothesis will be tested by operationalizing the concepts in the hypothesis, collecting the appropriate data, and then exploring the nature of the relationship between the measures of the concept by some form of statistical analysis, such as correlation or regression.

It is extremely important to distinguish between the theoretical and statistical uses of hypotheses. Theoretical hypotheses are tentative answers to 'why' research questions, regardless of where they come from. Statistical hypotheses are used to establish whether a relationship between two variables that have been measured in a probability sample could be expected to exist in the population from which the sample was drawn. This latter use is narrowly technical and is irrelevant when non-probability samples or populations are used. Decisions about whether data confirm or refute a theoretical hypothesis cannot be settled by the use of tests of statistical significance. Hence, consideration of null and alternative hypotheses is only relevant to statistical hypotheses, not theoretical hypotheses (see Blaikie 2003 for a more comprehensive discussion of these issues).<sup>6</sup>

If qualitative methods are being used in the Deductive research strategy – and there is no reason why they should not be – the testing process will be less formal and is likely to rely more on arguments from evidence and the manipulation of concepts and categories in textual data.

Hypotheses also have a role in the Abductive research strategy, and in grounded theory. However, their use here is less formal and is an integral part of the process of generating theory from data. Questions will arise from the analysis of some of the data, and hypotheses may be used to explore these questions, within the same

body of data, or to stimulate further data collection. This will not involve either the measurement of concepts or the statistical testing of relationships.

To reiterate a point made in chapter 3, 'what' questions do not require hypotheses to guide the data collection, and they may also be unnecessary for 'how' questions. 'What' questions need concepts, and descriptions can be produced using these concepts, with either quantitative or qualitative data, without the need to guess at what the outcome might be. Such guessing of answers to 'what' questions adds nothing to the quality or sophistication of the research.

## The Role of Models

Like *theory*, the concept of *model* has a variety of meanings and uses in the context of creating new knowledge and understanding social life. Calling something a model seems to be regarded as adding sophistication or legitimacy to one's research. A discussion of the role of *models* and *theory* in research is complicated by the fact that the concepts are sometimes used interchangeably. Some writers even combine them to produce 'theoretical models'.

In this section of the chapter, I will review the major types of models used in the social sciences. However, before doing this, it is necessary to set aside two everyday uses of *model* that are not relevant to our discussion: three-dimensional representations of objects, and ideals of some kind. Examples of representations include model aeroplanes, or an architect's model of a proposed building. The first is a model of an actual aeroplane, while the second is a model for a new building. Such models are not relevant to social research.

The other everyday use of model, again not relevant to research, is in the normative or ideal sense, for example, a model parent or a model organization. These models may never exist in reality but are presented as ideals for which to strive. However, they could be studied as a research topic.

### Types of Models

Models are used in social research in a variety of ways. They provide a conceptual or theoretical framework, they can represent a hypothetical explanatory structure or mechanism, perhaps derived by the use of analogies, or they can be a method of organizing and communicating research results

#### Types of Models

- Abstract descriptions
- Synonym for theory
- Conceptual models
- Theoretical models
- Analogues of mechanisms
- Diagrammatic representations
- Mathematical representations

#### Abstract descriptions

The most elementary but not trivial use of models in social research is as abstract descriptions. While not usually thought of as models, abstract descriptions can be regarded as models of some aspects of social reality. Casual or systematic observation and data may inform them.

Two examples of Schütz and Husserl's research strategy of the Retroductive and Dilthey but not verifiably attempted to do use in everyday these activities. life is possible are everyday c. tions. They are changed by pro social actors in a system of inter the intersubject plans – can only meanings that in sociological r

Schütz distingu tions, or ideal r. structured with a social stock of b. possible. Sociol. sede everyday (1963a: 246).

Schütz argues be understood t. existing in imp. tions as *model*. situations, not. The elements of logical outcome of testable hypo.

In their versa 'episodes' involv as well as some human life happ of an episode' ( it is necessary to structure and u processes. This Second 1972; 11. use of a differen that produced u will be discuss

Two examples of models as abstract descriptions can be found in the work of Schütz and Harré. Schütz elaborated the way models are used in the Abductive research strategy and Harré on how they are used in the *constructionist* version of the Retroductive strategy. Schütz's project (1963a, 1963b), like that of Weber and Dilthey before him, was to find a way 'to form objective concepts and objectively verifiable theory of subjective meaning structures' (Schütz 1963a: 246). He attempted to do this by establishing a bridge between the meanings social actors use in everyday activities and the meaning the social scientist must attribute to these activities in order to produce an adequate theory. He argued that social life is possible to the extent that social actors use typifications. Typifications are everyday categorizations of typical persons, social actions and social situations. They are socially constructed and transmitted, and they are refined and changed by processes of trial and error in everyday activities. Typifications that social actors use are related to their biographically and situationally determined system of interests and circumstances (Schütz 1963a: 243). According to Schütz, the intersubjective meanings that social actors use – motives, goals, choices and plans – can only be experienced in their typicality (1963a: 244). It is these typical meanings that the social scientist must discover, describe and use as ingredients in sociological ideal types.

Schütz distinguished between everyday typifications and sociological typifications, or ideal types. The critical difference between them is that they are constructed with different purposes in mind. Everyday typifications are part of the social stock of knowledge which, while often taken for granted, makes social life possible. Sociological typifications are constructed by social scientists to supersede everyday typifications and to understand some aspects of social life (Schütz 1963a: 246).

Schütz argued that all knowledge of the social world is indirect; people cannot be understood theoretically in their uniqueness but only as impersonal ideal types existing in impersonal and anonymous time. He regarded sociological typifications as *models* of typical social actors, typical social actions and typical social situations, not as descriptions of actual human beings, actions and situations. The elements of Schütz's models of the social world can be manipulated and the logical outcomes compared. They are the building blocks of theory and the source of testable hypotheses.

In their version of social psychology, Harré and Secord (1972) focused on 'episodes' involving one or more people. Episodes involve a beginning and an end as well as some internal structure or unity. 'Everything of interest that occurs in human life happens in the course of, or as the culmination of, or as the initiation of an episode' (Harré and Secord 1972: 153). In order to grasp such an episode it is necessary to construct a *model* of it, a critical or abstract description of its structure and its principle of unity, of the pattern of relationships and social processes. This type of model has been referred to as a *homeomorph* (Harré and Secord 1972; Harré 1977). However, the explanation of the episode requires the use of a different kind of model, a *paramorph*, which identifies the mechanism(s) that produced it. This second kind of model is based on the use of analogies and will be discussed shortly.

### Synonym for theory

The concept of *model* has been used by some writers as a synonym for 'theory', or, more particularly, for a particular view of theory. For example, Lave and March (1975) regarded *model* as being not only interchangeable with 'theory' but also 'paradigm', 'hypothesis' and even 'ideas'. Another example can be found in Inkeles's (1964) discussion of evolutionary, structural-functional and conflict theories as models of society. The sociologist 'carries in his [*sic*] head [models that] greatly influence what he looks for, what he sees, and what he does with his observations by way of fitting them, along with other facts, into a larger scheme of explanation' (Inkeles 1964: 28).

We should note, however, that Inkeles went on to suggest that a *model* is a general theory with a strong ontological component, while a 'theory' is an answer to a specific research question.

It is not always possible to distinguish precisely between a scientific model and a scientific theory, and the terms are sometimes used interchangeably. A model may generate a host of theories but one theory may be so powerful as to become, in effect, a general model. . . . [W]e use model to refer to a rather general image of the main outline of some major phenomenon, including certain leading ideas about the nature of the units involved and the pattern of their relations. A theory we take to be a heuristic device for organising what we know, or think we know, at a particular time about some more or less explicitly posed question or issue. A theory would, therefore, be more limited and precise than a model. A theory can ordinarily be proved wrong. In the case of a model, it can usually only be judged incomplete, misleading, or unproductive. (Inkeles 1964: 28)

I suggest that to use *model* and 'theory' synonymously is to add confusion to concepts that already have a variety of other uses. This practice is to be avoided.

### Conceptual models

*Modél* is also associated with the idea of a conceptual scheme. This usage is closely related to both 'theoretical perspectives' and the *ontological* conceptual tradition discussed earlier in this chapter. A *conceptual model* attempts to represent the social world in terms of an array of related concepts, or a conceptual scheme (see e.g. Krausz and Miller 1974: 5). Further examples of conceptual schemes will be discussed in the section 'Diagrammatic representations' later in this chapter.

A *conceptual model* may be an important component of a theoretical perspective. However, theoretical perspectives tend to use different sets of concepts. If the same concepts *are* used, they will usually be given different meanings. For example, structural-functionalism uses concepts such as norms, values, roles, socialization, social control, equilibrium, adaptation and system, while the conflict perspective uses concepts such as economic base, superstructure, alienation, contradiction, interests, class, power and structure. These two theoretical perspectives share some concepts, such as institution, and may use them in a similar way, but, overall, the concepts in each perspective entail very different

assumptions about the idea that conflict is those between very differently interactionism. It is determined by negotiated as social

### Theoretical models

Another common 'theoretical model' Willer (1967) has notion of the relation as a hierarchy of Paradigm comes and assumptions. contains concepts is the source of 'General models' They provide 'the construction and of statements that compact, systematic that identify the from 'general model when the nominal the 'formal system it becomes the 'operationalizing tradition' system' can be called

### Analogues of models

In both the natural drawing on ideas sciences occurred They developed the the idea of the only evolutionary theory organism. He argued society's structure in differentiation commonly called ancient and medieval provide a 'scientific



assumptions about and ways of viewing the social world. The former is based on the idea that consensus on norms and values is the basis of social order, and the latter that conflict and power are characteristic of all social relationships, including those between social classes. 'Role' is a good example of a concept that is used very differently in two perspectives such as structural-functionalism and symbolic interactionism. In the former, roles are occupied by social actors whose behaviour is determined by the associated norms. In the latter, roles are negotiated and renegotiated as social interaction proceeds; they are not predetermined.

### *Theoretical models*

Another common use of *model* is to combine the word with 'theory' to form 'theoretical model'. This is frequently done in a very imprecise manner. However, Willer (1967) has attempted to use the combined concept precisely in an elaboration of the relationship between theory and research. He saw this relationship as a hierarchy of levels with 'general model' at the top. My concept of Research Paradigm comes close to what he had in mind, a source of broad theoretical ideas and assumptions. The second level down consists of a 'theoretical model', which contains concepts and explanatory ideas related to a particular phenomenon. It is the source of specific hypotheses that can be tested in the course of research. 'General models' may be a source of 'theoretical models', but not the only one. They provide 'theoretical models' with the background that is essential in theory construction and testing. Below this is a 'formal system', which consists of set of statements that represent the key relationships within a phenomenon; it is a compact, systematized and internally consistent set of statements of relationships that identify the core ingredients of a 'theoretical model'. The logic of moving from 'general model' to 'theoretical model' to 'formal system' is deductive. Then, when the nominally defined concepts and the statements of the relationships of the 'formal system' are translated into measurable relationships between concepts it becomes the 'operational system'. (See the earlier discussion on the *operationalizing* tradition.) If the 'operational system' survives the testing, the 'formal system' can be called a 'theory'.<sup>7</sup>

### *Analogues of mechanisms*

In both the natural and social sciences, many theories have been developed by drawing on ideas from another field of science. An example from the natural sciences occurred when physicists tried to understand the structure of the atom. They developed the idea of electrons and neutrons by drawing from astronomy the idea of the orbits of the planets around the sun. In sociology, Spencer's (1891) evolutionary theory of social change viewed society as being like an evolving organism. He argued that evolutionary growth is accompanied by changes in society's structure and functions, that an increase in size produces an increase in differentiation and structural complexity. His theory has employed what is commonly called the 'organismic analogy'; an idea that can be traced back to ancient and medieval writings. Hence, as the discipline of sociology developed to provide a 'scientific' understanding of human societies, it drew on familiar and

well established ideas from the discipline of biology. A theory in biology was used as a model for a theory of society.

Many other examples can be found of the use of a theory from a better-developed field as a model for a theory in a field where knowledge is still limited. The process is one of taking the concepts, and the established relationships between them, from the better-developed field and translating them into concepts and statements of relationships in the new field. For the model to be most useful, a one-to-one correspondence has to be established between the concepts and statements of relationship in both fields. If this is achieved, then hypotheses can be developed and tested in the new field. For example, in order to understand how rumours spread, it is possible to use as a model a theory about the spread of diseases. If the resulting hypotheses are corroborated, theories in the two fields will have the same form.

Some writers (e.g. Black 1962; Brodbeck 1968) have argued that analogies are the only genuine kinds of models in science. They considered all other uses of 'model' are unnecessary because there are perfectly good alternative concepts available; other uses simply create ambiguity and confusion.

#### *Diagrammatic representations*

Models of this type are designed to indicate patterns of relations, time sequences, or causal connections between aspects of social life. Concepts are arranged in a visual space to reflect their ordering in the social world, and symbols, such as lines and arrows, are used to represent the form and direction of the relationships. These models include arrangements of abstract concepts about generic aspects of the social world, and more specific summaries of relations among a number of variables. The former have been described as *abstract-analytical* models and the latter as *empirical-causal* models (Turner 1987: 164–5; 1991: 17).

#### *Mathematical representations*

While this is not the place for a detailed discussion of the role of mathematics in the social sciences, a few comments are in order. The use of mathematics is essential in physics, and to a certain extent in biology, but social scientists are very divided about the extent and manner in which it should be used in the social sciences. Of course, the application of mathematics to the social sciences is not completely new: economics is very dependent on the use of mathematical modelling, and psychologists have applied mathematics to certain aspects of their work, particularly in psychometrics. It is in the areas of social psychology, sociology and political science that the use of mathematics is a more recent and controversial development.

At a very basic level, however, whenever we count some aspect of the social world, and then apply some form of statistical analysis to the data, we are assuming that regularities in the social world conform to the rules of arithmetic. However, this kind of mathematical modelling is largely taken for granted.

It is other activities to which the label of *mathematical modelling* is usually applied, such as:

- formalizing the consequences
- organizing, summarizing
- providing structured, tested; and
- playing 'what-if' games (Leik and Me

The first of these is the social theory. The second is the theory (Sorensen 1987). The third is the correlational and the fourth is the attempts to achieve a model and other forms of activity, the aim of which is to use data, or to establish a perfect model of the social world in the form of a set of hypotheses, by substituting a model would be a model and Featherman

It is hard to tell over recent years, particularly regarding that can best be independent variables, each one of modelling involving log linear and (such as that involving independent

Whether or not research design will be influenced by into account as well as one's discipline of interest of a mathematical model. In other words, models will be

## Theory

To summarize the models in each of is the contrast between sets out with a way

- formalizing theories by providing a language that clarifies assumptions and consequences embedded in the use of ordinary language;
- organizing, sifting through and finding systematic patterns in data;
- providing substitutes for theories from which consequences can be drawn and tested; and
- playing 'what if' games with sociological ideas (Lazarsfeld and Henry 1966; Leik and Meeker 1975).

The first of these activities is concerned with developing a precise language for social theory. However, this has not been the major use of mathematics in sociology (Sorensen 1978). The second use is the more common. It includes descriptive, correlational and inferential statistics at one extreme, and, at the other extreme, attempts to achieve causal explanations. The latter includes the use of regression and other forms of structural equation modelling (e.g. path analysis). In this activity, the aim is either to find a line or curve that represents a relationship in data, or to establish the extent to which a network of relationships conforms to a perfect model of them. The third and fourth uses involve constructing a theory in the form of a set of mathematical (algebraic) equations, exploring its implications by substituting parameters (possible values for the variables), and seeing what the model would predict. (See Coser 1975 for a critique of mathematical sociology, and Featherman 1976 and Treiman 1976 for defences.)

It is hard to find an article in any issue of *The American Sociological Review* over recent years that does not use some form of structural equation modelling, particularly regression. Generally, the aim is to find a set of independent variables that can best predict variations in a dependent variable. In regression analysis, independent variables are progressively added or manipulated in various combinations, each combination being described as a model. The other dominant form of modelling involves the use of mathematical equations of various kinds, including log linear and logit variations, to express a complex theoretical statement (such as that involved in rational choice theory) or the relations among dependent and independent variables.

Whether or not consideration needs to be given to mathematical modelling in a research design will depend on a number of other choices. These choices are likely to be influenced by the various audiences that a researcher needs or wishes to take into account as well as the paradigms that are regarded as being appropriate in one's discipline or research community. In some kinds of research, the development of a mathematical model may only be relevant after the data have been collected. In other kinds of research, such as most qualitative studies, mathematical models will be completely irrelevant.

## Theories, Models and Research Strategies

To summarize the discussion in this chapter, I shall review the role of theory and models in each of the research strategies. Two issues will be discussed. The first is the contrast between theory development and theory testing; whether research sets out with a well-developed theory or whether theory is the end product of

**Table 5.1** Research strategies, theory and models

Research strategy	Nature of theory		Use of models
Inductive	Form:	Generalizations Networks of propositions	Abstract descriptions Mathematical representations
	Process:	Generated by induction from data	Conceptual frameworks
Deductive	Form:	Deductive argument produces hypotheses	Theoretical models
	Process:	Hypotheses tested by matching against data	Diagrammatic representation Mathematical representation
Retrospective	Form:	Generative structures and/or mechanisms	Abstract descriptions
	Process:	Modelling of hypothetical mechanisms	May involve use of analogies
Abductive	Form:	Social scientific accounts	Abstract descriptions
	Process:	Generated from everyday accounts	(ideal types)

research. The second is concerned with the way explanation or understanding is achieved. The four research strategies present us with contrasting positions on these issues (see table 5.1).

### Inductive and Deductive Strategies

The relationship between theory and research is viewed differently in the Inductive and Deductive research strategies. Insofar as explanation is considered to be possible at all in the Inductive research strategy, theory consists of generalizations derived by induction from data. Hence, research starts with the collection of data, and, hopefully, ends up with abstract descriptions of patterns in the data. If strong support is achieved for a generalization from many studies, its status is enhanced. A specific instance of a particular phenomenon can be explained by regarding it as an instance of such a regularity, i.e. it is seen to fit the pattern. Hence the idea of *pattern* explanations. In short, research within the Inductive strategy involves collecting data by operationalizing concepts, and then searching for patterns in the data. Patterns become generalizations, and networks of generalizing generalizations is considered to be a theory. Theory development consists of accumulating generalizations and producing further support for them.

The use of models in the Inductive research strategy is confined to abstract descriptions and mathematical representations. The former consists of relatively low-level generalizations and possible networks of such generalizations, while the latter involves the mathematical modelling of data. This modelling can range from basic statistical summaries, such as measures of central tendency, dispersion and association, to more complex mathematical simplifications of patterns of relationships.

As we have seen, the logic of the Deductive research strategy is the reverse of the Inductive strategy. Rather than theory being the outcome of research, it has to be produced, borrowed or invented at the outset. Theory takes the form

of a deductive argument. The argument can be explained. Hence, data are collected.

A Deductive strategy involves an existing research theory. Alternatively, the theory and/or the data are a great deal of knowledge. Popper, it matters not, is a rigorous and the rigorous.

The Deductive strategy is possible to regard the context of a hypothesis (Willer 1967). Although the concepts can be and/or mathematical researchers.

The Retrospective strategy, a theory of the hypothesized observed regularities in sciences, the task of structures or mechanisms. Whether it is will depend on what. However, as we have argued that it is (context) and mechanism.

Models play a vital role in abstract descriptions (*morphs*), and they (*morphs*). It is in the creative process the connection between its existence, is not statistical testing of

To demonstrate the possibility of the connection between patterns of alienation

of a deductive argument. Depending on the purpose at hand, the conclusion to the argument can be a hypothesis, a prediction, or the regularity that is to be explained. Hence, this strategy requires a great deal of theoretical work before data are collected.

A Deductive theory can come from many sources, or a combination of them. An existing *researchers'* theory could be used in its original or a modified form. Alternatively, theory might be constructed using elements from *theoreticians'* theory and/or the findings of previous research. The latter clearly requires a great deal of knowledge of the field, as well as creativity. However, according to Popper, it matters not from whence a theory comes; it is the logic of its construction and the rigour of its testing that are important.

The Deductive strategy lends itself to the use of various types of models. It is possible to regard a deductive argument as a 'theoretical model' and to set it in the context of a 'general model', a 'formal system' and an 'operational system' (Willer 1967). Alternatively, it is possible to represent the relationships between the concepts contained in the propositions of the argument in diagrammatic and/or mathematical forms. This is now common practice among quantitative researchers.

### Retroductive and Abductive Strategies

The Retroductive and Abductive research strategies do not lend themselves to conceptual or logical ways of linking theory and research. In the Retroductive strategy, a theory or explanation is achieved by establishing the existence of the hypothesized structure or mechanism that is responsible for producing an observed regularity. Alternatively, and probably more commonly in the social sciences, the task is one of establishing which one of a number of possible known structures or mechanisms is responsible, and the conditions under which it operates. Whether it is a structure or a mechanism on which the researcher focuses will depend on whether the *structuralist* or the *constructionist* version is used. However, as we have seen, Pawson and Tilley (1997) and Layder (1998) have argued that it is possible, perhaps necessary, to incorporate both structures (context) and mechanisms in our explanations.

Models play a vital role in the Retroductive strategy. They are used to provide abstract descriptions of the regularities or episodes under consideration (*homeomorphs*), and they are then used to construct 'images' of mechanisms (*paramorphs*). It is in this latter use that analogies may be employed as a stimulus to the creative process involved in discovering unknown mechanisms. In the end, the connection between a hypothetical model, and the process of establishing its existence, is more a matter of arguing from evidence than of engaging in the statistical testing of hypotheses (as in the Deductive strategy).

To demonstrate the existence of a particular structure may involve documenting many possible consequences of its existence, and then arguing for the plausibility of the connection between the evidence and the theory. For example, to establish the existence of a particular type of class structure as an explanation for patterns of alienated behaviour at work will require an argument of the kind that

connects evidence other than the work behaviour in question to both that behaviour and a possible class structure. Such arguments will obviously be a matter of persuasion based on evidence.

The relationship between theory and research in the Abductive research strategy is very different from that in the other three strategies. In this case, the two are intimately intertwined; data and theoretical ideas are played off against one another in a developmental and creative process. Regularities that are discovered at the beginning or in the course of the research will stimulate the researcher to ask questions and look for answers. The data will then be reinterpreted in the light of emerging theoretical ideas, and this may lead to further questioning, the entertainment of tentative hypotheses, and a search for answers. *Research becomes a dialogue between data and theory mediated by the researcher.* Data are interpreted and reinterpreted in the light of an emerging theory, and, as a result, change in the process. The emerging theory is tested and refined as the research proceeds. While this dialogue could continue forever, a satisfactory explanation will have been produced when theoretical saturation is achieved and satisfying answers to the research questions have been arrived at.

The process used to generate theory in the Abductive research strategy is sometimes described as inductive. However, this is misleading for a number of reasons. Abduction is a process by means of which the researcher assembles lay accounts of the phenomenon in question, with all their gaps and deficiencies, and, in an iterative manner, begins to construct her or his own account. The central characteristic of this process is that it is iterative; it involves the researcher in alternating periods of immersion in the relevant social world, and periods of withdrawal for reflection and analysis. This alternating process means that theory is generated as an intimate part of the research process; it is not invented at the beginning nor is it just produced at the end. The form of this theory can vary, depending on the particular branch of Interpretivism within which the researcher is working. Following Weber, Schütz and Becker, my preference is for the construction of ideal types as the abstract second-order descriptions, i.e. models. The rich detail in ideal types can then be used to produce theoretical propositions, which, in turn, may be tested by the further use of the Abductive strategy, or, possibly, within the Deductive strategy. The latter case does not necessarily entail the use of quantitative methods; it is possible to test deductively derived hypotheses using any type of data.

Ideal types as models can look very much like the models of mechanisms developed in the *constructionist* version of the Retroductive research strategy. I have argued (Blaikie 1994) that Weber's ideal type of the Protestant work ethic, particularly the typical meaning given to work by the early Calvinists, is equivalent to a model of a mechanism. In this case, the mechanism explains the relationship between religion and occupation that Weber claimed existed in Germany over a hundred years ago. However, it is not clear whether Weber arrived at this ideal type cum model by abduction or retroduction. Given the historical nature of his study, his ability to use the logic of abduction, as used in the Abductive research strategy, was rather restricted. Perhaps he used a combination of both, thus reinforcing the idea of the possible close association between these two research strategies.

Blaikie, N. 2007.  
 Layder, D. 1998.  
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 The following refer  
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 Blumer, H. 1969.  
 Glaser, B. G. and  
 Harré, R. and P.  
 Merton, R. K. 196  
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## Further Reading

- Blaikie, N. 2007. *Approaches to Social Enquiry*.
- Layder, D. 1998. *Sociological Practice: Linking Theory and Social Research*  
Discusses the issues related to the relationship between theory and research and offers some practical procedures for achieving this.
- Turner, J. H. 1991. *The Structure of Sociological Theory*.  
Presents formal views of the relationship between theory and research.
- The following references, written between 1959 and 1972, deal with some classical issues and present various points of view.
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