7

Concepts, Theories, Hypotheses and Models

7.1 Chapter Summary

- It is not possible to avoid dealing to some extent with concepts, theories, hypotheses and models in a research design.
- The nature of the research questions, and the choice of a logic or logics of inquiry, 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* – concepts identify the basic features of some social phenomenon and the relationships between them.
  - *Operationalizing* – concepts are translated into variables by devising ways to measure them.
  - *Sensitizing* – concepts provide initial ideas of what to look for, ideas that will be refined as the research proceeds.
  - *Hermeneutic* – concepts that a researcher uses to describe and understand any social phenomenon are derived from everyday concepts and meanings.
- In addition, 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 logics of inquiry 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; grand theories, middle-range theories and formal theories.
- 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 providing both inputs and outputs in ongoing cycles of induction and deduction (Wallace).

o   As being generated from data (Glaser and Strauss).
o   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, being relevant only to the answering of 'why' research questions when Deductive logic is used.
- Various types of models are used in social research: abstract descriptions; a synonym for theory; conceptual models; theoretical models; analogues for mechanisms; diagrammatic representations; and mathematical representations.

7.2 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 turning concepts into variables, by devising a measure for them, and then 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 logics of inquiry, Inductive and Deductive, and 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 logics of inquiry (see Figure 7.1).

7.3 The Role of Concepts

A concept is an idea that is expressed in words. Technical concepts in any discipline form the language by means of which it deals with its subject matter. Concepts range in generality from the very specific to the highly abstract, and from the simple to the complex. However, *we cannot set out with just a single view of the role of concepts in social research.*

Concepts are commonly regarded as the building blocks of social theories. Such theories specify the relationships between concepts and why these relationships exist. In this approach, concepts are the way connections with 'the empirical world' are achieved. Blumer characterized this as follows.

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)

Blumer also saw concepts as being important in the paradigm and/or theoretical framework that sets a context for research, as being involved in the statement of a research problem, as determining the data that will be collected and how they will be 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 way actually match the empirical world to which they are supposed to refer (1969: 28). His solution was to use sensitizing rather than definitive concepts. This distinction will be discussed shortly.

It is differences in views about the sources of concepts and their definitions that distinguish the logics of inquiry. For example, when Inductive and Deductive
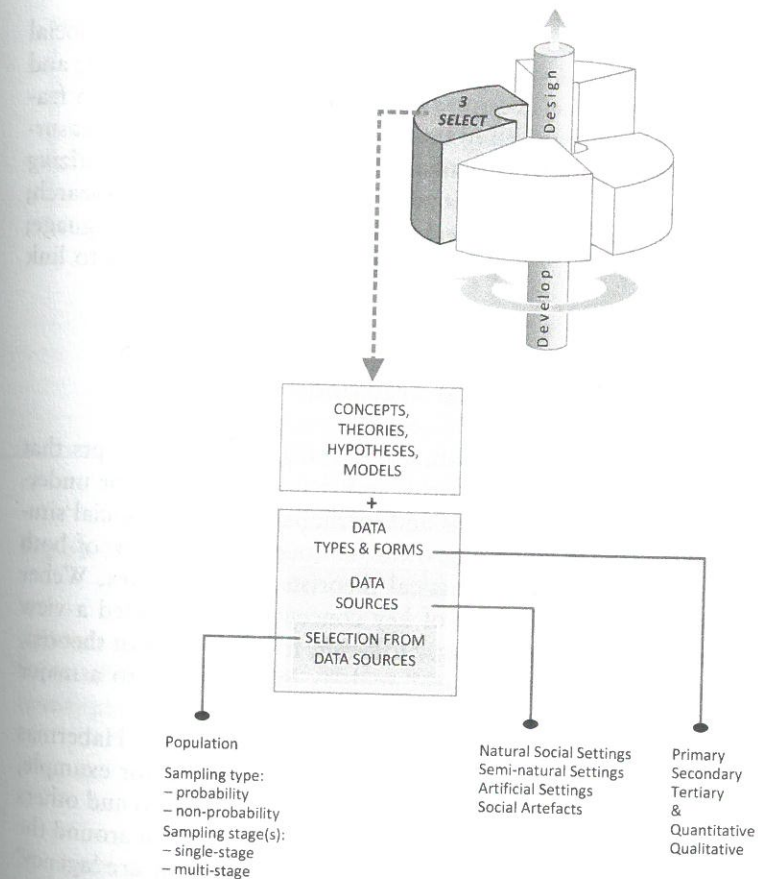

Figure 7.1   *Selecting* a design's content clarifies what is to be collected and analysed

logics are used, it is usually the researcher's responsibility to select the relevant concepts and to define them before the research commences. Such concepts can come from:

- a paradigm within which the research is conducted (e.g. positivism);
- a theoretical perspective that is dominant within a discipline or social scientific community (e.g. conflict theory);
- a specific research programme (e.g. on social inequality);
- 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.

However, in using Abductive logic, 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.

To explore these differences, five traditions in the use of concepts in the social sciences are discussed: *ontological, operationalizing, sensitizing, hermeneutic* and *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 identify the basic features of the social world, and that are essential for understanding societies, major social institutions and, perhaps, small-scale social situations. Elements of the ontological tradition can be found in the work of both 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 preoccupation that was intended to describe the social world.

More recent attempts at theoretical synthesis, such as those by Habermas and Giddens, also include a strong ontological emphasis. Giddens, for example, reorganized and redefined some of the basic concepts used by Parsons and others (e.g. society, social system, institution, structure), and arranged them around the concept of 'structuration'. The foundational 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,
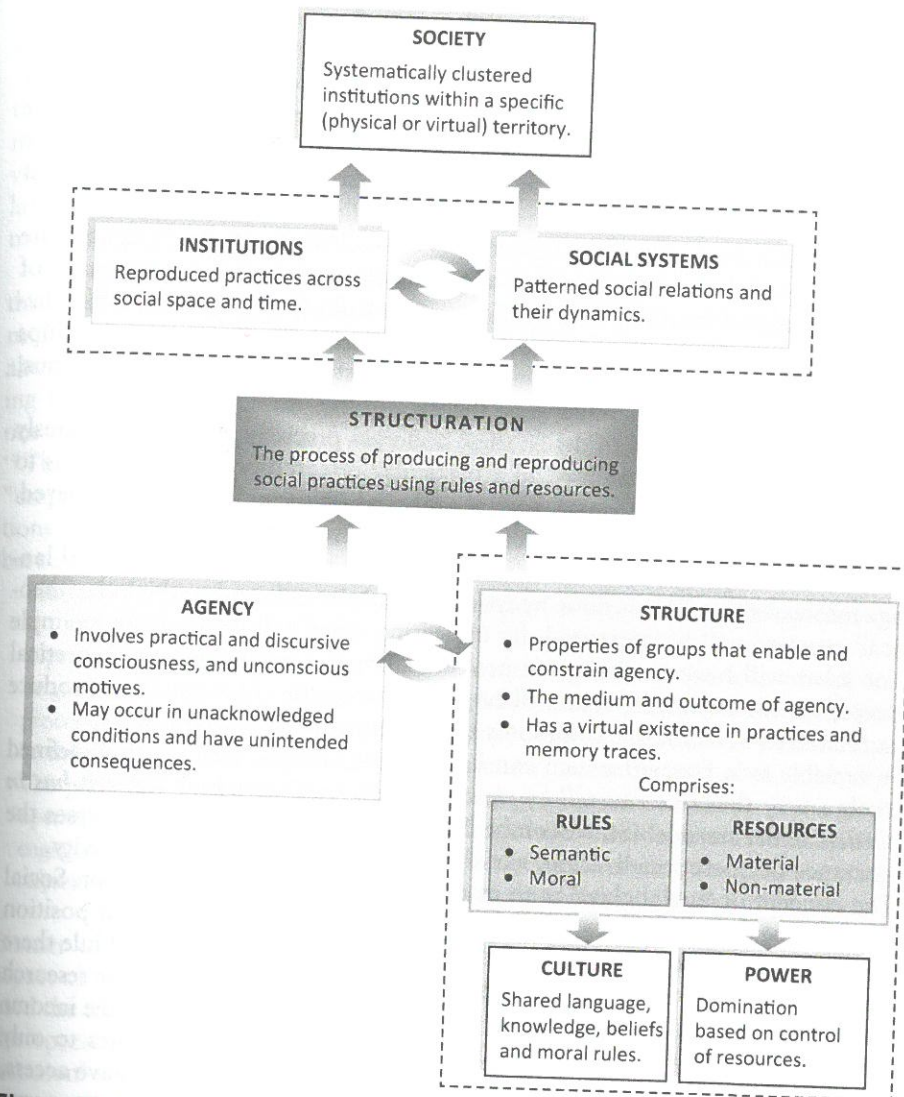
Figure 7.2   Key concepts in Structuration Theory

1984 as well as: Cohen 1989; Bryant and Jary 1991; Craib 1992; Layder 1994; Scott 1995; Blaikie 2007), Figure 7.2 is Blaikie's attempt at setting out the relationships between Giddens's basic concepts.[1]

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, defining them and then developing ways of measuring them.

From Durkheim on, in this tradition it has been argued that concepts must be defined precisely and consistently. The imprecision of ordinary language must be superseded by technical concepts.[2] This has led to the view that science has two languages: one of *conceptualization* and the other of *operationalization* (see, for example, Blalock 1968; Sedlack and Stanley 1992; Neuman 2006, 2014; Babbie 2016). Both languages are used in quantitative measurement and the testing of theories.

Conceptualization is the language that social scientists use to communicate their theoretical ideas and research findings to each other; it is the language of abstract theoretical notions and is used as a means of identifying observable phenomena. In research, this language identifies key concepts and states relationships between them in order to articulate research questions and hypotheses. Thus, some authors refer to this language as 'theory'.

Researchers are required to define these concepts precisely and unambiguously 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. The meanings of these concepts are usually referred to as *formal definitions*.

The second language, *operationalization*, is used to transform theoretical language into variables. 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*.

A variable is 'a *concept* which can have *various values*, and which is 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 operationalization, variables are the focus of research activity.

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 restricted to something that is readily measurable (although experienced researchers will know that obtaining accurate information about a person's annual wages or salary can be far from straightforward).

A great deal of attention has been given to the problems of operationalizing some of the major concepts in social science. Debates about this 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 for

years. 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 at specific times and places (e.g. suicide rate). Other concepts deal with very general phenomena that span time and place (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 meaning 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' (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, which he depicted 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)

Blumer objected to the idea of measuring concepts by selecting only a limited aspect of the relevant phenomenon and assuming that it reflected all aspects. He used the measurement of intelligence as an example and was critical of the use of the 'specialized and usually arbitrary selection of one area of its presumed manifestation' when the phenomenon manifests itself in everyday life in a wide variety of ways (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, he was not completely opposed to 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' (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 inquiry. 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 operationalizing tradition was to use sensitizing concepts.[3] 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 the 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 to their purpose.

Drawing on the ideas of Glaser and Strauss (1967) about grounded theory, Denzin has taken the middle ground with regard to sensitizing concepts. He 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 that 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. The *hermeneutic* tradition presents a radical alternative to this view.

The Hermeneutic Tradition

The hermeneutic tradition differs from the sensitizing tradition in that concepts that 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 researcher's discipline. 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 the 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 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; that is, 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. (See the two illustrations of the Interpretive research paradigm in Blaikie and Priest (2017) for details of how this can be done.)

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

The adaptive approach advocated by Layder (1998) is a refinement and development of the hermeneutic tradition. Later in the chapter we will encounter his approach to the relationship between theory and research. As part of this

proposal, he discussed the types of concepts that he considered 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 agency and reproduced social relations and practices. In other words, he wanted concepts that integrate agency and structure as well as the micro and macro levels 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 vantage 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* (structural), *bridging* (mediating) and *general* (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).[4]

Layder is willing to allow behavioural concepts to be either member-defined or observer-defined. However, if the latter, he argued that they need to be 'subjectively adequate' (Schütz 1963b; Bruyn 1966), to '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 aspects of society are intimately linked with the behavioural aspects, they constitute a second area of attention for theorists and social researchers.

Layder went on to argue that a third category of concepts is required as bridging 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.[5] 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 proposed that bridging concepts indicate and focus on three broad kinds of phenomena. The first is the linkage between subjective and objective phenomena, between agency and structure. 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 type 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; for example, managers and professionals. The third type of concept characterizes 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* theories 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 as not being connected 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 theoretician's concepts and theories come into play.

7.4 Concepts and Logics of Inquiry

There are some connections worth noting between the logics of inquiry outlined in chapter 6 and these five conceptual traditions. The ontological tradition provides a background to all research, although it is less relevant, and may be rejected, when Abductive logic is used. While the users of Deductive logic may find conceptual schemes very useful as a source of variables, those using Abductive logic 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 use of Inductive and Deductive logic that the operationalizing tradition has been most evident.[6] When Inductive logic is used, concepts need to be selected, defined and operationalized. When Deductive logic is used, hypotheses are deduced from a theory and concepts in them are measured in order to test whether or not the hypothesized relationship exists. While it is possible to test hypotheses using other methods, the use of this logic of inquiry is usually associated with the operationalizing tradition. It is worth noting that the sensitizing tradition can also be used with these two logics of inquiry; for example, in an exploratory phase when relevant concepts and their definitions are being sought.

The connection between the use of Retroductive logic and the conceptual traditions is rather complex. Strictly speaking, concepts are not operationalized in this logic of inquiry; 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 use of Retroductive logic apply particularly to its *structuralist* version. The situation is rather different in the *constructionist* version, where the logic is more likely to be Abductive. This logic is also associated with both the sensitizing and hermeneutic traditions. After all, 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 logics of inquiry. Linking the hermeneutic tradition and the use of Abductive logic 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 Deductive logic.

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 logic of inquiry 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.

7.5 The Role of Theory

One of the most vexing 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)

Not much has changed since Merton expressed this view.

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 with the four logics of inquiry.

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, Merton's comment 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)

From our point of view, theories are *explanations of recurrent patterns or regularities in social life*. They are answers to questions or puzzles about why people 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 designing research, *a theory is an answer to a 'why' research question*; it is an explanation for an observed pattern or regularity, 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 atheoretical accusations. While theory is commonly used in this way, Merton argued that *post hoc* theorizing is an unsatisfactory use of theory (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 produced with little or no direct reference to the findings of research, and they are not 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 any part 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. This type of theory 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 comes in two main forms: the work of great theorists; and established theoretical schools or perspectives. Theoretical perspectives bring together classical and contemporary theorists who share similar ontological assumptions and ways of viewing social life, and the common elements of their theories are abstracted. They are also described as 'general theoretical orientations' (Merton 1967), 'general models' (Willer 1967), 'meta-theories' (Turner 1991), 'foundationalist theories' or 'formal theories' (Waters 1994), and even 'paradigms' (Kuhn 1970; Friedrichs 1970; Krausz and Miller 1974).

A theoretical perspective provides a way of looking at the social world. It:

- highlights certain aspects while at the same time making other aspects less visible;

- provides 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; and
- may 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).

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' they tell about social life. They tend to disagree on:

- what topics should be studied (subject matter);
- what are the components of social life (e.g. individuals, collectivities, social processes or social structures), the extent to which human behaviour is determined and is, therefore, predicatable, and how society 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 inquiry 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).

A major contribution of theoretical perspectives to social research is a language with which to describe and explain aspects of the social world; they can be a source of explanatory ideas and even specific hypotheses. However, this is essentially a 'top down' approach that neglects the relationship between a theoretical language and everyday language. This relationship is regarded by some writers as being the most fundamental methodological issue in the social sciences (Bhaskar 1979; Blaikie 2007). The extent to which theoreticians make use of research in developing their ideas seems to be limited, the exceptions being 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 logics of inquiry is associated with a particular interpretation of this definition. In the use of Inductive logic, general statements are related in networks, while in the use of Deductive logic, these statements are related logically and have different levels of generality. Although the use of Retroductive logic 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 when Deductive logic is used. In the use of Abductive logic, theory may take many forms, from tight logical arguments to loose discussions. However, in the end, theories in all four logics of inquiry need to be reduced to statements of relationships between concepts. We will return to these differences between the logics of inquiry towards the end of the chapter.

An important issue for a researcher is where to get a suitable theory. Stinchcombe has argued that, in the absence of a good existing theory, 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).

Levels of Theory

Another way of approaching the diversity in theoretical activity in the social sciences is to view theories as occupying different levels. A number of attempts have been made to do this. However, the only one to be discussed here concerns differences in their scope. Denzin (1970) 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 them 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. Merton's ideas on middle-range theories will be elaborated 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).

7.6 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 (1949, 1957, 1967) 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.

The discussion here will be limited to a consideration of Merton's advocacy of middle-range theory, Mills's use of the sociological imagination, Wallace's

proposal to integrate Inductive and Deductive logic 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 seventy years ago. This is captured in his often-quoted passage from the beginning of the chapter in which he discussed 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 socio-logical 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 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 a 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 towards 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)

Merton 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 behavior 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 consonant 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. We are all residuary legatees of Durkheim and Weber. . .[7]
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. It does not assume itself to be equal to the task of providing theoretical solutions to all the urgent practical problems of the day but addresses itself to those problems that might now be clarified in the light of available knowledge. (Merton 1967: 68–9)

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.

A major critic of Merton's idea of middle-range theory argued that grand theory and small-scale empirical research are not really at ends of a continuum, and, even if they were, middle-range theory is not intermediate between them (Willer 1967: 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; what they need to be is precise and measurable, and it must be possible to connect them in a meaningful way. Willer 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 Deductive logic; 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, and 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 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 a researcher of some general theoretical ideas: 'For it obviously requires a theoretically sensitized observer to detect the universal in the particular' (1967: 159). 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 a researcher to think creatively in new directions by matching different theoretical ideas to the situation. This process is at the core of theory generation with Abductive logic, and is at the heart of the use of Retroductive logic.

In summary, 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 use of Deductive logic and quantitative methods, his view of theory construction shares much in common with the use of Abductive logic. 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

Writing around the same time, C. Wright Mills (1959) discussed similarly conceptualized extremes in sociology. He 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, 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: 8).

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 Weise.

[S]ociology 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* (1951), 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 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', meaning 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 almost sixty 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. One consequence of the advent of postmodernism is 'methodological paralysis', or a complete abandonment of a concern with methodological issues.

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)

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; Blaikie 1993a; de Vaus 2002). Wallace argued that the logics of Induction and Deduction should be combined in an ongoing cycle, thus providing an explicit link between theory and research, in a never-ending alternation between induction, deduction, induction, and so on (see Figure 7.3).

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. A new theory is constructed from these generalizations by the use of Inductive logic. Further testing could follow.

Theory testing starts at the top of the figure with the 'Theory' box. Hypotheses are deduced, their concepts operationalized, the data collected and analysed, and the results compared with the original hypothesis (represented by the 'Testing 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
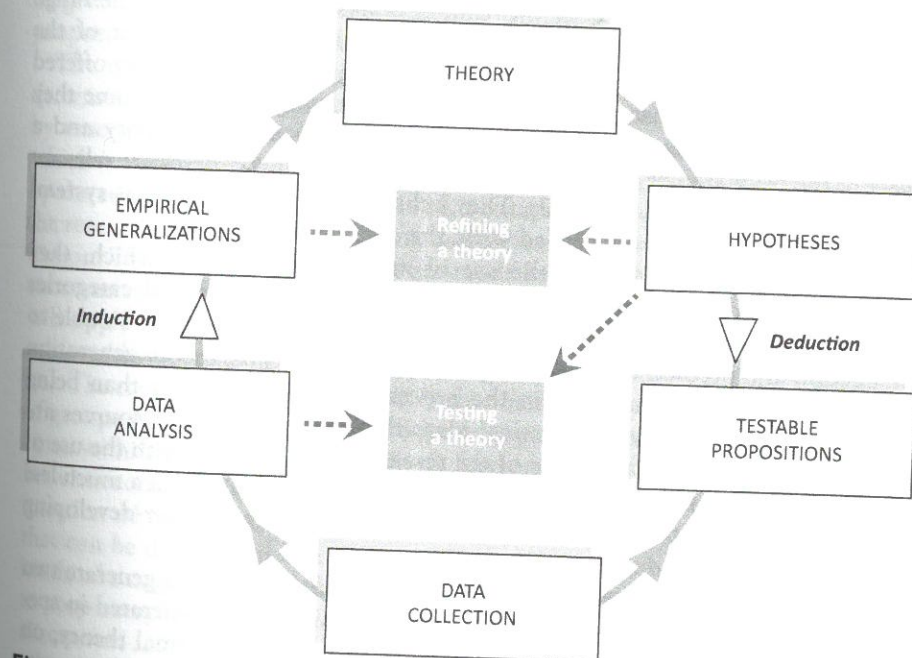

Figure 7.3   The cycle of theory construction and testing
(*Source:* Adapted from Wallace 1971, 1983; de Vaus 2002)

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 Deductive logic might benefit from recognizing the cyclical rather than linear nature of their kind of research, and for those who use Inductive logic 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, the inductive phase of the cycle is a much too simplistic representation of the creative side of research. What should occur is a complex trial and error process, more akin to the use of Abductive logic. The other major deficiency of the scheme is that it provides no place for 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

Glaser and Strauss (1967) proposed a different view of the relationship between theory and research. 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. For Glaser and Strauss, theory generation and verification are both part of the same process and occur in a much more flexible way.

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). They offered a radical critique of the use of Deductive logic by arguing that, at the time they were writing, there was an overemphasis on the verification of theory and a neglect of the prior step of discovering what concepts and hypotheses are relevant to the research problem (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; 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. Hence, theory generation is seen to be intimately involved in the process of research, rather than being something that precedes it. Theoretical ideas that come from other sources are not simply tested during the course of the research, as is the case with the use of Deductive logic, 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.

Glaser and Strauss advocated the use of *comparative analysis* 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. They 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 care is provided to patients of different socio-economic and ethnic backgrounds. 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. 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 ongoing 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.

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, which is important. Initially, the process of data collection and analysis is guided by the research topic or problem (and, perhaps, 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 this type of group. 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. Attention has been drawn to:

- its strong empiricist tendencies;
- the lack of adequate recognition of the role and input of the researcher;
- the absence of a concern with social actors' concepts and meanings; and
- a failure to recognize that the process of theory generation involves much more than Inductive logic allows.

Both authors have since elaborated the original version of grounded theory independently (e.g., Glaser 1978, 1992, 2001; Strauss 1987) and in a series of editions by Strauss and Corbin (1990, 1998; Corbin and Strauss 2015). 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, 2014).

Layder: the adaptive alternative

More recently, Layder (1998) has offered a practical proposal for linking theory and research. 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 is committed to the accumulation of sociological knowledge.

While rejecting the idea that there are pure facts from which objective truths can be derived, and that it is possible to produce one universal, objective truth about any social phenomena, he regarded the purpose of social inquiry to be the production of ever more adequate 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 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 proposed 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 lifeworld, 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, 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 ongoing 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 wanted to reserve a place for any form of theorizing as a possible source of input into the research process. He included not only the work of classical theorists, such as Marx, Durkheim, Weber and Simmel, who concerned themselves with empirical inquiry 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 of some aspects of it. It is probably easier to modify explanations, such as Durkheim's (1970) 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 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 saw 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. *Emergent* research data refers to the immediate findings from the 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 got 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.

Reminiscent of Giddens (1976), Layder proposed 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)

7.7 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 Deductive logic is being used to answer them. Hypotheses are not appropriate when Inductive logic is used and have a very different role in Abductive logic. When Retroductive logic is used, it is models of structures and/or mechanisms that are hypothesized rather than statements of relationships between concepts.

When quantitative methods are used with Deductive logic, a hypothesis is tested by operationalizing its concepts, collecting the appropriate data, and then

exploring the nature of the relationship between the measures of the concepts 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, which has 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 are used. *Decisions about whether data confirm or refute a theoretical hypothesis cannot be settled by the use of a test of statistical significance*; it is measures of association that are of prime importance. 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).[8]

When qualitative methods are used with Deductive logic – and there is no reason why they should not be – the testing process is 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 when Abductive logic is used, 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 4, 'what' questions do not require hypotheses to guide data collection, and they may also be unnecessary for 'how' questions. 'What' questions need concepts, but 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.

7.8 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 the first two editions of this book considerable space was devoted to a review of the major types of models used in the social sciences. Seven types were discussed as:

- abstract descriptions;
- synonym for theory;
- conceptual models;

- theoretical models;
- analogues for mechanisms;
- diagrammatic representations; and
- mathematical representations.

As the notion of a model is not relevant to the use of Inductive or Deductive logic, has only a very limited relevance in the use of Abductive logic, and is only really relevant when Retroductive logic is used, the discussion here will be confined to its role in these latter two logics of inquiry.

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. Two examples of this can be found in the work of Schütz and Harré. Schütz elaborated on how models are used with Abductive logic and Harré on how they are used in the *constructionist* application of Retroductive logic.

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 that 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 that, 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 types existing in impersonal and anonymous time. He regarded sociological typifications as *models* of typical social actors, typical social action 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.

Analogies have been used in both the natural and social sciences as a way of developing theories 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 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.

Representations of real or imagined things have been referred to as *iconic models* (Harré and Secord 1972: 74). Harré's second type of model, the iconic *paramorph*, relies on the use of analogies. Their function is to hypothesize plausible generative mechanisms; that is, explanations for the observed patterns identified by a *homeomorph*.

The most important function of iconic models in science is as plausible analogies of the unknown causal, generative mechanisms of the non-random patterns discovered in critical explorations of fields of natural phenomena. In this role they serve as a basis both for existential hypotheses as to the reality of certain classes of entities, and further hypotheses as to their nature and behaviour. In this role they are indispensable, since if we depend only upon formal criteria for explanation, such as the

deductibility from a theory of what is to be explained, then there will be indefinitely many theories which satisfy that criterion for any given set of facts. (Harré and Secord 1972: 76)

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' to be unnecessary because there are perfectly good alternative concepts available; other uses simply create ambiguity and confusion. We heartily concur with this view.

7.9 Conclusion

All scientific disciplines have developed their own vocabulary in order to conceptualize the phenomena they study and to connect with the reality that ontological assumptions envisage. The social sciences are no exception. However, a number of traditions have developed that use concepts in quite different ways. These are the *ontological*, *operationalizing*, *sensitizing*, *hermeneutic* and *adaptive* traditions. In turn, some of these traditions have close associations with the four logics of inquiry.

The role of theory in general, but especially in social research, is probably the most perplexing topic for novice social researchers. Various attempts have been made to explicate the relationship between theory and research; for example, as linear steps or a cyclical process, or as the product of the iterative interplay between data and ideas.

While researchers can gain valuable insights from the work of social theorists, they need theories that can explain specific patterns and regularities, similarities and differences, in social life. In so far as a researcher's theories can be regarded as a set of testable, related statements about associations between concepts, then variations can be found within each logic of inquiry in how they are derived, generated and presented.

There is a wide range of views about the role of hypotheses in social research. Their purposes, uses and consequent importance vary considerably depending on the way a research problem and its questions are framed and on the chosen logic(s) of inquiry and paradigm orientation(s) that shape and constrain the study's design.

There is a widespread tendency to inflate what goes on in social research by dressing it up in the technical language of 'models'. Models play a variety of roles in social research, but their use always needs to be confined to what is relevant to the research questions, the chosen logic(s) of inquiry and the paradigm(s).

7.10 Further Reading

Blaikie, N. (2007). *Approaches to Social Enquiry*.
Provides a more philosophical background to the issues discussed here.

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.

The following references, written between 1959 and 1972, deal with some classical issues and present various points of view:

Blumer, H. (1969). *Symbolic Interactionism*.
Glaser, B. G. and Strauss, A. L. (1967). *The Discovery of Grounded Theory*.
Harré, R. and Secord, P. F. (1972). *The Explanation of Social Behaviour*.
Merton, R. K. (1967). *On Theoretical Sociology*.
Mills, C. W. (1959). *The Sociological Imagination*.
Wallace, W. L. (1971). *The Logic of Science in Sociology*.
Willer, D. (1967). *Scientific Method: Theory and Method*.