5

Research design

This chapter

- **reviews the process of social research**
- **gives examples of its structure and place in social research**
- **reviews its relevance for qualitative and quantitative research**
- **clarifies their application by giving examples of design construction**
- **shows how to construct your own research project.**

Key headings

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2 Design and execution of research
3 Research design in quantitative research
4 Research design in qualitative research
5 Research design in critical research
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Introduction

This is where the actual research process begins; with a committed interest in certain answers, and of course with many questions. The questions that come up first are, 'Where do I begin', and 'What do I do next?', or better, 'What is the first step towards doing research?', and then 'What follows right after that?'. This chapter will help answer these and many other questions relating to how actual research is initiated and planned, and what type of decisions must be made in order for the research to achieve its purpose.

In the discussion that follows, we shall see that the first step towards doing research is to develop a plan that will present a summary of its main elements: what will be studied and how, when and where the research will take place; then, how it will be executed; and,

finally, how the data will be analysed and published. We shall also see how this planning of research is applied in real situations, including a student's project.

1 The research process

The manner in which research will be conducted is determined by the methodology that underlies the research. Qualitative and quantitative researchers conduct their research in different ways. Nevertheless, the overall models they employ share the same general structure. All researchers, despite their differences, follow the same basic path of research. The five basic criteria of the research process are shown below.

1 Research is conducted in a form of steps, guiding the researcher from the beginning to the end of the inquiry.
2 These steps are: first, the choice of the research topic and methodology; second, the methodological construction of the topic; third, sampling; fourth, data collection; fifth, data analysis and interpretation; and sixth, reporting.
3 Quantitative researchers move from step to step progressively, ensuring that each step is fully completed before they move to the next. Qualitative researchers are more flexible about this.
4 The design of the research model is constructed before the start of the research, although in certain contexts flexibility on this is also accepted.
5 There is a degree of order in the process of moving from step to step, varying according to the underlying paradigm.

The six steps of the research process (point 2 above) and the questions they intend to answer are briefly described in Box 5.1. Designs are usually presented in writing, constituting a document that is shared among the members of the research team, or are thought out clearly and retained in the researcher's mind. This is particularly so for simple studies conducted single-handedly by the (experienced) researcher.

2 Design and execution of research

2.1 The research design

Research entails two major stages: one is the stage of planning, and the other is the stage of execution. During the first stage, researchers construct a design, a plan of the research, and during the second they collect and analyse the data. The former is conducted in the researcher's office, the latter in the field.

The design explains in some detail how the researcher intends to conduct the work, namely how the questions asked in each research step shown in Box 5.1 will be addressed. This implies that the researcher will go through the research steps, one by one, and describe adequately the activities to be undertaken in each step.

There are many forms of design. Some focus on the process of data collection only (e.g. Diekmann, 1995: 274), while others extend their boundaries to cover data analysis (see Ragin, 1994a: 191). Most writers and researchers, however, see the research design in a wider context, covering all aspects of research from the selection of the topic to the publication of the data (see Flick, 2000b). This is how designs will be perceived and addressed in our discussion.

Box 5.1

Steps of the research design

Topic and methodology	WHAT is the research topic and which methodology will be employed?
⇩	
Methodological construction of the topic	HOW will the research topic be addressed in this study?
⇩	
Sampling procedures	WHERE and WHEN will the topic be studied, and WHO are the subjects?
⇩	
Data collection	WHERE will the subjects be found and HOW will the data be gathered?
⇩	
Data analysis and interpretation	HOW will the data be processed and in WHAT way will they be interpreted?
⇩	
Reporting	HOW will the findings be communicated to the community and interested parties?

2.2 Purpose of the research design

The purpose of research designs varies according to a number of factors such as the nature and purpose of the study, the type of population, the structure of the research, the number of researchers and research assistants and the ideological affiliation of the researcher. For most writers on this subject (Berger et al., 1989; Flick, 2000a; Pfeifer, 2000) the purpose of the research design reflects the goals described in Box 5.2.

Box 5.2

Purpose of the research design

The research design:

- offers a guide that directs the research action, and helps to rationalize the use of time and resources and to reduce costs
- helps to introduce a systematic approach to the research operation, thereby guaranteeing that all aspects of the study will be addressed and that they will be executed in the right sequence
- entails openness and accountability for research purposes and for the contractors
- helps to control, minimize or even eliminate eventual influences on data collection and through this on the quality of data

- offers order and clarity in the process of study
- makes the steps of the research design clear, enabling the researchers to foresee and prevent eventual errors, bias and distortions
- encourages the effective organization and coordination of the project, particularly when it includes more than one researcher
- makes replication easier and more effective
- enables accurate assessment of the validity and reliability of the study
- enables accurate estimation of the costs of the study and the required personnel.

Despite the many advantages of research designs, there are critics who see in them nothing but 'ritualistic straightjackets' that restrict freedom, flexibility and researcher ingenuity, and exclude from the investigation other issues and approaches that could not have been predicted at the time of construction.

Nevertheless, research designs are an integral part of the research process. Quantitative researchers employ designs as much as qualitative researchers do, as we shall see next.

3 Research design in quantitative research

3.1 Basic criteria for quantitative research design

In quantitative research, social inquiry follows a well-constructed design that covers in detail all the steps of the investigation. In this sense, research is perceived as progressing in a sequence of steps that are closely interrelated and develop from the first to the last, and in which the success of each depends on the successful completion of the preceding step. The features that mark the identity of the quantitative design are listed in Box 5.3.

Box 5.3

Features of the quantitative research design:

- contain six major steps (see Box 5.4)
- see the steps as relatively separate and independent parts of the research
- are constructed before the research commences
- are presented precisely and in great detail
- are rigid, leaving no flexibility or choice for change during execution
- are a one-way process, allowing no revisiting of steps that have already been completed
- presume that successful completion of a step depends on the success of previous steps
- are based on objectivity, requiring that all decisions are made using professional standards and allowing no scope for the personal preferences or decisions of the researcher.

Briefly, quantitative researchers employ the model of research design introduced in Box 5.1, although with some adjustments, as we shall soon see.

3.2 Structure of quantitative research design

As noted earlier, the structure of the steps of the quantitative research design varies according to the nature and purpose of the study, the complexity of the topic and population, and the number and expertise of the members of the research team. The general rule is that too many instructions limit the flexibility that every researcher wants to enjoy, while too few guidelines leave many questions unanswered, and allow too much freedom to research assistants, which may cause distortions.

Quantitative research favours the more restrictive option, precisely because it does not allow flexibility and freedom in the research process. The steps and specific tasks associated with each step of this research model are given in Box 5.4. Note also the direction of the flow (arrows) of the research process.

It is worth noting that the research design is to be perceived as a dynamic process, with the steps being interrelated and with each affecting the other, and being fully understood within that context.

Box 5.4

Steps of the quantitative research design

Topic and methodology	1 Selection of the research topic and 2 Selection of the research methodology
⇩ ⇩ ⇩	
Methodological construction of the topic	1 Formal definition of the topic 2 Exploration and operationalization 3 Formulation of hypotheses
⇩ ⇩ ⇩	
Sampling procedures	1 Choice of sampling method 2 Setting administrative parameters
⇩ ⇩ ⇩	
Data collection	1 Choosing the methods of data collection 2 Performing/organizing data collection 3 Supervizing/checking data collection
⇩ ⇩ ⇩	
Data analysis and interpretation	1 Analysing and processing of data 2 Interpreting the findings
⇩ ⇩ ⇩	
Reporting	1 Preparing a report for discussion/publication

3.3 Steps in quantitative research design

The content of a research design outlined above will be discussed in detail in the remaining chapters of this book, for it constitutes the essence of social inquiry. In this section we shall introduce briefly the meaning and content of the various steps, using an example to demonstrate their application in a real research context.

Step 1: Topic and methodology: The research begins with the selection of the topic to be studied and the research methodology (qualitative or quantitative). At this stage, the researcher makes explicit what is to be studied, and what methodology will be employed.

a. *Selection of research topic*. Here the topic of the study is formally stated. Any topic that is amenable to social inquiry can be chosen. For instance:

Topic: Parental divorce and children's attitudes to marriage.

The question here is whether the experience of parental divorce by children has any effect on the way young people perceive marriage.

b. *Selection of methodology*. The researcher must decide which methodology will direct the study. The choice is usually between quantitative and qualitative research. For instance:

Methodology: Quantitative methodology (resting on a positivist paradigm).

The researcher decides to use a quantitative study, either because this methodology is more suitable for the intended study or because the researcher has already established a methodological affiliation and predisposition to carry out predominantly, or even exclusively, quantitative research.

Step 2: Methodological construction of the topic: The purpose of this step is to make the research topic clear and specific and eventually to reduce it to the actual topic of analysis. In this context the topic will be defined more accurately, explored and operationalized, and hypotheses will be formulated.

a. *Formal definition of the topic*. Here, the researcher will explain clearly and accurately the topic as it will be analysed in the research. For instance:

Definitions:
Parental divorce: Legal dissolution of parental marriage.
Attitudes to marriage: Personal stand on marriage.
Children: Biological children aged 20–25 years of age.

Note how concepts have been specified and reduced. Divorce applies here to married couples only (not cohabiting); and the study focuses only on children between 20 and 25 years of age, and not children of all ages.

b. *Exploration*. This entails a thorough study of existing information on the subject; here the researcher will specify how this will be facilitated. For instance:

Exploration: Basic information will be gathered through literature review.

c. *Operationalization*. This is the process of converting the research topic to a form that can be measured. Or better, it is the process of translating abstract concepts into measurable indicators. Most quantitative researchers use operational definitions of some kind. In our example this will proceed as follows:

   Operationalization:
   1. Parental divorce is assessed according to whether the parents of the respondent have been divorced or not.
   2. Attitudes to marriage will be measured by means of two scales; one relating to whether children have positive or negative attitudes to this lifestyle, and one regarding whether they intend to marry or not.

d. *Formulation of hypotheses*. Here the researcher will state whether a hypothesis is required, and if so, which one. (A hypothesis is an assumption about the possible outcome of the study and provides a guideline for the research.) In our example, the following two hypotheses are appropriate:

   Hypotheses:
   1. Experience of parental divorce is associated with negative attitudes to marriage.
   2. Experience of parental divorce is associated with rejection of marriage as a personal choice.

Step 3: Sampling procedures: In this part of the design, the researcher will specify the size of the sample, the place where and the time when the study will be conducted, and who will take part in the study. In our example a sample will be taken. The essential parts of this procedure will be as follows:

Sampling: The sample will be chosen by means of probability sampling procedure. The sample will include 300 male and 300 female children of divorced parents, taken from the records of the 15th district court, covering cases of the last 12 months.

Step 4: Data collection: During this step, the researcher will specify how subjects will be approached, how data collection will be accomplished, and how data will be returned to the researcher. It will also note how research personnel and conditions will be handled so that the data will be gathered without bias and distortion. In our example, this step could be briefly described as follows:

Data collection: Data collection will proceed by means of interviews, and

will be conducted by students, previously trained by their lecturer, using the resources of their institution. Standard measures of data collection will be applied.

Step 5: Data processing: The design will specify how the collected data will be analysed and processed, including methods of analysis and processing, and the means of accessing the resources required. In our example, the researcher may decide as follows:

> Data processing: Data will be grouped, and subjected to statistical analysis by means of computers in order to uncover trends regarding children's attitudes to marriage as a personal choice. Resources will be provided by the teaching institution.

Step 6: Reporting: In this step, the researcher will specify how the findings will be communicated. This refers not only to the nature of the report but also to the channels of publication. In our example, this will be as follows:

> Reporting: An internal, self-published report will be sent to the institution that supported the project, and to the sponsor. A series of articles will be prepared for publication in professional journals.

It must be noted that the brief references to the content of the steps of the research design, presented through our example, are abbreviations of the real design. In real case research the descriptions are much more diverse and much more detailed. All the steps of this process will be introduced later, and will be discussed separately in detail.

4 Research design in qualitative research

4.1 Introduction

Qualitative researchers employ research designs as much as quantitative researchers do. (After all, 'no design is a design'.) They set the path of their research in some way and form, and are committed to a design, although in their own way (Berg, 1995: 14; Bouma, 2000: 2; Miles and Huberman,1994: 16, 17). All know what they intend to study, what settings to investigate, how and when, which actors to approach, which processes to consider, what types of events to register and what instruments to employ (Benini, 2000).

Nevertheless, the extent to which qualitative designs describe the content of the steps, the degree of rigidity of their instructions and the design of the flow of the research process vary considerably, presenting at least two types of qualitative designs: the *fixed* and the *flexible* designs.

4.2 Fixed qualitative designs

The fixed model of qualitative design employs a relatively structured approach, resembling the quantitative model. The steps are the same as those of quantitative research, as is the direction of the process, which is a one-way-path, from the choice of the topic to the conclusions (see Box 5.5). Two important points must be kept in mind when this research model is considered.

First, this model is employed when the researcher has a clear idea about the nature of the research topic and is interested in the way in which people respond to it. Hence, methodological parameters can be specified at the outset without knowing the responses of the subjects. Second, it is employed when data analysis is conducted partly or entirely after data collection. This is, for instance, the case when data are recorded mechanically, and are analysed after collection. The model of the quantitative design discussed above applies also to this research model.

Box 5.5

Steps of fixed qualitative design

Topic and methodology	1 Selection of the research topic 2 Selection of the research methodology
⇩ ⇩ ⇩	
Methodological construction of the topic	1 Framing of research questions 2 Literature review; conceptualization 3 Strategy and rationale
⇩ ⇩ ⇩	
Sampling procedures	1 Choice of setting 2 Choice of key informants 3 Choice of study groups and events
⇩ ⇩ ⇩	
Data collection	1 Choice of methods and of assistants 2 Entering the setting and conducting research 3 Recording and organizing data
⇩ ⇩ ⇩	
Data analysis and interpretation	1 Analysing data 2 Assigning meanings 3 Formulating/testing hypotheses
⇩ ⇩ ⇩	
Reporting	1 Preparing a report for discussion/publication

An example of fixed qualitative research model is a study of the experiences of women employed in traditionally male jobs, using in-depth interviews with a sample of women from three selected areas of employment. The interviews, which were constructed before the beginning of the study, were conducted by three interviewers, were audio-recorded, and transcribed, and the resulting text was subsequently analysed using content analysis.

4.3 Flexible qualitative designs

More common is the flexible model of qualitative research. The flexible qualitative design:

- Contains six major steps (see Box 5.6).
- Is constructed before the research commences.
- Is presented in a general and non-specific manner, allowing researchers to leave space for further decisions to be considered.
- Allows freedom of unlimited movement between the steps of data collection and data analysis in both directions, using new information to fine-tune concepts, sampling and analysis. Qualitative inquiry does not employ a one-way research process.
- Is not based on objectivity; it follows strictly professional standards; it allows for personal preferences of the researcher.

A presentation of the steps of the flexible qualitative design, including the central tasks to be accomplished in each step, is given in Box 5.6.

Box 5.6

Steps of flexible research design

Topic and methodology	Selection of the research topic Selection of the research methodology
⇩ ⇩ ⇩	
Methodological construction of the topic	Framing of research questions; literature review; conceptualization; strategy and rationale
⇩ ⇩ ⇩ ⇧ ⇧ ⇧	
Sampling procedures	Choice of setting, key informants, study groups, events, methods of data collection, & of assistants
⇩ ⇩ ⇩ ⇧ ⇧ ⇧	
Data collection	Entering field; collecting data; re-defining, aligning methods/sampling; checking for soundness of data
⇩ ⇩ ⇩ ⇧ ⇧ ⇧	
Data analysis and interpretation	Analysing data, formulating/testing of hypotheses, aligning research process
⇩ ⇩ ⇩	
Reporting	Preparing a report for discussion, submission and publication

4.4 Quantitative and (flexible) qualitative designs

The differences between fixed and quantitative designs are minimal; they lie in the content of each step and particularly in the nature of the research focus and methods used, not in the structure of the design. The differences between quantitative and flexible designs are more obvious and more significant. Even when the same concepts and elements are used, their content, purpose and nature often vary considerably. The basic differences between these two research models are shown in Table 5.1.

In conclusion, designs are an integral part of any systematic investigation, and serve to guide the course of the research process. They are set by the researchers themselves, and in reality contain directions or reminders about how it was decided to conduct the research. In qualitative research, designs are carefully constructed and more flexible than in quantitative research, and serve the same purpose equally well in their context. The content and complexity of their designs may vary but their presence in the process of everyday research practice cannot be denied.

5 Research design in critical research

Researchers working within a critical paradigm employ a quantitative or qualitative research design. This applies to both the steps and the content of the steps of the design. They may change the latter, but such changes are not significant enough to alter the methodological nature of the research design.

What makes critical research different is not necessarily its technical construction but rather its focus, its degree of engagement and emancipation, its purpose and particularly the politicization of its process and results. Critical researchers choose topics that are topical and of political significance, and those that are consciously or unconsciously neglected, and work towards emancipating the community in general and the people affected by the problems, and towards changing and reconstructing the social order.

Here the research paradigm entails elements of activism, engagement, ideology and commitment to change, which bias its process and focus. These attributes are most important and serve many goals, particularly with regard to minorities and oppressed groups. In a sense, any research design can become a part of critical research, when it focuses on engagement, critique, change and emancipation.

6 Examples of research design

In this section we shall introduce a few examples, to help you understand fully how research is constructed. We shall demonstrate how a quantitative design was constructed to investigate family values among students, and then how a common format of qualitative research is designed, before we demonstrate how a project is planned, which is something undergraduate or postgraduate students are often expected to complete. We begin with a quantitative design.

6.1 Quantitative research design: An example

A few years ago, the author decided to conduct a study on family values. The reason for this was the great number of people deciding not to marry as well as the significant proportion of married people divorcing. Given that this phenomenon is evident in most parts of the Western world, it was decided to include several countries in the project. With this in mind, a plan was developed that was to guide the research process. The

Table 5.1 Research designs: A comparison

Procedure	Quantitative model	Qualitative (flexible) model
Research topic	Selection of research topic Selection of methodology	Selection of research topic Selection of methodology
Methodological construction of the topic	Definition: precise, accurate and specific Employs operationalization Hypotheses: formulated before the study	Definition: general, and loosely structured Employs sensitizing concepts Hypotheses: formulated through/after the study
Methods, sampling and projections	Well planned and prescriptive Sampling: well planned before data collection; is representative Measurement/scales: employs all types Arranging printing of documents Appointing assistants (if required)	Well planned but not prescriptive Sampling: well planned, often during data collection; is not representative Measurement/scales: mostly nominal Planning field visits Appointing assistants (if required)
Data collection	Uses quantitative methods Employs assistants	Uses qualitative methods Usually single-handed
Data processing	Mostly quantitative and statistical analysis Inductive generalizations	Mainly qualitative; often collection and analysis occur simultaneously Analytic generalizations
Reporting	Highly integrated findings	Mostly not integrated findings

parameters of this plan were identical to those introduced earlier in this chapter. Below are brief descriptions of the steps of this research design.

Selection of topic and methodology. The topic was 'Family values' and the methodology selected was quantitative. This was because family values were to be measured precisely so as to allow comparisons between the various groups of respondents within each country and between the countries. Also, the topic was expected to be operationalized and this required quantification and precise and accurate measurement. A claim for a relative representativeness and for generalizations made quantitative research a better option.

Methodological formulation of the topic. After the topic had been defined and the methodology chosen, the topic was slightly reduced by focusing the study, first, on young people below the age of 25 and, second, on people with a relatively similar background. Following

an extensive literature review, major trends within this context and a number of scales were identified. The Familism scale was one of these. Overall, the topic was operationalized and its dimensions identified; the first four were family, heterosexual marriage, gay marriage and feminism. Indicators were chosen and ultimately translated into questions. It was hypothesized that among students below the age of 25:

H1 Attitudes to family values are very positive.
H2 Attitudes to heterosexual marriage are positive.
H3 Attitudes to gay marriage are negative.
H4 Attitudes to feminism are positive.

Sampling. In order to maintain a consistent background among the respondents, it was decided that they would be students of tertiary institutions. The countries were Austria, Greece, Japan, Australia and the United States. Researchers from these countries were chosen to take part in the study. The relevant questionnaires were constructed and translated into the various languages, and team members took the responsibility of obtaining ethical approval from the relevant ethics committees as well as the collection of the data.

Data collection. Questionnaires were distributed to students, who signed informed consent forms, working within the parameters of ethical standards. Students were chosen using probability sampling procedures. The questionnaires were collected by the team members and forwarded to the researcher for analysis.

Data analysis. Over 5,000 questionnaires were collected and subjected to quantitative analysis regarding trends in each dimension of the topic as well as among the various countries. Correlations between aspects of the topic and a series of other variables to establish more detailed results were also conducted. Very briefly, the first, second and fourth hypotheses were verified by the study; the third hypothesis was not.

Reporting. So far one conference paper and one journal article have been published. More publications are currently in preparation.

6.2 Fixed qualitative designs: An example

While working on gay couples, the author decided to explore further the social relationships of children of gay parents (Sarantakos, 2000b). The opportunity emerged when four such couples with children of primary-school age moved out of the city and settled in a country town in the same area. The project became even easier, firstly because the parents welcomed the proposed project, offering their support when and where needed, secondly because their children attended the same school, and thirdly because the parents and their children were open about their family style. Hence, teachers and students knew of the status of the children. Within these parameters, the research evolved as shown below.

Selection of topic and methodology. The topic was 'Social relationships of children of gay couples'. A qualitative methodology was chosen, primarily because the purpose of the study was to explore the topic in general terms, being open to any type of information. The aim of the study was to facilitate descriptions rather than quantitative data.

Methodological formulation of the topic. A more specific definition of the topic evolved through exploration, discussion with colleagues and the parents of the children, and more serious thinking about the topic. The focus of the study shifted to relations with children at school, particularly during playtime. The research interest changed to how children of gay parents fit into a school environment during their class-free time, how other students react to them as children of gay parents, and how they in turn respond to their schoolmates.

Sampling. It was decided that the study would include the children of gay parents as they interacted with other children, and would be conducted every day for two consecutive weeks in the school playground, in the morning before classes began, and during lunchtime.

Data collection. It was decided that the method of data collection would be non-participant unstructured observation. The playground was in front of the school building and this made it easy to observe the children from a distance. Given the number of children and the expected complexity of interactions, it was decided to video-record the children as carefully as possible, and to process and analyse the data after collection.

Data analysis. It was decided to employ qualitative analysis (mainly descriptive) when analysing the data. Beyond this, the videos were to be viewed by other researchers as well as the parents of the children. This was expected to offer opportunities for explaining behaviours more extensively and perhaps more accurately.

Reporting. The results regarding the behaviour of the children of gay parents were most illuminating, and raised many more questions than they answered. Reports were written employing the qualitative model (see Chapter 17).

6.3 Flexible qualitative design: An example

Flexible qualitative designs provide a context within which research procedures are conducted as required by the research outcomes. They entail a dynamic process that builds itself as it goes along. The parameters of this design require some knowledge of the underlying principles, so the example we will use here is one that is employed by many researchers who employ a flexible design. This is grounded theory. Below, we shall outline the rationale of this approach, and then describe how a researcher can construct a flexible design and also what the various steps will contain.

6.3.1 Introduction to grounded theory

Grounded theory is a method, technique or research design, and the outcome of the research. It is not just a tool of data analysis either, for it entails all aspects of a research model, beginning with the selection of a question and ending with an answer. It is 'grounded' because it is related to, emerges out of, is created through and is 'grounded' in empirical data. Grounded theory was developed by Glaser and Strauss (Glaser, 1992).

Since its inception, grounded theory has changed somewhat, and different versions of this model have been developed. The notion of certain elements (concepts, categories) varies among its supporters, and its allegiance to interpretivism has also been questioned (Charmaz, 2000).

6.3.2 Characteristics of grounded theory

Grounded theory is embedded within the interpretivist paradigm; hence it demonstrates all the characteristics presented in previous chapters on this. Strong emphasis is placed on the researcher as an element of the research process. This underlines the importance of an interpretation of reality that places as much emphasis on the object of analysis as on the interpreter. Researchers are seen here to operate like artists: approaching reality in an unprejudiced manner and forming and shaping it accordingly.

Being grounded in data means that grounded theory is close to everyday behaviour and action. Everyday knowledge is an unrenounceable resource, and a central element of its structure and approach. Primary experience is very significant for the development of grounded theory, which is marked by the parameters of openness and flexibility, and focuses on the development, comparison and testing of concepts and key and core categories.

The development of concepts is a process not a structure; it is constantly changing. This is facilitated through a sequence of processes which are continuous until saturation is achieved. These are: first, induction (development of temporary/conditional hypotheses); second, deduction (derivation of implications of hypotheses); and third, verification (testing of the validity of these hypotheses).

Being a qualitative research model, grounded theory demonstrates all the criteria of the qualitative paradigm, such as interpretivism, openness, flexibility, communicativity and naturalism. What makes grounded theory different from qualitative models such as the fixed model is the emphasis it places on the following points:

- The whole research process is guided by the knowledge gathered during the study (the emerging theory) and not by conventional practices.
- The nature of sampling and the respondents, as well as sample size, are decided according to the information gathered during the study.
- Sampling refers not only to people but also to events and to settings.
- Analysis is not conducted after but during data collection. There is a constant interplay between collection and analysis, continued until saturation has been achieved.

While there are certainly differences in other aspects of this research model, the above mentioned are the most important.

Box 5.7

Basics of grounded theory

- It questions the notion of starting research with already established prescriptive guidelines.
- It aims to develop theory through the research, not to subject research to theory.
- It is most suitable in areas where theories are not available or the field is dominated by many contradictory theoretical positions.
- It follows a qualitative paradigm and is almost exclusively employed by qualitative researchers, but it can equally be employed within a quantitative model.
- It is applicable to any field and any setting, being equally suitable and effective.
- The research design is not a direct one-way path but a circular one, which allows moving back and forth between data collection and analysis.
- It employs a purposive sampling procedure (theoretical sampling) guided by the information collected during the study, and completed when theoretical saturation is reached.
- It employs a variety of methods, from observation to interviews and documentary analysis.
- Analysis proceeds from open coding to axial coding and to selective coding, which produce concepts, categories, typologies and theory.
- The characteristic of this research design is that it is guided not by the researcher or other general professional practices and standards but by the theory that emerges during the research.

(Pfeifer, 2000: 193)

6.3.3 The research process

In general terms, the major steps in qualitative research based on grounded theory are not different from those employed in the flexible qualitative model. Their content and purpose, however, are different. As shown in earlier examples, these steps are as shown in Box 5.8 (Strauss and Corbin, 1998).

The procedures of data analysis will be considered in more detail in Chapter 15. In technical terms, the analysis follows a systematic path leading from open coding to axial coding, to selective coding and then to the creation of a conditional matrix. The main elements of the research process in the grounded theory model can be described as follows:

a. *Constructing categories*. Through open coding and by segmenting information, the researcher establishes categories of information, and looks for properties/subcategories within the categories, attempting to dimensionalize the properties.

b. *Interconnecting categories*. Employing axial coding, researchers search for a central category or a central phenomenon, and then attempt to identify the presence of causal conditions that impact on the phenomenon, explore the specific strategies employed to cope with these influences, analyse the context of the causal factors and study their consequences.

Box 5.8

Research design in grounded theory

Research steps	Tasks
Step 1: Selection of the research topic	Choosing the research topic and the relevant methodology
Step 2: Construction of the research topic	Outlining the boundaries of the topic and of the methodology; searching for material, asking generative questions, etc.
Step 3: Theoretical sampling	Choosing the setting, the event and the respondent(s) to be addressed first. Settings, events and respondents will change as the research progresses
Step 4: Data collection and analysis	Data gathering and open coding; examining, and comparing data; conceptualizing data, leading to identification of concepts; adding new data; refining concepts
	Axial coding; integrating, re-integrating data and constructing categories
	Inter-connecting, contextualizing categories, giving attention to causes and consequences; adding new data; comparing categories, formulating propositions
	Selective coding; identifying the core category, relating it to other categories, validating their relationships, and further refining and developing them
	Testing propositions, hypotheses; theoretical saturation; leading to theory
Step 5: Reporting	Preparing a report

c. *Forming a story that integrates categories*. Selective coding helps to identify a central line that integrates the categories identified in the axial coding process, leading to the emergence of conditional propositions.

d. *Developing and testing propositions*. This process leads to the establishment of a logical system containing the historical, social and economic factors and conditions that influence the central phenomenon, which can be visually displayed in a conditional matrix. This eventually leads to the establishment of a substance-level theory, which will be subjected to further empirical testing.

6.3.4 Why use this research model?

The value of this theory and its acceptability among social scientists is demonstrated by the extent to which it is applied in real social research. Bryman and Burgess (1994: 6),

referring to the popularity of grounded theory, note that it is 'widely adopted as an approving bumper sticker in qualitative studies'. Others (e.g. Pfeifer, 2000) note that researchers see in grounded theory certain advantages, or rather a combination of strengths, which make it a useful research tool and one that offers advantages over other qualitative methods. It is noted here that grounded theory:

- is theory neutral (it can be used by researchers with a diverse epistemological background)
- is a model suitable to both qualitative and quantitative research (Glaser, 1992)
- possesses mechanisms that help researchers avoid feeling swamped by the data
- generates rich data from the personal experiences of people
- has the capacity to develop theories
- is a powerful research model with a rigorous procedure.

However, grounded theory does not hold a 'monopoly of rigour', exclusivity of access to the personal experiences of respondents or to the capacity to develop a theory. Moreover, there are several weak points in this research model that require due attention. Lamnek (1988), for instance, makes the following points:

- The notion of entering the research scene without preconceptions is sociologically very questionable.
- The notion of personal involvement in the research raises the point of subjectivity and the level of validity of the findings.
- The extent to which new information is expected to be added is not very clear.
- There is not enough explanation of how hypotheses are to be verified.
- The process of data collection is not very clear. There is no information about what should be included in the study, that is, what is useful, suitable, theoretically relevant and so on.
- The validity of data needs to be defined in some way, when data are considered as offering empirical validation of the relationships contained in the theory.
- The method of theory building (especially of formal theory) is not precise.
- The notion of the theory being 'grounded in data' betrays empiricist principles and objectivist elements of research, which are incompatible with its qualitative paradigm.

7 Designing your project

Now that we have become acquainted with the basics of research design we shall demonstrate how to construct a design of your personal choice. As you are no doubt aware, the structure of the design is independent of the title or topic of the project. What is important is the nature of the project, the nature of the questions you ask and the expected outcomes. To come closer to this project let us assume that you are a student and that you need to design a project and demonstrate how this design will be executed. Suffice to say that this

example will be equally useful for non-students who intend to conduct research of a similar type.

The design you are about to construct will contain all parameters required to stimulate your thinking, to set time and resource parameters, to refine and further adjust the definition of the topic, and to choose the methods of sampling, data collection and analysis while you are studying them.

For instance, you may choose the topic and the methodology; you may also choose the sampling procedure and other elements of the project. If you are confident that these are the parameters you want to employ, you may pay more attention to them while going though your preparation stage. Your choice may motivate you to ask relevant questions, before finalizing the construction of the design. The discussion that follows offers an example of such a design.

7.1 Pre-design decisions

Remember, whatever the research topic and the methodology, you need a research design. This may be fixed, rigid and strict, or it may be flexible, dynamic and unfolding. However, before you begin with the construction of your research design, you have to consider some basic issues that are very important. For instance, you have to pay attention to issues such as priority, supervision, breadth and depth of the study, computer use, timing, resourcing and possible limitation of your projects. Let us have a closer look at these points.

- *Priority*. Institutional guidelines as to how research is to be conducted and presented are to be given priority.
- *Supervisor(s)*. Keep in close contact with your supervisor(s). They have a better understanding of the nature of the research and hence can provide useful suggestions.
- *Breadth and depth*. Be modest and realistic with your research ambitions. (Don't bite off more than you can chew.)
- *Computers*. Use electronic assistance wisely. Remember, computers will give you what you give them. In qualitative research, transcribing data may be more time consuming than doing the analysis. IBM® SPSS® Statistics software ('SPSS') is appropriate for quantitative research, and QSR International's NVivo software for qualitative studies. You are the judge!
- *Time*. Use time constructively, by planning your research systematically, for example by using a time-set design that will guide you through the research within time parameters.
- *Resources*. Whatever their nature and amount, resources must be used wisely. Make sure that they are assessed within the parameters of the research, the nature of the topic and the time available. Ample resources do not always guarantee success in a project.
- *Limits*. Is permission required to enter the research field? To inquire about the status of the planned study, check:
  - whether permission can be obtained
  - whether a request for permission is required
  - whether this will limit the publication of your findings (will you own the data?).

7.2 Your design

7.2.1 Topic and methodology

Choose your topic by taking into account factors wider than your personal interest. This is true also for methodology. With regard to the latter, consider seriously the points made in Chapter 2. Both methodologies, qualititative and quantitative, are effective tools of research but they serve different goals. Make sure you choose the one that is suitable to your research.

The choice of topic is equally critical. Like methodologies, topics tie you down to a domain and research path that will be critical for you throughout the research. Make sure that the topic is not only within your research interests but also within your research possibilities. Here are some relevant points to consider when choosing the topic.

Choosing a topic:

- The topic should be within the area of your expertise. Basic knowledge of the topic and its theoretical and methodological environment will significantly reduce later difficulties and unwelcome surprises.
- It should lend itself to rigorous empirical analysis and allow the application of the types of research described earlier (Chapter 1).
- You should be able to handle the topic within the time parameters of the institutional regulations. Remember to assess the research topic within the context of your study (thesis, dissertation etc.) rather than of the world. Additional aspects of the topic can be addressed at a later time.
- You need to consider the constraints of resources as well as accessibility to the research field. As noted above, topics that are hard to access can cause serious problems and delays in your research. Be sure about both accessibility and suitable resources before you choose the research topic.
- The topic must be researchable, first in general terms, and second by means of the methodology you choose. You cannot study issues that are not accessible to empirical analysis (such as life after death), and must bear in mind that methodologies are constructed to study particular aspects of reality.

7.2.2 Methodological formulation of the topic

This step allows you to take your research further by refining it and making it clear and specific. It also allows you to correct decisions you made in the previous step. If for instance your topic is found to be too general or too large for the project, you have a chance at this point to reduce it in content and focus. Below are a few important tasks that you need to perform to establish sound foundations for your project.

How do I do it?

- *Explore your research topic*. Have you read enough to be able to speak with some confidence about the theoretical and conceptual parameters of the topic? A thorough literature review is a minimum requirement. Additional steps such as talking to experts (academics who know more about this topic) or to people associated with the research topic may give you some new insights into the domain of the research.

- *Define the research topic accurately*. Particularly if you are working within a quantitative paradigm, it is important that you define the research topic clearly and specifically, so that there is no doubt about its nature and dimensions. This will not only help you to avoid possible misunderstandings and methodological errors; it will also enable you to make comparisons more easily and accurately.
- *Operationalize the topic*. If you have decided on a quantitative study, you can hardly avoid operationalizing the topic of your study. Read the next chapter to see what it involves. This will help you to measure general concepts such as alienation, religiosity and power. You will need to create indicators and other elements that will make measurement easier, more accurate and more precise.
- *Any hypotheses*? This may be an optional device for some, but an essential part of the study for others, especially if inferential statistics are to be employed. Here you simply make a logical and educated guess as to the nature of the issue under study (e.g. 'rich people live longer', 'religious students do better in exams than non-religious students'). The validity of the hypothesis will be tested during the study.

7.2.3 Sampling

Having established the basic parameters of the research, you now have to focus on sampling. The issues that will be addressed here relate to the size of the sample, type and location of the respondents and the procedures employed to access the right sample. In more detail the following questions need to be addressed and answered.

Sampling: Questions to be answered:

- Which sampling procedure will you employ to choose the appropriate sample?
- When and where will the respondents be selected from?
- How large should the sample be?
- What type of respondents will be selected? (male–female; old–young, married–unmarried, etc.)
- Is a sampling frame required? If so, is one available?
- How representative should the sample be?
- Are the required time, funds and staffing adequate?
- How is non-response going to be dealt with in the study?
- Do any issues of ethics and objectivity need to be considered at this stage, and how will such requirements be met?

7.2.4 Data collection

At this stage of the research design you must explain clearly and unambiguously how the required information will be collected. The following questions need to be addressed:

Data collection: Questions to be answered:

- Which method(s) will be employed to gather the data?
- Will assistants be required during this stage of research?

- Do documents need to be printed and distributed in some way to respondents?
- What kind of qualities will the assistants need to have?
- Is training required for the assistants (e.g. interviewing skills)?
- What kind of procedures have been introduced to deal with possible non-responses?
- Is there a need to check data collection for fairness, accuracy, reliability and so on?

7.2.5 Data analysis

As in the previous steps, in this step you have to make important decisions, and answer many relevant questions. In most cases these questions mainly concern technical and administrative issues. Other questions relate to the essence of analysis, which depends on the type of methodology chosen. These issues are discussed in detail in Chapters 15 and 16, and require no further attention here. There are however questions about aspects of the research that require attention at the planning stage to enable you to make relevant decisions. Some of these questions are listed below.

Data analysis: Questions to be answered:

- Will the analysis be quantitative or qualitative?
- Will computers be needed?
- If so, are the computers equipped with appropriate programs?
- Will you need help in data entry and processing?
- Are funds available for these services?
- Will there be a need for assistance with data preparation and analysis?

7.2.6 Reporting

The nature and content of the report will very much depend on the requirements of your institution. This relates to the format of presentation, as well as the report's size, the number of copies required and other aspects. The report depends also on the nature of the study, the underlying methodology and the nature of the data. All relevant requirements to be met if a research report is to be presented in accordance with professional standards are explained in Chapter 17.

In conclusion, it should be noted that the discussion in this chapter is as much related to preparing a research design at a professional level as to constructing a design for a one-off project, thesis or dissertation. All parts of this text relate to this task.

Main points

- The research process is often presented in the form of a model. The research design provides a path that guides the process from beginning to end.
- Research is assumed to proceed in a set of steps that are executed in a prescribed order.
- The use of a research model guides research planning and action, and brings many advantages to the research project.
- Quantitative researchers employ fixed designs; qualitative researchers employ both fixed and flexible designs.

- The steps of a research model are preparation, research design, data collection, data processing and reporting.
- Research preparation entails selection of methodology, selection and definition of the research topic, exploration, operationalization and formulation of hypotheses.
- Data collection entails decisions and action regarding the collection of the information required to address the research question.
- Data processing entails grouping, presentation, analysis and interpretation of the findings.
- Reporting refers to the process of publishing the findings.
- Grounded theory research falls within the parameters of qualitative research.
- Grounded theory perceives research units as autonomous, sees scientific interpretation of reality as the work of an artist, sees continuity from everyday thinking to scientific thinking, and assumes openness of social scientific formation of concepts.

? Where to from here?

Before you leave this chapter, visit the companion website for the fourth edition of *Social Research* at http://www.palgrave.com/sociology/sarantakos4e to review the main concepts introduced in this chapter and to test yourself on the major issues discussed.

🕮 Further reading

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