A common feature of qualitative projects is that they aim to create understanding from data as the analysis proceeds. This means that the research design of a qualitative study differs from that of a study that starts with an understanding to be tested, where often the hypothesis literally dictates the form, quantity, and scope of required data. This sort of design preempts other ways of looking at the research question.

Qualitative research is usually not preemptive. Whatever the study and whatever the method, the indications of form, quantity, and scope must be obtained from the question, from the chosen method, from the selected topic and goals, and also, in an ongoing process, from the data. Thus research design is both challenging and essential, yet it is the least discussed and least adequately critiqued component of many qualitative projects.

Freedom from a preemptive research design should never be seen as release from a requirement to have a research design. In Chapter 2, we established how a research purpose points to a research question and how the question informs the choice of method. But these choices do not remove the task of designing a qualitative project. Therefore we start this chapter by looking first at the levels of design and then at the goals of designing to specify the ultimate scope of a project and the type of data required. We end with practical advice on how you can tackle the ongoing tasks of designing your project so that you develop a research topic into a researchable question; we discuss the different levels and ways of planning, and the pacing of the project as a whole.
THE LEVELS OF DESIGN

Research design is created by the researcher, is molded (rather than dictated) by the method, and is responsive to the context and the participants. Creating research design involves seeing the project at different levels. Once you have located your project methodologically, you need to design the pacing of processes and strategies to be used, and at the same time you need to see the project as a whole.

The pacing of the project involves planning the sequencing of its components and the movement between data gathering and data analysis. This requires ongoing decisions during the project: When should you stop interviewing? When do you return to observing—as processes of analysis show that more data are needed to verify, or when thin areas in analysis are revealed? The selection of method informs selection of research strategies, but these are also chosen in the context of the research question (i.e., what you want to find out) and the research context. For example, in studying the experience of menopause in a Newfoundland village, Davis (1983) relied on interviews rather than observational data. Richards, Seibold, and Davis (1997) were investigating the social construction of menopause, so they used observation of women’s support groups and information centers as well as many forms of interview.

The overall design of the project must be aimed at answering your research question, and we look at detailed examples of design below. You need to design a project that both fits and is obtained from the question, the chosen method, the selected topic, and the research goals. You should treat research design as a problem to be considered carefully at the beginning of the study and reconsidered throughout—it is never a given.

PLANNING DESIGN

Where to start? If the questions, problem, and method are to guide design, then this becomes a highly conceptual and complex process. It is helpful to start with two questions: What is the scope of this project? and What is the nature of the data required?
The Scope of the Project

By *scope*, we refer to the domain of inquiry, the coverage and reach of the project. Scope involves both the substantive area of inquiry (the limits of the research topic) and the areas to be researched (the setting[s] and the sample).

Definitions of the topic and the relevant concepts and theories as perceived by other investigators in part delimit the area of inquiry. Consideration of the scope of the study continues in the process of gathering and analyzing data. You must work carefully and in depth, without losing sight of the research goals; remain flexible, self-critical, and, at all times, analytic; and use the literature as a comparative template. Coding decisions demand that you constantly ask: “Is this an instance of this category, or is it something different?” During the project, you must continually revisit the substantive scope of inquiry. If the data do not fit the question, analysis is likely to lack clear focus; the project may take too long to saturate and conceptualize and so, frustratingly, may achieve very little. On the other hand, if the scope is set too rigidly too early, the study will be severely limited. Avoid preemptively committing your study to definitions of the phenomenon of interest and concepts from the literature, thereby predetermining meanings of concepts; avoid making decisions too early in the study and drawing conclusions too quickly. Such preemptive scoping will result in premature closure.

The *scope of the sample* and the selection of the setting are driven by two principles. One is that setting and sample are purposively selected. This may involve choosing the “best,” most optimal example of the phenomenon and the setting in which you are most likely to see whatever it is you are interested in. It may involve observing or interviewing experts in that particular topic or experience. Alternatively, you may select a setting because it allows you to obtain examples of each of several stances or experiences. The study may proceed by snowball sampling (seeking further participants by using the recommendations of those participants already in the study).

The second principle of sampling is that once you have begun to understand whatever it is you are studying, your sampling strategies normally are extended through *theoretical sampling* (Glaser, 1978). This means that your selection of participants is directed by the emerging analysis, and the theory being developed from data is subsequently modified by data.
obtained from the next participants. The scope of a study is never just a question of how many, but always includes who, where, and which settings will be studied; in what ways, by whom, and for how long they will be studied; and what can be asked and answered. All of these questions must be asked repeatedly as the project progresses. The research question may require that you seek out negative cases (examples of experiences that are contrary to cases that support the emerging theory, and that provide new dimensions, perhaps as indicated by the theory but not yet encountered) or thin areas from participants who have experienced special conditions that have been identified as significant. The scope of a project is bigger than its sample, for participants provide information about others like them or unlike them. Such “shadowed data” (Morse, 2001) provide you with further direction for your theoretical sampling. When sampling, you must be aware of when you are working inductively and discovering and when you are working deductively and verifying.

The interrelationship of the two components of scope becomes clear during the processes of data gathering and analysis. You need to ask constantly, “What scale of data and what range of settings and sources of data will give the strands required for this question, this topic, this method, this audience, this disciplinary or political context?” Asking and answering these questions about the project will help you to locate it, to establish the bounds of the question to be addressed and the goals to be rethought.

**Designing the Scope**

*Scoping* is an ongoing process in a project. It is rare for a qualitative researcher to set a scope and stick to it. Adjustments to the mode of making data are frequently required so that the project can be data driven. But this does not mean that such changes can “just happen.” Changes ideally build upon the researcher’s growing understanding of the situation.

We recommend that you always keep in mind the following issues regarding scoping:

- The substantive scope of a project involves issues of comparison (“Will I understand the wider situation if I stay in this group?”) and intervention (“Before I influence policy, how would I know if I were wrong?”). How many perspectives are needed? It is hard, for example, to study relationships only by observing interaction. If your question is about the
relations between management and staff, you need to observe, if possible, but you must interpret your observations strictly in terms of your presence. You will also need other data sources; you need to talk to the managers and the staff, and you should examine relevant documents. These data sources will provide conflicting information—and you as the researcher have to make sense of the contradictions.

Scoping for change involves asking if this is a study of a process (most qualitative studies are) and, if so, what time period it involves. Beware of studying a process with static data. One-off interviews, for example, will give interviewees’ accounts, or the versions they see as appropriate in the interview situation, of what happened in the past. Is this the process and are these the perceptions you need?

Scoping for diversity involves examining the sample, asking questions like “Is the research question comparative? If so, how do I achieve an adequate comparative base?” As you come to understand gender, race, or class divisions, new issues of scope will emerge (“If I observe only those folks, I will not be accepted over there”). Scoping for diversity involves considering the scale of the research question (“Whose experience will I not hear?”). It requires attention to representation (“What is it that I want to make statements about? Does what I won’t see matter?”). It also requires attention to the areas to be covered (“Is there more than one perspective on this issue?”).

As you reevaluate each of these issues, the answers will shift in response to your discovering, theorizing, and constructing theory. Scoping the project almost always shifts the question in the interplay between what can realistically be asked and what can properly be discovered. The process moves the question from a research question to a researchable one.

The Nature of the Data

How will you create data, and how will you ensure a fit of data to the research task? These are different questions. They require you to explore the possible ways of constructing data within a setting and to select methods that will combine to ensure that the data will be sufficiently rich, complex, and contextual to address the question and support the required analysis.
Thus, rather than preparing a research instrument for use throughout the project, in undertaking the design of a qualitative study, you need to consider carefully the variety of approaches available and the sorts of data they generate. Predesigned research instruments may be useful for some tasks (e.g., a survey form may be used to record basic demographic data about participants). But because the goals of the project include learning inductively from the data, instruments designed entirely in advance will rarely support an entire project.

You should expect that an interesting research question will usually require several strategies for making data. Relying on one technique may produce homogeneous data, which are highly unlikely to provide enough sources of understanding and ways of looking at a situation or a problem. Commitment to one sort of data makes the techniques of theoretical sampling very difficult to follow, so you need to resist the easy route of selecting one technique and building in the assumption that you will “do focus groups” or “do in-depth interviews.” Keep asking, “Why would this one way of making data suffice to answer my question?” We share a concern with other scholars regarding the increasing homogeneity of data in qualitative projects as the dominant mode of uniform, as “in-depth” interviews take over from the previous speckled diversity of qualitative data. Our advice is that you not look first for a technique of making data with which you are familiar or that you have been trained to do, but rather ask how, in this situation, you can best access accounts of behavior and experience, best weigh the different versions of “reality,” and best interpret them.

You should expect that the nature of the data will change during your project. The importance of knowing a budget and timeline can easily overtake the requirement of growing a project informed by the data. Starting with the assumption that they are “doing interviews,” researchers are easily led to see as the only relevant question the issue of how many respondents they should “do.” (We recommend reflection on discourse here—both about what you are proposing and how you are expressing it.) Even the most expert researchers cannot answer the sample size question without involvement in the project. What constitutes a large enough sample will be determined in the future by the situation studied and the quality of data. But the fact that the question is asked should alert you to its corollary: “What else could or should I be doing to create a strong and rich data set?”

Focus on the end, not only on the beginning, of the project, and particularly on the claims to be made (“What am I asking of these data?” “What types and combinations of data do I need to create?”). Try to foresee the adequacy of likely results (“What will I not see if I rely on these sources?”).
Ask yourself about your own ability to create the data (“Will I be able to do this, to be accepted in this situation, to conduct these sessions, to find participants?”). Try also to foresee limitations (“If I seek nuances of meaning in people’s language, how do I ensure that my records contain these and that they are not determined by my intervention?”). At this earliest stage, it is helpful to think backward from possible outcomes. What sort of a study of this issue would be convincing? What ground do you want to be able to claim? Who do you want to persuade and how would they be persuaded? How will you know, at that wonderful final stage of reporting, if you were wrong?

DOING DESIGN

We have emphasized the importance of allowing the questions, problem, and method to inform the scope of the project and nature of the data, and also the importance of the researcher’s actively designing and controlling the project. How do you do both?

A good place to start is to read other studies critically. What is it about particular studies and their designs that convinces you (or that is convincing to you)? Do those authors persuade you that they were not wrong? The qualitative studies that you find exciting are likely to be convincing because the projects had the scope of design and the nature of data necessary to answer the research questions with the methods chosen. Unconvincing projects are those in which the researchers try to make claims where there is no justification or try to stretch thin data beyond their capacity to hold an argument.

If the task of starting is daunting, we recommend that you approach it by taking the five steps outlined below. As you prepare your proposal, you will find it helpful to keep an account of these steps and your thinking as you proceed, and of the puzzles that confront you and the ideas that occur. Many researchers commence their projects with proposals that avoid critical questions, which also often means that they avoid design—a very problematic stance.

Step 1: Establishing purpose. What are you asking? Why are you asking it? Who has asked it or something like it before, and how and why did those studies not satisfy your curiosity? (Treat your literature review as qualitative research.) What are you doing that adds to what they did? What is your intent? What do you want to come out of this? What do you
know, and what advantage and disadvantage is this? Revisit the discussion of topic selection in Chapter 2. (Particularly, at this stage, do not assume that being “one of them” gives you enough knowledge to research “them.” Treat being one of them as a problem, not an advantage.)

Step 2: Methodological location. What is the appropriate fit of qualitative method to this question and topic? Never start with the method and then seek a topic. Does the method point you in the direction of research design? Particular methods usually require certain sorts of data—what sorts of data are you going to need to do your project this way? Revisit the discussion of the armchair walkthrough technique in Chapter 2.

Step 3: Scoping. Now move on to the task of defining the scope of your project. What is it that you want to make statements about? Do you know enough about the field to determine who you should sample? If not, build in preparatory fieldwork—this is not a pilot but a stage in itself. Do you know enough about the issues? If not, build in preparatory identification of them. Are you comparing anything? If so, design for comparison. Are you intervening? If so, how, and are you planning for this?

Step 4: Planning the nature of your data. What sorts of data will be relevant? What sorts are available? How, and in what order, will they be combined? Are you able to handle those sorts of data? The design should include your data-handling methods and the ways you will use software. [Note that one of the classic howlers of research is to say of any software program that it “will analyze” the data!]

Step 5: Thinking ahead. How satisfying will this study be? How robust? Why should it be believed? How will you know if you were wrong? Present your proposal to skeptical audiences and become a skeptic yourself. The goal is to start your study knowing that it will be convincing at the end.

Designing for validity

Validity is a term too often avoided in qualitative research, because it is mistakenly seen as an indicator of attitudes to analysis or to interpretation that do not fit with qualitative methods. In the literature of every method you will find debate about the term’s possible meanings in qualitative research, and sometimes alerts about “the crisis of validity” [Denzin & Lincoln, 2000] or complex suggestions about specially “qualitative”
terminology. As you prepare your research design, it is important to be aware of how the issues are considered in your chosen method.

However, it is also important to ensure that you are designing a project whose outcome will be appropriate and fully justifiable, as properly based in the data. This is the commonsense and dictionary meaning of “validity”: a valid assertion is “well founded and applicable; sound and to the point; against which no objection can fairly be brought” (Shorter Oxford English Dictionary, in Richards, 2005, p. 139).

Two general rules guide research design for validity in all qualitative projects. The first is the theme of this book: Pay attention always to the fit of question, data, and method. This will ensure that the data are appropriate and appropriately handled and the question addressed fully and responsibly. From this requirement, it may follow that you should set up specific ways of checking how the data and method are performing. For example, it may assist a team project to check the reliability of coding. However, those checks should always be designed and carried out consistently with the method (Richards, 2005, pp. 139–144).

The second general rule is to ensure that you can properly account for each step in your analysis. All qualitative projects get their claim to being trustworthy from the ability of the researcher to account for the outcome (Maxwell, 1992). From this requirement, it follows that from the design stage, you should set up processes by which you can log each significant decision and the interpretation of each discovery. To do this as you work will be very important. Remember that qualitative analysis builds theory out of the data, one interpretation providing the platform for another enquiry. Your log of that journey will be the prime source of your justification of where you arrived and what you discovered (Richards, 2005, pp. 22–26).

At the research design stage, consider what your project design needs now to ensure that your conclusions will be regarded as sound and well founded. The steps outlined in this chapter take you through stages of design, with warnings about how they can go wrong. For more detail on the ways you can check the soundness of your analysis, go to Chapter 9 where we return to the challenges of “getting it right.”

**PROJECT PACING**

What does a good design look like? The sort of evolving design described above will be less tidy than one for a survey research project, where
properly collecting data is the first stage, followed in turn by coding and analyzing. A qualitative research design is more like a journey in which each of the stages builds on previous experiences. Planning flexibly for these stages helps you to confront the work that is often not factored into a design, to budget time and money, and to distribute workloads and manage relationships with your significant others. One of the interesting results of planning this way is that you discover that no stage ends neatly so another can begin. Whether or not you are required to make a formal proposal with timelines, it is worthwhile to draw up a schedule that includes the five stages described below. (If you are required to write a proposal, see the details provided in Chapter 11.)

Conceptualizing Stage

Plan and budget for careful thinking through of the project, the literature review, and critiques of other studies. Plan to do this early—and keep doing it. You will need to continue to read and critique the literature throughout the study as new relevancies appear and new studies emerge. Handle the literature review data as data—using the data-handling method you intend to use later for the interviews or field notes. (If you are using a computer program, now is the time to get to know it well. Tutorial 1 on the CD shows the basic techniques for storing the materials acquired at this stage.)

Entering the Field

Treat entering the field as research work: Prepare and budget for it. Your field may be a location [such as a school], or it may be entering a topic [the people who have the disease you are studying or who share an experience of discrimination]. In many disciplines, the emphasis is on making data through direct, obtrusive methods such as interviews or focus groups, where researchers are deprived of the insights of ethnography. If you do not know the literature on field research, explore it now. It will alert you to the observer’s task of preparing for, gaining entry to, and becoming accepted in a setting.

If you are working in a familiar area, be especially careful. A useful mind-set is to regard yourself as reentering the field as an observer. Assume that the advantage of understanding problems and perspectives is at least partly balanced by the disadvantage of the insider’s taken-for-granted assumptions, commitments, labels, and ways of seeing. If you
are studying a familiar topic (a problem or group you know) by more obtrusive methods, such as interviews, be particularly cautious on entering the field. When you spend only a couple of hours with an interviewee, your assumptions can go unchallenged.

**Setting Up and Managing a Data Management System**

For obvious reasons, any research design must include the ways in which you intend to handle data. We hope that by now it is clear that selection of a data-handling system must be done very carefully: The system you choose must be tailored to the task and adequate to the scope of the project and the varieties of data and analysis expected. (The literature is often silent on this essential stage, but for exceptions, see Dey, 1995; Lofland & Lofland, 1995.) You need to plan for the data-handling system you will use from the beginning of the project; you must be sure that you are familiar with it and that it is working from the start. Note that this advice is especially important for team projects (Richards, 1999b, 2005). Your research design should allow for the time you will need to develop a system that works for you and for the time it will take for you to learn any skills, particularly computer skills, that the project will require.

Now is the time to learn the software skills that you will need throughout the project. You should at this stage make decisions about the software you will use, learn to use it competently, and become familiar with the range of processes it will support. Then, as soon as possible, you should start using it. To delay working with your software risks serious disadvantage. If material piles up on paper, waiting to be entered on your computer, the workload of managing your data will grow, as will your anxiety about being able to handle your data. To bring the early material immediately into the computer will give you confidence, time to learn software techniques, and the ability to integrate research design materials with the data records you will soon start to create. This chapter, and each of the next three, concludes with a section on software tools relevant to the chapter’s content.

**Sampling and Theoretical Sampling**

Allow time in your design for the process of locating and evaluating the ways you can sample the studied area. This can be very demanding; never assume a sample is waiting for you like apples to be plucked from a tree.
Treat theoretical sampling (i.e., the selection of participants according to the needs of your emerging analysis) as a necessity and build time and budget for it into your design. In a grant application, state areas where further sampling is likely, and budget time and other resources accordingly.

Analysis

Any project design must allow for the cognitive processes of research. Build thinking into your timelines and your budget. In a grant application, allow time for coding of data, for recoding of exploratory categories, and for management and exploration of category systems as well as for coding validation and reliability exploration. Allow time for asking questions and incorporating the answers into your analysis. And, above all, allow time for writing, rewriting, revisiting the data, and verifying your conclusions.

CHOOSING YOUR SOFTWARE

Researchers who have not previously used specialist qualitative software will face an obvious early task, to choose from the available software types and products. If the choice is not made for you, by institutional licensing or availability of skilled assistance, you will need to research the range of software functions, and then their appropriateness to your research design.

If you are planning to combine qualitative and quantitative modes of analysis, this means you are choosing two software packages. To make that choice requires a good knowledge not only of how each works but also of their compatibility and appropriateness for your project. Note from Tables 4.2 and 4.3 below that qualitative programs differ greatly in the ways they can link with quantitative programs.

Think of this choice process as another step in the pursuit of methodological congruence. Just as research purposes and questions fit with data types and analysis strategies, so do software tools fit, for better or worse, with all these aspects of research design. Start there, setting out what you are asking, what data you expect to be handling, and by what methods of analysis, and from there ask which of the tools available in software would best assist you.
The task is less daunting now than it was in earlier stages of software development. When computer tools were first designed for qualitative research, very different types could be identified (Tesch, 1990; Weitzman & Miles, 1995). Two decades later, there is a substantial common ground for basic functions, summarized in the regularly updated comparisons at http://caqdas.soc.surrey.ac.uk/, the website of the CAQDAS Networking Project (the acronym is for Computer Assisted Qualitative Data Analysis).

The main commonalities and differences at the time of writing are summarized in the following tables.

<table>
<thead>
<tr>
<th>Expect This of All Qualitative Software</th>
<th>Look for These Differences</th>
<th>When Will This Matter?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provision for storage and managing of data and interpretations in a single unit or project</td>
<td>Programs differ in how a project is saved, stored, and transported.</td>
<td>Researchers nervous about security, ease of backup, and sharing of team projects should check for software help.</td>
</tr>
<tr>
<td>Ways of combining and comparing projects</td>
<td>Most programs support merging of projects, but they differ in flexibility of merging parts of projects.</td>
<td>This will matter if you have multiple researchers or sites or a good reason for combining your own projects.</td>
</tr>
<tr>
<td>Ways of backing up and safely storing projects</td>
<td>Programs differ in whether the source data is imported in the software or remains external to the software.</td>
<td>Mode of storage if not understood can imperil a project—be very clear about what should be backed up!</td>
</tr>
<tr>
<td>Ways of interfacing with other software</td>
<td>Programs differ greatly in whether they are designed to import from and export to statistical or database software.</td>
<td>This will be critical if you plan mixed-methods research.</td>
</tr>
</tbody>
</table>
Table 4.2  Your Data Documents, Ideas, and Links

<table>
<thead>
<tr>
<th>Expect This of All Qualitative Software</th>
<th>Look for These Differences</th>
<th>When Will This Matter?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handling of text data for the project prepared in word processors</td>
<td>Programs differ in permitted format of files (plain text, rich text, or word processor formats (including pictures, tables, etc.).</td>
<td>Text formatting matters most for projects with “rich” records.</td>
</tr>
<tr>
<td>Ability to create and edit text within the project. All will allow typing of memos.</td>
<td>Programs differ in whether data documents can be freely edited once “in” and in the flexibility of editing memos.</td>
<td>Typing up in the project matters most for records you want to code or annotate as you create them.</td>
</tr>
<tr>
<td>Inclusion of text data files in the project</td>
<td>Programs differ in whether they import the documents or link to files kept externally.</td>
<td>Where the data is stored may matter for security and convenience.</td>
</tr>
<tr>
<td>Handling nontext data—photos, videos, etc. (either importing and coding directly or ways of representing nontext records)</td>
<td>Some but not all will import nontext (pictures, video, or audio). Others vary in terms of what can be done with multimedia data.</td>
<td>A central concern if your design requires detailed analysis of nontext data.</td>
</tr>
<tr>
<td>Storing information (such as demographics) about people or places, etc.</td>
<td>Most will import such information from spreadsheets or statistics software—but differ in options and display—and the flexibility with which you can use this information.</td>
<td>This is critical if you are doing mixed methods research or have a large sample.</td>
</tr>
<tr>
<td>Creation and editing of documents and memos from within the program</td>
<td>Programs differ in flexibility to edit and in ways memos are created and whether and how they are searched. Check whether the program is designed for extensive editing or just for corrections.</td>
<td>This is important if your method requires constant reflective records as theories are built (e.g., grounded theory).</td>
</tr>
</tbody>
</table>
### Table 4.2 (Continued)

<table>
<thead>
<tr>
<th>Expect This of All Qualitative Software</th>
<th>Look for These Differences</th>
<th>When Will This Matter?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annotating or commenting text</td>
<td>Programs differ in ways of annotating particular passages of your data, how annotations can be viewed, and how they are reported.</td>
<td>This is important if your method requires fine detail commenting of discourse in texts (e.g., discourse analysis).</td>
</tr>
<tr>
<td>Support for linking to data within project and outside</td>
<td>Very different approaches and methods of linking: Look for what can be linked and how.</td>
<td>This matters if your method requires you to bring data together in ways other than coding.</td>
</tr>
</tbody>
</table>

### Table 4.3 Coding and Text Search

<table>
<thead>
<tr>
<th>Expect This of All Qualitative Software</th>
<th>Look for These Differences</th>
<th>When Will This Matter?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding of selected data at categories created by the researcher (called “codes” or “nodes”) and retrieving all data coded at a category</td>
<td>Programs differ in mode of selection of data and procedure of coding. Some programs allow the researcher to record weighting of coding.</td>
<td>Coding style and facility are important to most researchers—try out software to see if you like the way it codes!</td>
</tr>
<tr>
<td>Ability to view all of the data you have coded at a category</td>
<td>Programs differ in how you view coded data and whether and how the context can be retrieved. They also differ in how you can work with coded data to revise coding and optionally code further from it.</td>
<td>This matters most for methods where coding is just a first step toward interpretation, especially if it is important to explore the dimensions of a category.</td>
</tr>
</tbody>
</table>

(Continued)
Table 4.3 (Continued)

<table>
<thead>
<tr>
<th>Expect This of All Qualitative Software</th>
<th>Look for These Differences</th>
<th>When Will This Matter?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to see on the screen what coding you've done (usually in margin, sometimes by highlighting or reporting)</td>
<td>Programs differ in whether all coding can be seen at once and how the markings can be used to explore that code.</td>
<td>It will matter if you rely on (and are concerned about) coding or if in teams you want to compare coding.</td>
</tr>
<tr>
<td>Auto-coding of data (mechanical finding and coding of words or segments)</td>
<td>Programs differ in how easily this is done and how much formatting is required, as well as whether you can set the context you want coded.</td>
<td>This is particularly important to projects with a lot of very structured data or requiring immediate retrieval (e.g., everything said by a particular speaker).</td>
</tr>
<tr>
<td>Text search of words in data and sometimes coding of the finds</td>
<td>Programs differ in the ways they conduct searches and store results, and whether you can save searches and results.</td>
<td>This is important if your method requires the mechanical processes of word search and/or further exploration of results.</td>
</tr>
<tr>
<td>Counting of codes or occurrences of words; quantitative content analysis</td>
<td>Some offer word frequency counts and quantitative reporting of searches. Ability to create your own dictionary in some.</td>
<td>This is important if your method requires counts. If so, check out “text retriever” and “content analysis” programs.</td>
</tr>
<tr>
<td>Expect This of All Qualitative Software</td>
<td>Look for These Differences</td>
<td>When Will This Matter?</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Management and viewing of coding categories</td>
<td>Most programs support hierarchical cataloging of categories for review and access.</td>
<td>This is important if your coding categories will be numerous and/or if you are sharing coding schema.</td>
</tr>
<tr>
<td>Asking questions (with “search” or “query” tools) about patterns in the coding of data</td>
<td>Programs differ in ability to search combinations (e.g., Boolean, proximity) of coding, text, and the characteristics associated with people or places. Some allow multiple searches producing matrices for pattern exploration.</td>
<td>Some methods require sophisticated searches (e.g., matrices to show patterns). Do a “walkthrough” of the project to check how you want to query your data.</td>
</tr>
<tr>
<td>Saving of search results</td>
<td>Some save them as reports only, while others allow the possibility for the search results to be incorporated in the database.</td>
<td>This matters if you want to build enquiries on your coding patterns.</td>
</tr>
<tr>
<td>Ability to run repetitive searches</td>
<td>Only some programs provide for the researcher to write scripts to set up analysis processes.</td>
<td>This is important for projects where computer searching must be adapted to the design.</td>
</tr>
<tr>
<td>Visual displays</td>
<td>Most provide some tool for modeling. These vary greatly from simple diagrams to live-to-data representations of theories and networks.</td>
<td>If visual representation of what is happening in your project is important, check what you need the software to display.</td>
</tr>
</tbody>
</table>

(Continued)
We return, in conclusion, to the top level of design—your vision of the overall project. Novice qualitative researchers are sometimes prevented from taking an overall view of their projects because they are so insistently told not to be preemptive. There is danger here that you will never see what you are aiming for, and without such a vision, design is impossible. Flexibility and willingness to learn from the data do not require lack of purpose. The ability to see and design the overall project is particularly important in comparative research and in projects that combine different sorts of data. We discuss two such design challenges below: comparative design and triangulated design.

### Comparative Design

If your question demands that you determine what is special about a group or identify particular conditions or circumstances, then you may need a two-group design. Ideally, you will keep data from the two groups separate, as well as theoretical sampling driven by each group, and the data will be saturated separately. Later in the research process, you will compare and contrast these data sets to determine similarities and differences between the two groups. Sampling and data collection will continue beyond this phase so that the emerging analysis may be expanded and verified.
Comparative qualitative research is important, for example, in evaluation. Qualitative inquiry alone will not answer “how much” or “how many” or, therefore, how great a difference has resulted from an intervention. But a researcher can look at such questions by using a two-group design in which both groups have had similar experiences but only one group received the intervention, or by examining a single group before, during, and after intervention. Such studies, conducted outside of the laboratory, are called naturalistic experiments.

Triangulated Design

A text search of grant applications in many countries would return a high count for the odd word *triangulation*—so would a vote among researchers for the most misused term. Originally coined to describe a specific sort of research design, *triangulation* is now widely used to mean vaguely “three sorts of something.” But exactly what is triangulation?

*Triangulation* refers to the gaining of multiple perspectives through completed studies that have been conducted on the same topic and that directly address each other’s findings. To be considered triangulated, studies must “meet”—that is, one must encounter another in order to challenge it (for clarification), illuminate it (add to it conceptually or theoretically), or verify it (provide the same conclusions). Goffman (1989) coined the term, drawing on the metaphor of the surveyor’s practice of making sightings from two known points to a third.

Like the surveyor, the qualitative researcher may be aided by drawing from different perspectives on the same question or topic. Triangulation requires careful research designs to ensure the same question will be addressed, and answered, by each of the proposed approaches (Richards, 2005, p. 140). A researcher may do this by juxtaposing analysis of different data *types* and *methods* to illuminate the same *question* (e.g., field note records of participant observation in a school are examined for the picture they give of authority behavior, and authority is “sighted” differently via a study that used interviews in private with students and teachers). More ambitiously, researchers may address the same question in separate studies designed for direct comparison and using different methods and data. If they reach the same conclusion, they will use triangulation to verify or challenge alternative interpretations. Or, in a third form of triangulation, a researcher may address the same topic as that addressed by another, but through a different *question, method, setting,*
and data to gain a different perspective (e.g., in a study of prejudice in a community, a study using a survey method gathers precoded results to feed statistical analysis, while observation in various community organizations reaps a record of how people from the same community, who may or may not have participated in the survey study, behave in public).

All of these are useful techniques—as long as the question is being properly sighted from the different angles. Such multiple sightings on an understanding can be extraordinarily revealing; a new interpretation of the sources of teachers’ apparent authority may come to light, or new information concerning the ways in which prejudice is concealed. The necessary condition of such good results is, of course, a good research design. If you elect to use a triangulated design, it is essential that, from the start, you are clear about your purpose in using such a design, and that you make explicit in each stage of the research design what you are claiming you can do with it and what it will add.

Avoid misusing the term triangulation. One does not do triangulation by interpreting the same data using different theories, or by gathering a multidisciplinary team of investigators or coders. And although you may have complicated data—for example, in the form of a couple of data sets, neither of which can be a complete study in itself, or a few interviews conducted from a different perspective—they do not necessarily offer different sightings on the same question. The following research designs, all of which may be constructive and successful, are not examples of triangulation:

- Multiple data sources used in a single study to build a single picture (such as ethnography consisting of interviews, observations, and so forth)
- A second study added on to the first (six case studies more!) (Increasing your sample size is not triangulation.)
- Two studies that do not reflect on the same phenomenon or the same question (Studies that are not designed to give sightings on the same question are highly unlikely to meet in their conclusions.)
- Juxtaposition of quantitative and qualitative inquiry (For example, a study of stepparenting that uses in-depth interviews of stepparents may be informed by a study using census data on the distribution of stepparenting across California. The survey provides context for the qualitative study, but it does not address the same question, nor does it strengthen, add to, or potentially challenge the results of the other.)
COMBINING QUALITATIVE AND QUANTITATIVE METHODS

When the research problem is complex or if the researcher suspects that one method or strategy may not comprehensively address the research problem, multiple research methods may be used (i.e., multiple-method design) or a second research strategy may be used to supplement the core method (i.e., mixed method design). The combination of methods is less likely to threaten validity in multiple-method design as each method is complete in itself.

Mixed Method Design

In mixed method designs, a single method and one or more strategies drawn from a second method are used in the same project—these may be both qualitative, one qualitative and one quantitative, or two quantitative (however, the last design, two quantitative, are beyond the scope of this book). Mixed method designs are usually used because one method alone will not provide a comprehensive answer to the research question. Perhaps in a study that is primarily quantitative, there is some aspect of the phenomenon that cannot be measured; or in a study that is primarily qualitative, there is some aspect of the study that can be measured quantitatively, and the measurement will enhance our descriptive understanding of the phenomenon. Or perhaps if two qualitative methods are used, one will complement the other, for instance, provide access to a perspective that cannot be accessed by the first.

Morse, Wolfe, & Niehaus (in press) argue that several principles are important to attend to when conducting a mixed method project.

Analytic weighting of both components: Both components are not equally weighted in the analysis; one component provides the analytic core, and the other component’s findings add to or fit into that core or provide insight adding explanation to the findings of the core component.

Completeness of components: The core component is complete in itself, and the supplemental component is not complete enough to stand alone—that is, it is not publishable as a separate component. The supplemental strategies may be, for example, data obtained from several focus
groups from which items are developed for a quantitative questionnaire, or quantitative measurement of anxiety to describe the anxiety levels of participants within an ethnography of relatives’ waiting rooms in a hospital.

Theoretical drive: Mixed method projects are either inductive or deductive, as determined by the research question, and subsequently by the primary or core method. The overall inductive or deductive direction of inquiry is referred to as the theoretical drive of the project, and the major methodological assumptions must be consistent with the assumptions of the major method. For instance, if the core project is quantitative, then the core design and the analytic methods are quantitative, and vice versa for qualitative. The theoretical drive of the project is indicated in the sequencing below in caps, for instance, QUAL for a qualitative theoretically driven project and QUAN for a quantitative theoretically driven project. The notation for the supplemental component is lowercase letters.

Sequencing: The sequencing of the project is important. The core and the supplemental project may be conducted at the same time (simultaneous, indicated with a +), or with the supplemental project following the core project (sequential, or indicated with an —>). Simultaneous mixed method design may permit the transformation of the qualitative data to quantitative numerical data and incorporation into the quantitative data set. But this will be possible only if the qualitative methods used ask the same question of all participants and the sample size is equivalent to the quantitative sample, as, for instance, in the case of semistructured interviews, questions contained within a survey.

This means that we have the following combinations of mixed method designs:

- QUAL + quan, a qualitatively driven project, with a qualitative core and quantitative simultaneous component
- QUAL —> quan, a qualitatively driven project, with a qualitative core and quantitative sequential component
- QUAN + qual, a quantitatively driven project, with a quantitative core and qualitative simultaneous component
- QUAN —> qual, a quantitatively driven project, with a quantitative core and qualitative sequential component. An example may be conducting a quantitative survey and obtaining surprising results. A qualitative study is then conducted to obtain some insight into those results.
QUAL + qual, or QUAL —> qual, a qualitatively driven project with a qualitative core and a qualitative supplemental component, first conducted simultaneously and second, sequentially. An example of these designs might be a grounded theory project explaining the process of some aspect of parenting, and a phenomenological component used as a supplement to illustrate the meaning or essence of some part of the process, either simultaneously or sequentially.

Sampling: Difficulties occur if the supplementary component is qualitative and the quantitative core sample is too large to incorporate the qualitative component. How, then, does the researcher select the qualitative sample? When this problem occurs, the qualitative sample is purposefully selected from the quantitative sample, or a separate qualitative sample is drawn, consistent with the principles of qualitative sampling. Conversely, if the core component is qualitative and the supplementary component quantitative, then the qualitative sample is too small for quantitative analysis. If it is necessary to measure some aspect of the qualitative sample, then the quantitative measure must have external norms against which to compare and interpret the scores obtained. Alternatively, a large quantitative sample must be drawn. Occasionally a mixed method project is designed with both a quantitative questionnaire and qualitative, opened-ended questions as a part of the questionnaire. Then, the qualitative questions are coded and transformed numerically and incorporated as variables into the quantitative data set.

Multiple-Method Design

In multiple-method research, the two (or more) projects may both be quantitative, both qualitative, or one qualitative and one quantitative. In this text, those methods that are both quantitative are beyond our scope, and we will discuss only those projects that are qualitatively driven and conducted concurrently or simultaneously within either a quantitative or a qualitative research program. Because both projects are complete in themselves, these projects are usually a part of programmatic research. That is, they are a part of a series of funded projects around a common research problem, and may only be located in review articles that examine the work of a single investigator or team.

The overall theoretical drive to the program may be identified by the programmatic overall question. Projects may be qualitatively or quantitatively driven, and the individual projects within the program may be
qualitative (to provide meaning and insight) or quantitative (usually to test emerging ideas). However, it is important that the researcher recognize the theoretical thrust of the overall program, for that will enable the identification of the study that will form the theoretical base of the project. It is into that base that the findings of the other methods fit and inform the overall emerging model.

Note that because the projects are independent, it is the results that are combined in multiple-method research, not the data, nor the analysis. Therefore, multiple-method research escapes some of the quandaries of mixed method research with regards to the provision of appropriate and adequate samples and the transformation of data for analysis.

How are the results combined to inform the base project? Simply put, the results are combined in the process of writing in the form and format that will provide the reader with understanding. Because the numbers of studies are often more than two, the researchers often write monographs, with the previous studies reprinted from refereed journals, so the reader can assess the contribution of each study.

**Taking an Overview**

Seeing your project overall will prevent you from going into a situation with the conviction that understanding will just happen, or from collecting the data and then thinking about them. It will help you to avoid narrow designs, homogeneous data projects, and making data (often volumes of data) without being sure you have the skills and resources to handle the resulting richness. It will warn you against writing a proposal that gives a vague direction—to “get in there and find out what’s going on.” It will push you to sharpen your reflection on the appropriate ways to get in, on where or what there is, and how one would find out. The vaguer the research question and the less located the context, the more the project is at risk of wandering aimlessly—and the more you need a research design. Good studies rarely, if ever, just happen (and studies are not often funded on the basis of a promise that they will).

When detail threatens to cloud your bigger picture, return to looking at your project overall. Unfunded research requires focus on a question and a design to answer it, perhaps more urgently than does funded research, because the constraints may be greater. Just as the funding body needs to understand your research design, so do you need to know that your project is likely to contribute to understanding of your topic, that it
is within your capability and resources, and that it has a shape and a likely outcome. Like the funding body, you will also want to know for ethical reasons that the possibly invasive processes of data making are designed to contribute an answer to something worth asking. During this process, you will be asking yourself constantly how to scope the project to maximize the chances of achieving an adequate answer, and how to design the data so that they contribute to an understanding that is not just good enough but convincing.

**USING YOUR SOFTWARE FOR RESEARCH DESIGN**

We end this chapter, and each of the next three, with a brief discussion of what specialized qualitative software offers for the tasks discussed, and how it changes what the researcher can do. These sections describe and discuss the ways of doing qualitative research using computer software under three headings—approaches, advances, and alerts. They advise on what you can ask of your software, then on the ways software enables doing things that could not be done when only manual methods were available, and finally on avoiding temptations and pitfalls.

All qualitative researchers now use software of some sort. Their interviews are typed on word processors, their sample characteristics in spreadsheets. But most will also use specialist software designed to help with the challenges of managing complex qualitative data records without losing their context, and storing and exploring the growing ideas about those data records.

What does software offer to the researcher approaching the issues discussed in this chapter? At this early stage of a project, what approaches are supported by software? What advances in method does software offer? And what are the traps and temptations to which you should be alerted?

**Approaches**

Early in a project, important tasks are organizational. Taking the steps to a good research design as described in this chapter, you will make a lot of records of your thinking, reading, scoping of the project, and planning. Research proposals, grant applications, and literature reviews are the intended outputs. The inputs can be messy and confusing.
Qualitative software is designed to help you handle messy inputs, so it will assist with these early records. Novice researchers often are misled into thinking they have to have “real” data before they can start using software. But there is no need to start by storing research design records separately from later records of interviews or field research. If you do so, it will be much harder to access these together throughout the project.

Start by learning how your software will store records and allow you to see them separately—in folders, sets, or groups. If you set up a project carefully, you will be able to access your plans and reviews alongside the other data records you will create when you commence interviewing or field research. So the contribution of software at the research design stage is as a reliable (but not rigid) container for plans, early considerations, and topics.

You need to learn now:

- What your software can do, and how to do it
- How to start a project
- How to manage it—saving, backing up, and transporting it

If you wish at this stage to try working in qualitative software, go to Appendix 1, where there is a guide to tutorials available online.

If you are planning to combine qualitative and quantitative modes of analysis, it is important to build into your research design consideration of the ways you will “mix” these. To do so will involve moving data between software packages. While it is still common for a “mixed method” study to be designed simply as two studies (Bryman, 2006), good mixed method research does not merely juxtapose two projects but integrates them. To do this, you will need to plan, from the start of your research design, for the appropriate data and staging of analysis. In her full review of recent literature and methods, Bazeley (in press) distinguishes between two major strategies for integration: using software to combine numeric and text data and using software to convert coding from qualitative data for statistical analysis. This paper and other resources for mixed method research are available at www.researchsupport.com.au.

**Advances**

Computer software cannot design your project, but it can assist greatly in the data management tasks at this stage.
Once you learn software skills, you will find that starting early in software has great advantages. And more important, starting early in software does not disadvantage you. Software tools are now far more fluid than those first developed for qualitative research. A good software package will allow you to create a project and then later change practically all aspects of it, as your ideas about the data and analysis grow.

At the early stage of design, you can store drafts and estimates of project stages, and using the tools taught in later tutorials, you will be able to link them and shape the ideas that inform your design. As you work the ideas and issues, you will be able to see more clearly what design decisions must be made or how, for example, you can design the sample of your study to encounter the range of discovered issues.

In the early stages of research design, the computer offers storage for documents and for ideas—and the ability to link them by coding the relevant passages of documents at the relevant ideas, so that all the relevant material can be retrieved later. The research design can be informed and directed by systematic storage of early explorations of the topic, serious reflection on the range of options for approaching it, and informed decision making.

Alerts

Software is not a method. Having chosen the software you will use, ensure that all your research moves are directed by your design and your method. Always be concerned if you are doing something because your software can do it!

Starting in software gives great advantages later—so long as you ensure that you remain flexible. Where you start will not be where you go: This is built into the method. If you start your project with software, start flexibly. Use software tools for storing your changing definitions of concepts, finely coding data about them, ordering them, and exploring their relationships. Any software package will allow the coding categories to be changed at any time, reordered at any time, combined, or deleted as the data direct your understanding of them.

Keep moving! Getting out ideas, thinking about them, and making them accessible do not require a computer, but, like so many other tasks, it is dramatically easier and faster with the proper software. The risk is that this may encourage you to work on those early tentative ideas
so long and so well that you start constructing the framework for analysis preemptively.

Setting up a project is not analysis. You must also start and continue reflecting on what you do. Making and designing a project should involve processes of recording and logging your thinking about your research design. To do this on the computer is not necessary, of course, but it will help you to clarify the choices you have and the decisions to be made. As you prepare designs and time estimates, edit them to reflect, change, and manage them. As you store your early ideas, describe and write about them.

Beware of flexibility as well as of rigidity! Don’t allow the fun of setting up a project and moving parts of it around distract you from the tasks of creating a research design [at least not for too long].

**SUMMARY**

Before beginning your project, you must give careful consideration to design, including how research strategies will be paced and how the method you choose will answer your research question. Consider how you will find participants and what scope for the project will be obtained with your sample. Does your design account for the purpose of the study? How will you locate your study methodologically? What data will you gather and how will you handle these data? Which software will you use? Finally, consider how you will use the computer for management and analysis of data.

In this chapter, we have explained the need for careful design of a qualitative project and the special requirements of qualitative research design. Qualitative projects usually involve ongoing processes of design as the researcher designs and reviews the scope of the project and the nature of the data required. We have suggested the questions you should ask and the issues you should consider as you prepare a design, as well as the ways in which you can revisit and revise it as you commence your project. We have described the five steps of establishing your purpose, locating the study methodologically, deciding the scope of your inquiry, planning the nature of your data, and then thinking ahead to the goals you wish to achieve. As you plan, anticipate that your study will involve different stages, and allow time for each—conceptualizing, entering the
field, creating a data management system, sampling and theoretical sampling, and final analysis.

Throughout this chapter, we have emphasized that you need to see your project in terms of its overall design. We have discussed combinations of qualitative and quantitative designs. In addition, in this chapter you have met the first of a series of sections on qualitative computing. If you wish to learn software skills, go to Appendix 1 and follow the directions to run the tutorial using software for setting up your project.

**RESOURCES**

**Beginning Design**


**Resources for Design**


**Resources Describing Analysis**


**Software and Design**


