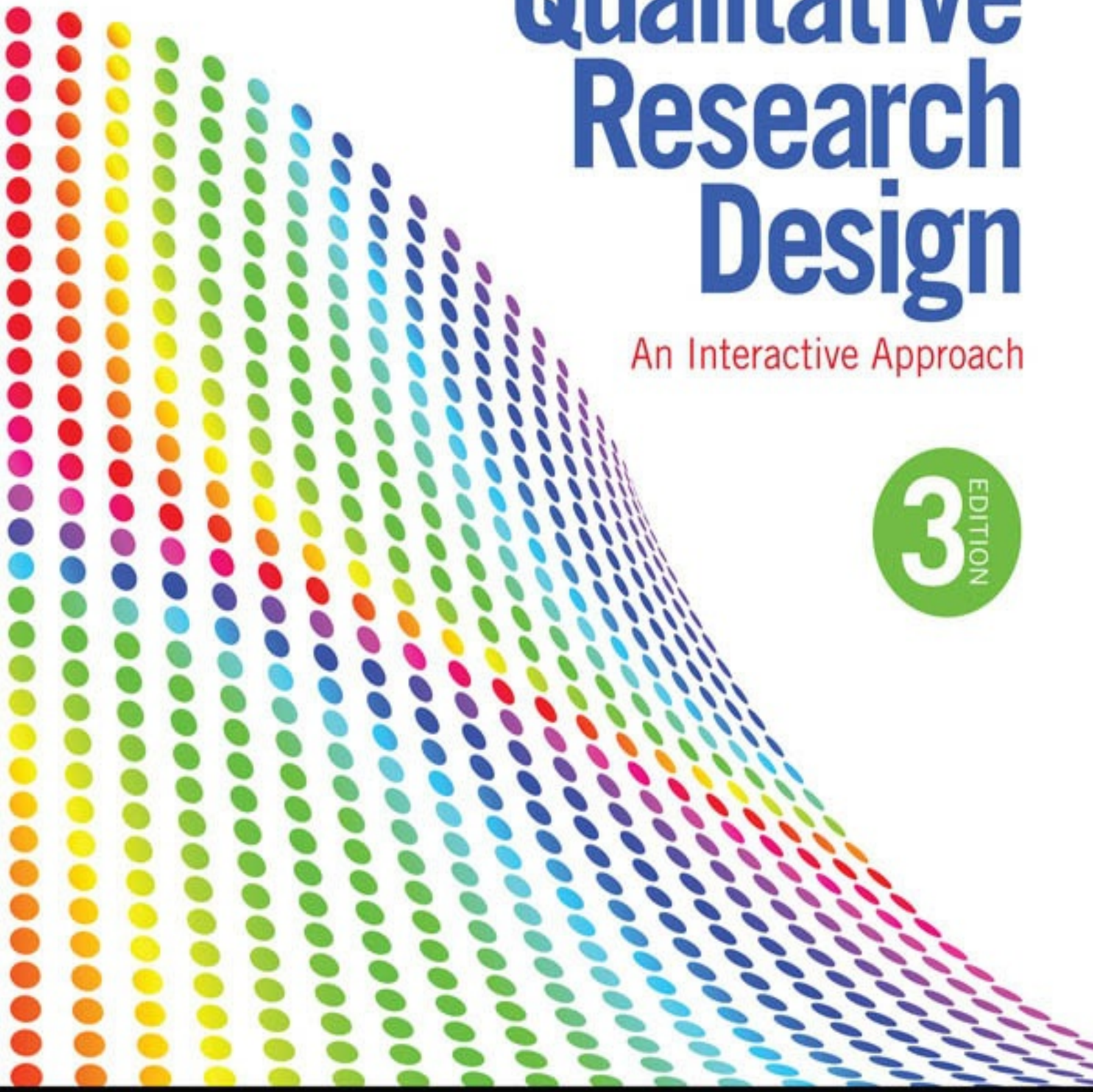
Joseph A. Maxwell

Qualitative Research Design

An Interactive Approach

3 EDITION



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Research Questions

What Do You Want to Understand?

Your research questions—what you specifically want to understand by doing your study—are at the heart of your research design. They are the component that most directly links to all of the other components of the design. More than any other aspect of your design, your research questions will have an influence on, and should be responsive to, every other part of your study.

In many works on research design, research questions are presented as the *starting point* and primary determinant of the design. Such approaches don't adequately capture the interactive and inductive nature of qualitative research. Certainly, *if* you already have well-grounded, feasible research questions that are *worth* answering (and this implies goals and knowledge that justify these questions), the rest of your design (especially your methods and conceptual framework) should initially be constructed to address these questions. In qualitative research, however, you usually can't come up with such questions without making use of the other components of your design. Locking onto your research questions before having a pretty good sense of what your theoretical and methodological commitments and options are, and the implications of these for your questions, creates the danger of what quantitative researchers call a Type III error—answering the wrong question.

For this reason, qualitative researchers often don't develop their final research questions until they have done a significant amount of data collection and analysis. (See Example 4.1 and Weiss, 1994, pp. 52–53.) This doesn't mean that qualitative researchers begin a study with *no* questions, simply going into their research with an open mind and seeing what is there to be investigated. As discussed in the previous two chapters, every researcher begins with certain goals and a substantial base of experience and theoretical knowledge, and these inevitably highlight certain problems or issues and generate questions about these. These early, provisional questions frame the study in important ways, guide decisions about methods, and influence (and are influenced by) the conceptual framework, preliminary results, and potential validity concerns. My point is that well-constructed, focused questions are generally the result of an interactive design process, rather than being the starting point for developing a design.

Example 4.1 The Inductive Development of Research Questions

Suman Bhattacharjea's (1994) dissertation dealt with the ways in which the female administrators in an educational district office in Pakistan defined, implemented, and controlled their professional tasks and

working environment in a gender-segregated and male-dominated society. She began her fieldwork with a single broad question: What do staff in this office do every day, and who does what? Her position as a consultant to a computer implementation project required her to spend much of her time interacting with the women in this office; the fact that she was female, spoke virtually the same language, and (being from India) was familiar with some aspects of their situation led to acceptance and trust. When she submitted her dissertation proposal, a year after she began the research, she had focused her study on two specific questions:

1. What is the nature of the expectations that affect female administrators' actions?
2. What strategies do female administrators adopt to deal with these constraints in the context of a gender-segregated and male-dominated environment?

On the basis of the research she had already done, she was able to formulate three propositions (or hypotheses) as tentative answers to these questions:

1. Female administrators' actions reflect their desire to *maintain harmony* between their roles as women in a gender-segregated society and their roles as officials within a bureaucracy.
2. The major strategy female administrators use in this regard is to try to create a family-like environment at work, interacting with their colleagues in ways that parallel their interactions in a domestic setting and thus blurring the distinction between "public" and "private."
3. The implications of this strategy for female administrators' actions depend on the *context* of their interaction—in particular, where this context lies on the public/private continuum. Women use different strategies when interacting with other women (most private or family-like), with male colleagues within the office, and with other men (least private or family-like).

In this chapter, I will discuss the purposes that research questions can accomplish in a research design, consider the kinds of questions that a qualitative study can best investigate, and give some suggestions on how you can develop appropriate and productive research questions.

THE FUNCTIONS OF RESEARCH QUESTIONS

In a research proposal or published paper, the function of your research questions is to explain specifically what your study is intended to learn or understand. In your research *design*, the research questions serve two other vital functions as well: to help you to focus the study (the questions' relationships to your goals and conceptual framework) and to give you guidance for how to conduct it (their relationship to methods and validity) (cf. Miles & Huberman, 1994, pp. 22–25).

A design in which the research questions are too general or too diffuse creates difficulties both in conducting the study—in knowing what sites or participants to choose, what data to collect, and how to analyze these data—and in clearly connecting your results to your goals and conceptual framework. If your questions remain on the "What's going on here?" level, you have no clear guide in deciding what data to collect, in selecting or generating relevant theory for your study, or in anticipating and dealing with significant

validity issues. More precisely framed research questions, in contrast, can point you to specific areas of theory that you can use as modules in developing an understanding of what's going on, and can suggest ways to do the study.

On the other hand, it is possible for your questions to be *too* focused; they may create tunnel vision, leaving out things that are important to the goals (both intellectual and practical) of the study or your understanding of what is going on and why. Research questions that are precisely framed too early in the study may lead you to overlook relevant areas of theory or prior experience, or cause you to not pay enough attention to data that reveal important and unanticipated phenomena and relationships.

A third potential problem is that you may be smuggling unexamined assumptions into the research questions themselves, imposing a conceptual framework that doesn't fit the reality you're studying. A research question such as "How do teachers deal with the experience of isolation from their colleagues in their classrooms?" assumes that teachers do experience such isolation. Such an assumption needs to be carefully examined and justified, and a question of this form may be better placed as a subquestion to broader questions about the nature of classroom teachers' experience of their work and their relations with colleagues.

Fourth, there is the possibility, an unfortunate but not unknown one with students beginning to write dissertation proposals, that the stated research questions bear little relationship to the students' actual goals and beliefs about what's going on. Instead, they are constructed to satisfy what the students think research questions should look like, or what they think committee members will want to see in the proposal. Such questions may be inconsistent with other parts of the design. (See the discussion of Potemkin villages in Chapter 7.) In qualitative research, such questions are often the result of adopting quantitative research conventions for framing questions, conventions that are often inappropriate for a qualitative study.

For all of these reasons, there is a real danger in not carefully formulating your research questions in connection with the other components of your design. Your research questions need to take account of why you want to do the study (your goals), your connections to a (or several) research paradigm(s), and what is already known about the things you want to study and your tentative theories about these phenomena (your conceptual framework). You don't want to pose questions for which the answer is already available, that don't clearly connect to what you think is actually going on, or that, even if you answer them, won't advance your goals.

Similarly, your research questions need to be answerable by the kind of study you could actually conduct. You don't want to pose questions that no feasible study could answer, either because the data that might answer them could not be obtained or because the conclusions you might draw would be subject to serious validity threats. These issues will be covered in more detail in the next two chapters.

To develop appropriate research questions for your study, you need to understand clearly what a research question is, and the different kinds of research questions that you might construct. I will first discuss the nature of research questions in general, and then introduce some specific distinctions among research questions that are important for qualitative studies.

RESEARCH QUESTIONS AND OTHER KINDS OF QUESTIONS

A common problem in developing research questions is confusion between your research questions and the

goals of your study, and within the latter, between intellectual goals—what you want to understand by doing the study—and practical goals—what you want to accomplish. According to LeCompte and Preissle (1993), "distinguishing between the purpose and the research question is the first problem" (p. 37) in coming up with workable research questions. As discussed in Chapter 2, practical concerns often can't be directly addressed by your research questions. These practical goals should inform your research questions, but usually shouldn't be directly incorporated into these questions. Instead, you should frame your research questions so they point you to the information and understanding that will help you accomplish your practical goals or develop the practical implications of what you learn.

For example, a research question such as "How can support services for minority students entering college be improved?" incorporates implicit value assumptions about what would constitute "improvement," and can't be directly answered by the data you collect. (This is different from a research question asking, "How do staff and administrators in this program *believe that* support services for minority students entering college can be improved?" which is a very answerable question for a qualitative study, and one that has direct implications for improving the program.) The former question is often best kept as a goal of the study (to improve support services for minority students entering college). To develop relevant research questions for this goal, you need to ask yourself, "What data could I collect, and what conclusions might I draw from these, that would help me to accomplish this goal?" Your intellectual goals for the study can function as a link between your practical goals and your research questions: What do you need to understand in order to improve these services? The coherence between your practical goals, intellectual goals, and research questions is often something that takes considerable thought and multiple iterations of these.

A second distinction, one that is critical for interview studies, is that between *research* questions and *interview* questions. Your research questions identify the things that you want to understand; your interview questions generate the data that you need to understand these things. These are rarely the same; the distinction is discussed in more detail in Chapter 5.

Research Hypotheses in Qualitative Designs

Research questions are not the same as research hypotheses. Research questions state what you want to learn. Research hypotheses, in contrast, are a statement of your tentative answers to these questions, what you think is going on; these answers are normally based on your theories about, or experiences with, the things you are studying. (See example 4.1.)

The use of explicit research hypotheses is often seen as incompatible with qualitative research. My view, in contrast, is that there is no inherent problem with formulating qualitative research hypotheses; the difficulty has been partly a matter of terminology and partly a matter of the inappropriate application of quantitative standards to qualitative research hypotheses.

Many qualitative researchers explicitly state their ideas about what is going on as part of the process of theorizing and data analysis. These may be called "propositions" rather than hypotheses (Miles & Huberman, 1994, p. 75), but they serve the same function. The distinctive characteristic of hypotheses in qualitative research is that they are typically formulated *after* the researcher has begun the study; they are "grounded" (Glaser & Strauss, 1967) in the data and are developed and tested in interaction with them, rather than being prior ideas that are simply tested against the data.

This runs counter to the view, widespread in quantitative research, that unless a hypothesis is framed in advance of data collection, it can't be legitimately tested by the data. This requirement is essential for the statistical test of a hypothesis; if the hypothesis is framed after seeing the data, the assumptions of the statistical test are violated. Colloquially, this is referred to as a "fishing expedition"—searching through the data to find what seem to be significant relationships. However, qualitative researchers rarely engage in statistical significance testing, so that this argument is largely irrelevant to qualitative research. In addition, statistical significance testing has been widely criticized by many prominent statisticians and researchers; see Endnote 2 in Chapter 2. "Fishing" for possible answers to your questions is perfectly appropriate in qualitative research, as long as these answers are then tested against additional evidence and possible validity threats (see Chapter 6).

One risk in explicitly formulating hypotheses is that, like prior theory, they can act as blinders, preventing you from seeing what's going on. You should regularly reexamine these hypotheses, asking yourself what alternative ways there are of making sense of your data; thought experiments (Chapter 3) are a good way to do this.

I next want to discuss three specific distinctions among kinds of research questions, ones that are important to consider in developing the questions for your study. These distinctions are between general and particular questions, between instrumentalist and realist questions, and between variance and process questions.

GENERAL QUESTIONS AND PARTICULAR QUESTIONS

There is a widespread, but often implicit, assumption, especially in quantitative research, that research questions should be framed in general terms, and then "operationalized" by means of specific sampling and data collection decisions. For example, there is a tendency to state a research question about racial and ethnic differences in a school as "How do students deal with racial and ethnic difference in multiracial schools?" and to then answer this by studying a particular school as a sample from this population of schools, rather than to state the question at the outset as "How do students at North High School deal with racial and ethnic difference?" I will refer to these two types of questions as general and particular questions, respectively.

The assumption that research questions should be stated in general terms may derive, in part, from logical positivism, in which causal explanation was seen as inherently involving general laws, and the goal of science was to discover such laws. However, this assumption has been challenged by some qualitative researchers (e.g., Miles & Huberman, 1994; Schwandt, 1997, p. 14) and realist philosophers (see Maxwell, 2004a), who argue for researchers' ability to observe causation in single cases. It also does not fit a great deal of research in the social sciences and in fields such as education, where particular questions can be appropriate and legitimate. It is especially misleading in applied research, where the focus is usually on understanding and improving some particular program, situation, or practice.

These two types of questions are linked to the difference between a sampling approach and a case-study approach to research. In a sample study, the researcher states a general question about a broad population, and then selects a particular sample from this population to answer the question. In a case study, in contrast, the researcher often selects the case and then states the questions in terms of the particular case selected. A sample

study justifies the sampling strategy as a way of attaining representativeness of the specific data collected for the population sampled. A case study, on the other hand, justifies the selection of a particular case in terms of the goals of the study and existing theory and research (this is often called "purposeful selection," and is discussed in Chapter 5), and needs a different kind of argument to support the generalizability of its conclusions (see Chapter 6).

Both approaches are legitimate in qualitative research. Interview studies, in particular, sometimes employ a "sampling" logic, selecting interviewees to generalize to some population of interest. In addition, the larger the study, the more feasible and appropriate a sampling approach becomes; large multisite studies in which generalizability is important (such as those described in Miles & Huberman, 1994) must pay considerable attention to issues of sampling and representativeness.

However, qualitative studies often employ small samples of uncertain representativeness, and this usually means that the study can provide only suggestive answers to any question framed in general terms, such as "How do kindergarten teachers assess the readiness of children for first grade?" A plausible answer to this general question would normally require some sort of probability sampling from the population of all kindergarten teachers, and a larger sample than most qualitative studies can manage. Furthermore, the phrase "kindergarten teachers" is itself in need of further specification. Does it refer only to American teachers? Only to public school teachers? Only to certified teachers? These concerns, and analogous ones that could be raised about any research questions framed in general terms, presuppose a sample framework for the study, and may push the study in a quantitative direction.

On the other hand, a qualitative study *can* confidently answer such a question posed in particular terms, such as "How do the kindergarten teachers *in this school* assess the readiness of children for first grade?" This way of stating the question, although it does not entirely avoid issues of sampling, frames the study much more in "case" terms. The teachers are treated not as a *sample* from some much larger population of teachers to whom the study is intended to generalize, but as a *case* of a group of teachers who are studied in a particular context (the specific school and community). The *selection* of this particular case may involve considerations of representativeness (and certainly any attempt to generalize from the conclusions must take representativeness into account), as discussed in Chapter 5, but the primary concern of the study is not with generalization, but with developing an adequate description, interpretation, and explanation of this case.

In a qualitative study, framing your questions in terms specific to the setting or participants included in your research has several advantages. First, it helps to protect you from inappropriate generalization—assuming that other people or settings are similar to the ones you studied. Second, it can help you to recognize the diversity among the individuals, or within the settings, that you study—not assuming that you have to come up with conclusions or a theory that ignores or minimizes these differences (see Maxwell, 2011b, Chapter 4). Finally, it helps you to focus on the specific beliefs, actions, and events that you observe or ask about, and the actual contexts within which these are situated, rather than seeing these as simply manifestations of abstract, context-free categories. As Marshall and Rossman (1999) stated, a site-specific study is "defined by and intimately linked to that place" (p. 68).

INSTRUMENTALIST QUESTIONS AND REALIST QUESTIONS

As discussed in Chapter 2, social science was long dominated by the positivist view that only theoretical terms whose meaning could be precisely specified in terms of the research operations used to measure them (what came to be called "operational definitions") were legitimate in science. (The statement "Intelligence is whatever intelligence tests measure" is a classic example of this view.) Although this position (often called "instrumentalism") has been abandoned by almost all philosophers of science, it still influences the way many researchers think about research questions. Advisors and reviewers often recommend framing research questions in terms of what the respondents say or report, or in terms of what can be directly observed, rather than in terms of inferred beliefs, behavior, or causal influences.

For example, Gail Lenehan, for her dissertation, proposed to interview nurses who specialize in treating sexual assault victims, focusing on their cognitive, behavioral, and emotional reactions to this work. Although there is considerable anecdotal evidence that these nurses often experience reactions similar to those of their victims, no one had systematically studied this phenomenon. Her research questions included the following:

1. What, if any, are the effects on nurses of working with rape victims?
2. Are there cognitive, psychological, and behavioral responses to having experiences of rape shared with them as well as witnessing victims' suffering after the assault?

Her proposal was not accepted, and the committee, in explaining its decision, argued (among other concerns) that

> The study relies solely on self-report data, but your questions do not reflect this limitation. Each question needs to be reframed in terms that reflect this limitation. Some examples might be: "how do nurses perceive and report … the effects of working with rape victims?" or "What specific cognitive, psychological (emotional?), and behavioral responses do nurses report?"

This disagreement illustrates the difference between instrumentalist and realist approaches (Norris, 1983) to research questions. Instrumentalists formulate their questions in terms of observable or measurable data. They worry about the validity threats (such as self-report bias) that the researcher risks in making inferences to unobservable phenomena, and prefer to stick with what they can directly verify. Realists, in contrast, do not assume that research questions and conclusions about feelings, beliefs, intentions, prior behavior, effects, and so on, need to be reduced to, or reframed as, questions and conclusions about the actual data that one collects. Instead, they treat these unobserved phenomena as *real,* and their data as *evidence* about these, to be used critically to develop and test ideas about the existence and nature of the phenomena (Campbell, 1988; Cook & Campbell, 1979; Maxwell, 1992, 2011b).

This is not just philosophical hairsplitting; it has important implications for how you conduct your research, and each of the two approaches has its risks. The main risk of instrumentalist questions is that you will lose sight of what you're really interested in, and narrow your study in ways that exclude the actual phenomena you want to investigate, ending up with a rigorous but uninteresting conclusion. As in the joke about the man who had lost his keys at night and was looking for them under the streetlight (rather than where he dropped them) because the light was better there (Kaplan, 1964, p. 11), you may never find what you started out to look for. An instrumentalist approach to your research questions may also make it more

difficult for you to address important goals of your study (such as developing programs to deal with the actual effects on nurses of talking to rape victims), and can inhibit your theorizing about phenomena that are not directly observable.

The main risk with realist questions, on the other hand, is that your increased reliance on inference may lead you to draw unwarranted conclusions, ignoring potential validity threats such as participants' deliberate or unintentional distortions of the actual effects on them, or your possible biases in inferring these. My preference is to use realist questions, and to address as systematically and rigorously as possible the validity threats that this approach involves. I have several reasons for this. First, the seriousness of these validity threats (such as self-report bias) depends on the topic, goals, and methods of the research, and needs to be assessed in the context of a particular study; these threats are often not as serious as instrumentalists imply. Second, there are usually effective ways to address such threats in a qualitative design; some of these are discussed in Chapters 5 and 6. Finally, I take a realist position that unobservable phenomena (e.g., black holes, quarks, and the extinction of the dinosaurs) can be just as real as observable ones, and just as legitimate as objects of scientific study.

Thus, in my view, the risk of trivializing your study by restricting your questions to what can be directly observed is usually more serious than the risk of drawing invalid conclusions. What the statistician John Tukey (1962) said about precision is also true of certainty: "Far better an approximate answer to the right question, which is often vague, than an exact answer to the wrong question, which can always be made precise" (p. 13; cited in Light & Pillemer, 1984, p. 105). My advice to students in Lenehan's position is to argue for the legitimacy of framing your questions in realist terms (which she successfully did). Even if you are required to restrict your *proposal* to instrumentalist questions, you should make sure that your actual *design* incorporates any realist concerns that you want your study to address.

One issue that is not entirely a matter of realism versus instrumentalism is whether research questions in interview studies should be framed in terms of the respondents' *perceptions* or *beliefs* about what happened, rather than what actually happened. This was an issue for Lenehan's study, described previously; one recommendation of the committee was to focus the questions on how nurses *perceive* the effects of working with rape victims, rather than on the actual effects. Both of these are, in principle, realist questions, because, from a realist perspective, perceptions and beliefs are real phenomena, and neither participants' perceptions nor actual effects can be inferred with certainty from interview data.

This decision should be based not simply on the seriousness of the risks and validity threats for each, but also on what you actually want to understand. In many qualitative studies, the real interest is in how participants make sense of what has happened (itself a real phenomenon), and how this perspective informs their actions, rather than in determining precisely what happened or what they did. Furthermore, in some circumstances you may be more interested in how participants organize and communicate their experiences (another real phenomenon) than in the "truth" of their statements (e.g., Linde, 1993). Jackson (1987, pp. 292–294), after finishing his study of death row inmates, was asked how he knew the men he interviewed were telling the truth, or even if they believed what they told him. He eventually decided that he was in fact most interested in how the men constructed a presentation of self, a narrative of their life. As he said,

> Whether the condemned men who speak to you on these pages *believe* their presentations is

interesting, but not finally important; what is important is first that they feel the need to organize their verbal presentations of themselves so they are rational, and second that they know how to do it. (p. 293)

VARIANCE QUESTIONS AND PROCESS QUESTIONS

Finally, I want to return to the distinction between variance theory and process theory that I introduced in Chapter 2, and relate this to the framing of research questions. Variance questions focus on difference and correlation; they often begin with "does," "how much," "to what extent," and "is there a relationship." Process questions, in contrast, focus on *how* things happen, rather than *whether* there is a particular relationship or how much it is explained by other variables. The fundamental distinction here is between questions that focus on variables and differences and those that focus on processes; it closely parallels the distinction between positivist and realist approaches to causation.

For example, asking "Do second-career teachers remain in teaching longer than teachers for whom teaching is their first career, and if so, what factors account for this?" is a variance question, because it implies a search for a difference and for the particular variables that explain the difference. An example of a process question would be "How do second-career teachers decide whether to remain in teaching or to leave?" The focus in the latter question is not in explaining a difference (a dependent variable) in terms of some independent variables, but on understanding how these teachers think about and make decisions on remaining in teaching.

In a qualitative study, it can be risky for you to frame your research questions in a way that focuses on differences and their explanation. This may lead you to begin thinking in variance terms, to try to identify the variables that will account for observed or hypothesized differences, and to overlook the real strength of a qualitative approach, which is in understanding the processes by which things take place. Variance questions are normally best answered by quantitative approaches, which are powerful ways of determining *whether* a particular result was related to one or another variable, and *to what extent* these are related. However, qualitative research is often better at showing *how* this occurred. (See the discussion of causality in Chapter 2.) In my introductory qualitative methods course, I strongly discourage students from attempting to answer variance questions, because doing so will often interfere with their learning what is most essential to qualitative research. Variance questions can be legitimate in qualitative research, but they are often best grounded in the answers to prior process questions.

Qualitative researchers thus tend to focus on three kinds of questions that are much better suited to process theory than to variance theory: (1) questions about the *meaning* of events and activities to the people involved in these, (2) questions about the influence of the physical and social *context* on these events and activities, and (3) questions about the *processes* by which these events and activities and their outcomes occurred. (See the discussion of the goals of qualitative research in Chapter 2.) Because all of these types of questions involve situation-specific phenomena, they do not lend themselves to the kinds of comparison and control that variance theory requires. Instead, they generally involve an open-ended, inductive approach, in order to discover what these meanings and influences are and *how* they are involved in these events and activities—an inherently processual orientation.

One student, Bruce Wahl, wrote to me about having changed his research questions while he was analyzing the data for his dissertation, an evaluation of math projects for community college students that engaged different learning styles:

> I don't know if you remember, but two years ago when I was writing my proposal, you stressed that I should be writing my research questions beginning with words like "how" and "what" and "why" instead of the yes/no questions I was asking. For example, my first question was, "Do the projects help students to grasp mathematical concepts?" As I am writing up the interview results, I finally understand what you were saying. What I really wanted to know was "How do the projects help (or not help!) the students to grasp mathematical concepts?" It seems so clear now, it is a wonder that I didn't understand it back then. I have rewritten the five research questions for myself with that in mind and will include those new, and I hope, improved questions with the [dissertation] draft I deliver next week.

DEVELOPING RESEARCH QUESTIONS

Light, Singer, and Willett (1990) pointed out that formulating research questions is not a simple or straightforward task:

> Do not expect to sit down for an hour and produce an elaborate list of specific questions. Although you must take the time to do just that—sit down and write—your initial list will not be your final list. Expect to iterate. A good set of research questions will evolve, over time, after you have considered and reconsidered your broad research theme. (p. 19)

And they cautioned to "Be wary of the desire to push forward before going through this process" (p. 19).

What follows is an exercise for you to work through in developing your research questions. This exercise will not only generate research questions, but will also help you connect these questions to the other four components of your research design, in order to make these questions as relevant and practicable as possible. These connections are two-way streets; try to see not only what questions, or changes in questions, the other four components suggest, but also what changes in these other components your questions may imply.

Exercise 4.1 Developing Your Research Questions

Like most of the other exercises in this book, this one asks you to write a memo that addresses the following sets of issues for your research. This involves trying to connect your tentative research questions to the other four components of your design. At this point, your answers to Items 5 and 6 may need to be very tentative; that's fine. You can repeat this exercise as you get a better sense of what your study will look like.

1. Begin by setting aside whatever research questions you already have, and starting with your concept map (Chapter 3). What are the places in this map that you *don't* understand adequately, or where

you need to test your ideas? Where are the holes in, or conflicts between, your experiential knowledge and existing theories, and what questions do these suggest? What could you learn in a research study that would help you to better understand what's going on with these phenomena? Try to write down all of the potential questions that you can generate from the map.

2. Next, take your original research questions and compare them to the map and the questions you generated from it. What would answering these questions tell you that you *don't* already know? What changes or additions to your questions does your map suggest? Conversely, are there places where your questions imply things that *should* be in your map, but aren't? What changes do you need to make to your map?
3. Now go through the same process with your researcher identity memo (Chapter 2). What could you learn in a research study that would help to accomplish these goals? What questions does this imply? Conversely, how do your original questions connect to your reasons for conducting the study? How will answering these *specific* questions help you achieve your goals? Which questions are most *interesting* to you, personally, practically, or intellectually?
4. Now *focus.* What questions are most *central* for your study? How do these questions form a coherent set that will guide your study? You can't study everything interesting about your topic; start making choices. Three or four main questions are usually a reasonable maximum for a qualitative study, although you can have additional subquestions for each of the main questions.
5. In addition, you need to connect your questions to the methods you might use. *Could* your questions be answered by these methods and the data that they would provide? What methods would you *need* to use to collect data that would answer these questions? Conversely, what questions can a qualitative study of the kind you are planning productively address? At this point in your planning, this may primarily involve thought experiments about the way you will conduct the study, the kinds of data you will collect, and the analyses you will perform on these data. This part of the exercise is one you can usefully repeat when you have developed your methods and validity concerns in more detail; Exercise 5.2, in the next chapter, also addresses these issues.
6. Assess the potential answers to your questions in terms of their validity. What are the plausible validity threats and alternative explanations that you would have to rule out? How might you be wrong, and what implications does this have for the way you frame your questions?

Don't get stuck trying to precisely frame your research questions, or in specifying in detail how to measure things or gain access to data that would answer your questions. Try to develop some meaningful and important questions that would be *worth* answering. Feasibility is obviously an important issue in doing research, but focusing on it at the beginning can abort a potentially valuable study. My experience is that there are very few important questions that can't be potentially answered by some sort of research.

An extremely valuable additional step is to share your questions, and your reflections on these, with a small group of fellow students or colleagues. Ask them if they understand the questions and why these would be worth answering, what other questions or changes in the questions they would suggest, and what problems they see in trying to answer them. If possible, tape-record the discussion; afterward, listen to the tape and take notes.

Your research questions will often need to evolve over the course of your study. However, you may not be aware of subtle ways in which your thinking has changed, or how your data are suggesting that you should modify your research questions. To help my students with this, I developed a strategy that I call the "Jeopardy exercise," after the television game show of that name, in which contestants are given an answer and have to try to guess the question. The basic idea of this exercise is for you to take your tentative results or conclusions, or even a preliminary analysis of your data, and ask yourself, "If these are my answers, what questions are they answering?" This requires you to set aside your original questions and to look at your data and results with new eyes, trying to see what they are telling you.

You might ask, "Why should I bother to revise my research questions? Why shouldn't I just take my results and present these?" I think there are two reasons for explicitly realigning your research questions with what you've learned. First, your research questions do not simply (as in linear models of research design) help you plan your research methods and then go on vacation, with no further responsibilities. They need to be actively involved in the *actual* design of your study throughout the entire research process. Your revised research questions should help you further focus your analysis, suggest possible changes in your conceptual framework, and allow you to better anticipate potential validity threats. Second, your research questions will play an important role in *communicating* whatever you write about your research, helping your reader understand what questions your results answer and why these are important.

Example 4.2 shows how one student, Jennifer Buxton, used the Jeopardy exercise in her data analysis.

Example 4.2 Revising Your Research Questions

When Jennifer Buxton began analyzing her interviews with her former elementary school students about their perceptions of the changes in homework from elementary to middle school, her previous excitement about her study began to evaporate. She began by sorting her data into the organizational categories that she had initially developed, and writing notes and memos to herself about the ideas she was getting from the data. However, as she described in her final project report,

> I quickly became frustrated and confused using this approach because so much of the data was so intertwined and applicable to a number of my initial categories, while some of the data didn't fit anywhere. I knew that this meshing of ideas and meaning would eventually be valuable in connecting my data, but at that point, I was very anxious and worried about it not making sense….
>
> Instead of ignoring the anxiety, I knew I needed to face it to figure out what was causing me to feel like that. As I reflected on what I was doing in my research process, the error of my ways was immediately clear. I figured out that I made the novice mistake, of which I was warned of in the readings and in class, of trying to fit the data to my preconceived ideas instead of listening to what it was trying to say.
>
> I remembered the advice about determining the questions that the data answers. I printed

another copy of the transcriptions and played Jeopardy with the data. With my initial ideas awake in the back of my mind, I used this exercise to develop a list of the questions my data answered. I found in doing this I was able to more comfortably and logically able to chunk the data into categories. In the process, I felt my anxiety fading away.