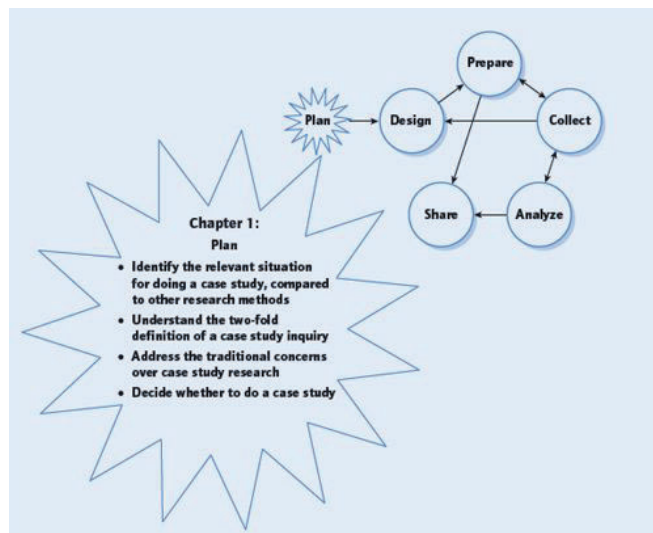
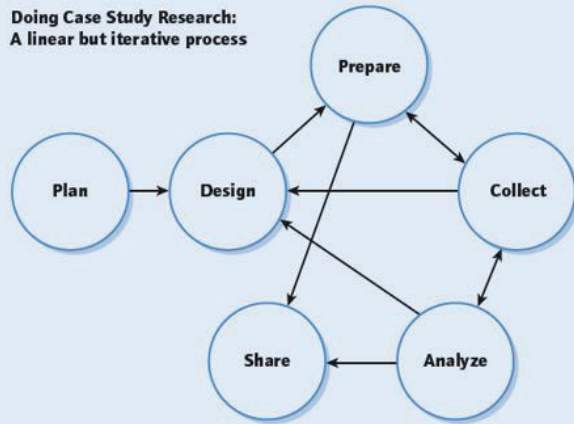


## ABSTRACT

### Doing Case Study Research: A linear but iterative process



Case study research is one of several forms of social science research. Others include experiments, surveys, histories, and archival analyses such as economic or statistical modeling. Doing case study research would be the preferred method, compared to the others, in situations when (1) the main research questions are “how” or “why” questions; (2) a researcher has little or no control over behavioral events; and (3) the focus of study is a contemporary (as opposed to entirely historical) phenomenon.

As the first part of a twofold definition, a case study investigates a contemporary phenomenon (the “case”) in its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident. The second part of the definition points to case study design and data collection features, such as how data triangulation helps to address the distinctive technical condition whereby a case study will have more variables of interest than data points. Among the variations in case studies, a case study can include single or multiple cases, can be limited to quantitative evidence, and can be a useful method in doing an evaluation.

Properly doing case study research means addressing five traditional concerns about case studies—by conducting the research rigorously, avoiding confusion with teaching cases, knowing how to arrive at generalized conclusions if desired, carefully managing the level of effort, and understanding the comparative advantage of case study research. The overall challenge makes case study research “hard,” although it has classically been considered a “soft” form of research.

## GETTING STARTED

### *How to Know Whether and When to Use the Case Study as a Research Method*

#### THE CASE STUDY AS A RESEARCH METHOD

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#### Doing Case Study Research

Doing case study research remains one of the most challenging of all social science endeavors. This book will help you—an experienced or budding social scientist—to deal with the challenge. Your goal is to design good case studies and to collect, present, and analyze data fairly. A further goal is to bring your case study to closure by composing a compelling article, report, book, or oral presentation.

Do not underestimate the extent of the challenge. Although you may be ready to focus on designing and doing case study research, others may espouse and advocate other research methods. Similarly, prevailing federal or other research funds may favor other methods, but not case study research. As a result, you may need to have ready responses to some inevitable questions.

First and foremost, you should explain and show how you are devoting yourself to following a rigorous methodological path. The path begins with a thorough literature review and the careful and thoughtful posing of research questions or objectives. Equally important will be a dedication to formal and explicit procedures when doing your research. Along these lines, this book offers much guidance. It shows how case study research includes procedures central to all types of research methods, such as protecting against threats to validity, maintaining a chain of evidence, and investigating and testing rival explanations. The successful experiences of

scholars and students from using this book, for more than 30 years, may attest to the potential payoffs.

Second, you should understand and openly acknowledge the strengths and limitations of case study research. Such research, like any other, complements the strengths and limitations of other types of research. In the face of those who might only see the need for a single research method, this book believes that, just as different scientific methods prevail in the natural sciences, different social science research methods fill different needs and situations for investigating social science topics. For instance, in the natural sciences, astronomy is a science but does not rely on the experimental method; nor do engineering and geology (Scriven, 2009). Similarly, many studies in neurophysiology and neuroanatomy do not rely on statistical methods. In social science, later portions of this chapter will present more about the potential niches of different research methods.

#### **Tip: How do I know if I should use the case study method?**

There's no formula, but your choice depends in large part on your research question(s). The more that your questions seek to explain some present circumstance (e.g., “how” or “why” some social phenomenon works), the more that case study research will be relevant. The method also is relevant the more that your questions require an extensive and “in-depth” description of some social phenomenon.

**What are some other reasons you might cite for using or not using the case study method?**

#### Salience of Case Study Research in Different Fields

As a research method, the case study is used in many situations, to contribute to our knowledge of individual, group, organizational, social, political, and related phenomena. Not surprisingly, the case study has been a common research method in psychology, sociology, political science,

anthropology, social work, business, education, nursing, and community planning. For instance, [Appendix A](#) describes the case study's lengthy but peculiar history in the field of psychology. Case studies are even found in economics, in investigations about the structure of a given industry or the economy of a city or a region.

Whatever the field of interest, the distinctive need for case study research arises out of the desire to understand complex social phenomena. In brief, a case study allows investigators to focus on a “case” and retain a holistic and real-world perspective—such as in studying individual life cycles, small group behavior, organizational and managerial processes, neighborhood change, school performance, international relations, and the maturation of industries.

This book covers the distinctive characteristics of the case study as a research method. The book will help you to deal with some of the more difficult questions still frequently neglected by available research texts. So often, for instance, the author has been confronted by a student or colleague who has asked (a) how to define the “case” being studied, (b) how to determine the relevant data to be collected, or (c) what to do with the data, once collected. This book answers these questions and more, by covering all phases of design, data collection, analysis, and composing.

At the same time, the book does not cover all uses of case studies. For example, it is not intended to help those who might use case studies as a teaching tool, popularized in the fields of law, business, medicine, or public policy (see Garvin, 2003; Llewellyn, 1948; Stein, 1952; Towl, 1969; Windsor & Greanias, 1983) but now prevalent in virtually every academic field, including the natural sciences. For teaching purposes, a case study need not contain a complete or accurate rendition of actual events. Rather, the purpose of the “teaching case” is to establish a framework for student discussion and debate. The criteria for developing good cases for teaching—usually of the single- and not multiple-case variety—are different from those for doing research (e.g., Caulley & Dowdy, 1987). Teaching case studies need not be concerned with the rigorous and fair presentation of empirical data; research case studies need to do exactly that.

Similarly, this book is not intended to cover those situations in which cases are used as a form of recordkeeping. Medical records, social work files, and other case records are used to facilitate some practice, such as

medicine, law, or social work—or some case-based procedure such as conducting a child custody evaluation (e.g., Vertue, 2011). Although the creation of a case record or case evaluation may follow a similar procedure as if doing a case study for research purposes, in fact the criteria for developing good cases for practice differ from those for doing case study research (Bromley, 1986).

In contrast, the rationale for this book is that case study research is commonly found in both the social science disciplines and the practicing professions. For instance, [Figure 1.1](#) lists 12 such fields, along with illustrative works that focus on the use of case study research in each specific field. (Not cited are either of two other kinds of works: general methodological texts that discuss various types of research, even if including case study research, and general texts on case study research that are not directed at any specific field.)

You as a social scientist would like to know how to design and conduct a single- or multiple-case study to investigate a research issue. You may only be doing a case study or you may be using it as part of a larger mixed methods study (see [Chapter 2](#)). Whichever, this book covers the entire range of issues in designing and doing case study research, including how to start and design a case study, collect case study evidence, analyze case study data, and compose a case study report.

## COMPARING THE CASE STUDY WITH OTHER RESEARCH METHODS IN THE SOCIAL SCIENCES

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When and why would you want to do case study research to examine some social science topic? Should you consider doing an experiment instead? A survey? A history? An analysis of archival records, such as the statistical modeling of economic trends or of student performance in schools?

**Figure 1.1** Sampler of Works Devoted to Case Study Methods in Specific Fields

FIELD	Illustrative Work(s)
DISCIPLINES:	
Anthropology and Ethnography	Burawoy, 1991
Political Science	George & Bennett, 2004; Gerring, 2004
Psychology	Bromley, 1986; Campbell, 1975
Sociology	Feagin, Orum, & Sjoberg, 1991; Hamel, 1992; Mitchell, 1983; Platt, 1992
PROFESSIONS:	
Accounting	Bruns, 1989
Business and International Business	Dul & Hak, 2008; Gibbert, Ruigrok, & Wicki, 2008; Johnston, Leach, & Liu, 2000; Meyer, 2001; Piekkari, Welch, & Paavilainen, 2009; Vissak, 2010
Education	Yin, 2006a
Evaluation	U.S. Government Accountability Office, 1990
Marketing	Beverland & Lindgreen, 2010
Nursing and Public Health	Baxter & Jack, 2008
Public Administration	Agranoff & Radin, 1991
Social Work	Gilgun, 1994; Lee, Mishna, & Brennenstuhl, 2010

These and other choices represent different research methods. Each is a different way of collecting and analyzing empirical evidence. Each follows its own logic and procedures. And each method has its own advantages and disadvantages. To get the most out of doing case study research, you need to appreciate these distinctions.

### Relationships among the Methods: Not Hierarchical

A common misconception is that the various research methods should be arrayed hierarchically. Many social scientists still implicitly believe that case study research is only appropriate for the exploratory phase of an investigation, that surveys and histories are appropriate for the descriptive phase, and that experiments are the only way of pursuing explanatory or causal inquiries. The hierarchical view reinforces the idea that case study research is only a preliminary method and cannot be used to describe or test propositions.

This hierarchical view, however, may be questioned. Experiments with an exploratory motive have certainly always existed. In addition, the development of causal explanations has long been a serious concern of

historians, reflected by the subfield known as historiography. Likewise, case study research is far from being only an exploratory strategy. Some of the best and most famous case studies have been explanatory case studies (e.g., see [BOX 1](#) for a vignette on Allison and Zelikow's *Essence of Decision: Explaining the Cuban Missile Crisis*, 1999). Similarly, famous descriptive case studies are found in major disciplines such as sociology and political science (e.g., see [BOX 2](#) for two vignettes). Additional examples of explanatory case studies, covering a university innovation, a drug prevention community organization, and small businesses, are presented in their entirety in a companion book to this text (Yin, 2012, chaps. 7–9). Examples of descriptive case studies, covering education leadership, residential crime prevention, and the development of a community organization, are similarly found there (Yin, 2012, chaps. 4–6). Thus, distinguishing among the various research methods and their advantages and disadvantages may require going beyond the hierarchical stereotype.

### BOX 1 A Best-Selling, Explanatory, Single-Case Study

For more than 40 years, Graham Allison's (1971) original study of a single case, the 1962 Cuban missile crisis, has been a political science best seller. In this crisis, a U.S.–Soviet Union confrontation could have produced nuclear holocaust and doomed the entire world. The book posits three competing but also complementary theories to explain the crisis—that the United States and Soviets performed as (a) rationale actors, (b) complex bureaucracies, or (c) politically motivated groups of persons. Allison compares the ability of each theory to explain the actual course of events in the crisis: why the Soviet Union placed offensive (and not merely defensive) missiles in Cuba in the first place, why the United States responded to the missile deployment with a blockade (and not an air strike or invasion—the missiles already were in Cuba!), and why the Soviet Union eventually withdrew the missiles.

The case study shows the explanatory and not just descriptive or exploratory functions of single-case studies. Furthermore, the authors

contrast the lessons from the case study with prevailing alternative explanations in post–Cold War studies of foreign policy and international politics. In this way, the book, even more thoughtfully presented in its second edition (Allison & Zelikow, 1999), forcefully demonstrates how a single case study can be the basis for significant generalizations.

## BOX 2

### Two Famous Descriptive Case Studies

#### 2A. A Neighborhood Scene

*Street Corner Society* (1943/1993), by William F. Whyte, has for decades been recommended reading in community sociology. The book is a classic example of a descriptive case study. It traces the sequence of interpersonal events over time, describes a subculture that had rarely been the topic of previous study, and discovers key phenomena—such as the career advancement of lower income youths and their ability (or inability) to break neighborhood ties.

The study has been highly regarded despite its taking place in a small urban neighborhood (under the pseudonym of “Cornerville”) and during a time period now nearly 100 years old. The value of the book is, paradoxically, its generalizability even to contemporary issues of individual performance, group structure, and the social structure of neighborhoods. Later investigators have repeatedly found remnants of Cornerville in their work, even though they have studied different neighborhoods and different time periods (also see [BOX 20, Chapter 4](#), p. 114).

#### 2B. A National Crisis

Neustadt and Fineberg’s excellent analysis of a mass immunization campaign was issued originally as a government report in 1978, *The Swine Flu Affair: Decision-Making on a Slippery Disease*, and later published independently as *The Epidemic That Never Was* (1983). The

case study describes the immunization of 40 million Americans that took place under President Gerald Ford’s administration, when the United States was faced with a threat of epidemic proportions from a new and potentially lethal influenza strain. Because the case study has become known as an exceptionally well-researched case study, contemporary policy makers have continued to consult it for any generalizable lessons for understanding the quandaries of health crises and public actions in light of new threats by flu epidemics, such as the H1N1 strain of 2008–2010.

The more appropriate view may be an inclusive and pluralistic one: Every research method can be used for all three purposes—exploratory, descriptive, and explanatory studies. There may be exploratory case studies, descriptive case studies, or explanatory case studies. Similarly, there may be exploratory experiments, descriptive experiments, and explanatory experiments. What distinguishes the different methods is not a hierarchy but three important conditions discussed next. As an important caution, however, the clarification does not imply that the boundaries between the methods—or the occasions when each is to be used—are always sharp. Even though each method has its distinct characteristics, there are large overlaps among them. The goal is to avoid gross misfits—that is, when you are planning to use one type of method but another is really more advantageous.

Define the three types of case studies used for research (but not teaching) purposes: (a) explanatory or causal case studies, (b) descriptive case studies, and (c) exploratory case studies. Compare the situations in which these different types of case studies would be most applicable. Now name a case study that you would like to conduct. Would it be explanatory, descriptive, or exploratory? Why?

## When to Use Each Method

The three conditions consist of (a) the type of research question posed, (b) the extent of control a researcher has over actual behavioral events, and (c) the degree of focus on contemporary as opposed to entirely historical events. [Figure 1.2](#) displays these three conditions and shows how each is related to five major research methods: experiments, surveys, archival analyses (e.g., economic modeling, or a statistical analysis in an epidemiological study), histories, and case studies. The importance of each condition, in distinguishing among the five methods, is as follows.

**Figure 1.2** Relevant Situations for Different Research Methods

METHOD	(1) Form of Research Question	(2) Requires Control of Behavioral Events?	(3) Focuses on Contemporary Events?
Experiment	how, why?	yes	yes
Survey	who, what, where, how many, how much?	no	yes
Archival Analysis	who, what, where, how many, how much?	no	yes/no
History	how, why?	no	no
Case Study	how, why?	no	yes

SOURCE: COSMOS Corporation.

(a) *Types of research questions* (see [Figure 1.2](#), column 1). The first condition covers your research question(s) (Hedrick, Bickman, & Rog, 1993). A basic categorization scheme for the types of questions is the familiar series: “who,” “what,” “where,” “how,” and “why” questions.

If research questions focus mainly on “what” questions, either of two possibilities arises. First, some types of “what” questions are exploratory, such as “What can be learned from a study of a startup business?” This type of question is a justifiable rationale for conducting an exploratory study, the goal being to develop pertinent hypotheses and propositions for further

inquiry. However, as an exploratory study, any of the five research methods can be used—for example, an exploratory survey (testing, for instance, the ability to survey startups in the first place), an exploratory experiment (testing, for instance, the potential benefits of different kinds of business incentives), or an exploratory case study (testing, for instance, the importance of differentiating “first-time” startups from startups by entrepreneurs who had previously started other firms).

The second type of “what” question is actually a form of a “how many” or “how much” line of inquiry—for example, “What have been the ways that communities have assimilated new immigrants?” Identifying such ways is more likely to favor survey or archival methods than others. For example, a survey can be readily designed to enumerate the “what,” whereas a case study would not be an advantageous method in this situation.

Similarly, like this second type of “what” question, “who” and “where” questions (or their derivatives—“how many” and “how much”) are likely to favor survey methods or the analysis of archival data, as in economic studies. These methods are advantageous when the research goal is to describe the incidence or prevalence of a phenomenon or when it is to be predictive about certain outcomes. The investigation of prevalent political attitudes (in which a survey or a poll might be the favored method) or of the spread of a disease like AIDS (in which an epidemiologic analysis of health statistics might be the favored method) would be typical examples.

In contrast, “how” and “why” questions are more explanatory and likely to lead to the use of a case study, history, or experiment as the preferred research method. This is because such questions deal with operational links needing to be traced over time, rather than mere frequencies or incidence. Thus, if you wanted to know how a community successfully overcame the negative impact of the closing of its largest employer—a military base (see Bradshaw, 1999, also presented in [BOX 26](#), [Chapter 5](#), p. 137)—you would be less likely to rely on a survey or an examination of archival records and might be better off doing a history or a case study. Similarly, if you wanted to know how research investigators may possibly (but unknowingly) bias their research, you could design and conduct a series of experiments (see Rosenthal, 1966).



Let us take two more examples. If you were studying “who” had suffered as a result of terrorist acts and “how much” damage had been done, you might survey residents, examine government records (an archival analysis), or conduct a “windshield survey” of the affected area. In contrast, if you wanted to know “why” the act had occurred, you would have to draw upon a wider array of documentary information, in addition to conducting interviews; if you focused on the “why” question in more than one terrorist act, you would probably be doing a multiple-case study.

Similarly, if you wanted to know “what” the outcomes associated with a new governmental program had been, you could answer this question by doing a survey or by examining economic data, depending on the type of program involved. Questions—such as “How many clients did the program serve?” “What kinds of benefits were received?” “How often were different benefits produced?”—all could be answered without doing a case study. But if you needed to know “how” or “why” the program had worked (or not), you would lean toward either a case study or a field experiment.

To summarize, the first and most important condition for differentiating among the various research methods is to classify the type of research question being asked. In general, “what” questions may either be exploratory (in which case, any of the methods could be used) or about prevalence (in which surveys or the analysis of archival records would be favored). “How” and “why” questions are likely to favor using a case study, experiment, or history.

Develop a “how” or “why” question that would be the rationale for a case study that you might conduct. Instead of doing a case study, now imagine that you only could do a history, a survey, or an experiment (but not a case study) to address this question. What would be the distinctive advantage of doing a case study, compared to these other methods, in order to address the question?

Defining your research question(s) is probably the most important step to be taken in a research study, so you should be patient and allow sufficient time for this task. The key is to understand that your research questions have both *substance*—for example, What is my study about?—and *form*—for example, am I asking a “who,” “what,” “where,” “why,” or “how” question? Others have focused on some of the substantively important issues (see Campbell, Daft, & Hulin, 1982); the point of the preceding discussion is that the form of the question can provide an important clue regarding the appropriate research method to be used. Remember, too, that the methods can overlap. Thus, for some questions, a choice among methods might actually exist. Be aware, finally, that you (or your academic department) may be predisposed to favor a particular method regardless of the study question. If so, be sure to create the form of the study question best matching the method you were predisposed to favor in the first place.

Locate a research study based solely on the use of a survey, history, or experiment (but not a case study). Identify the research question(s) addressed by the study. Does the type of question differ from those that might have appeared as part of a case study on the same topic, and if so, how?

(b) *Extent of control over behavioral events (see [Figure 1.2, column 2](#)) and (c) degree of focus on contemporary as opposed to entirely historical events (see [Figure 1.2, column 3](#)).* Assuming that “how” and “why” questions are to be the focus of study, these two remaining conditions help to distinguish further among a history, case study, and experiment.

A history is the preferred method when there is virtually no such control or access. The distinctive contribution of the historical method is in dealing with the “dead” past—that is, when direct observations of the event(s) being studied are not possible and when no relevant persons are

alive to report, even retrospectively, what occurred. The historian must then rely on primary documents, secondary documents, and cultural and physical artifacts as the main sources of evidence. A history can, of course, be done about fairly recent events, as in conducting an oral history (e.g., Janesick, 2010); in this situation, the method begins to overlap with that of the case study.

The case study is preferred when examining contemporary events, but when the relevant behaviors cannot be manipulated. The case study relies on many of the same techniques as a history, but it adds two sources of evidence not usually available as part of the historian's repertoire: direct observation of the events being studied and interviews of the persons involved in the events. Again, although case studies and histories can overlap, the case study's unique strength is its ability to deal with a full variety of evidence—documents, artifacts, interviews, and observations—beyond what might be available in a conventional historical study. Moreover, in some situations, such as participant-observation (see [Chapter 4](#)), informal manipulation can occur.

Finally, experiments are done when an investigator can manipulate behavior directly, precisely, and systematically. This can occur in a laboratory setting, in which an experiment may focus on one or two isolated variables (and presumes that the laboratory environment can “control” for all the remaining variables beyond the scope of interest), or it can be done in a field setting, where the term *field* (or *social*) *experiment* has emerged to cover research where investigators “treat” whole groups of people in different ways, such as providing them with different kinds of vouchers to purchase services (Boruch & Foley, 2000).

The full range of experimental science also includes those situations in which the experimenter cannot manipulate behavior but in which the logic of experimental design still may be applied. These situations have been commonly regarded as *quasi-experimental* situations (e.g., Campbell & Stanley, 1966; Cook & Campbell, 1979) or *observational studies* (e.g., Rosenbaum, 2002). The quasi-experimental approach even can be used in a historical setting, where, for instance, an investigator may be interested in studying race riots or lynchings (see Spilerman, 1971) and use a quasi-experimental design because no control over the behavioral event was

possible. In this case, the experimental method begins to overlap with histories.

*A special situation in evaluation research.* In the field of evaluation, Boruch and Foley (2000) have made a compelling argument for the desirability of one type of field experiment—*randomized field trials*—to be used in virtually all evaluations. For instance, the authors maintain that the field trials design, emulating the design of laboratory experiments, can be and has been used even when evaluating complex community initiatives. However, you should be cautioned about the possible limitations of this design.

In particular, the design may work well when, within a community, individual consumers or users of services are the units of analysis. Such a situation would exist if a community intervention consisted, say, of a health promotion campaign and the outcome of interest was the incidence of certain illnesses among the community's residents. The random assignment might designate a few communities to have the campaign, compared to a few that did not, and the outcomes would compare the condition of the residents in both sets of communities.

In many community studies, however, the actual outcomes of interest and therefore the appropriate unit of analysis may be at the community or collective level and not at the individual level. For instance, efforts to upgrade neighborhoods may be concerned with improving a neighborhood's economic base (e.g., the number of jobs per residential population). Now, although the candidate communities still can be randomly assigned, the degrees of freedom in any later statistical analysis are limited by the number of communities as well as the number of residents (the technical tool would be a two-level hierarchical linear model). Most field experiments will not be able to support the participation of a sufficiently large number of communities to overcome the severity of the subsequent statistical constraints.

The limitations when communities or collective entities are the units of analysis are extremely important because many public policy objectives focus on the collective rather than individual level. For instance, the thrust of federal education policy in the early 2000s focused on *school* performance. Schools were held accountable for year-to-year performance



even though the composition of the students enrolled at the schools changed each year. Creating and implementing a field trial based on a large number of schools, as opposed to a large number of students, would present an imposing challenge and the need for extensive research resources. In fact, Boruch (2007) found that a good number of the randomized field trials inadvertently used the incorrect unit of analysis (individuals rather than collectives), thereby making the findings from the trials less usable.

Field experiments with a large number of collective entities (e.g., neighborhoods, schools, or organizations) also raise a number of practical challenges:

- any randomly selected “control” sites may adopt important components of the intervention of interest before the end of the field experiment and no longer qualify as “no-treatment” sites;
- the funded intervention may call for the experimental communities to reorganize their entire manner of providing certain services—that is, a “systems” change—thereby creating site-to-site variability in the unit of assignment (the experimental design assumes that the unit of assignment is the same at every site, both intervention and control);
- the same systems change aspect of the intervention also may mean that the organizations or entities administering the intervention may not necessarily remain stable over the course of time (the design requires such stability until the random field trials have been completed); and
- the experimental or control sites may be unable to continue using the same instruments and measures (the design, which will ultimately cluster the data to compare intervention sites as a group with comparison sites as a second group, requires common instruments and measures across sites).

The existence of any of these conditions will likely lead to the need to find alternatives to randomized field trials.

**Summary.** You should be able to identify some situations in which all research methods might be relevant (such as exploratory research) and other

situations in which two methods might be considered equally attractive. You also can use multiple methods in any given study (for example, a survey within a case study or a case study within a survey). To this extent, the various methods are not mutually exclusive. But you also should be able to identify some situations in which a specific method has a distinct advantage. For case study research, this niche is when

- A “how” or “why” question is being asked about
  - a contemporary set of events,
  - over which a researcher has little or no control.

To determine the questions that are the most pressing on a topic, as well as to gain some precision in formulating these questions, requires much preparation. One way is to review the literature on the topic (Cooper, 1984). Note that such a literature review is therefore a means to an end, and not—as many people have been taught to think—an end in itself. Novices may think that the purpose of a literature review is to determine the *answers* about what is known on a topic; in contrast, experienced investigators review previous research to develop sharper and more insightful *questions* about the topic.

#### VARIATIONS IN CASE STUDIES, BUT A COMMON DEFINITION

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Our discussion has progressed without formally defining *case study*. Moreover, commonly asked questions about case study research still have been unanswered. For example, (1) Is it still a case study when more than one case is included in the same study? (2) Does a case study preclude the use of quantitative evidence? (3) Can a case study be used to do evaluations? Let us now attempt to define the case study as a research method and then answer these three questions.

## Definition of the Case Study as a Research Method

Some definitions of case studies have merely repeated the types of topics to which case studies have been applied. For example, in the words of one observer,

The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a *decision* or set of decisions: why they were taken, how they were implemented, and with what result. (Schramm, 1971, emphasis added)

This definition thus cites cases of “decisions” as the major focus of case studies. Other common cases include “individuals,” “organizations,” “processes,” “programs,” “neighborhoods,” “institutions,” and even “events.” However, dwelling on the definition of a case study “by interest in an individual case, not by the methods of inquiry used” (e.g., Stake, 2005, p. 443) would seem insufficient to establish the complete basis for case studies as a research *method*.

Alternatively, many of the earlier social science textbooks failed to consider case study research as a formal method at all. As discussed previously, one common shortcoming was to consider case study research as the exploratory stage of some other type of research method.

Another definitional shortcoming was to confuse case study research with doing “fieldwork,” as in ethnography or participant-observation. Thus, early textbooks limited their discussion of case studies to descriptions of participant-observation or of fieldwork as a data collection process, without elaborating further on a definition of case study research (e.g., Kidder & Judd, 1986; Nachmias & Nachmias, 1992).

In a historical overview of the case study in American methodological thought, Jennifer Platt (1992) explains the reasons for these treatments. She traces the practice of doing case studies back to the conduct of life histories, the work of the Chicago school of sociology, and casework in social work. She then shows how *participant-observation* emerged as a data collection technique, effectively eliminating any further recognition of case study research. Thus, she found ample references to case study research in methodological textbooks up to 1950 but hardly any references to case studies or to case study research in textbooks from 1950 to 1980 (Platt,

1992, p. 18). Finally, Platt explains how the first edition of this book (1984) definitively dissociated case study research from the limited perspective of only doing some kind of fieldwork. She then also found a renewed discussion of case study research in textbooks, largely occurring from 1980 to 1989 and continuing thereafter (also see this book’s preface for a Google Ngram analysis of the trends from 1980 to 2008). Case study research, in her words, had now come to be appreciated as having its own “logic of design ... a strategy to be preferred when circumstances and research problems are appropriate rather than an ideological commitment to be followed whatever the circumstances” (Platt, 1992, p. 46).

*Twofold definition of case study.* And just what is this research method? The critical features first appeared in earlier publications (Yin, 1981a, 1981b), predating the first edition of this book. The resulting definition as it has evolved over the four previous editions of this book reflects a twofold definition of case studies. The first part begins with the *scope of a case study*:

### 1. A case study is an empirical inquiry that

- investigates a contemporary phenomenon (the “case”) in depth and within its real-world context, especially when
- the boundaries between phenomenon and context may not be clearly evident.

In other words, you would want to do case study research because you want to understand a real-world case and assume that such an understanding is likely to involve important contextual conditions pertinent to your case (e.g., Yin & Davis, 2007).

This first part of the definition therefore helps you to continue distinguishing case study research from the other methods that have been discussed. An experiment, for instance, deliberately separates a phenomenon from its context, attending only to the phenomenon of interest

and only as represented by a few variables (typically, the context is entirely ignored because it is “controlled” by the laboratory environment). A history, by comparison, does deal with the entangled situation between phenomenon and context but usually in studying *noncontemporary* events. Finally, surveys can try to deal with phenomenon and context, but a survey’s ability to investigate the context is extremely limited. The survey designer, for instance, constantly struggles to limit the number of items in a questionnaire (and hence the number of questions that can be analyzed) to fall safely within the allotted degrees of freedom (usually constrained by the number of respondents who are to be surveyed).

The second part of the definition of case studies arises because phenomenon and context are not always sharply distinguishable in real-world situations. Therefore, other methodological characteristics become relevant as the *features of a case study*:

## 2. A case study inquiry

- copes with the technically distinctive situation in which there will be many more variables of interest than data points,<sup>1</sup> and as one result
- relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result
- benefits from the prior development of theoretical propositions to guide data collection and analysis.

In essence, the twofold definition—covering the scope and features of a case study—shows how case study research comprises an all-encompassing method—covering the logic of design, data collection techniques, and specific approaches to data analysis. (For a further elaboration on this definition, see [Tutorial 1.1](#) at the end of this chapter.) In this sense, case study research is not limited to being a data collection tactic alone or even a design feature alone (Stoecker, 1991). How the method is practiced is the topic of this entire book.

*Applicability of different epistemological orientations.* This all-encompassing method also can embrace different epistemological orientations—for example, a *relativist* or *interpretivist* compared to a *realist* orientation.<sup>2</sup> Much of case study research as it is described in this book appears to be oriented toward a *realist* perspective, which assumes the existence of a single reality that is independent of any observer. However, case study research also can excel in accommodating a *relativist* perspective—acknowledging multiple realities having multiple meanings, with findings that are observer dependent. For instance, [Chapter 2](#) will later discuss the importance of “theory” in designing case studies. If you want to assume a relativist perspective, your theory in designing a case study may very well concern the way that you will capture the perspectives of different participants, and how and why you believe their different meanings will illuminate your topic of study.

Retrieve an example of case study research from the research literature. The case study can be on any topic, but it must have some empirical method and present some empirical (qualitative or quantitative) data. Why is this a case study? What, if anything, is distinctive about the findings that could not be learned by using some other type of social science method focusing on the same topic?

## Variations in Case Studies as a Research Method

Certain other characteristics of case study research are not critical for defining the method. They may be considered variations in case studies, which now also provide the opportunity to answer the three questions posed at the outset of this subsection.

Yes, case study research includes both single- and multiple-case studies. Although some fields, such as political science and public administration, have tried to distinguish between these two approaches (and have used such terms as the *comparative case method* as a distinctive form of multiple-case studies; see Agranoff & Radin, 1991; Dion, 1998; Lijphart, 1975), single- and multiple-case studies are in reality but two variants of case study designs (see [Chapter 2](#) for more). [BOX 3](#) contains two examples of multiple-case studies.

### BOX 3

#### Multiple-Case Studies: Case Studies Containing Multiple “Cases”

Case studies can cover multiple cases and then draw a single set of “cross-case” conclusions. The two examples below both focused on a topic of continuing public interest: identifying successful programs to improve U.S. social conditions.

##### 3A. A Cross-Case Analysis following the Presentation of Separate, Single Cases

Jonathan Crane (1998) edited a book that has nine social programs as separate cases. Each case has a different author and is presented in its own chapter. The programs had in common strong evidence of their effectiveness, but they varied widely in their focus—from education to nutrition to drug prevention to preschool programs to drug treatment for delinquent youths. The editor then presents a cross-program analysis in a final chapter, attempting to draw generalizable conclusions that could apply to many other programs.

##### 3B. A Book Whose Entire Text Is Devoted to the Multiple-Case (“Cross-Case”) Analysis

Lisbeth Schorr’s (1997) book is about major strategies for improving social conditions, illustrated by four policy topics: welfare reform,

strengthening the child protection system, education reform, and transforming neighborhoods. The book continually refers to specific cases of successful programs, but these programs do not appear as separate, individual chapters. Also citing data from the literature, the author develops numerous generalizations based on the case studies, including the need for successful programs to be “results oriented.” Similarly, she identifies six other attributes of highly effective programs (also see [BOX 41A](#) and [41B](#), [Chapter 6](#), p. 183).

And yes, case study research can include, and even be limited to, quantitative evidence. In fact, any contrast between quantitative and qualitative evidence does not set apart the various research methods. Note that, as analogous examples, some experiments (such as studies of perceptions) and some survey questions (such as those seeking categorical rather than numerical responses) rely on qualitative and not quantitative evidence. Likewise, historical research can include enormous amounts of quantitative evidence.

As a related but important note, case study research is not just a form of qualitative research, even though some have recognized the case study as being among the array of qualitative research choices (e.g., Creswell, 2012). The use of a mix of quantitative and qualitative evidence, along with the necessity for defining a “case,” are but two of the ways that case study research goes beyond being a type of qualitative research. As a further example, case study research need not always engage in the *thick description* (Geertz, 1973) or detailed observational evidence that marks most forms of qualitative research.

And yes (and as discussed in greater detail in [Appendix B](#) of this book), case study research has its own place in doing evaluations (see Cronbach & Associates, 1980; Patton, 2002; U.S. Government Accountability Office, 1990; Stufflebeam & Shinkfield, 2007, pp. 309–324). There are at least four different applications (U.S. Government Accountability Office, 1990). The most important is to *explain* the presumed causal links in real-world interventions that are too complex for survey or experimental methods. A second application is to *describe* an intervention and the real-world context in which it occurred. Third, a case

study can *illustrate* certain topics within an evaluation, again in a descriptive mode. Fourth, case study research may be used to *enlighten* those situations in which the intervention being evaluated has no clear, single set of outcomes. Whatever the application, one constant theme is that program sponsors—rather than researchers alone—may have a prominent role in defining the evaluation questions and relevant data categories.

### ADDRESSING TRADITIONAL CONCERNS ABOUT CASE STUDY RESEARCH

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Although the case study is a distinctive form of empirical inquiry, many researchers nevertheless disdain the method. In other words, as a research endeavor, the case study has been viewed as a less desirable form of inquiry than either an experiment or a survey. Why is this?

*Rigorous enough?* Perhaps the greatest concern has arisen over a presumed need for greater rigor in doing case study research. Too many times, a case study researcher has been sloppy, has not followed systematic procedures, or has allowed equivocal evidence to influence the direction of the findings and conclusions. In doing case study research, you need to avoid such practices. Interestingly, a lack of rigor is presumed to be less likely when using the other methods—possibly because of the existence of numerous methodological texts providing researchers with specific procedures to be followed. In contrast, only a small (though increasing) number of texts besides the present one cover case study research in similar fashion.

*Confusion with teaching cases?* The possibility also exists that people have confused case study research with the case studies used in teaching. In teaching, case study materials may be deliberately altered to demonstrate a particular point more effectively (e.g., Ellet, 2007; Garvin, 2003). In research, any such step would be strictly forbidden. Thus, if a person's main prior exposure to case studies has been to one or more teaching cases, the exposure may taint the person's view of the case study as a research method.

In doing case study research, you must work hard to report all evidence fairly, and this book will help you to do so. What is often forgotten is that bias also can enter into the conduct of experiments (see Rosenthal, 1966) and the use of other research methods, such as designing questionnaires for surveys (Sudman & Bradburn, 1982) or in conducting historical research (Gottschalk, 1968). The problems are not different, but in case study research, they may occur more frequently and demand greater attention.

Obtain a copy of a case study designed for teaching purposes (e.g., a case in a textbook used in a business school course). Identify the specific ways in which this type of “teaching” case is different from research case studies. Does the teaching case cite primary documents, contain evidence, or display data? Does the teaching case discuss how this evidence was fairly collected? What appears to be the main objective of the teaching case?

*Generalizing from case studies?* A third common concern about case study research is an apparent inability to generalize from case study findings. “How can you generalize from a single case?” is a frequently heard question. The answer is not simple (Kennedy, 1976). However, consider for the moment that the same question had been asked about an experiment: “How can you generalize from a single experiment?” In fact, generalizations in science are rarely based on single experiments; they are usually based on a multiple set of experiments that have replicated the same phenomenon under different conditions.

The same approach can be used with case studies but requires a different concept of the appropriate research designs, discussed in detail in [Chapter 2](#). The short answer is that case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not

represent a “sample,” and in doing case study research, your goal will be to expand and generalize theories (analytic generalizations) and not to extrapolate probabilities (statistical generalizations). Or, as three notable social scientists describe in their *single* case study done years ago, the goal is to do a “generalizing” and not a “particularizing” analysis (Lipset, Trow, & Coleman, 1956, pp. 419–420).<sup>3</sup>

*Unmanageable level of effort?* A fourth frequent concern about case study research is that case studies can potentially take too long and that they can result in massive, unreadable documents. This concern may be appropriate, given the way case studies have been done in the past (e.g., Feagin, Orum, & Sjoberg, 1991), but this is not necessarily the way case studies must be done in the future. [Chapter 6](#) discusses alternative ways of composing a case study (whether presenting the case study in writing or orally)—including an option in which the traditional, flowing (and potentially lengthy) narrative can be avoided.

Nor need case studies take a long time. This incorrectly confuses case study research with a specific method of data collection, such as ethnography (e.g., O'Reilly, 2005) or participant-observation (e.g., DeWalt & DeWalt, 2011). Ethnographies usually require long periods in the field and emphasize detailed observational and interview evidence. Participant-observation may similarly assume a hefty investment of field effort. In contrast, a case study is a form of inquiry that does *not* depend solely on ethnographic or participant-observer data. You could even do a valid and high-quality case study without leaving the telephone or Internet, depending on the topic being studied.

*Comparative advantage?* A fifth possible concern with case study research has to do with its unclear comparative advantage, in contrast to other research methods. This issue especially emerged during the first decade of the 21st century, which favored randomized controlled trials (RCTs) or “true experiments,” especially in education and related topics. These kinds of experiments were esteemed because they aimed to establish the effectiveness of various treatments or interventions (e.g., Jadad, 1998). In

the eyes of many, the emphasis led to a downgrading of case study research because case studies (and other types of nonexperimental methods) cannot directly address this issue.

Overlooked has been the possibility that case studies can offer important insights not provided by RCTs. Noted quantitative scholars suggest, for instance, that RCTs, though addressing the effectiveness question, are limited in their ability to explain “how” or “why” a given treatment or intervention necessarily worked (or not), and that case studies are needed to investigate such issues (e.g., Shavelson & Towne, 2002, pp. 99–106)—or, as succinctly captured by the subtitle of an excellent article on evaluating public programs, “not whether programs work, but how they work” (Rogers, 2000).<sup>4</sup> In this sense, case study research does indeed offer its own advantage. At a minimum, case studies may be valued “as adjuncts to experiments rather than as alternatives to them” (Cook & Payne, 2002). In clinical psychology, a “large series of single case studies,” confirming predicted behavioral changes after the initiation of treatment, may augment the evidence of efficaciousness from a field trial (e.g., Veerman & van Yperen, 2007). Finally, in a similar manner, case study research can readily complement the use of other quantitative and statistical methods (see [BOX 4](#)).

## BOX 4

### Complementarity of Case Study and Statistical Research

In the field of international politics, a major proposition has been that “democracies seldom if ever make war upon one another” (George & Bennett, 2004, p. 37). The proposition has been the subject of an extensive body of research, involving statistical studies as well as case studies. An excellent chapter by George and Bennett (2004, pp. 37–58) shows how the statistical studies may have tested the correlation between regime types and war, but how case studies have been needed to examine the underlying processes that might explain such a correlation. For instance, one of the more prominent explanations has been that democracies are able to make formal commitments with each other that make the use of military force unnecessary for resolving



disputes (p. 57). The review shows how the relevant research has taken place over many decades, involving many different scholars. The entire body of research, based on both the statistical and case studies, illustrates the complementarity of these methods.

**Summary.** Despite the fact that these five common concerns can be allayed, as above, one major lesson is that a good case study is still difficult to do. The inability to screen for a researcher's ability to do a good case study further compounds the problem. People know when they cannot play music; they also know when they cannot do mathematics beyond a certain level, and they can be tested for other skills, such as the bar examination in law. Somehow, the skills for doing good case study research have not yet been formally defined. As a result, "most people feel that they can prepare a case study, and nearly all of us believe we can understand one. Because neither view is well founded, the case study receives a good deal of approbation it does not deserve" (Hoaglin, Light, McPeck, Mosteller, & Stoto, 1982, p. 134). This quotation is from a book by five prominent *statisticians*. Surprisingly, from another field, even they recognize the challenge of doing a good case study.

## SUMMARY ▲

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This chapter has introduced the importance of case study research. Like other methods, it is a way of investigating an empirical topic by following a set of desired procedures. Articulating these procedures will dominate the remainder of this book.

The chapter has provided an operational definition of the case study and has identified some of the variations in case studies. The chapter also has attempted to distinguish case study research from alternative methods in social science, indicating the situations in which doing a case study may be preferred, for instance, to doing a survey. Some situations may have no clearly preferred method, as the strengths and weaknesses of the various

methods may overlap. The basic goal, however, is to consider all the methods in an inclusive and pluralistic fashion—before settling on your method of choice in conducting a new social science study.

Finally, the chapter has addressed some of the major concerns about case study research, suggesting possible responses to these concerns. However, we must all work hard to overcome the problems of doing case study research, including the recognition that some of us were not meant, by skill or disposition, to do such research in the first place. Case study research is remarkably hard, even though case studies have traditionally been considered to be "soft" research, possibly because researchers have not followed systematic procedures. By offering an array of such procedures, this book tries to make case study research easier to follow and your own case study better.

## NOTES TO CHAPTER 1 ▲

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1. [Appendix A](#) has a full discussion of the reasons for the large number of variables in a case study.

2. These terms were deliberately chosen even though they oversimplify two contrasting perspectives. Ignored are the many more subtle orientations that investigators may bring to their research. For brief definitions, see Schwandt's (2007) dictionary of qualitative inquiry, which characterizes *realism* as "the doctrine that there are real objects that exist independently of our knowledge of their existence" (p. 256), *relativism* as "the doctrine that denies that there are universal truths" (p. 261), and *interpretivism* as a term that has "occasionally been used as a synonym for all qualitative inquiry" (p. 160).

3. There nevertheless may be exceptional circumstances when a single case is so unique or important that a case study investigator has no desire to generalize to any other cases. See Stake's (2005) "intrinsic" case studies and Lawrence-Lightfoot and Davis's (1997) "portraits."

4. Scholars also point out that the classic experiments only can test simple causal relationships—that is, when a single treatment such as a new drug is hypothesized to produce an effect. However, for many social and behavioral topics, the relevant causes may be complex and involve multiple interactions, and investigating these may well be beyond the capability of any single experiment (George & Bennett, 2004, p. 12).

In this book, a “case study” means a particular kind of research inquiry. The term parallels those used to refer to other kinds of inquiries, such as an “experiment,” a “survey,” and a “history.” “Case study research” is then a more formal label (again parallel to “experimental research,” “survey research,” and “historical research”), and the method of doing case study research is the topic of this entire book.

The definition of case study in [Chapter 1](#) of this fifth edition retains the essence stated in this book’s first edition (1984). The definition has two parts: (a) the scope of a case study inquiry and (b) its features. Concepts implicit in the original definition now appear explicit, including notions such as an “in-depth” inquiry, the phenomenon being studied as the “case,” the “triangulation of evidence,” and having “more variables of interest than data points.”

Communicating a clear definition is difficult. Some reference works (e.g., Abercrombie, Hill, & Turner, 2006; Schwandt, 2007) give short but incomplete definitions. Other works may use several pages and still not attain clarity (e.g., David, 2006b; Mills et al., 2010b). This book’s definition also can be enhanced, to avoid misinterpretations that have arisen with the book’s earlier editions. The enhancements are as follows:

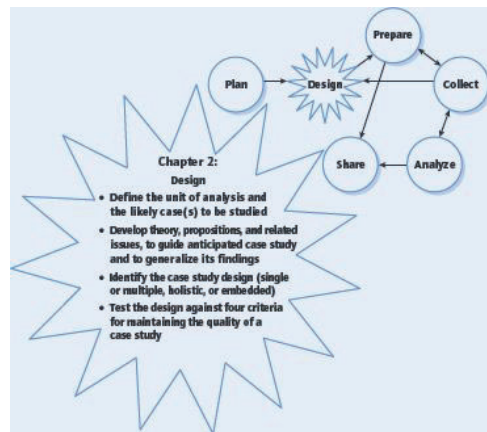
1. The lack of sharpness between *phenomenon* and *context* does not minimize the need to identify a “case” and its singularity as the essential feature of a case study; on the contrary, [Chapter 2](#) (see pp. 35–40) discusses the challenge of defining the “case” in great detail.
2. The term *in-depth*, especially when studying a *contemporary phenomenon*, implies the likely need for some kind of fieldwork, to get you up close to the case being studied.
3. The term *contemporary phenomenon* embraces a broad notion of studying the present but that does not exclude the recent past—just not those events extending back to the “dead” past, where no direct observations can be made and no people are alive to be interviewed (doing a history would be the relevant method under those conditions).

4. Having *more variables of interest than data points* arises from the complexity of the case and its context (hence, many variables), with the case being the only “data point.” The use of this language does not mean that case studies are variable-based; on the contrary, the multiplicity of variables raises doubts about the usefulness of conventional variable-based methods in analyzing case study data, hence favoring holistic approaches.

As a final note, the book’s discussion of when to use case study research (pp. 4–6) focuses on its “niche,” compared to other methods, and the discussion was not intended to be used as the definition of “case study.”

### Briefly Annotated References for Tutorial 1.1

- Abercrombie, N., Hill, S., & Turner, B. S. (2006). *The Penguin dictionary of sociology* (5th ed.). London: Penguin. Presents a pocket dictionary, with references, of terms used in sociology.
- David, M. (2006b). Editor’s introduction. In M. David (Ed.), *Case study research* (pp. xxiii–xliv). London: Sage. Contains nearly 100 reprints of source materials for case study research.
- Mills, A. J., Durepos, G., & Wiebe, E. (2010b). Introduction. In A. J. Mills, G. Durepos, & E. Wiebe (Eds.), *Encyclopedia of case study research* (pp. xxxi–xxxvi). Thousand Oaks, CA: Sage. Introduces a two-volume encyclopedia devoted to case study research.
- Schwandt, T. A. (2007). *The Sage dictionary of qualitative inquiry* (3rd ed.). Los Angeles: Sage. Defines terms, with references, used in qualitative research.



## ABSTRACT

A research design is the logic that links the data to be collected (and the conclusions to be drawn) to the initial questions of study. Every empirical study has an implicit, if not explicit, research design. Articulating a “theory” about what is being studied and what is to be learned helps to strengthen a research design when doing case study research. Good theoretical propositions also lay the groundwork for generalizing the findings from the case study to other situations, by making *analytic* rather than *statistical generalizations*.

Critical to the design will be to define the “case” or unit of analysis to be studied, as well as to set some limits or bounds to the case. You can then examine the quality of your emerging design in relation to four tests commonly used in social science research: (a) construct validity, (b) internal validity, (c) external validity, and (d) reliability.

Among the specific case study designs, four major types follow a  $2 \times 2$  matrix. The first pair consists of single-case and multiple-case

designs. The second pair, which can occur in combination with either of the first pair, distinguishes between holistic and embedded designs. Whether holistic or embedded, in a multiple-case study, the selection of the cases should follow a replication rather than sampling logic. Although single-case studies can yield invaluable insights, most multiple-case study designs are likely to be stronger than single-case study designs. Trying to use even a “two-case” design is therefore a worthy objective, compared to doing a single-case study. Case study research also can be used in combination with other methods, as part of a larger mixed methods study.

## DESIGNING CASE STUDIES

### *Identifying Your Case(s) and Establishing the Logic of Your Case Study*

#### GENERAL APPROACH TO DESIGNING CASE STUDIES

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[Chapter 1](#) has shown when you might choose to do case study research, as opposed to other types of research, to carry out a new study. The next step is to design your case study. For this purpose, as in designing any other type of research investigation, you need a plan or *research design*.

The development of this research design calls for careful craftwork. Unlike other research methods, a comprehensive and standard catalog of research designs for case study research has yet to emerge. There are no textbooks, like those in the biological and psychological sciences, covering such design considerations as the assignment of subjects to different groups, the selection of different stimuli or experimental conditions, or the identification of various response measures (see Cochran & Cox, 1957; Fisher, 1935, cited in Cochran & Cox, 1957; Sidowski, 1966). In a laboratory experiment, each of these choices reflects an important logical connection to the issues being studied. Nor have any common case study designs emerged—such as the *panel studies*, for example—used in survey research (see Kidder & Judd, 1986, chap. 6).

One pitfall to be avoided, however, is to consider case study designs to be a subset or variant of the research designs used for other methods, such as quasi-experiments (e.g., Campbell & Stanley, 1966; Cook & Campbell, 1979). For a long time, scholars incorrectly thought that the case study was but one type of quasi-experimental design (the “one-shot post-test-only” design—Campbell & Stanley, 1966, pp. 6–7). Although the misperception lingers to this very day, it was later corrected when one of the original

authors made the following statement in the revision to the original work on quasi-experimental designs:

Certainly the case study as normally practiced should not be demeaned by identification with the one-group post-test-only design. (Cook & Campbell, 1979, p. 96)

In other words, the one-shot, post-test-only design as a quasi-experimental design still may be considered flawed, but the case study has now been recognized as something different. In fact, case study research is a separate method that has its own research designs.

Unfortunately, case study research designs have not been codified. The following chapter therefore expands on the methodological ground broken by earlier editions of this book and describes a basic set of research designs for doing single- and multiple-case studies. Although these designs will need to be continually modified and improved in the future, in their present form they will nevertheless help you to design more rigorous and methodologically sound case studies.

#### **Tip: How should I select the case(s) for my case study?**

You need sufficient access to the data for your potential case—whether to interview people, review documents or records, or make field observations. Given such access to more than a single candidate case, you should choose the case(s) that will most likely illuminate your research questions. Absent such access, you should consider changing your research questions, hopefully leading to new candidates to which you do have access.

#### **Do you think access should be so important?**

#### Definition of Research Designs

Every type of empirical research study has an implicit, if not explicit, research design. In the most elementary sense, the design is the logical

sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions. Colloquially, a research design is a *logical plan for getting from here to there*, where *here* may be defined as the initial set of questions to be answered, and *there* is some set of conclusions (answers) about these questions. Between *here* and *there* may be found a number of major steps, including the collection and analysis of relevant data. As a summary definition, another textbook has described a research design as a plan that

guides the investigator in the process of collecting, analyzing, and interpreting observations. It is a *logical model of proof* that allows the researcher to draw inferences concerning causal relations among the variables under investigation. (Nachmias & Nachmias, 1992, pp. 77–78, emphasis added)

Another way of thinking about a research design is as a “blueprint” for your research, dealing with at least four problems: what questions to study, what data are relevant, what data to collect, and how to analyze the results (Philliber, Schwab, & Samsloss, 1980).

Note that a research design is much more than a work plan. The main purpose of the design is to help to avoid the situation in which the evidence does not address the initial research questions. In this sense, a research design deals with a *logical* problem and not a *logistical* problem. As a simple example, suppose you want to study a single organization. Your research questions, however, have to do with the organization's relationships with other organizations—their competitive or collaborative nature, for example. Such questions can be properly answered only if you collect information directly from the other organizations and not merely from the one you started with. If you complete your study by examining an organization's relationships from the vantage point of only one organization, you cannot draw unbiased conclusions about the relationships. This is a flaw in your research design, not in your work plan. The outcome could have been avoided if you had developed an appropriate research design in the first place.

## Components of Research Designs

In case study research, five components of a research design are especially important:

1. a case study's questions;
2. its propositions, if any;
3. its unit(s) of analysis;
4. the logic linking the data to the propositions; and
5. the criteria for interpreting the findings.

**Study questions.** This first component has already been described in [Chapter 1](#), which suggested that the *form* of the question—in terms of “who,” “what,” “where,” “how,” and “why”—provides an important clue regarding the most relevant research method to be used. Case study research is most likely to be appropriate for “how” and “why” questions, so your initial task is to clarify precisely the nature of your study questions in this regard.

More troublesome may be your having to come up with the substance of the questions. Many students take an initial stab, only to be discouraged when they find the same question(s) already well covered by previous research. Other less desirable questions focus on too trivial or minor parts of an issue. A helpful hint is to move in three stages. In the first, try to use the literature to narrow your interest to a key topic or two, not worrying about any specific research questions. In the second, examine closely—even dissect—a few key studies on your topic of interest. Identify the questions in those few studies and whether they conclude with new questions or loose ends for future research. These may then stimulate your own thinking and imagination, and you may find yourself articulating some potential questions of your own. In the third stage, examine another set of studies on the same topic. They may reinforce the relevance and importance of your potential questions or even suggest ways of sharpening them.

**Study propositions.** As for the second component, each proposition directs attention to something that should be examined within the scope of study. For instance, assume that your research, on the topic of interorganizational partnerships, began with the following question: How and why do

organizations collaborate with one another to provide joint services (for example, a manufacturer and a retail outlet collaborating to sell certain computer products)? These “how” and “why” questions, capturing what you are really interested in addressing, led you to case study research as the appropriate method in the first place. Nevertheless, these “how” and “why” questions do not sufficiently point to what you should study.

Only if you are forced to state some propositions will you move in the right direction. For instance, you might think that organizations collaborate because they derive mutual benefits. This proposition, besides reflecting an important theoretical issue (that other incentives for collaboration do not exist or are unimportant), also begins to tell you where to look for relevant evidence (that is, to define and ascertain the extent of specific benefits to each organization).

At the same time, some studies may have a legitimate reason for not having any propositions. This is the condition—which exists in experiments, surveys, and the other research methods alike—in which a topic is the subject of “exploration.” Every exploration, however, should still have some purpose. Instead of propositions, the design for an exploratory study should state this purpose, as well as the criteria by which an exploration will be judged successful (or not). Consider the analogy in [BOX 5](#) for exploratory case studies. Can you imagine how you would ask for support from Queen Isabella to do your exploratory study?

### BOX 5

#### “Exploration” as an Analogy for an Exploratory Case Study

When Christopher Columbus went to Queen Isabella to ask for support for his “exploration” of the New World, he had to have some reasons for asking for three ships (Why not one? Why not five?), and he had some rationale for going westward (Why not south? Why not south and then east?). He also had some (mistaken) criteria for recognizing the Indies when he actually encountered it. In short, his exploration began with some rationale and direction, even if his initial assumptions might later have been proved wrong (Wilford, 1992). This same degree

of rationale and direction should underlie even an exploratory case study.

*Unit of analysis—the “case.”* This third component is related to the fundamental problem of defining the “case” to be studied—a problem that rightfully confronts many researchers at the outset of their case studies (e.g., Ragin & Becker, 1992). You will need to consider at least two different steps: defining the case and bounding the case.

In *defining the case*, for instance, the classic case studies usually focus on an individual person as the case (e.g., Bromley, 1986, p. 1). Jennifer Platt (1992) has noted how the early case studies by scholars in the Chicago school of sociology were life histories of such persons as juvenile delinquents or derelict men. You also can imagine case studies of clinical patients, of exemplary students, or of certain types of leaders. In each situation, an individual person is the case being studied, and the individual is the primary unit of analysis. Information about the relevant individual would be collected, and several such individuals or “cases” might be included in a multiple-case study.

You would still need study questions and study propositions to help identify the relevant information to be collected about this individual or individuals. Without such questions and propositions, you might be tempted to cover “everything” about the individual(s), which is impossible to do. For example, the propositions in studying these individuals might be limited to the influence of early childhood or the role of peer relationships. Such seemingly general topics nevertheless represent a vast narrowing of the relevant data. The more a case study contains specific questions and propositions, the more it will stay within feasible limits.

Of course, the “case” also can be some event or entity other than a single individual. Case studies have been done about a broad variety of topics, including small groups, communities, decisions, programs, organizational change, and specific events. Feagin et al. (1991) contains some classic examples of these single cases in sociology and political science.

Beware of these types of cases—none is easily defined in terms of the beginning or end points of the “case.” For example, a case study of a



specific program may reveal (a) variations in program definition, depending upon the perspective of different actors, and (b) program components that preexisted the formal designation of the program. Any case study of such a program would therefore have to confront these conditions in delineating the unit of analysis. Similarly, you might at first identify a specific locale, such as a “city,” as your case. However, your research questions and data collection might in fact be limited to tourism in the city, city policies, or city government. These choices would differ from defining the geographic city and its population as your case.

As a general guide, the tentative definition of your case (or of the unit of analysis) is related to the way you define your initial research question(s). Suppose, for example, you want to study the role of the United States in the global economy. Years ago, Peter Drucker (1986) wrote a provocative essay (but not a case study) about fundamental changes in the world economy, including the importance of “capital movements” independent of the flow of goods and services. If you were interested in doing a case study on this topic, Drucker’s work would only serve as a starting point. You would still need to define the research question(s) of interest to you, and each question might point to a different unit of analysis (or “case”). Depending upon your question(s), the appropriate case might be a country’s economy, an industry in the world marketplace, an economic policy, or the trade or capital flow between countries. Each unit of analysis and its related questions and propositions would call for a different case study, each having its own research design and data collection strategy.

If your research questions do not lead to the favoring of one unit of analysis over another, your questions may be too vague or too numerous—and you may have trouble doing a case study. However, when you do eventually arrive at a definition of the unit of analysis, do not consider closure permanent. Your choice of the unit of analysis, as with other facets of your research design, can be revisited as a result of discoveries during your data collection (see discussion and cautions about maintaining an adaptive posture, throughout this book and at the end of this chapter).

Sometimes, the unit of analysis may have been defined one way, even though the phenomenon being studied actually follows a different definition. Most frequently, investigators have confused case studies of neighborhoods with case studies of small groups (as another example,

confusing a new technology with the workings of an engineering team in an organization; see [BOX 6A](#)). How a geographic *area* such as a neighborhood copes with racial transition, upgrading, and other phenomena can be quite different from how a small *group* copes with these same phenomena. For instance, *Street Corner Society* (Whyte, 1943/1993; see [BOX 2A](#) in [Chapter 1](#) of this book) and *Tally’s Corner* (Liebow, 1967; see [BOX 9](#), this chapter) often have been mistaken for being case studies of neighborhoods when in fact they are case studies of small groups (note that in neither book is the neighborhood geography described, even though the small groups lived in a small area with clear neighborhood definitions if not boundaries). In contrast, [BOX 6B](#) presents a good example of how units of analyses can be defined in a more discriminating manner—in the field of world trade.

## BOX 6 Defining the Unit of Analysis

### 6A. What Is the Unit of Analysis?

*The Soul of a New Machine* (1981) was a Pulitzer Prize–winning book by Tracy Kidder. The book, also a best seller, is about the development of a new minicomputer, produced by Data General Corporation, intended to compete with one produced by a direct competitor, Digital Equipment Corporation (also see [BOX 29](#), [Chapter 5](#), p. 144).

This easy-to-read book describes how Data General’s engineering team invented and developed the new computer. The book begins with the initial conceptualization of the computer and ends when the engineering team relinquishes control of the machine to Data General’s marketing staff.

The book is an excellent example of a case study. However, the book also illustrates a fundamental problem in doing case studies—that of defining the unit of analysis. Is the “case” being studied the minicomputer, or is it about the dynamics of a small group—the engineering team? The answer is critical for understanding how the case study might relate to any broader body of knowledge—that is, whether to generalize to a technology topic or to a group dynamics

topic. Because the book is not an academic study, it does not need to, nor does it, provide an answer.

### 6B. A Clearer Choice among Units of Analysis

Ira Magaziner and Mark Patinkin's (1989) book, *The Silent War: Inside the Global Business Battles Shaping America's Future*, presents nine individual case studies (also see [BOX 36](#), [Chapter 5](#), p. 165). Each case helps the reader to understand a real-life situation of international economic competition.

Two of the cases appear similar but in fact have different main units of analysis. One case covers a firm—the Korean firm Samsung—and the critical policies that make it competitive. Understanding Korean economic development is part of the context, and the case study also contains an embedded unit—Samsung's development of the microwave oven as an illustrative product. The other case covers a country—Singapore—and the policies that make it competitive. Within the country case study is an embedded unit of analysis—the development of an Apple computer factory in Singapore, serving as an illustrative example of how the national policies affect foreign investments.

To reduce the confusion and ambiguity in defining the unit of analysis or “case,” one recommended practice is to discuss your potential case selection with a colleague. Try to explain to that person what questions you are trying to address and why you have chosen a specific case or group of cases as a way of addressing those questions. This may help you to avoid incorrectly identifying the unit of analysis.

Once the general definition of the case has been established, other clarifications—sometimes called *bounding the case*—become important. If the unit of analysis is a small group, for instance, the persons to be included within the group (the immediate topic of the case study) must be distinguished from those who are outside of it (the context for the case study). Similarly, if the case is about the local services in a specific geographic area, you need to decide which services to cover. Also desirable, for almost any topic that might be chosen, are the specific time boundaries

to define the estimated beginning and ending of the case, for the purposes of your study (e.g., whether to include the entire or only some part of the life cycle of the entity that is to be the case). Bounding the case in these ways will help to determine the scope of your data collection and, in particular, how you will distinguish data about the subject of your case study (the “phenomenon”) from data external to the case (the “context”).

Select a topic for a case study you would like to do. Identify some research questions to be answered or propositions to be examined by your case study. Does the naming of these questions or propositions clarify the boundaries of your case with regard to the time period covered by the case study; the relevant social group, organization, or geographic area; the type of evidence to be collected; and the priorities for data collection and analysis? If not, should you sharpen the original questions?

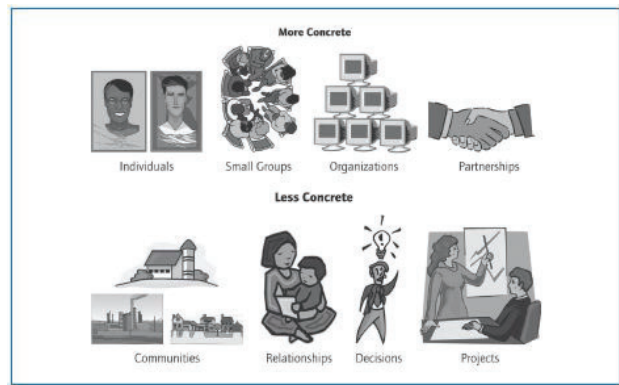
These latter cautions regarding the need for spatial, temporal, and other concrete boundaries underlie a key but subtle aspect in defining your case. The desired case should be some real-life phenomenon that has some concrete manifestation. The case cannot simply be an abstraction, such as a claim, an argument, or even a hypothesis. These abstractions could rightfully serve as the starting points for research studies using other kinds of methods and not just case study research. To justify doing case study research, you need to go one step further: You need to define a specific, real-life “case” to be a concrete manifestation of the abstraction. (For examples of more concrete and less concrete case study topics, see [Figure 2.1](#).)

Take the concept of “neighboring.” Alone, it could be the subject of research studies using methods other than the case study method. The other methods might include a survey of the relationships among neighbors, a history of the evolution of the sense of neighboring and the creation of

neighborhood boundaries, or an experiment in which young children do tasks next to each other to determine the distracting effects, if any, of their “neighbors” in a classroom. These examples show how the abstract concept of “neighboring” does not alone produce the grounds for a case study. However, the concept could readily become a case study topic if it were accompanied by your selecting a specific neighborhood (“case”) to be studied and posing study questions and propositions about the neighborhood in relation to the concept of “neighboring.”

One final point pertains to the role of the available research literature and needs to be made about defining the case and the unit of analysis. Most researchers will want to compare their findings with previous research. For this reason, the key definitions used in your study should not be idiosyncratic. Rather, each case study and unit of analysis either should be similar to those previously studied by others or should innovate in clear, operationally defined ways. In this manner, the previous literature also can become a guide for defining the case and unit of analysis.

Figure 2.1 Illustrative Cases for Case Studies



SOURCE: Clip Art © Jupiter Images.

*Linking data to propositions.* The fourth component has been increasingly better developed in doing case study research. The component foreshadows the data analysis steps in your case study. [Chapter 5](#) covers these steps and the various analytic techniques and choices in detail. However, during the design stage, you need to be aware of the choices and how they might suit your case study. In this way, your research design can create a more solid foundation for the later analysis.

Examine [Figure 2.1](#). Discuss each subject, which illustrates a different unit of analysis. Find a published case study on at least one of these subjects, indicating the actual “case” that was being studied. Understanding that each subject illustrates a different unit of analysis and involves the selection of different cases to be studied, do you think that the more concrete units might be easier to define than the less concrete ones? Why?

All of the analytic techniques in [Chapter 5](#) represent ways of *linking data to propositions*: pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis. The actual analyses will require that you combine or assemble your case study data as a direct reflection of your initial study propositions. For instance, knowing that some or all of your propositions cover a temporal sequence would mean that you might eventually use some type of time-series analysis. If you noted this strong likelihood during the design phase, you might make sure that your planned data collection included the collection of appropriate time markers as part of the case being studied.

As a caution, if you have had limited experience in conducting empirical studies, you may not easily identify the likely analytic technique(s) or anticipate the needed data to use the techniques to their full advantage. Even more experienced researchers often note how they have

either (a) collected too much data that were not later used in any analysis or (b) collected too little data that prevented the proper use of a desired analytic technique. Sometimes, the latter situation even may force researchers to return to their data collection phase (if they can), to supplement the original data. The more you can avoid either of these situations, the better off you will be.

*Criteria for interpreting a case study's findings.* For many studies, a common illustration of this fifth component arises when statistical analyses are relevant. For instance, by convention, quantitative studies consider a  $p$  level of less than .05 to demonstrate that observed differences are “statistically significant” and therefore associated with more robust findings. In other words, the statistical estimates serve as the criteria for interpreting the findings. However, much case study analysis will not rely on the use of statistics, leading to the need to find other ways of thinking about such criteria.

When doing case studies, a major and important alternative strategy is to identify and address rival explanations for your findings. Addressing such rivals becomes a criterion for interpreting your findings: The more rivals that have been addressed and rejected, the stronger will be your findings. Again, [Chapter 5](#) discusses this strategy and how it works. At the design stage of your work, the challenge is to anticipate and enumerate the important rivals, so you will include data about them as part of your data collection. If you only think of rival explanations after data collection has been completed, you will be starting to justify and design a *future* study, but you will not be helping to complete your *current* case study. For this reason, specifying important rival explanations is a part of a case study's research design work.

*Summary.* A research design should include five components. The first three components—that is, defining your study's questions, propositions, and unit of analysis—will lead your research design into identifying the data that are to be collected. The last two components—that is, defining the logic linking the data to the propositions and the criteria for interpreting the

findings—will lead the design into anticipating your case study analysis, suggesting what is to be done after the data have been collected.

## THE ROLE OF THEORY OR THEORETICAL PROPOSITIONS IN RESEARCH DESIGNS

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Covering the preceding five components of research designs will effectively force you to begin constructing some preliminary theory or theoretical propositions related to your topic of study. This role of theory development, prior to the conduct of any data collection, is one point of difference between case study research and related qualitative methods such as ethnography (Lincoln & Guba, 1985; Van Maanen, 1988) and *grounded theory* (Corbin & Strauss, 2007). Typically, these related methods may deliberately avoid specifying any theoretical propositions at the outset of an inquiry (nor do these methods have to cope with the challenge of defining a “case”). As a result, students who may consider these methods to be interchangeable with case study research wrongly think that, by having selected the case study method, they can proceed quickly into their fieldwork (e.g., by rushing to establish their field contacts as quickly as possible). No presumption could be more misleading. Among other considerations, the relevant field contacts depend upon an understanding—or theory—of what is being studied.

### Theory Development

For case studies, some theory development as part of the design phase is highly desired. The needed theory can be plain and simple. For example, a case study on the implementation of a new management information system (MIS) started with the following straightforward theoretical statement:

The case study will show why implementation only succeeded when the organization was able to re-structure itself, and not just overlay the new MIS on the old organizational structure. (Markus, 1983)

The statement presents the nutshell of a theory of MIS implementation—that is, that organizational restructuring is needed to make MIS implementation work.

The same MIS case study then added the following theoretical statement:

The case study will also show why the simple replacement of key persons was not sufficient for successful implementation. (Markus, 1983)

This second statement presents the nutshell of a *rival* theory—that is, that MIS implementation fails because of the resistance to change on the part of individual people and that the replacement of such people is the main requirement for implementation to succeed.

You can see that as these two initial statements are elaborated, the stated ideas will increasingly cover the questions, propositions, units of analysis, logic connecting data to propositions, and criteria for interpreting the findings—that is, the five components of the needed research design. In this sense, the complete research design embodies a “theory” of what is being studied.

This theory should by no means be considered with the formality of grand theory in social science, nor are you being asked to be a masterful theoretician. Rather, the simple goal is to have a sufficient blueprint for your study, and this requires theoretical propositions, usefully noted by Sutton and Staw (1995) as “a [hypothetical] story about why acts, events, structure, and thoughts occur” (p. 378). The theoretical propositions can represent key issues from the research literature or practical matters such as differing types of instructional leadership styles or partnering arrangements in a study of organizations. Such propositions will enable the complete research design to provide surprisingly strong guidance in determining the data to collect and the strategies for analyzing the data. For this reason, some theory development prior to the collection of any case study data is desirable. Paul Rosenbaum notes that, for nonexperimental studies more generally, the preferred theoretical statements should elaborate a complex pattern of expected results—the more complex the better (Rosenbaum, 2002, pp. 5–6 and 277–279). The benefit is a stronger design and a heightened ability to interpret your eventual data.

However, theory development takes time and can be difficult (Eisenhardt, 1989). For some topics, existing works may provide a rich theoretical framework for designing a specific case study. If you are interested in international economic development, for instance, Peter Drucker’s (1986) “The Changed World Economy” cited earlier is an exceptional source of theories and hypotheses. Drucker claims that the world economy has changed significantly from the past. He points to the “uncoupling” between the primary products (raw materials) economy and the industrial economy, a similar uncoupling between low labor costs and manufacturing production, and the uncoupling between financial markets and the real economy of goods and services. To test these propositions might require different studies, some focusing on the different uncouplings, others focusing on specific industries, and yet others explaining the plight of specific countries. Each different study would likely call for a different unit of analysis. Drucker’s theoretical framework would provide guidance for designing these studies and even for collecting relevant data.

In other situations, the appropriate theory may be a descriptive theory (see [BOX 2A](#) in [Chapter 1](#) for another example), and your concern should focus on such issues as (a) the purpose of the descriptive effort, (b) the full but realistic range of topics that might be considered a “complete” description of what is to be studied, and (c) the likely topic(s) that will be the essence of the description. Good answers to these questions, including the rationales underlying the answers, will help you go a long way toward developing the needed theoretical base—and research design—for your study.

For yet other topics, the existing knowledge base may be poor, and the available literature will provide no conceptual framework or hypotheses of note. Such a knowledge base does not lend itself to the development of good theoretical statements, and any new empirical study is likely to assume the characteristic of an “exploratory” study. Nevertheless, as noted earlier with the illustrative case in [BOX 5](#), even an exploratory case study should be preceded by statements about what is to be explored, the purpose of the exploration, and the criteria by which the exploration will be judged successful.

Overall, you may want to gain a richer understanding of how theory is used in case studies by reviewing specific case studies that have been



successfully completed. For instance, Yin (2012, chap. 3) shows how theory was used in exploratory, descriptive, and explanatory situations by discussing five actual case studies.

### Illustrative Topics for Theories

In general, to overcome the barriers to theory development, you should try to prepare for your case study by doing such things as reviewing the literature related to what you would like to study (e.g., see H. M. Cooper, 1984), discussing your topic and ideas with colleagues or teachers, and asking yourself challenging questions about what you are studying, why you are proposing to do the study, and what you hope to learn as a result of the study.

As a further reminder, you should be aware of the full range of theories that might be relevant to your study. For instance, note that the earlier MIS example illustrated MIS “implementation” theory and that this is but one type of theory that can be the subject of study. Other types of theories for you to consider include:

- individual theories—for example, theories of individual development, cognitive behavior, personality, learning and disability, individual perception, and interpersonal interactions;
- group theories—for example, theories of family functioning, informal groups, work teams, supervisory-employee relations, and interpersonal networks;
- organizational theories—for example, theories of bureaucracies, organizational structure and functions, excellence in organizational performance, and interorganizational partnerships; and
- societal theories—for example, theories of urban development, international conflicts, cultural institutions, technological development, and marketplace functions.

Other examples cut across these illustrative types. Decision-making theory (Carroll & Johnson, 1992), for instance, can involve individuals,

organizations, or social groups. As another example, a common topic of case study research is the evaluation of publicly supported programs, such as federal, state, or local programs. In this situation, the development of a theory of how a program is supposed to work is essential to the design of the evaluation. In this situation, Bickman (1987) reminds us that the theory needs to distinguish between the substance of the program (e.g., how to make education more effective) and the process of program implementation (e.g., how to install an effective program). The distinction would avoid situations where policy makers might want to know the desired substantive remedies (e.g., findings about a newly effective curriculum) but where an evaluation unfortunately focused on managerial issues (e.g., the need to hire a good project director). Such a mismatch can be avoided by giving closer attention to the substantive theory.

### Use of Theory to Generalize From Case Studies

Besides making it easier to design your case study, having some theory or theoretical propositions will later play a critical role in helping you to generalize the lessons learned from your case study. This role of theory has been characterized throughout this book as *analytic generalization* and has been contrasted with another way of generalizing the results from empirical studies, known as *statistical generalization*. Understanding the distinction between these two types of generalization may be your most notable accomplishment in doing case study research.

Let us first take the more commonly recognized way of generalizing—*statistical generalization*—although it is the less relevant one for doing case study research. In statistical generalization, an inference is made about a population (or universe) on the basis of empirical data collected from a sample of that universe. This is shown graphically as a Level One inference in [Figure 2.2](#).<sup>1</sup> This method of generalizing is commonly followed when doing surveys (e.g., Fowler, 1988; Lavrakas, 1987) or analyzing archival data such as in studying housing or employment trends. As another example, political polls need to generalize their findings beyond their sample of respondents and to apply to the larger population, and research

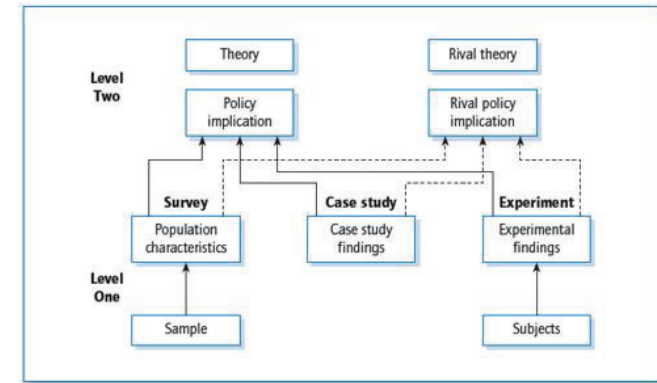


investigators readily follow quantitative procedures to determine the confidence with which such extrapolations can be made.

A fatal flaw in doing case studies is to consider statistical generalization to be the way of generalizing the findings from your case study. This is because your case or cases are not “sampling units” and also will be too small in number to serve as an adequately sized sample to represent any larger population.

Rather than thinking about your case as a sample, you should think of it as the opportunity to shed empirical light about some theoretical concepts or principles, not unlike the motive of a laboratory investigator in conceiving of and then conducting a new experiment.<sup>2</sup> In this sense, both a case study and an experiment may have an interest in going beyond the specific case or experiment. Both kinds of studies are likely to strive for generalizable findings or lessons learned—that is, analytic generalizations—that go beyond the setting for the specific case or specific experiment that had been studied (see [Tutorial 2.1](#)). For example, the lessons learned could assume the form of a *working hypothesis* (Cronbach, 1975), either to be applied in reinterpreting the results of existing studies of other concrete situations (that is, other cases or experiments) or to define new research focusing on yet additional concrete situations (that is, new cases or experiments). Note that the aim of an analytic generalization is still to generalize to these other concrete situations and not just to contribute to abstract theory building. Also note that the generalizations, principles, or lessons learned from a case study may potentially apply to a variety of situations, far beyond any strict definition of the hypothetical population of “like-cases” represented by the original case.

Figure 2.2 Making Inferences: Two Levels



The theory or theoretical propositions that went into the initial design of your case study, as empirically enhanced by your case study’s findings, will have formed the groundwork for an analytic generalization. Alternatively, a new generalization may emerge from the case study’s findings alone. In other words, the *analytic generalization* may be based on either (a) corroborating, modifying, rejecting, or otherwise advancing theoretical concepts that you referenced in designing your case study or (b) new concepts that arose upon the completion of your case study. The important point is that, regardless of whether the generalization was derived from the conditions you specified at the outset or uncovered at the conclusion of your case study, the generalization will be at a conceptual level higher than that of the specific case (or experiment)—shown graphically as a Level Two inference in [Figure 2.2](#).

Several prominent case studies illustrate how analytic generalizations can use a case study’s findings to implicate new situations. First, consider how the three initial case studies of this book (cited in [BOXES 1, 2A, and 2B](#) of [Chapter 1](#)) treated the generalizing function:

- [BOX 1](#): Allison’s case (1971) is about the Cuban missile crisis, and he relates the three theoretical models from his case study to many other situations, first to other international confrontations, such as between the United States and North Vietnam in the 1960s (p. 258). The later

edition of the case study (Allison & Zelikow, 1999) then discusses the models' relevance to the "rethinking of nuclear threats to Americans today" (p. 397) as well as to the broader challenge of inferring the motives underlying actions taken by a foreign power.

- [BOX 2A](#): Whyte's study (1943/1993) is well known for uncovering the relationship between individual performance and group structure, highlighted by a bowling tournament where he directly experienced the impact on his own performance ("as if something larger than myself was controlling the ball"—p. 319) and observed how the gang members' bowling scores, with one notable exception, emulated their standing in the gang. Whyte generalizes his findings by later commenting that "I believed then (and still believe now) that this sort of relationship may be observed in other group activities everywhere" (p. 319).
- [BOX 2B](#): Neustadt and Fineberg (1983) show yet another variation, claiming no generalization but concluding with an extensive discussion of the usefulness of their case study in teaching public policy courses (pp. 231–250).

Second, [BOX 7](#) contains four additional illustrations. All show how findings from a single-case study nevertheless can be generalized to a broad variety of other situations. The fourth of these case studies has one other notable feature: It demonstrates how an entire case study can be published as a journal article (the first three examples appeared in the form of rather lengthy books).

Analytic generalization can be used whether your case study involves one or several cases, which shall be later referenced as single-case or multiple-case studies. Also to come, this chapter's later discussion under the topic of *external validity* adds a further insight about making analytic generalizations. The main point at this juncture is that you should try to aim toward analytic generalizations in doing case studies, and you should avoid thinking in such confusing terms as "the sample of cases" or the "small sample size of cases," as if a single-or multiple-case study were equivalent to respondents in a survey. In other words, again as graphically depicted in

[Figure 2.2](#), you should aim for Level Two inferences when doing case studies.

In a like manner, even referring to your case or cases as a "purposive sample" may raise similar conceptual and terminological problems. You may have intended to convey that the "purposive" portion of the term reflects your selection of a case that will illuminate the theoretical propositions of your case study. However, your use of the "sample" portion of the term still risks misleading others into thinking that the case comes from some larger universe or population of like-cases, undesirably reigniting the specter of statistical generalization. The most desirable posture may be to avoid referring to any kind of sample (purposive or otherwise). (The preferred criteria and terminology for selecting cases, as part of either a single- or a multiple-case study, are discussed later in this chapter under the topic of "case study designs.") In this sense, case study research directly parallels experimental research: Few if any people would consider that a new experiment should be designed as a sample (of any kind) from a larger population of like-experiments—and few would consider that the main way of generalizing the findings from a single experiment would be in reference to a population of like-experiments.

## **BOX 7**

### **Generalizing from Single-Case Studies: Four More Examples**

#### **7A. A Sociology of "Mistake"**

The tragic loss of the space shuttle *Challenger* in 1986, vividly shown in repeated TV replays of the spaceship's final seconds, certainly qualifies as a unique case. The causes of this loss became the subject of a Presidential Commission and of a case study by Diane Vaughan (1996). Vaughan's detailed study shows how the social structure of an organization (the NASA space agency) had, over time, transformed deviance into acceptable and routine behavior.

Vaughan's ultimate explanation differs markedly from that of the Presidential Commission, which pointed to individual errors by middle

managers as the main reasons for failure. In Vaughan's words, her study "explicates the sociology of mistake" (p. xiv)—that "mistakes are systemic and socially organized, built into the nature of professions, organizations, cultures, and structures" (p. 415). She shows how deviance is transformed into acceptable behavior through the institutionalization of production pressures (originating in the organizational environment), leading to "nuanced, unacknowledged, pervasive effects on decisionmaking" (p. xiv). Her final discussion applies this generalization to a diverse array of other situations. As examples, she cites studies showing the research distortions created by the worldview of scientists, the uncoupling of intimate relationships, and the inevitability of accidents in certain technological systems.

### 7B. The Origins of Social Class

The second example is about the uncovering and labeling of a social class structure based on a case study of a small American city, Yankee City (Warner & Lunt, 1941). This classic case study in sociology made a critical contribution to social stratification theory and an understanding of the social differences among "upper," "upper-middle," "middle-middle," "upper-lower," and "lower" classes. Over the years, the insights from these differences have applied to a broad range of situations (by no means limited to other small cities).

### 7C. Contribution to Urban Planning

The third example is Jane Jacobs and her famous book, *The Death and Life of Great American Cities* (1961). The book is based mostly on experiences from a single case, New York City. The book's chapters then show how these New York experiences can be used to develop broader theoretical principles in urban planning, such as the role of sidewalks, the role of neighborhood parks, the need for primary mixed uses, the need for small blocks, and the processes of slumming and unslumming.

Jacobs's book created heated controversy in the planning profession. New empirical inquiries were made about one or another of her rich and provocative ideas. These inquiries helped to test the

broader applicability of her principles to other concrete settings, and in this way Jacobs's work still stands as a significant contribution in the field of urban planning.

### 7D. Government Management of "Spoiled" National Identity

The fourth example creatively extended Erving Goffman's well-known sociological theory, regarding the management of stigma by individual people, to an institutional level (Rivera, 2008). A field-based case study of Croatia showed how the stigma created by the wars of Yugoslav secession had demolished the country's image as a desirable tourist destination, but then how the country successfully used an impression management strategy to revive the tourism. Croatia thus presented "an exciting case of reputation management in action" (p. 618). The author suggests that her adapted theoretical model can be used as "a launching point for understanding the public representation dilemmas faced by other states and organizational actors that have undergone reputation-damaging events" (p. 615). In so doing, the case study has provided another illustration of analytic generalization.

### Summary

This section has suggested that a complete research design, while including the five components previously described, will benefit from the development of theoretical propositions. A good case study researcher should pursue such propositions and take advantage of this benefit, whether the case study is to be exploratory, descriptive, or explanatory. The use of theory and theoretical propositions in doing case studies is an immense aid in defining the appropriate research design and data to be collected. The same theoretical orientation also will become the main vehicle for generalizing the findings from the case study.

Because a research design is supposed to represent a logical set of statements, you also can judge the quality of any given design according to certain logical tests. Concepts that have been offered for these tests include trustworthiness, credibility, confirmability, and data dependability (U.S. Government Accountability Office, 1990).

Four tests, however, have been commonly used to establish the quality of any empirical social research. Because case study research is part of this larger body, the four tests also are relevant to case study research. An important innovation of this book is the identification of several tactics for dealing with these four tests when doing case study research. [Figure 2.3](#) lists the four widely used tests and the recommended case study tactics, as well as a cross-reference to the phase of research when the tactic is to be used. (Each tactic is described in detail in the referenced chapter of this book.)

Because the four tests are common to all social science methods, the tests have been summarized in numerous textbooks (e.g., see Kidder & Judd, 1986, pp. 26–29). The tests also have served as a framework for assessing a large group of case studies in the field of strategic management (Gibbert, Ruigrok, & Wicki, 2008). The four tests are:

[Figure 2.3](#) Case Study Tactics for Four Design Tests

TESTS	Case Study Tactic	Phase of Research in which Tactic Occurs
Construct validity	<ul style="list-style-type: none"> <li>• use multiple sources of evidence</li> <li>• establish chain of evidence</li> <li>• have key informants review draft case study report</li> </ul>	data collection (see Chap. 4) data collection (see Chap. 4) composition (see Chap. 6)
Internal validity	<ul style="list-style-type: none"> <li>• do pattern matching</li> <li>• do explanation building</li> <li>• address rival explanations</li> <li>• use logic models</li> </ul>	data analysis (see Chap. 5) data analysis (see Chap. 5) data analysis (see Chap. 5) data analysis (see Chap. 5)
External validity	<ul style="list-style-type: none"> <li>• use theory in single-case studies</li> <li>• use replication logic in multiple-case studies</li> </ul>	research design (see Chap. 2) research design (see Chap. 2)
Reliability	<ul style="list-style-type: none"> <li>• use case study protocol</li> <li>• develop case study database</li> </ul>	data collection (see Chap. 3) data collection (see Chap. 4)

- **Construct validity:** identifying correct operational measures for the concepts being studied
- **Internal validity** (for explanatory or causal studies only and not for descriptive or exploratory studies): seeking to establish a causal relationship, whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships
- **External validity:** defining the domain to which a study’s findings can be generalized
- **Reliability:** demonstrating that the operations of a study—such as the data collection procedures—can be repeated, with the same results

Each item on this list deserves explicit attention. For case study research, an important revelation is that the several tactics to be used in dealing with these tests should be applied throughout the subsequent conduct of a case study, not just at its beginning. Thus, the “design work” for doing case studies may actually continue beyond the initial design plans.

### Construct Validity

This first test is especially challenging in case study research. People who have been critical of case studies often point to the fact that a case study

researcher fails to develop a sufficiently operational set of measures and that “subjective” judgments—ones tending to confirm a researcher’s preconceived notions (Flyvberg, 2006; Ruddin, 2006)—are used to collect the data.<sup>3</sup> Take an example such as studying “neighborhood change”—a common case study topic (e.g., Bradshaw, 1999; Keating & Krumholz, 1999): Over the years, concerns have arisen over how certain urban neighborhoods have changed their character. Any number of case studies has examined the types of changes and their consequences. However, without any prior specification of the significant, operational events that constitute “change,” a reader cannot tell whether the claimed changes in a case study genuinely reflect the events in a neighborhood or whether they happen to be based on a researcher’s impressions only.

Neighborhood change can cover a wide variety of phenomena: racial turnover, housing deterioration and abandonment, changes in the pattern of urban services, shifts in a neighborhood’s economic institutions, or the turnover from low- to middle-income residents in revitalizing neighborhoods. The choice of whether to aggregate blocks, census tracts, or larger areas also can produce different results (Hipp, 2007).

To meet the test of construct validity, an investigator must be sure to cover two steps:

1. define neighborhood change in terms of specific concepts (and relate them to the original objectives of the study) and
2. identify operational measures that match the concepts (preferably citing published studies that make the same matches).

For example, suppose you satisfy the first step by stating that you plan to study neighborhood change by focusing on trends in neighborhood crime. The second step now demands that you select a specific measure, such as police-reported crime (which happens to be the standard measure used in the FBI Uniform Crime Reports) as your measure of crime. The literature will indicate certain known shortcomings in this measure, mainly that unknown proportions of crimes are not reported to the police. You will then need to discuss how the shortcomings nevertheless will not bias your study of neighborhood crime and hence neighborhood change.

As previously shown in [Figure 2.3](#), three tactics are available to increase construct validity when doing case studies. The first is the use of *multiple sources of evidence*, in a manner encouraging convergent lines of inquiry, and this tactic is relevant during data collection (see [Chapter 4](#)). A second tactic is to establish a *chain of evidence*, also relevant during data collection (also [Chapter 4](#)). The third tactic is to have the draft case study report reviewed by key informants (a procedure described further in [Chapter 6](#)).

## Internal Validity

This second test has been given the greatest attention in experimental and quasi-experimental research (see Campbell & Stanley, 1966; Cook & Campbell, 1979). Numerous “threats” to internal validity have been identified, mainly dealing with spurious effects. However, because so many textbooks already cover this topic, only two points need to be made here.

First, internal validity is mainly a concern for explanatory case studies, when an investigator is trying to explain how and why event  $x$  led to event  $y$ . If the investigator incorrectly concludes that there is a causal relationship between  $x$  and  $y$  without knowing that some third factor— $z$ —may actually have caused  $y$ , the research design has failed to deal with some threat to internal validity. Note that this logic is inapplicable to descriptive or exploratory studies (whether the studies are case studies, surveys, or experiments), which are not concerned with this kind of causal situation.

Second, the concern over internal validity, for case study research, extends to the broader problem of making inferences. Basically, a case study involves an inference every time an event cannot be directly observed. An investigator will “infer” that a particular event resulted from some earlier occurrence, based on interview and documentary evidence collected as part of the case study. Is the inference correct? Have all the rival explanations and possibilities been considered? Is the evidence convergent? Does it appear to be airtight? A research design that has anticipated these questions has begun to deal with the overall problem of making inferences and therefore the specific problem of internal validity.

However, the specific tactics for achieving this result are difficult to identify when doing case study research. [Figure 2.3](#) (previously shown) suggests four analytic tactics. All are described further in [Chapter 5](#) because they take place during the analytic phase of doing case studies: *pattern matching*, *explanation building*, *addressing rival explanations*, and *using logic models*.

## External Validity

The third test deals with the problem of knowing whether a study's findings are generalizable beyond the immediate study, regardless of the research method used (e.g., experiments, surveys, or case studies). For case studies, the issue relates directly to the earlier discussion of *analytic generalization* and the reference to Level Two in [Figure 2.2](#). To repeat the earlier discussion further, referring to *statistical generalization* and any analogy to samples and populations would be misguided.

Another insight on this issue derives from observing the form of the original research question(s) posed in doing your case study. The form of the question(s) can help or hinder the preference for seeking generalizations—that is, striving for external validity.

Recall that the decision to favor case study research should have started with the posing of some “how” and “why” question(s). For instance, many descriptive case studies deal with the “how” of a situation, whereas many explanatory case studies deal with the “why” of situations. However, if a case study has no pressing “how” or “why” questions—such as a study merely wanting to document the social trends in a neighborhood, city, or country or the employment trends in an organization (and essentially posing a “what” question)—arriving at an analytic generalization may be more difficult. To avoid this situation, augmenting the study design with “how” and “why” questions (and collecting the additional data) can be extremely helpful. (Alternatively, if in the illustrative examples a study's research interest is entirely limited to documenting social trends, using some other method might serve the study's objectives better than using the case study method.)

In this manner, the form of the initial research question(s) can directly influence the strategies used in striving for external validity. These research question(s) should have been settled during the research design phase of your case study, if not earlier. For this reason, [Figure 2.3](#) as previously shown points to the research design phase, with the identification of appropriate theory or theoretical propositions, as being the most appropriate time for establishing the groundwork for starting to address the external validity of your case study.

## Reliability

Most people are probably already familiar with this final test. The objective is to be sure that, if a later researcher follows the same procedures as described by an earlier researcher and conducts the same case study over again, the later investigator should arrive at the same findings and conclusions. (Note that the emphasis is on doing the *same* case over again, not on “replicating” the results of one case by doing another case study.) The goal of reliability is to minimize the errors and biases in a study.

One prerequisite for allowing this other investigator to repeat an earlier case study is the need to document the procedures followed in the earlier case. Without such documentation, you could not even repeat your own work (which is another way of dealing with reliability). In the past, case study research procedures have been poorly documented, making external reviewers suspicious of the reliability of the case study method.<sup>4</sup> As previously shown, [Figure 2.3](#) suggests two specific tactics for overcoming these shortcomings—the use of a *case study protocol* to deal with the documentation problem in detail (discussed in [Chapter 3](#)) and the development of a *case study database* (discussed in [Chapter 4](#)).

The general way of approaching the reliability problem is to make as many steps as operational as possible and to conduct research as if someone were looking over your shoulder. Accountants and bookkeepers always are aware that any calculations must be capable of being audited. In this sense, an auditor also is performing a reliability check and must be able to produce the same results if the same procedures are followed. A good guideline for doing case studies is therefore to conduct the research so that an auditor



could in principle repeat the procedures and hopefully arrive at the same results.

## Summary

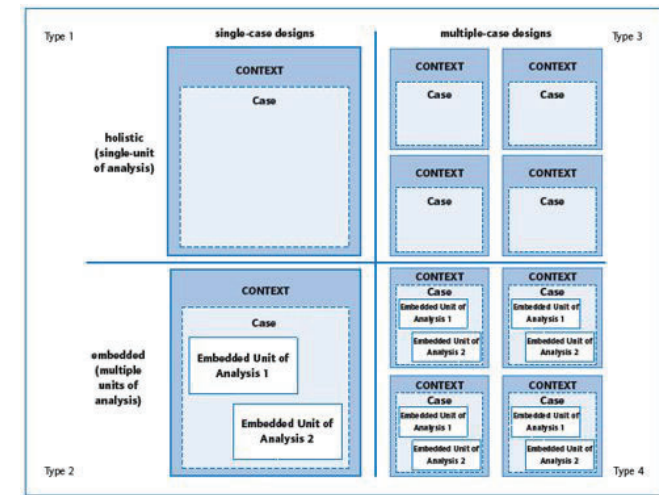
Four tests may be considered relevant in judging the quality of a research design. In designing and doing case studies, various tactics are available to deal with these tests, though not all of the tactics occur at the same phase in doing a case study. Some of the tactics occur during the data collection, data analysis, or compositional phases of the research and are therefore described in greater detail in subsequent chapters of this book.

Define the four criteria for judging the quality of research designs: (a) construct validity, (b) internal validity, (c) external validity, and (d) reliability. Give an example of each type of criterion in a case study you might want to do.

## CASE STUDY RESEARCH DESIGNS

Traditional case study research has not usually included the idea of having formal designs, as might be found when doing survey or experimental research. You still may successfully conduct a new case study without any formal design. However, attending to the potential case study research designs can make your case studies stronger and, possibly, easier to do. You might therefore find the remainder of this section to be useful. It covers four types of designs, based on the  $2 \times 2$  matrix in [Figure 2.4](#).

Figure 2.4 Basic Types of Designs for Case Studies



SOURCE: COSMOS Corporation.

The matrix first shows that every type of design will include the desire to analyze contextual conditions in relation to the “case,” with the dotted lines between the two signaling that the boundaries between the case and the context are not likely to be sharp. The matrix then shows that single- and multiple-case studies reflect different design situations and that, within these two variants, there also can be unitary or multiple units of analysis. The resulting four types of designs for case studies are (Type 1) single-case (holistic) designs, (Type 2) single-case (embedded) designs, (Type 3) multiple-case (holistic) designs, and (Type 4) multiple-case (embedded) designs. The rationale for these four types of designs is as follows.

## What Are the Potential Single-Case Designs (Types 1 and 2)?

*Five rationales for single-case designs.* A primary distinction in designing case studies is between *single-* and *multiple-*case study designs. This means the need for a decision, prior to any data collection, on whether you are going to use a single case or multiple cases in your case study.

The single-case study is an appropriate design under several circumstances, and five single-case rationales—that is, having a *critical*, *unusual*, *common*, *revelatory*, or *longitudinal* case—are given below. Recall that a single-case study is analogous to a single experiment, and many of the same conditions that justify a single experiment also can justify a single-case study.

Recall, too, that the selection of your case should be related to your theory or theoretical propositions of interest. These form the substantive context for each of the five rationales. Thus, the first rationale for a single case—selecting a *critical case*—would be critical to your theory or theoretical propositions (again, note the analogy to the critical *experiment*). The theory should have specified a clear set of circumstances within which its propositions are believed to be true. The single case then can be used to determine whether the propositions are correct or whether some alternative set of explanations might be more relevant. In this manner, like Graham Allison’s comparison of three theories and the Cuban missile crisis (described in [Chapter 1](#), [BOX 2](#)), the single case can represent a significant contribution to knowledge and theory building by confirming, challenging, or extending the theory. Such a study even can help to refocus future investigations in an entire field. (See [BOX 8](#) for another example, in the field of organizational innovation.)

### BOX 8

#### The Critical Case as a Single-Case Study

One rationale for selecting a single-case rather than a multiple-case design is that the single case can represent the critical test of a significant theory. Gross, Bernstein, and Giacquinta (1971) used such a design by focusing on a single school in their book, *Implementing Organizational Innovations* (also see [BOX 20B](#), p. 114).

The school was selected because it had a prior history of innovation and could not be claimed to suffer from “barriers to innovation.” In the prevailing theories, such barriers had been prominently cited as the major reason that innovations failed. Gross et al. (1971) showed that, in this school, an innovation also failed but that the failure could not be attributed to any barriers. Implementation processes, rather than barriers, appeared to account for the failure.

In this manner, the book, though limited to a single case, represented a watershed in organizational innovation theory. Prior to the study, analysts had focused on the identification of barriers to innovation; since the study, the literature has been much more dominated by studies of the implementation process, not only in schools but also in many other types of organizations.

A second rationale for a single case is where the case represents an *extreme* case or an *unusual* case, deviating from theoretical norms or even everyday occurrences. For instance, such cases can occur in clinical psychology, where a specific injury or disorder may offer a distinct opportunity worth documenting and analyzing. In clinical research, a common research strategy calls for studying these unusual cases because the findings may reveal insights about normal processes. In this manner, the value of a case study can be connected to a large number of people, well beyond those suffering from the original clinical syndrome.

Conversely, a third rationale for a single case is the *common* case. Here, the objective is to capture the circumstances and conditions of an everyday situation—again because of the lessons it might provide about the social processes related to some theoretical interest. In this manner, a street scene and its sidewalk vendors can become the setting for learning about the potential social benefits created by informal entrepreneurial activity (e.g., Duneier, 1999), a study of a small business can yield insights into innovations and innovative processes (e.g., see Yin, 2012, chap. 9), and the social and institutional structure within a single, low-income urban neighborhood can provide insights into the relationship between poverty and social capital (e.g., Small, 2004).

A fourth rationale for a single-case study is the *revelatory* case. This situation exists when a researcher has an opportunity to observe and analyze a phenomenon previously inaccessible to social science inquiry, such as Whyte's (1943/1993) *Street Corner Society*, previously described in [Chapter 1, BOX 2A](#). Another example is Phillippe Bourgois's (2003) study of crack and the drug-dealing marketplace in Spanish Harlem—a neighborhood in New York City. The author gained the trust and long-term friendship of two dozen street dealers and their families, revealing a lifestyle that few had been able to study up to that time. For another example, see Elliot Liebow's (1967) famous case study of unemployed men, *Tally's Corner* ([BOX 9](#)). When researchers have similar types of opportunities and can uncover some prevalent phenomenon previously inaccessible to social scientists, such conditions justify the use of a single-case study on the grounds of its revelatory nature.

### BOX 9

#### The Revelatory Case as a Single-Case Study

Another rationale for selecting a single case is that the researcher has access to a situation previously inaccessible to empirical study. The case study is therefore worth conducting because the descriptive information alone will be revelatory.

Such was the situation in Elliot Liebow's (1967) sociological classic, *Tally's Corner*. The book is about a single group of African American men living in a poor, inner-city neighborhood. By befriending these men, the author was able to learn about their lifestyles, their coping behavior, and in particular their sensitivity to unemployment and failure. The book provided insights into socioeconomic conditions that have prevailed in many U.S. cities for a long time, but that only had been obscurely understood. The single case showed how investigations of such topics could be done, thus stimulating much further research and eventually the development of needed public policy actions.

A fifth rationale for a single-case study is the *longitudinal* case: studying the same single case at two or more different points in time. The theory of interest would likely specify how certain conditions and their underlying processes change over time. The desired time intervals would presumably reflect the anticipated stages at which the changes should reveal themselves. They may be pre-specified time intervals, such as prior to and then after some critical event, following a “before” and “after” logic. Alternatively, they might not deal with specific time intervals but cover trends over an elongated period of time, following a developmental course of interest. Under exceptional circumstances, the same case might be the subject of two consecutive case studies, such as occurred with *Middletown* (Lynd & Lynd, 1929) and *Middletown in Transition* (Lynd & Lynd, 1937). Whatever the time intervals or periods of interest, the processes being studied should nevertheless reflect the theoretical propositions posed by the case study. The desired time intervals would presumably reflect the anticipated stages at which the changes should reveal themselves, and the processes being observed should again reflect the theoretical propositions posed by the case study.

These five serve as major rationales for selecting a single-case study. There are other situations in which the single-case study may be used as a pilot case that might be the beginning of a multiple-case study. However, in this latter situation, the single-case portion of the study would not be regarded as a complete study on its own.

Whatever the rationale for doing single-case studies (and there may be more than the five mentioned here), a potential vulnerability of the single-case design is that a case may later turn out not to be the case it was thought to be at the outset. Single-case designs therefore require careful investigation of the potential case, to minimize the chances of misrepresentation and to maximize the access needed to collect the case study evidence. A fair warning is not to commit yourself to any single-case study until these major concerns have been covered.

*Holistic versus embedded case studies.* The same single-case study may involve units of analysis at more than one level. This occurs when, within a single case, attention is also given to a subunit or subunits (see [BOX 10](#)).

For instance, even though a case study might be about a single organization, such as a hospital, the analysis might include outcomes about the clinical services and staff employed by the hospital (and possibly even some quantitative analyses based on the employee records of the staff). In an evaluation study, the single case might be a public program that involves large numbers of funded projects—which would then be the embedded units (see [Appendix B](#) for more details). In either situation, these embedded units can be selected through sampling or cluster techniques (McClintock, 1985). No matter how the units are selected, the resulting design would be called an *embedded case study design* (see [Figure 2.4](#), Type 2). In contrast, if the case study examined only the global nature of an organization or of a program, a *holistic design* would have been used (see [Figure 2.4](#), Type 1).

### BOX 10 An Embedded, Single-Case Design

*Union Democracy* (1956) is a highly regarded case study by three eminent academicians—Seymour Martin Lipset, Martin Trow, and James Coleman. The case study is about the inside politics of the International Typographical Union and involves several units of analysis (see “Kinds of Data” table, below). The main unit was the organization as a whole, the smallest unit was the individual member, and several intermediary units also were important. At each level of analysis, different data collection techniques were used, ranging from historical to survey analysis.

Unit Being Characterized	Kinds of Data				
	Total System	Intermediate Units		Individuals	
	Issues, Data on Occupation; Union Laws; Policies; Historical Data; Convention Reports	Locals' Histories and Voting Records; Issues on Local Level; Size of Locals	Shops' Voting Records; Shop Size	Interviews with Leaders	Interviews of the Sample of Men
International Typographical Union as a whole	Structural, environmental, behavioral properties	By inference, communication network (structural)			
Locals	Behavioral properties (militancy, etc.)	Behavioral properties, size	By inference, communication network (structural)	Structural, environmental, behavioral properties	
Shops	Shops		Behavioral properties, size		Distributions of individual properties
Other immediate social environment of men	The social climate, by inference from dominant issues and election outcome	The social climate, by inference from dominant issues and election outcome			Chapel chairman's attributes; friends' attributes
Men	By inference, dominant values and interests	By inference: values, interests, and loyalties (e.g., local over international)	By inference: values, interests, loyalties (e.g., to shop over local)	By inference: values	Behavior, background, values, attitudes

SOURCE: Lipset, Trow, and Coleman (1956, p. 422). Reprinted by permission.

These two variants of single-case studies both have their strengths and weaknesses. The holistic design is advantageous when no logical subunits can be identified or when the relevant theory underlying the case study is itself of a holistic nature. Potential problems arise, however, when a global approach allows a researcher to avoid examining any specific phenomenon in operational detail. Thus, a typical problem with the holistic design is that the entire case study may be conducted at an unduly abstract level, lacking sufficiently clear measures or data.

A further problem with the holistic design is that the entire nature of the case study may shift, unbeknownst to the researcher, during the course of study. The initial study questions may have reflected one orientation, but as the case study proceeds, a different orientation may emerge, and the evidence begins to address different research questions. Although some people have claimed such flexibility to be a strength of case study research, in fact the largest criticism of case studies is based on this type of shift—in which the implemented research design is no longer appropriate for the

research questions being asked (see COSMOS Corporation, 1983). Because of this problem, you need to avoid such unsuspected slippage; if the relevant research questions really do change, you should simply start over again, with a new research design. One way to increase the sensitivity to such slippage is to have a set of subunits. Thus, an embedded design can serve as an important device for focusing a case study inquiry.

An embedded design, however, also has its pitfalls. A major one occurs when the case study focuses only on the subunit level and fails to return to the larger unit of analysis. For instance, an evaluation of a program consisting of multiple projects may include project characteristics as a subunit of analysis. The project-level data may even be highly quantitative if there are many projects. However, the original evaluation becomes a project study (i.e., a multiple-case study of different projects) if no investigating is done at the level of the original case—that is, the program. Similarly, a study of organizational climate may involve individual employees as a subunit of study. However, if the data focus only on individual employees, the study will in fact become an employee and not an organizational study. In both examples, what has happened is that the original phenomenon of interest (a program or organizational climate) has become the context and not the target of study.

**Summary.** Single-case studies are a common design for doing case study research, and two variants have been described: those using holistic designs and those using embedded units of analysis. Overall, the single-case design is eminently justifiable under certain conditions—where the case represents (a) a critical test of existing theory, (b) an extreme or unusual circumstance, or (c) a common case, or where the case serves a (d) revelatory or (e) longitudinal purpose.

A major step in designing and conducting a single case is defining the unit of analysis (or the case itself). An operational definition is needed, and some caution must be exercised—before a total commitment to the whole case study is made—to ensure that the case in fact is relevant to the issues and questions of interest.

Within the single-case study may still be incorporated subunits of analyses, so that a more complex (or embedded) design is developed. The

subunits can often add significant opportunities for extensive analysis, enhancing the insights into the single case. However, if too much attention is given to these subunits, and if the larger, holistic aspects of the case begin to be ignored, the case study itself will have shifted its orientation and changed its nature. If the shift is justifiable, you need to address it explicitly and indicate its relationship to the original inquiry.

### What Are the Potential Multiple-Case Designs (Types 3 and 4)?

The same study may contain more than a single case. When this occurs, the study has used a multiple-case design, and such designs have increased in frequency in recent years. A common example is a study of school innovations (such as the use of new curricula, rearranged school schedules, or a new educational technology), in which individual schools adopt some innovation. Each school might be the subject of an individual case study, but the study as a whole covers several schools and in this way uses a multiple-case design.

**Multiple-versus single-case designs.** In some fields, multiple-case studies have been considered a different “methodology” from single-case studies. For example, both anthropology and political science have developed one set of rationales for doing single-case studies and a second set for doing what have been considered “comparative” (or multiple-case) studies (see Eckstein, 1975; Lijphart, 1975). This book, however, considers single- and multiple-case designs to be variants within the same methodological framework—and no broad distinction is made between the so-called classic (that is, single) case study and multiple-case studies. The choice is considered one of research design, with both being included under case study research.

Multiple-case designs have distinct advantages and disadvantages in comparison to single-case designs. The evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as being more robust (Herriott & Firestone, 1983). At the same time, the rationale for single-case designs cannot usually be satisfied by



multiple cases. By definition, the unusual or extreme case, the critical case, and the revelatory case all are likely to involve only single cases. Moreover, the conduct of a multiple-case study can require extensive resources and time beyond the means of a single student or independent research investigator. Therefore, the decision to undertake multiple-case studies cannot be taken lightly.

Selecting the multiple cases also raises a new set of questions. Here, *a major insight is to consider multiple cases as one would consider multiple experiments*—that is, to follow a “replication” design. This is far different from a misleading analogy that incorrectly considers multiple cases to be similar to the multiple respondents in a survey (or to the multiple subjects within an experiment)—that is, to follow a “sampling” design. The methodological differences between these two views are revealed by the different rationales underlying the replication as opposed to sampling designs.

*Replication, not sampling logic, for multiple-case studies.* The replication logic is analogous to that used in multiple experiments (see Hersen & Barlow, 1976). For example, upon uncovering a significant finding from a single experiment, an ensuing and pressing priority would be to replicate this finding by conducting a second, third, and even more experiments. Some of the replications might attempt to duplicate the exact conditions of the original experiment. Other replications might alter one or two experimental conditions considered unimportant to the original finding, to see whether the finding could still be duplicated. Only with such replications would the original finding be considered robust.

The logic underlying the use of multiple-case studies is the same. Each case must be carefully selected so that it either (a) predicts similar results (a *literal replication*) or (b) predicts contrasting results but for anticipatable reasons (a *theoretical replication*). The ability to conduct 6 or 10 case studies, arranged effectively within a multiple-case design, is analogous to the ability to conduct 6 to 10 experiments on related topics; a few cases (2 or 3) would be literal replications, whereas a few other cases (4 to 6) might be designed to pursue two different patterns of theoretical replications. If all the cases turn out as predicted, these 6 to 10 cases, in the aggregate, would

have provided compelling support for the initial set of propositions. If the cases are in some way contradictory, the initial propositions must be revised and retested with another set of cases. Again, this logic is similar to the way researchers deal with conflicting experimental findings.

The logic underlying these replication procedures also should reflect some theoretical interest, not just a prediction that two cases should simply be similar or different. For example, one might consider the initial proposition that an increase in using a new computer system in small business environments will occur when the system is used for both administrative (e.g., accounting and personnel) and business (e.g., sales and production) applications, but not either alone. To pursue this proposition in a multiple-case study design, 3 or 4 small businesses (or cases) might be selected in which both types of applications are present, to determine whether, in fact, use of the system did increase over a period of time (the investigation would be predicting a literal replication in these 3 or 4 cases). Three or 4 additional cases might be selected in which only administrative applications are present, with the prediction being little increase in use (predicting a theoretical replication). Finally, 3 or 4 other cases would be selected in which only business applications are present, with the same prediction of little increase in use, but for different reasons than the administrative-only cases (another theoretical replication). If this entire pattern of results across these multiple cases is indeed found, the 9 to 12 cases, in the aggregate, would provide substantial support for the initial proposition.

Another example of a multiple-case replication design comes from the field of urban studies (see [BOX 11](#)). You also can find examples of three entire case studies, all following a replication design but covering university administration, the transformation of business firms, and HIV/AIDS prevention, in the companion text (Yin, 2012, chaps. 11, 12, and 15).

## BOX 11

### A Multiple-Case, Replication Design

A common problem in the 1960s and 1970s was how to get good advice to city governments. Peter Szanton’s (1981) book, *Not Well*



*Advised*, reviewed the experiences of numerous attempts by university and research groups to collaborate with city officials.

The book is an excellent example of a multiple-case replication design. Szanton starts with eight case studies, showing how different university groups all failed to help city governments. The eight cases are sufficient “replications” to convince the reader of a general phenomenon. Szanton then provides five more case studies, in which nonuniversity groups also failed, concluding that failure was therefore not necessarily inherent in the academic enterprise. Yet a third group of cases shows how university groups have successfully helped business, engineering firms, and sectors other than city government. A final set of three cases shows that those few groups able to help city government were concerned with implementation and not just with the production of new ideas, leading to the major conclusion that city governments may have peculiar needs in receiving but also then putting advice into practice.

Within each of the four groups of case studies, Szanton has illustrated the principle of literal replication. Across the four groups, he has illustrated theoretical replication. This potent case study design can and should be applied to many other topics.

This replication logic, whether applied to experiments or to case studies, must be distinguished from the sampling logic commonly used in surveys. The sampling logic requires an operational enumeration of the entire universe or pool of potential respondents and then a statistical procedure for selecting a specific subset of respondents to be surveyed. The resulting data from the sample that is actually surveyed are assumed to reflect the entire universe or pool, with inferential statistics used to establish the confidence intervals for which this representation is presumed accurate. The entire procedure is commonly used when a researcher wishes to determine the prevalence or frequency of a particular phenomenon.

Any application of this sampling logic to case study research would be misplaced. First, case studies are not the best method for assessing the prevalence of phenomena. Second, a case study would have to cover both the phenomenon of interest and its context, yielding a large number of

potentially relevant variables. In turn, this would require an impossibly large sample of cases—too large to allow more than a superficial examination of any given case.

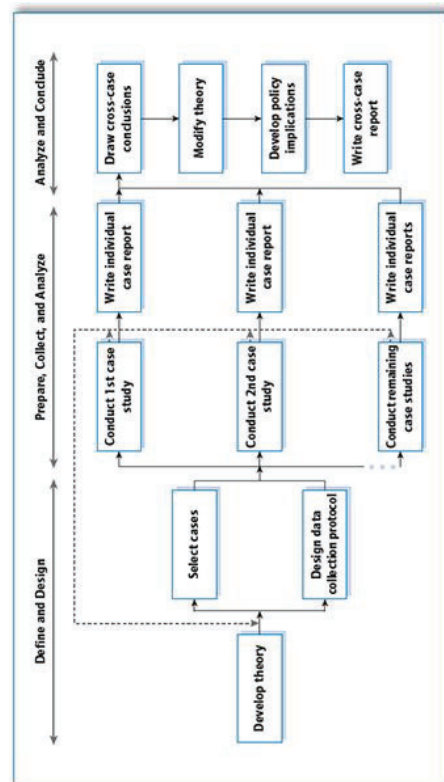
Third, if a sampling logic had to be applied to all types of research, many important topics could not be empirically investigated, such as the following problem: Your investigation deals with the role of the presidency of the United States, and you are interested in doing a multiple-case study of (a few) presidents to test your theory about presidential leadership. However, the complexity of your topic means that your choice of a small number of cases could not adequately represent all the 44 presidents since the beginning of the Republic. Critics using a sampling logic might therefore deny the acceptability of your study. In contrast, if you use a replication logic, the study is eminently feasible.

The replication approach to multiple-case studies is illustrated in [Figure 2.5](#). The figure indicates that the initial step in designing the study must consist of theory development, and then shows that case selection and the definition of specific measures are important steps in the design and data collection process. Each individual case study consists of a “whole” study, in which convergent evidence is sought regarding the facts and conclusions for the case; each case’s conclusions are then considered to be the information needing replication by other individual cases. Both the individual cases and the multiple-case results can and should be the focus of a summary report. For each individual case, the report should indicate how and why a particular proposition was demonstrated (or not demonstrated). Across cases, the report should indicate the extent of the replication logic and why certain cases were predicted to have certain results, whereas other cases, if any, were predicted to have contrasting results.

An important part of [Figure 2.5](#) is the dashed-line feedback loop. The loop represents the situation where important discovery occurs during the conduct of one of the individual case studies (e.g., one of the cases did not in fact suit the original design). Such a discovery may require you to reconsider one or more of the study’s original theoretical propositions. At this point, “redesign” should take place before proceeding further. Such redesign might involve the selection of alternative cases or changes in the case study protocol (see [Chapter 3](#)). Without such redesign, you risk being accused of distorting or ignoring the discovery, just to accommodate the

original design. This condition leads quickly to a further accusation—that you have been selective in reporting your data, to suit your preconceived ideas (that is, the original theoretical propositions).

Figure 2.5 Multiple-Case Study Procedure



SOURCE: COSMOS Corporation.

Overall, [Figure 2.5](#) depicts a different logic from that of a sampling design. The logic as well as its contrast with a sampling design may be difficult to follow and is worth extensive discussion with colleagues before proceeding with any multiple-case study.

When using a multiple-case design, a further question you will encounter has to do with the *number* of cases deemed necessary or sufficient for your study. However, because a sampling logic should not be used, the typical criteria regarding the use of a power analysis to determine the desired sample size (e.g., Lipsey, 1990) also are irrelevant. Instead, you should think of the number of case replications—both literal and theoretical—that you need or would like to have in your study.

Your judgment will be a discretionary, not formulaic, one. Such discretionary judgments occur in non-case study research, such as in setting the criterion for defining a “significant effect” in experimental science. Thus, designating a “ $p < .05$ ” or “ $p < .01$ ” likelihood of detection, to set the confidence level for accepting or rejecting the null hypothesis, is not based on any formula but is a matter of discretionary, judgmental choice. Note that when patient safety and well-being are at stake, as in a clinical trial, investigators will usually not even settle for a “ $p < .01$ ” significance level but may choose to attain a “ $p < .0001$ ” or even more stringent level. Analogously, designating the number of replications depends upon the certainty you want to have about your multiple-case results. For example, you may want to settle for two or three literal replications when your theory is straightforward and the issue at hand does not demand an excessive degree of certainty. However, if your theory is subtle or if you want a higher degree of certainty, you may press for five, six, or more replications.

In deciding upon the number of replications, an important consideration is related to your sense of the strength and importance of rival explanations. The stronger the rivals, the more additional cases you might want, each case showing a different result when some rival explanation had been taken into account. For example, your original hypothesis might be that summer reading programs improve students’ reading scores, and you already might have shown this result through several cases that served as literal replications. A rival explanation might be that parents also work more closely with their children during the summer and that this circumstance can account for the improved reading scores. You would then

find another case, with parent participation but no summer reading program, and in this theoretical replication you would predict that the scores would not improve. Having two such theoretical replications would provide even greater support for your findings.

*Rationale for multiple-case designs.* In short, the rationale for multiple-case designs derives directly from your understanding of literal and theoretical replications. The simplest multiple-case design would be the selection of two or more cases that are believed to be literal replications, such as a set of cases with exemplary outcomes in relation to some evaluation question, such as “how and why a particular intervention has been implemented smoothly.” Selecting such cases requires prior knowledge of the outcomes, with the multiple-case inquiry focusing on how and why the exemplary outcomes might have occurred and hoping for literal (or direct) replications of these conditions from case to case.<sup>5</sup>

More complicated multiple-case designs would likely result from the number and types of theoretical replications you might want to cover. For example, investigators have used a “two-tail” design in which cases from both extremes (of some important theoretical condition, such as extremely good and extremely bad outcomes) have been deliberately chosen. Multiple-case rationales also can derive from the prior hypothesizing of different types of conditions and the desire to have subgroups of cases covering each type. These and other similar designs are more complicated because the study should still have at least two individual cases within each of the subgroups, so that the theoretical replications across subgroups are complemented by literal replications within each subgroup.

*Multiple-case studies: Holistic or embedded.* The fact that a design calls for multiple-case studies does not eliminate the variation identified earlier with single-case studies: Each individual case may still be holistic or embedded. In other words, a multiple-case study may consist of multiple holistic cases (see [Figure 2.4](#), Type 3) or of multiple embedded cases (see [Figure 2.4](#), Type 4).

The difference between these two variants depends upon the type of phenomenon being studied and your research questions. In an embedded design, a study even may call for the conduct of a survey at each case study site. For instance, suppose a study is concerned with the impact of the same type of curriculum adopted by different nursing schools. Each nursing school may be the topic of a case study, with the theoretical framework dictating that nine such schools be included as case studies, three to replicate a direct result (literal replication) and six others to deal with contrasting conditions (theoretical replications).

For all nine schools, an embedded design is used because surveys of the students (or, alternatively, examination of students’ archival records) are needed to address research questions about the performance of the schools. However, the results of each survey will *not* be pooled across schools. Rather, the survey data will be part of the findings for each individual nursing school, or case. These data may be highly quantitative and even involve statistical tests, focusing on the attitudes and behavior of individual students, and the data will be used along with information about the school to interpret the success and operations with the curriculum at that particular school. If, in contrast, the survey data are pooled across schools, a replication design is no longer being used. In fact, the study has now become an embedded, single-case study, in which all nine schools and their students have now become part of some larger, main unit of analysis that might not have been specified at the outset. Such a turn of events would create a pressing need to discard the original multiple-case design. The newly designed single-case study would require a complete redefinition of the main unit of analysis and entail extensive revisions to the original theories and propositions of interest.

*Summary.* This section has dealt with situations in which the same investigation may call for multiple-case studies. These types of designs are becoming more prevalent, but they are more expensive and time-consuming to conduct.

Any use of multiple-case designs should follow a replication, not a sampling, logic, and a researcher must choose each case carefully. The cases should serve in a manner similar to multiple experiments, with similar

results (a literal replication) or contrasting results (a theoretical replication) predicted explicitly at the outset of the investigation.

The individual cases within a multiple-case study design may be either holistic or embedded. When an embedded design is used, each individual case study may in fact include the collection and analysis of quantitative data, including the use of surveys within each case study.

Select one of the case studies described in the BOXES of this book, reviewing the entire case study (not just the material in the BOX). Describe the research design of this case study. How did it justify the relevant evidence to be sought, given the main research questions to be answered? What methods were used to identify the findings, based on the evidence? Is the design a single- or multiple-case design? Is it holistic or does it have embedded units of analysis?

### MODEST ADVICE IN SELECTING CASE STUDY DESIGNS

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Now that you know how to define case study designs and are prepared to carry out design work, you might want to consider three pieces of advice.

#### Single- or Multiple-Case Designs?

The first word of advice is that, although all designs can lead to successful case studies, when you have the choice (and resources), multiple-case designs may be preferred over single-case designs. If you can do even a “two-case” case study, your chances of doing a good case study will be better than using a single-case design. Single-case designs are vulnerable if only because you will have put “all your eggs in one basket.” More

important, the analytic benefits from having two (or more) cases may be substantial.

To begin with, even with two cases, you have the possibility of direct replication. Analytic conclusions independently arising from two cases, as with two experiments, will be more powerful than those coming from a single case (or single experiment) alone. Alternatively, you may have deliberately selected your two cases because they offered contrasting situations, and you were not seeking a direct replication. In this design, if the subsequent findings support the hypothesized contrast, the results represent a strong start toward theoretical replication—again strengthening your findings compared to those from a single-case study alone (e.g., Eilbert & Lafronza, 2005; Hanna, 2005; also see [BOX 12](#)).

### BOX 12 Two, “Two-Case” Case Studies

#### 12A. Contrasting Cases for Community Building

Chaskin (2001) used two case studies to illustrate contrasting strategies for capacity building at the neighborhood level. The author’s overall conceptual framework, which was the main topic of inquiry, claimed that there could be two approaches to building community capacity—using a collaborative organization to (a) reinforce existing networks of community organizations or (b) initiate a new organization in the neighborhood. After thoroughly airing the framework on theoretical grounds, the author presents the two case studies, showing the viability of each approach.

#### 12B. Contrasting Strategies for Educational Accountability

In a directly complementary manner, Elmore, Abelman, and Fuhrman (1997) chose two case studies to illustrate contrasting strategies for designing and implementing educational accountability (i.e., holding schools accountable for the academic performance of their students). One case represented a lower cost, basic version of an accountability system. The other represented a higher cost, more complex version.

In general, criticisms about single-case studies usually reflect fears about the uniqueness or artifactual conditions surrounding the case (e.g., special access to a key informant). As a result, the criticisms may turn into skepticism about your ability to do empirical work beyond having done a single-case study. Having two cases can begin to blunt such criticism and skepticism. Having more than two cases will produce an even stronger effect. In the face of these benefits, having at least two cases should be your goal. If you do use a single-case design, you should be prepared to make an extremely strong argument in justifying your choice for the case.

Develop some preliminary ideas about a “case” for your case study. Alternatively, focus on one of the single-case studies presented in the BOXES in this book. In either situation, now think of a companion “case” that might augment the single case. In what ways might the companion case’s findings supplement those of the first case? Could the data from the second case fill a gap left by the first case or respond better to some obvious shortcoming or criticism of the first case? Would the two cases together comprise a stronger case study? Could yet a third case make the findings even more compelling?

### Closed or Adaptive Designs?

Another word of advice is that, despite this chapter’s details about design choices, you should not think that a case study’s design cannot be modified by new information or discovery during data collection. Such revelations can be enormously important, leading to your altering or modifying your original research design.

As examples, in a single-case study, what was thought to be a critical or unusual case might have turned out not to be so, after initial data

collection had started; ditto a multiple-case study, where what was thought to be parallel cases for literal replication turn out not to be so. With these revelations, you have every right to conclude that your initial design needs to be modified. However, you should undertake any alterations only given a serious caution. The caution is to understand precisely the nature of the alteration: Are you merely selecting different cases, or are you also changing your original theoretical concerns and objectives? The point is that the needed adaptiveness should not lessen the rigor with which case study procedures are followed.

### Mixed Methods Designs: Mixing Case Studies with Other Methods?

Researchers have given increasing attention to *mixed methods research*—a “class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a *single* study” (Johnson & Onwuegbuzie, 2004, p. 17, emphasis added). Confinement to a single study forces the methods being mixed into an integrated mode. The mode differs from the conventional situation whereby different methods are used in *separate* studies that may later be synthesized.

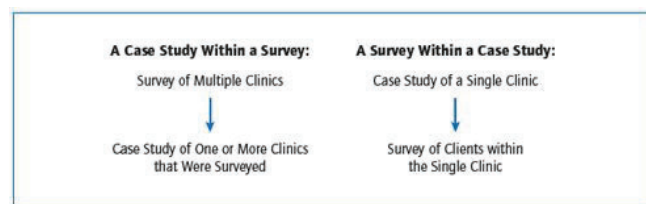
Mixed methods research forces the methods to share the same research questions, to collect complementary data, and to conduct counterpart analyses (e.g., Yin, 2006b)—in short, to follow a mixed methods design. As such, mixed methods research can permit researchers to address more complicated research questions and collect a richer and stronger array of evidence than can be accomplished by any single method alone. Depending upon the nature of your research questions and your ability to use different methods, mixed methods research opens a class of research designs that deserve your attention.

The earlier discussion of embedded case study designs in fact points to the fact that certain kinds of case studies already represent a form of mixed methods research: Embedded case studies may rely on holistic data collection strategies for studying the main case and then call upon surveys or other quantitative techniques to collect data about the embedded unit(s)

of analysis. In this situation, other research methods are embedded within case study research.

The opposite relationship also can occur. Your case study may be part of a larger, mixed methods study. The main investigation may rely on a survey or other quantitative techniques, and your case study may help to investigate the conditions within one of the entities being surveyed. The contrasting relationships (survey within case or case within survey) are illustrated in [Figure 2.6](#) (also see [Appendix B](#) for further discussion of these mixtures in relation to evaluation studies).

**Figure 2.6** Mixed Methods: Two Nested Arrangements



At the same time, mixed methods research need not include the use of case study research at all. For instance, a clinical study could be combined with historical work that embraces the quantitative analysis of archival records, such as newspapers and other file material. Going even further, mixed methods research need not be limited to combinations of quantitative and qualitative methods. For instance, a study could employ a mix of two quantitative methods: a survey to describe certain conditions, complemented by an experiment that tries to manipulate some of those conditions (e.g., Berends & Garet, 2002).

By definition, studies using mixed methods research are more difficult to execute than studies limited to single methods. However, mixed methods research can enable you to address broader or more complicated research questions than case studies alone. As a result, mixing case study research

with other methods should be among the possibilities meriting your consideration.

## NOTES TO CHAPTER 2

1. [Figure 2.2](#) focuses only on the formal research design process, not on data collection activities. For all three types of research (survey, case study, and experiment), data collection techniques might be depicted as the level below Level One in the figure. For example, for case study research, this might include using multiple sources of evidence, as described further in [Chapter 4](#). Similar data collection techniques can be described for surveys or experiments—for example, questionnaire design for surveys or stimulus presentation strategies for experiments.

2. Whether experiments also need to address statistical generalizations has been the topic of sharp debate in psychology. According to the statistical argument, the human subjects in an experiment should be considered a population sample, with the experimental results therefore limited to the universe of the same population. The debate began over the excessive use of college sophomores in behavioral research (e.g., Cooper, McCord, & Socha, 2011; Gordon, Slade, & Schmitt, 1986; McNemar, 1946; Peterson, 2001; Sears, 1986) and has since extended to an awareness that the subjects in most behavioral research have been white males from industrialized countries (Henrich, Heine, & Norenzayan, 2010), even though the experimental findings are intended to apply as “the norm for all human beings” (Prescott, 2002, p. 38).

3. One of the anonymous reviewers of the third edition of this book pointed out that construct validity also has to do with whether interviewees understand what is being asked of them.

4. For other suggested guidelines for reviewers of case study proposals or manuscripts, see Yin (1999).

5. Strictly quantitative studies that select cases with known outcomes follow the same design and have alternatively been called “case-control,” “retrospective,” or “case referent” studies (see Rosenbaum, 2002, p. 7).

An analytic generalization consists of a carefully posed theoretical statement, theory, or theoretical proposition. The generalization can take the form of a lesson learned, working hypothesis, or other principle that is believed to be applicable to other situations (not just other “like cases”). Thus, the preferred analytic generalization is posed at a conceptual level



higher than that of the specific case (presumably, this higher level was needed to justify the importance of studying the chosen case in the first place).

Though not using the same terminology, other prominent works have devoted attention to analytic generalization, also distinguishing it from statistical generalization: (1) Mitchell's (1983) discussion of *logical inference* and *statistical inference*; (2) Bromley's (1986) discussion of *case inference* compared with *statistical inference* (pp. 290–291); and Donmoyer's (1990) *schema*. A fourth work, by Burawoy (1991), covers the *extended case method*—his way of describing how a generalization “extends” a narrow case to some broader significance (pp. 271–280).

The more difficult and contrary position—that the studied case should be construed as an instance, example, or sample of some larger group of cases—undesirably returns to statistical generalization (the relationship between a sample and its population—e.g., Gomm, Hammersley, & Foster, 2000, pp. 99–103). That position dwells on the fact that a “case” seems to be an instance or example of other “like cases.” However, such a claim is inappropriate when thinking about analytic generalization, where the findings from a case study can have implications going well beyond the same kind of case and extend to a whole host of other unlike situations (see [BOX 7](#), p. 43, in the main text for three examples). Moreover, unless a case study has included a large number of cases—typically dozens or scores if not hundreds of cases (see [Tutorial 5.3](#))—the study will face an uphill battle by invoking the sample to population analogy and its concomitant need to employ statistical analyses to assess the strength of any relationship.

Small (2009) provides two excellent examples and an insightful discussion of analytic generalization, also citing the same key works as referenced above. To him, the preferred logic represents “a different perspective and language of inquiry” (p. 18). He further notes the importance of starting with a substantive proposition (e.g., a causal relationship) rather than a numeric one (e.g., the representativeness of a case) to make analytic generalizations work.

Bromley, D. B. (1986). *The case-study method in psychology and related disciplines*. Chichester, England: Wiley. Provides comprehensive guidance on case study research in psychology.

Burawoy, M. (1991). The extended case method. In M. Burawoy, A. Burton, A. A. Ferguson, K. J. Fox, J. Gamson, N. Gartrell, et al. (Eds.), *Ethnography unbound: Power and resistance in the modern metropolis* (pp. 271–287). Berkeley: University of California Press. Presents the extended case method for analyzing participant-observation data.

Donmoyer, R. (1990). Generalizability and the single-case study. In E. W. Eisner & A. Peshkin (Eds.), *Qualitative inquiry in education: The continuing debate* (pp. 175–200). New York: Teachers College Press. Offers a way of generalizing from single studies, not based on sampling and statistical significance.

Gomm, R., Hammersley, M., & Foster, P. (2000). Case study and generalization. In R. Gomm, M. Hammersley, & P. Foster (Eds.), *Case study method* (pp. 98–115). London: Sage. Highlights use of the case study method for generalizing, rather than merely studying a case for its own sake.

Mitchell, J. C. (1983). Case and situation analysis. *Sociological Review*, 31, 187–211. Emphasizes case study research as a method for preserving the unitary character of the social object being studied and discusses the challenge of generalizing from the case(s).

Small, M. L. (2009). “How many cases do I need?” On science and the logic of case selection in field-based research. *Ethnography*, 10, 5–38. Poses a thoughtful article on key issues in designing field-based research, including the challenge of generalizing from field situations.

## Briefly Annotated References for Tutorial 2.1