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Methods of Inquiry

Quantitative and Qualitative Approaches

The principal characteristic of scholarly and scientific inquiry—as opposed to informal, intuitive kinds of inquiry—is the use of rationally grounded procedures to extend knowledge that a community of scholars regards as reliable and valid. The dissertation process is a ritual of socialization into that community of scholars, so it is necessary for you, as a student, to master the scholarly procedures within your discipline. The specific methods chosen to attack a problem will depend on your discipline and the nature of the specific problem. There is no universally accepted approach within the social sciences, although there are rich research traditions that cannot be ignored, as well as a common understanding that chosen methods of inquiry must rest on rational justification. This means that scientific methods differ from more informal methods of inquiry by their reliance on validated public procedures that have been determined to produce reliable knowledge.

Currently, there are many disagreements in the social sciences regarding what constitutes knowledge and the procedures for gaining it. One way to think about how research generally contributes to the knowledge base of a discipline is in terms of the following three-level hierarchy of knowledge, suggested by our colleague Marilyn Freimuth.

Axiologic/Epistemic Level. This is the underlying level of basic world hypotheses that form the foundation for content and method within a field

of inquiry. ***Epistemology*** refers to the study of the nature of knowledge, whereas ***axiology*** refers to the study of ethics, values, and aesthetics. Examples of constructs at this level include the explanatory principle of cause and effect and the notion of open systems.

Theoretical Level. This is the level of models and theories. Theories are premises to account for data or, more informally, explanations of how things work based on data. Examples are the theory of loss aversion in economics (Tversky & Kahneman, 1991) and the five-factor theory of personality in psychology (McCrae & Costa, 2003). The distinction between *theories* and *models* is murky because these terms are often used interchangeably within the social sciences. At the most basic level, both theories and models refer to relationships between concepts. For our purposes, the term *model* refers to a higher-order theory, that is, a representational system at a higher level of abstraction that can inform and be informed by alternative theories. (This concept is similar to the framework or worldview that guides researchers, identified as a "paradigm" by Thomas Kuhn [1996].) Thus, psychoanalysis could be seen as a model, a wide lens with which to view and understand the mysteries of human behavior. Each model carries with it certain sets of assumptions. In the case of psychoanalysis, these assumptions include the unifying importance of causal determinism and unconscious motivation. Note that this use of the term *model* differs somewhat from that in the discussion of working models in Chapter 2.

Empirical Level. In the field of epistemology, *empiricism* refers to a commitment to obtaining knowledge through sense experience (literally, "based on experience" in Greek). Empiricism is frequently contrasted with *rationalism,* which refers to knowledge derived purely through thought and reason, and to more natural philosophical and religious traditions of reaching conclusions. In the present context, the empirical level includes hypotheses and methods and data of scientific research. Hypotheses are tentative answers to questions, generally based on theory.

The primary role of research within this three-level schema is to link the theoretical and the empirical. Theories need the support of data to remain viable, whereas methods carry assumptions that are theoretical in nature. Note that research findings do not contribute directly to the axiologic/epistemic level or even to basic models. Those levels reflect fundamental value commitments and personal preferences that are rarely modified on the basis of additional data, especially the kind of data generated by scholarly research. It is hard to imagine a psychoanalyst becoming a behaviorist

or a Republican joining the Democrats without a significant shift in values unlikely to be compelled by the accumulated wisdom imparted by a series of research studies. Because most researchers strongly identify with particular values and carry many personal preferences into their work, it becomes especially important to learn to discriminate between beliefs and opinions, on the one hand, and verifiable, data-inspired support for ideas, on the other hand.

A brief look at the history of science is a humbling experience that should put to rest the misguided notion that research discovers truth. Drilling holes in the skull (trephining) used to be an acceptable way to dismiss the demons responsible for mental illness, and it wasn't that long ago that the sun was thought to circle the earth. One wonders what remnants of contemporary scientific truth will be regarded as equally ludicrous tomorrow. Instead, what research contributes is a series of thoughtful observations that support or question the validity of theories, which are in turn based on a set of largely untestable beliefs and assumptions. Every once in a while, at opportunistic moments of scholarly upheaval, a new paradigm appears that seems to do a better job of explaining the available data and guiding further inquiry.

Each social science discipline and set of investigators seems to have its own favored approach to generating knowledge. For instance, public opinion studies usually rely on survey research methods, psychoanalytic studies of infants make use of observational techniques, studies of organizational effectiveness may employ action research methods and case studies, historical investigations of political and social events rely on archival records and content analysis, and laboratory studies of perceptual processes stress experimental manipulation and hypothesis testing. Within your chosen field, it is important to ask how a piece of research acquires legitimacy as reliable knowledge. No doubt part of the answer comes down to underlying epistemological assumptions and values. Certainly research strategies will differ in terms of the problems they address and the outcomes they produce. As we later show, one important distinction in the choice of method seems to be the nature of the relationship between the researcher and the topic of study.

We would argue that researchers in the social sciences have generally been myopic in defining the kinds of studies that might legitimately lend themselves to research dissertations. Most students in the social sciences are taught early on about the difference between independent and dependent variables and how experimental research implies active manipulation of independent variables to observe a subsequent impact

on dependent variables. This basic and time-honored strategy has an earthy history in the systematic evaluation of fertilizers for agricultural productivity (Cowles, 2000). It remains a cornerstone in conducting social science research with human subjects. Yet it is certainly not the only way to conduct research.

The only universal in scientific knowledge is a general commitment to using logical argument and evidence to arrive at conclusions that are recognized as tentative and subject to further amendment. Good scientists in action often deviate from an "official" philosophy of science and a prescribed methodology. William Bevan (1991), former president of the American Psychological Association, noted,

> If you want to understand what effective science making is about, don't listen to what creative scientists say about their formal belief systems. Watch what they do. When they engage in good, effective science making they don't, as a rule, reflect on their presuppositions; they engage in a practical art form in which their decisions are motivated by the requirements of particular problem solving. (p. 478)

The key to evaluating a completed study is to assess whether the selected method is sufficiently rigorous and appropriate to the research question and whether the study is conceptually and theoretically grounded. The more familiar you are with the full range of alternative research strategies, the more enlightened and appropriate your choice of a particular method is apt to be. Too often, students become so enamored with an approach to research that they choose the method before determining the question. Unless the dissertation is designed to illustrate the use of a promising and innovative methodology, this is putting the cart before the horse. In general, the method needs to evolve out of the research question and be determined by it.

Quantitative Methods

The epistemological foundation of most social science inquiry throughout the 20th century was logical positivism, a school of thought that maintains that all knowledge is derived from direct observation and logical inferences based on direct observation. To a great extent, the notion of objectively studying human beings is derived from a love affair that social scientists have had with the natural sciences, which sought to understand nature by isolating phenomena, observing them, and formulating mathematical laws to describe patterns in nature. Current research in the social sciences is deeply steeped in the empirical and quantitative traditions.

Statistical methods are especially useful for looking at relationships and patterns and expressing these patterns with numbers. Descriptive statistics describe these patterns of behavior, whereas inferential statistics draw on probabilistic arguments to generalize findings from samples to populations of interest. Kerlinger (1977) focused on the inferential process when he defined *statistics* as

> the theory and method of analyzing quantitative data obtained from samples of observations in order to study and compare sources of variance of phenomena, to help make decisions to accept or reject hypothesized relations between the phenomena, and to aid in making reliable inferences from empirical observations. (p. 185)

Note that the focus in the natural science model of research is the study of average or group effects, not of individual differences. The kinds of inferential statements that derive from this model of research refer to groups of people or groups of events; that is, they are probabilistic (e.g., "Surveys find that most people believe that police officers use excessive force in dealing with criminals," or "Emotional expressiveness is related to coping effectively with natural disasters").

In experimental research, quantitative research designs are used to determine aggregate differences between groups or classes of subjects. Emphasis is placed on precise measurement and controlling for extraneous sources of error. The purpose, therefore, is to isolate a variable of interest (the independent variable) and manipulate it to observe the impact of the manipulation on a second, or dependent, variable. This procedure is facilitated by the "control" of extraneous variables, thus allowing the researcher to infer a causal relationship between the two (or more) variables of interest.

Methodological control is generally accomplished by two procedures that rely on the principle of randomness. One is *random sampling*, which uses subjects that have randomly been drawn from the potential pool of subjects so that each member of the population has an equal chance or known probability of being selected. Random selection of subjects permits the researcher to generalize the results of the study from the sample to the population in question. The second procedure is *randomization*, which assigns subjects to groups or experimental conditions in such a way that each subject has an equal chance of being selected for each condition. Subject characteristics are thus randomly distributed in every respect other than the experimental manipulation or treatment, allowing the researcher to infer that resultant differences between the groups must be the result of the isolated variable in question.

Unfortunately, these efforts at experimental control are often impractical in social science research with human subjects. Psychology, for instance, has an honorable tradition of laboratory research using tight experimental designs, but research in the clinical or social arena may not permit the kind of control stipulated by the experimental method. This dilemma is equally prominent in field studies in disciplines such as sociology, education, and political science. Jared Diamond (2005), Pulitzer Prize–winning geographer and biologist, for example, conducted quantitative "natural experiments" to investigate the problem of deforestation on Pacific islands. He and his colleague Barry Rolett numerically graded the extent of deforestation on 81 Pacific islands and statistically predicted this outcome from a combination of nine input variables, such as the amount of rainfall, isolation from human populations, and restoration of soil fertility. In a different context, one cannot practically conspire to rear children using two distinct parenting styles, nor can one ethically inflict child abuse to study its immediate impact in a controlled fashion. Researchers can, however, study analogs of these variables using pure experimental designs (e.g., one can ask parents to use specific interventions at the onset of particular child behaviors). Change studies, in which a treatment or program is being evaluated for its effectiveness, may also lend themselves well to experimental designs. Even so, it may not be possible to randomize subjects into groups that receive a treatment or intervention and those that do not. A number of ingenious solutions have been proposed to deal with the ethics of denying treatment to those who need it, including the use of placebos and waiting-list controls (Kazdin, 2002).

More typically, the research method of choice in the social sciences seems to be a quasi-experimental design that compromises some of the rigor of the controlled experiment but maintains the argument and logic of experimental research (Kline, 2009; Shadish, Cook, & Campbell, 2001). This kind of research uses a systematic, empirical approach in which the investigator does not employ a control group or does not randomly assign subjects to conditions because events have already occurred or cannot be sufficiently manipulated. So-called causal statements become correlational statements in quasi-experimental research, although it is often possible to infer a sequence of events in causal form. That is one reason why it is crucial to have a theoretical model as a foundation for an empirical study. The model itself informs your attempt to meaningfully interpret the results of the study. However, because it is difficult to ascribe causality with confidence from quasi-experimental designs that lack true experimental manipulation, independent variables are often termed "predictor" variables in these studies (Kline, 2009).

Caution is also needed in interpreting the meaning of results whenever subjects assign themselves to groups. A colorful example is the apparent negative correlation that exists between the numbers of mules found in the various states and the number of PhDs living there. The fact that states that have a lot of mules don't have so many PhDs, and vice versa, is an empirical observation that can be statistically expressed in the form of a correlation coefficient. A researcher would be hard-pressed to argue a causal relationship between these two variables unless he or she drew on an underlying theoretical model that links the two variables through a third (mediating) variable, such as the degree of urbanization. Note that this simple correlational study could, at least theoretically, be transformed into an experimental study by, for example, flooding some states with mules to see if the PhDs leave or wooing the PhDs across state lines to see if the number of mules in the new state of residence decreases.

This is not a book on research design, but the adoption of a particular research strategy will affect the final form of your dissertation. Whether a study employs a true experimental design, a quasi-experimental design, or a cross-sectional survey design, the most popular strategy in the social sciences is a comparison between groups. That is, independent (randomly assigned) groups of subjects are used for each experimental or control condition. The best-known variant of this strategy, the pretest-posttest control group design, uses two equivalent groups of subjects that both receive pretests and posttests and differ only in the experimental treatment that is given to one group (see Table 3.1).

In this design, it becomes possible to evaluate the impact of an intervention because the control group offers a baseline for comparison. One could use this design to evaluate, for example, whether the inclusion of spouses in an aftercare program for heart bypass surgery patients encourages greater compliance with medical regimens. Or one could design a study to evaluate the effect of introducing air bags in automobiles on the rate of physical injury to passengers. Some automobiles of a given make would receive air bags, some would not, and the change in types and rates of injuries would be the dependent measure.

Table 3.1 Pretest, Posttest, Control Group Design

	Pretest	Treatment	Posttest
Experimental	yes	yes	yes
Control	yes	no	yes

The straightforward pretest–posttest–control group design makes it possible to attribute the effect of experimental interventions to those interventions rather than to some extraneous variable. The interpretation of results of studies using this design may be compromised, however, if the subjects have not been assigned to conditions in a truly random manner. In the proposed air bag study, for example, if automobiles and drivers are not randomly assigned to conditions, inherently safer drivers may well choose automobiles with better safety features. Because randomization is not always possible, it becomes crucial to argue for the "equivalence" of the two groups, even if they do not derive from the identical population of subjects. One way in which researchers attempt to make this argument is by matching the groups on key variables that are critical to the understanding of the study, such as age, sex, symptomatology, or, in the current example, the previous driving records of the participants.

The basic pretest–posttest–control group design does not adequately control for any effect that the pretest evaluations might have on the subjects. Some assessments can sensitize subjects by making them aware that they are now participating in a study or by providing a practice experience that contaminates the validity of posttest results. A simple posttest-only design may get around this difficulty and is probably underused (Campbell & Stanley, 2005). In any case, choosing a basic research design does not eliminate the need for you to think carefully and creatively about potential sources of error and alternative explanations to account for findings.

Most experimental designs are variants of the treatment and control group format described earlier.[1] Such designs permit the researcher to make causal inferences regarding relationships among the variables. In contrast, correlational (or observational) studies do not generally enable the researcher to demonstrate causal relationships among variables. Any conclusions regarding causality must be inferred from the underlying theory rather than from the results of the study.

Studies built around experimental or correlational designs generate data that are subsequently analyzed using appropriate inferential statistics. Statistical techniques that are used to evaluate the effectiveness of an intervention or a difference between groups, such as an analysis of variance (ANOVA) or *t* test, compare the size of between-group differences (e.g., the treatment effect) with the size of within-group differences due to individual variability. These techniques express the experimental tradition. The logic of the correlational paradigm is quite different (Cronbach, 1975). Correlations depend on comparing two distributions of scores that

are broadly dispersed along two dimensions, such as longevity and alcohol use. Statistical techniques that emerged from this tradition, such as multiple regression, are especially popular in social science research that relies on questionnaires, surveys, or scales and the relationship between continuous variables. Because correlational studies typically cannot randomly assign subjects to groups, we have a second major type of control in social science research—statistical control. Statistical control attempts to use complex statistical procedures to remove variability from measures of group difference or relationship that could be attributed to variables other than the major independent variables of interest. Be aware, however, that it is the design of the study and not the choice of statistical method that principally governs the types of statements that can be made about the relationships among variables.

Both experimental and correlational traditions have a rightful place in the evaluation of quantitative data, and a detailed comparison of them goes beyond the scope of this book. It is important to remember that although statistics is an indispensable tool for scientific inference, the appropriate application of statistics cannot make up for a faulty research design. In many instances, statistical methods drawn from both the experimental and correlational paradigms are equally legitimate choices. In fact, the same data usually can be analyzed in multiple ways. If you are looking at the relationship between locus of control and frequency of medical visits for preventive health, for example, you could express this relationship using a correlation coefficient or by dividing your sample into two or more subgroups on the basis of the personality construct of locus of control and comparing the resulting groups on medical visits. Generally speaking, it is not a good idea to "throw away" data (you are throwing away data if you arbitrarily reduce a continuum of locus of control scores to two or more discrete values, such as internal or external categories), but these kinds of decisions require statistical expertise and theoretical grounding.

Table 3.2 summarizes the methodological and statistical methods of controlling for extraneous factors in a research design.

We wish to make two additional points regarding the use of quantitative research. One is that there is a tendency in the social sciences to overemphasize the importance of statistically significant findings and to underemphasize the importance of clinically or socially significant findings. In other words, simply because a difference is significant at a certain probability level (typically, .05 or .01) does not mean that the difference is meaningful in practical terms. For instance, a difference of 5 points on a

Table 3.2 Methods of "Control": Comparison Groups, Control Groups, and Statistics

Technique	Type of Control	Example
Randomization	Methodological	Assigns cases randomly to experimental and control groups.
Precision matching (pairwise matching)	Methodological	Pairs subjects on treatment relevant variables and assigns randomly to treatment conditions.
Frequency distribution matching	Methodological	Average values of E and C groups are matched on treatment relevant variables.
Comparison group	Methodological	Compares two similar groups without random assignment or matching.
Hierarchical regression	Statistical	Removes variability due to potential confounding before assessing main study variables.
Analysis of covariance	Statistical	Removes variability due to the "covariate" before assessing main and interaction effects.

depression scale might be statistically meaningful but may not be meaningful clinically. Too often, students assume that the object of research is to achieve statistical significance rather than to make meaningful inferences about behavior. The primary reason that Jacob Cohen (1990), the father of power analysis, was drawn to correlational analyses is that they yield an *r*, a measure of effect size. That is, unlike probability (*p*) values, correlation coefficients can straightforwardly indicate the magnitude of the relationship between variables, which may be far more informative than the presence or absence of statistical significance. Cohen went on to note that researchers sometimes learn more from what they see than from what they compute, and he argued for an increased use of the graphic display of data, using simple scatter plots and so-called stem-and-leaf diagrams before or instead of performing complicated statistical analyses. (We have more to say about this topic in Chapter 6, our discussion of strategies for presenting results.)

Second, as you consider the kinds of designs and controls that are available to the social science researcher, we urge you to be aware of a fundamental dilemma. Good research is a constant balancing act between control and meaningfulness. At one extreme is an emphasis on controlling the observation and measurement of a variable by eliminating the influence of as many confounding variables as possible. What results might be a tight laboratory study in which the findings inspire confidence but are not particularly interesting. At the other extreme is the observation of complex human behavior in the field, without invoking any controls, so that the results seem fascinating but are highly unreliable and difficult to replicate. The fashion in social science research has moved back and forth between these poles of emphasizing precision of measurement and generalizability of findings versus emphasizing depth of coverage and description of context. Today the pendulum seems to be swinging in the direction of meaningfulness, hastened by the availability of a greater number of permissible research strategies together with a reevaluation of research epistemology.

Qualitative Methods

The researcher who employs experimental and quasi-experimental designs attempts to control the playing field of the study as much as possible, restrict the focus of attention to a relatively narrow band of behavior (often manipulating experimental conditions to further narrow the object of study to a single variable), and do no harm as a detached and objective observer of the action. A countervailing trend in social science research calls for sidestepping the artificiality and narrowness of experimental studies by promoting methods of inquiry that allow researchers to be more spontaneous and flexible in exploring phenomena in their natural environment. Some of these methods of inquiry challenge the epistemological and philosophical foundations of traditional social science research, which is more compatible with a research culture that maintains a belief in a knowable world, universal properties of social behavior, and the attainment of truth through method (K. J. Gergen, 2001). The commitment to a logical empirical approach to research is not necessarily seamless with a postmodern worldview, which challenges the sanctity of the scientific method as a vehicle for attaining truth and promotes an awareness that beliefs and apparent "realities" are socially constituted rather than given and, therefore, can show up differently in different cultures,

times, and circumstances (Neimeyer, 1993). The term *constructivism* is a name for the epistemology associated with the view that what people may consider objective knowledge and truth are a result of perspective. For the constructivist, knowledge is not "found" or "discovered" from existing facts but constructed as the invention of an active, engaging mind.

There are many flavors of constructivism,[2] but they all focus on how humans create systems of meaning to understand their world and their experience. The term *social constructionism* is usually used to refer to the fact that meaning is typically created not by individual cognitive processes but within human relationships as part of a social exchange process. Thus, a focus on the isolated knower is replaced by an emphasis on how knowledge is situated within, and is dependent upon, historical factors, cultural factors, and contextual factors. Describing a person or an event is not mirroring "what is out there" but understanding how meaning is socially constructed and mediated by language and values.

Qualitative methods are usually linked to a constructivist theory of knowledge because qualitative methods tend to focus on understanding experiences from the point of view of those who live them. But that is not necessarily the case. The world of qualitative research is rich with alternative perspectives. At one extreme are those who, in their questioning of the validity of a logical positivistic science applied to human behavior and social systems, take issue with the ideal or even the possibility of having a neutral, disengaged investigator (see Feyerabend, 1981; Popper, 1965; Toulmin, 1972). Taking their hint from modern physics, they suggest that the presence of an observer inevitably alters that which is being observed—that, in fact, one cannot separate the investigator from the object of inquiry. Feminist theorists have other reasons for criticizing the traditional experimental method, claiming that it creates a hierarchy of power in which the omnipotent researcher, often a male, instructs, observes, records, and sometimes deceives the subjects (Peplau & Conrad, 1989). It should be noted, however, that whether a study uses experimental or nonexperimental methods does not necessarily imply anything about the researcher's commitment to nonsexist research.

The impact of these developments in the philosophy of science on method has been profound, especially within the last 20 years or so. A host of alternative research paradigms have evolved and are now being applied to dissertation research in the social sciences. The labels given to these approaches include "phenomenological," "hermeneutic," "naturalistic," "experiential," "dialectical," and so on. The generic label most

commonly used to incorporate these diverse research strategies is "qualitative research." Crotty (1998) maintained that the fundamental distinction between quantitative research and qualitative research is seen at the level of method, rather than the level of theory or epistemology. Moreover, qualitative researchers do not possess a distinct set of methods that are all their own (Denzin & Lincoln, 2011). They can make use of interviews, text analysis, surveys, participant observation, and even statistics. Over time, different research traditions have evolved that bring to bear particular perspectives from which to investigate particular topics, such as psychoanalytic studies of children and ethnographic studies of cultures. Within these domains, the researcher may draw on many specific methods; an example is the ethnographer who employs both interviews and observational descriptions. In general, qualitative research implies an emphasis on processes and meanings over measures of quantity, intensity, and frequency (Denzin & Lincoln, 2011). As suggested earlier, the newer generation of qualitative researchers emphasizes the socially constructed nature of reality, a close relationship between the researcher and the object of study, and the context that influences the inquiry.

The boundaries between quantitative research and qualitative research have become increasingly fuzzy as various disciplines have adopted their own perspectives on adapting methodologies to serve their needs. At the risk of overgeneralization, we are listing eight distinctions between quantitative and qualitative research that are often highlighted. These distinctions are also summarized in Table 3.3.

1. The most obvious distinction is that data in quantitative studies are expressed in numbers, where numbers are a metric for measuring, describing, testing, and generalizing about variables of interest to the researcher. In qualitative research, the currency of choice is words. However, in some qualitative (or hybrid) studies, those words may be coded, categorized, expressed in numerical form, and analyzed quantitatively.

2. Quantitative research tends to use the hypothetico-deductive approach to research design, which prescribes specification of variables and hypotheses before data collection. Counterexamples include survey research methods and factor analytic studies that are more exploratory and rely on inductive rather than deductive procedures to interpret findings. In contrast, qualitative research begins with specific observations and moves toward the identification of general patterns that emerge from the cases under study. The researcher does not impose much of an organizing structure or make assumptions about the interrelationships among

Table 3.3 Common Differences Between Quantitative and Qualitative Research Strategies

Quantitative	Qualitative
1. Data expressed in numbers	1. Data expressed in words
2. Hypothetico-deductive	2. Inductive
3. Controlled research situations	3. Naturally occurring and contextual
4. Isolation of operationally defined variables	4. Holistic view of phenomena
5. Seeks objectivity	5. Interested in subjectivity
6. Emphasis on prediction and explanation	6. Emphasis on description, exploration, search for meaning
7. Researcher directs, manipulates, controls	7. Researcher participates and collaborates
8. Statistical analysis	8. Text analysis

the data prior to making the observations. This is not to imply, however, that the study is not thoroughly planned.

3. The quantitative researcher usually tries to control the site and context of the study to focus on a limited number of variables. This is particularly true in experimental laboratory research and, to a lesser extent, quasi-experimental studies. The qualitative researcher, on the other hand, is intent on understanding phenomena in their naturally occurring context with all of its inherent complexity. Just because a study is conducted in the field, however, does not mean that it is necessarily qualitative in form.

4. Quantitative research seeks to define a narrow set of variables operationally and isolate them for observation and study. This contrasts with qualitative research, which is more holistic and aims for a psychologically rich, in-depth understanding of a person, program, or situation by exploring a phenomenon in its entirety.

5. Quantitative research seeks objectivity and pursues this ideal by standardizing procedures and measures as much as possible and by distancing the researcher from the participants. The qualitative researcher values the subjectivity of the participants and sees their unique characteristics

not as "error" to be removed or minimized but as valued aspects of the research situation.

6. The aim of quantitative studies is prediction, control, or explanation/theory testing, or all three. Predicting under what circumstances events lead to other events or variables are associated with other variables helps to explain important phenomena in the social sciences. In qualitative studies, the goal is more likely to focus on description, exploration, search for meaning, or theory building. Qualitative research tends to be a discovery-oriented approach.

7. The stance of the researcher is different in qualitative research than in quantitative research. The quantitative researcher drives the study by manipulating and controlling the conditions of the study as well as the information provided to the research participants. The qualitative researcher usually invites the subject to participate, sometimes as a formal collaborator, by contributing knowledge about unobservable aspects of his or her experience that are not accessible to the researcher in other ways.

8. Quantitative research relies on statistical analysis to analyze data. This includes the use of descriptive and inferential statistics to determine the relationship between variables or the significance of group differences or the effect of an intervention. In qualitative research, some kind of text analysis is employed to categorize responses and identify themes, which are then evaluated subjectively to shed light on a phenomenon of interest. Although individual differences may be explored to further understand the phenomenon, those differences between individuals or groups are usually not the focus of the study. Instead, they are used to build theory or add to theory development.

The appropriate selection of methods of inquiry is contextual and depends to a large extent on learning the standards used in your own discipline. For example, qualitative methods have an especially comfortable home in the ethnographic and field study traditions of anthropology and sociology that emerged in the 19th century. Psychologists and psychiatrists also developed detailed case histories of their patients at about that time. Today, qualitative dissertations are widespread, although any classification of qualitative methods is apt to be a simplification. The following approaches are frequently adopted in contemporary social science dissertations: phenomenological research, ethnographic inquiry, grounded theory, and narrative research. They are described in more detail throughout the book.

As Crotty (1998) clarified, all methodologies and methods (methodologies can be regarded as the strategies, action plans, or designs that inform the choice of specific methods, that is, procedures and techniques for data collection and analysis) flow from philosophical positions that provide a theoretical context for the choice of methodology. Theories and methods need to be logically linked. However, it is also possible for different theoretical perspectives to employ very similar methods. For instance, case studies have a rich tradition in the literature as a method of collecting data. But there are big differences between observing a well-known political figure to learn about campaign tactics, interviewing the Dalai Lama about the role of spirituality in world affairs, and measuring the social behavior of an autistic child before and after a treatment intervention. All of these examples can formally be described as case studies, but they emanate from different perspectives on research. We remind you to be tolerant of overlapping categorizations because there is considerable inbreeding among research paradigms. And we urge you again to select methods, regardless of their source, based on their sensitivity and application to the research questions you are asking.

Phenomenology

Phenomenologists take issue with positivist science and maintain that the scientific world is not the "lived" world that we experience on a daily basis. Edmund Husserl (1970), the reputed founder of phenomenology, argued that traditional science distances people from the world of everyday experiences. By setting aside theories, conceptualizations, and hypotheses, one could begin with a direct and unbiased appreciation of pure human experience. As such, the phenomenological movement was inspired by Husserl's well-known dictum, "[Back] to the things themselves!"

The reader who seeks a historical perspective of the philosophical basis of phenomenology is referred to analyses by Crotty (1998), Giorgi (2009), and Gubrium and Holstein (1997). Crotty, in particular, maintained that the practice of phenomenological research, especially in North America, has evolved to the point that the everyday experiences of participants are accepted much more subjectively and uncritically than the theory of phenomenology would suggest. Gubrium and Holstein discussed how phenomenology has become a philosophical basis for interpretive research strategies that include ethnomethodology (the study of the meaning of ordinary talk and social interactions) and conversational analysis (the study of the structure of such talk and interactions).

As it is most commonly understood, the focus of phenomenological research is on what the person experiences and its expression in language that is as loyal to the lived experience as possible. Thus, phenomenological inquiry attempts to describe and elucidate the meanings of human experience. More than other forms of inquiry, phenomenology attempts to get beneath how people describe their experience to the structures that underlie consciousness, that is, to the essential nature of ideas. Phenomenologically oriented researchers typically use interviews or extended conversations as the source of their data. Important skills for the researcher include listening, observing, and forming an empathic alliance with the subject. The investigator remains watchful for themes that are presented but resists any temptation to structure or analyze the meanings of an observation prematurely. Once the basic observations are recorded, the data may be reduced, reconstructed, and analyzed as a public document.

Most writers distinguish between at least two strains of phenomenological research (Polkinghorne, 2010). One, called "empirical" phenomenological research, is directly descended from Husserl's philosophical position. It is represented by a tradition of studies from Duquesne University, starting with van Kaam's (1966) study of "feeling understood." Giorgi's (2009) ongoing work is illustrative: The researcher collects naïve descriptions of a phenomenon from open-ended questions and dialogue with a participant and then uses reflective analysis and interpretation of the participant's story to describe the structure of the experience. This is in line with Husserl's observation that the mind identifies objects as indicators of categories rather than as raw sensory data.

The second primary type of phenomenological research is "existential" or "interpretive" phenomenological research (Polkinghorne, 2010). This increasingly popular approach within the research community draws upon the existential contributions of Heidegger, a student of Husserl. Heidegger was interested in the uniqueness of individuals rather than the classification schemes found across people. Interpretive phenomenology refers to how different individuals understand and give meaning to similar life events. An example might be how different participants in a study understand and relate to the experience of returning home from military service.

Clark Moustakas (1994), one of the founding fathers of phenomenological research, referred to his own version of phenomenological inquiry as *heuristic research*, meaning "to discover" or "to find." The process begins with a question or a problem that is personally meaningful to the researcher in terms of understanding the relationship between oneself and world. Moustakas's early study of loneliness serves as an example. According to

Moustakas, heuristic research has a somewhat different flavor than does the Duquesne approach: The process maintains closer contact with the individual stories of the participants than does structural analysis. At the same time, it is broader in scope than a single situation in the life of a participant and may go beyond narrative description to include stories, self-dialogues, journals, diaries, and artwork as sources of data.

Several of our doctoral students have developed dissertations based on phenomenologically oriented qualitative interviews. As one example, Lauri Francis (2012), for her dissertation in educational leadership, used interviews and a writing activity to determine which pedagogical experiences impact the ability of teaching leaders to nurture the implementation of academic rigor in the classroom. Another student explored how people make meaning from experiences of unanticipated mortal danger. Veronica Clark (1997) conducted open-ended interviews with 10 participants who had experienced life-threatening events in the arena of sports. Her analysis of and reflection on these interviews, presented in both prose and prose trope (a form of narrative poetry), revealed how the events had forced participants to experience multiple realities and get to a deeper understanding of the layered human experience. Finally, Sharon Sherman (1995) completed a largely phenomenological dissertation on the meaning of living with asthma. Her interviews with asthmatic adults led to the development of a conceptual model by which to understand this experience.

Ethnographic Inquiry

The ethnographic paradigm includes anthropological descriptions, naturalistic research, field research, and participant observations. Ethnographers attempt to capture and understand specific aspects of the life of a particular group by observing their patterns of behavior, customs, and lifestyles. The focus is on obtaining full and detailed descriptions from informants about ordinary behavior within naturally occurring settings. There is a strong emphasis on exploring the nature of a specific social phenomenon rather than testing hypotheses (Atkinson & Hammersley, 1994). Ethnographers tend to work with uncoded, unstructured data to produce explicit interpretations of the meanings of human actions. Ethnography is a prominent research method within the fields of cultural anthropology and sociology.

Ethnographic inquiry can be found on a continuum ranging from relatively pure description to more theoretically guided explanations of

cultural, social, and organizational life. On the more inductive end of the continuum, the researcher develops theory out of the descriptive and interpretive process; on the deductive end of the continuum, the researcher builds a study out of an established theoretical framework. Typically, the ethnographer initiates prolonged contact and immersion in a setting of interest while maintaining as much detachment as possible from the subject matter. The naturalistic setting could be the mental hospital explored in the work of Erving Goffman (1961) over 50 years ago or the street corner populated by unemployed Black men in a classic study by Liebow (1968/2003). More traditional anthropological examples would be a study of health practices among Native Americans living on a reservation or the immersion in non-Western cultures by Mead, Malinowski, or Franz Boas, the renowned ethnographer who advanced social relativism as the prevailing form of American anthropology. The investigator might obtain some preliminary understanding of the history of the culture by referring to archival records and artifacts in preparation for living among the informants for several months. During the time in the field, the researcher would keep field notes of all observations and interactions and perhaps follow up the observations with intensive, qualitative interviews. The data are recorded verbatim, if possible, using the language of the participant, and then reduced for analysis and presentation. More detailed overviews of ethnographic research can be found in contemporary texts such as Schensul, Schensul, and LeCompte (2013) and Fetterman (2010).

When conducting ethnographic studies, there is a fundamental tension between being an objective, detached observer and an emotionally involved participant. The researcher simultaneously adopts two distinct roles while trying to understand the actions, beliefs, and knowledge of a particular group of people (the insider perspective is called *emic*, and the outsider perspective is called *etic*). George Herbert Mead (1934), a social psychologist and philosopher from the late 19th and early 20th centuries, argued that to "enter the attitudes of the community" one must "take the role of others," and this adoption of the perspective of others found its way into ethnographic inquiry. Today, ethnography is being transformed by an infusion of critical inquiry, which means going beyond trying to understand a culture to addressing political dimensions within it (Crotty, 1998). Thus, whereas traditional ethnography positions the researcher in the background of the study as an objective recorder of facts (i.e., the "realist" position), some contemporary ethnographers take a position of advocacy toward their subjects, who often represent marginalized groups in

society. The latter is known as the "critical" perspective (Madison, 2012). Another extension of ethnographic inquiry is called autoethnography, whereby the researcher becomes the object of study. Stacy Holman Jones (2005) showed how a qualitative researcher might subject his or her own gender, class, and cultural beliefs and behaviors to the same study as those of other participants.

Ethnographic inquiry was the basis of Sarah MacDougall's (2005) creative dissertation on the transformational capacity of a contemporary group process called PeerSpirit circling. MacDougall drew on evidence from ancient and contemporary indigenous cultures indicating the efficacy of circle council as a means of effective problem solving, and used focus groups, participant observation, interviews, and autoethnography to demonstrate how the practice fosters personal transformative experiences that lead to collaborative social action. In an excellent dissertation in sociology at the University of California at Santa Cruz, Rebecca Scott (2007) attempted to understand how the culture of West Virginia coalfields contributes to endorsement of mountaintop-removal coal mining, which leads to both environmental and social destruction. Her study involved spending time in the coal-mining culture and interviewing the stakeholders.

Grounded Theory

One of the more prominent types of qualitative research is referred to as grounded theory. In Crotty's (1998) opinion, grounded theory is a form of ethnographic inquiry that relies on a clearly formulated series of procedures for developing theory. When researchers use the term *grounded theory,* they are usually referring to those analytical steps (described in Chapter 7), but the term can also apply to a method of inquiry itself. As such, grounded theory has its roots in the theory of symbolic interactionism, which also influenced ethnographic inquiry (Crotty, 1998). Symbolic interactionism evolved as a pragmatic approach to the study of social interactions through the original contributions of George Herbert Mead. The theory argues that every person is a social construction; that is, people become persons through their interactions with society, using the vehicles of language, communication, and community. From the social interactionist perspective, the researcher must put himself or herself in the role of the other person to view the world from that person's perspective and understand the meaning of his or her actions (Crotty, 1998).

As a research methodology, the grounded theory approach is a way of conceptualizing the similarities of experience of an aggregate of individuals. It

is a discovery-oriented approach to research that offers a set of procedures for collecting data and building theory. The researcher has a research question but rarely a set of theoretical propositions or hypotheses to color the interpretation of findings that emerge from the study.

Grounded theory became popular as a research methodology through a successful 1967 book by Glaser and Strauss. A few years thereafter, the authors ended their collaboration and published independently, Strauss with his colleague Juliette Corbin (Strauss & Corbin, 1998) and Glaser (1998) on his own. The differences between their approaches make for interesting reading (see, e.g., Rennie, 1998). One of the key differences is the extent to which theory is truly discovered, without the preconceptions of the researcher, as opposed to verified, as is more the case in the traditional hypothetico-deductive paradigm. Thus, some grounded theorists became concerned that Strauss and Corbin, among others, became overly prescriptive in developing elaborate coding procedures for analyzing qualitative data. These coding procedures were seen as adding a deductive element to the research process because the categories themselves may reflect the researcher's interests and biases. The antidote, from the traditional grounded theory perspective, was to immerse oneself in the lived experience of the participants (i.e., the data) in a more direct but flexible way.

To make matters even more complicated, whereas most authorities view Strauss and especially Glaser as quite positivistic and objective in their orientations to research, recent writers are more explicitly constructivist and postmodern. Willig (2013), for example, has noted that the term *discovery* implies that the researcher is seeking to find meaning that is already extant within the data, whereas meaning does not *emerge* from a phenomenon but is always constructed by the researcher in an interaction with the data. Thus, one cannot completely avoid the influence of the researcher on the interpretation of the data, no matter how disciplined one's attempt to do so. This social constructivist wing of contemporary grounded theory research is well illustrated by the work of Charmaz (2005, 2014), who very clearly focuses on interpreting a phenomenon rather than reporting it or verifying it. She insists that theory that is generated in grounded theory research is shaped by the researcher and derived through deliberate interaction with the data. The resulting theory, then, is inevitably only one slice of the pie, so to speak, rather than the only "truth." Charmaz (2005) also made the point that, in contrast to her orientation, grounded theory methodology originally gave researchers a way of doing qualitative studies with positivist approval.

As a student, it may not matter so much which approach to grounded theory methodology you adopt, as long as you have a good understanding of what you are doing, why you are doing it, and that you are doing it consistently. The procedures for conducting a grounded theory study are presented in more detail in Chapter 5.

A good example of the classic grounded theory approach espoused by Glaser and Strauss (1967) is Victor Chears's (2009) dissertation *Taking a Stand for Others*. The author allowed the theory to emerge from the data rather than attempting to verify any preconceived concepts in his exploration of "standers," individuals who assume leadership roles with respect to other individuals or organizations explicitly to help facilitate important transitions in others' lives. The theory comes from the strategies adopted by the standers as they built these relationships and were present and available to help develop the capacities of their clients. A dissertation by Virginia Hedges (2003) used a grounded theory approach to examine the journeys of Latino students who were unusually successful in navigating the public school system. Data from one-on-one, open-ended interviews were analyzed using the constant comparative method (see Chapter 7). A grounded theory consisting of the conceptual categories of encouragement, *familia*, meaningful relationships, and goal orientation emerged that described a process by which Latino students enhance their cultural identity. Another example of a grounded theory dissertation is Candice Knight's (2005) exploration of significant training experiences that contributed to the perceived competency development of exceptional humanistic psychotherapists. Transcribed data from videotaped interviews with 14 participants from throughout the United States and Canada led to the emergence of a multivariate theoretical training model.

Narrative Inquiry

We have added narrative inquiry as a fourth major qualitative methodology, in part because of its increasing visibility in the research literature and because many of our students seem to be employing this model for their dissertations. Simply put, narrative inquiry can be regarded as a qualitative methodology that deals with biographic experiences as narrated by the person who has lived them (Chase, 2012). Forerunners of narrative inquiry include the life history method espoused by sociologists and anthropologists early in the 20th century. Life histories are often based on extensive autobiographies from noteworthy cultures or subgroups. Lewis's (1961) well-known study of a Mexican family, published as

The Children of Sanchez, introduced the "culture of poverty" as a concept. Other influences on the development of narrative inquiry include sociolinguists who have studied oral narratives of everyday experience and feminists who have addressed the distinctiveness of women's narratives. An example of the latter is Belenky, Clinchy, Goldberger, and Tarule's (1986) honored study *Women's Ways of Knowing*.

According to Chase (2012), a narrative may be oral or written and derived from naturally occurring conversation, an interview, or fieldwork. It can be a story that refers to a specific event, such as a job interview or a romantic liaison; it can be a story that reflects on an important life issue, such as athletics or dying; it can even be a story about one's entire life. What is distinct about the contemporary narrative approach to research is the focus on meaning making, as opposed to merely documenting a history or an experience. Narrative researchers need considerable training in interviewing skills because they must draw out and listen to the thoughts, feelings, and interpretations of the narrator as he or she constructs and organizes previous life experiences. Each person's narrative is unique, not only because of the uniqueness of that person's thought processes but also because of the uniqueness of the setting in which it is produced. Chase (2005, p. 657) referred to narratives as "socially situated interactive performances" to capture the notion that narratives are a product of a narrator and the listener coming together at a specific time and place for a specific purpose.

In the final stages of narrative inquiry, researchers also become narrators, as they interpret and make sense of the narratives they have elicited. In this endeavor, the subjectivity of the researcher and of those who are studied is part of the research process. The researcher's reflections, including how he or she makes interpretations and judgments, become part of the data pool and are also documented. This turning back and reflecting on oneself is known as reflexivity (Josselson & Lieblich, 2003) and has become a fundamental construct in contemporary narrative research.

Specific approaches to narrative research may differ somewhat depending on the academic discipline (Chase, 2012). Psychologists tend to emphasize the content of stories and may be interested in the relationship between life stories and the process of identity development (i.e., the life and the story differ from, but may impact, one another). For example, a dissertation by Denise Humphrey (2003) used a narrative approach to explore the intricate relationships of women who had been adopted in a closed adoption system with their adoptive mothers, birth mothers, and biological children. Humphrey interpreted the interview narratives of

these women through the lens of Kohut's (1978–1991) concepts of self-object needs and functions. Humphrey concluded that becoming a mother serves a restorative function for the adoptee that helps overcome deficiencies in the adoptive process. A second student, Ellen Schecter (2004), observed that little is known about how women in general, and lesbians in particular, negotiate sexual fluidity in terms of their sexual identity. Through in-depth, qualitative interviews, she examined the experience of long-time lesbians who, in midlife, became intimately partnered with a man. Common themes in the narratives were found, leading to a new conceptual model that shows how social and personal constructions are used to create idiosyncratic sexual identities that fit the individual.

In contrast to these psychological studies, sociologists may focus on how participants construct their experience within specific institutional or organizational contexts (i.e., narratives as lived experience) or how they understand certain aspects of their lives. An example is Catherine Riessman's (1990) classic study of men's and women's divorce stories. The link between narrative inquiry and ethnography has been captured best by anthropologists who become involved with one or more members of a community over time and construct narratives about those encounters.

Dissertation Implications of Qualitative Research

The distinctiveness of qualitative research has implications for the write-up of the research proposal and dissertation. Qualitative research designs typically are not intended to prove or test a theory, and it is more likely that the theory will emerge once the data are collected (an inductive approach rather than a traditional deductive approach). This does not mean that the researcher can ignore the theoretical perspectives of previous work cited in the literature review. Note, however, that some qualitative researchers discourage the consideration of any theoretical knowledge based on inferences from existing research before analyzing data from the proposed study. We are in general agreement with Miles and Huberman (1994), who take a moderate position on the role of theory in naturalistic studies. They view a conceptual framework as the "current version of the researcher's map of the territory being investigated" (p. 20). This means that the framework may change as the study evolves. The amount of prestructuring depends on what is known from the literature about the phenomenon being studied, the measures or instruments that are available, and the time allotted for the study. Very loose designs imply the collection of great amounts of data that may initially look important but turn

out to be tangential or irrelevant, along with great amounts of time to sift through these data. At the very least, a conceptual framework allows different investigators who are exploring a similar phenomenon to communicate with one another and compare experiences and results.

Adopting a tentative conceptual framework allows the researcher to focus and bound the study with regard to whom and what will and will not be studied. Miles and Huberman (1994) chose to express their conceptual frameworks in terms of graphic "bins" that consist of labels for events, settings, processes, and theoretical constructs. They reasoned that the researcher will come to the study with some ideas about the content of these bins. For instance, a qualitative study on prison behavior could reflect working decisions focusing on current behavior rather than prior history (events), high-security prisons (settings), interactions among prisoners and between prisoners and guards (processes), and authority relations and organizational norms (theoretical constructs). These choices and distinctions are, of course, informed by the theoretical and empirical literature.

Research questions can then be formulated as a way of explicating any theoretical assumptions and orienting the investigator (and the student's committee) to the primary goals and tasks of the study without dampening the process of curiosity and discovery. For example, one cannot study every aspect of prison life. Furthermore, the issues adopted by the researcher and expressed as research questions have direct implications for the choice of methodology. A focus such as "how prisoners and guards negotiate conflict and express power in relationships" has implications for the behavioral events that will be sampled and the research tools that will be used to obtain information (e.g., field notes, interview transcripts, diaries, prison documents). Research questions in qualitative research can be revised or reformulated as the study proceeds.

Students selecting a qualitative design need to convince their committees that they understand the role of the qualitative researcher. This includes experience with the sensitive kind of interviewing found in naturalistic studies, whereby the investigator enters the world of the participant subject without a fixed agenda and maintains sufficient scientific rigor in the process. Because the researcher is regarded as a person who comes to the scene with his or her own operative reality, rather than as a totally detached scientific observer, it becomes vital to understand, acknowledge, and share one's own underlying values, assumptions, and expectations. This perspective should become clear in the Review of the Literature and Method chapters of the dissertation. Moreover, researcher

subjectivity can be reduced by a variety of data-handling procedures. Will there be audio- or videotaping to augment written field notes? How will these materials be reduced in scope? Will process notes be included that describe the researcher's reactions at various points of the study? Will pilot studies be used to test the suitability of procedures? Will conclusions be provided to informants for verification prior to publication (member checking)? Specification of these ingredients can be convincing documentation of the rigor of the proposed study that do not compromise the necessary open contract of the proposal.

Because qualitative data may consist of detailed descriptions of events, situations, and behaviors, as well as direct quotations from people about their experiences and beliefs, the Results chapter of the dissertation will be directly influenced as well. We have found that students often mistakenly believe that a qualitative study might be easier to conduct because there are no specific hypotheses and no statistical tests to perform. However, the sifting and resifting of transcripts with huge amounts of open-ended responses into a coherent pattern generally takes as much effort and leads to as much frustration as the statistics that were being avoided. Good research is always taxing in some way.

Other Possible Approaches to the Dissertation

Hermeneutics

Hermeneutics has been described as the interpretation of texts or transcribed meanings (Polkinghorne, 2000). One engages in a hermeneutic approach to data to derive a better understanding of the context that gives it meaning. Hermeneutics, as a specialized field of study, was pioneered by biblical scholars in the 17th century who used textual analysis and interpretation to elicit the meanings of religious text. More recently, researchers in the social sciences, as well as scholars in the field of literary criticism, have extended the application of hermeneutics to the interpretation of secular texts.

There is ongoing debate within the field of hermeneutics between objectivists, who consider the text to contain meaning independent of the interpreter, and others, who view active interpretation as primary to all understanding. The latter position is quite similar to modern constructivist thinking in the philosophy of science (Winograd & Flores, 1986). From this orientation, understanding is the fusion of the perspective of the phenomenon and the perspective of the interpreter. Everyone brings

life experiences and expectations to the task of interpretation, but because even people's self-understanding is limited and only partially expressible, interaction with the meaning of the text can produce a deeper understanding of both the observer and the observed. As Mahoney (1990) put it, "New or changed meanings arise from the active encounter of the text and its reader" (p. 93).

Texts from ancient cultures, for instance, may be analyzed in their historical context with the goal of applying their meanings to current issues. This understanding, which must show the meaning of a phenomenon in a way that is both comprehensible to the research consumer and loyal to the frame of reference of the subject, may then lead to more formal research questions. In hermeneutics, the data are given to the researcher, whereas in a standard phenomenological study, the researcher helps to create the transcribed narrative, which has usually been obtained by interviewing the participant(s) (Hoshmand, 1989). As we have seen, phenomenological research can have a hermeneutic basis that is more interpretive than descriptive. A good example of a dissertation taking this approach is Smith's (1998) study of how family/divorce mediators can remain internally balanced and focused while trying to resolve challenging disputes between separating partners. Smith conducted three in-depth interviews with seven nationally recognized mediators and performed an inductive analysis of the interview transcripts that revealed layers of voices existing within the mediators' consciousness. Hermeneutic phenomenology, as a research method, can also make use of data sources such as literature, poetry, visual arts, and video while retaining the participants' oral or written descriptions of their experiences (Hein & Austin, 2001). At the dissertation level, this kind of hermeneutic approach is exemplified by J. M. Elliott's (1997) study of five Renewal of Canada conferences, in which the materials that were studied included videotapes, formal and informal papers and reports, press releases, and media coverage of the conference workshops and meetings. The outcome is an understanding of the conditions that contribute to or hinder the quality of the communicative interaction in a discursive attempt to bridge differences.

A hermeneutically informed approach to research is quite complex. Because language is regarded as the core of understanding, the researcher needs to return repeatedly to the source of data, setting up a dialogue with it, so to speak. The investigator asks what the data mean to their creator and tries to integrate that meaning with their meaning to the researcher. This kind of inquiry is sometimes referred to as the "hermeneutic circle method," originally proposed by Wilhelm Dilthey (1996) in the 19th century

as a series of steps to educe how the meaning of an entire text informs the meaning of segments of the text and how the meaning of segments of the text elucidate the meaning of the entire text. Whereas Dilthey took an objectivist stance in trying to create a "science of subjectivity" that could be used to reconstruct the meaning of texts, subsequent hermeneuticists such as Gadamer (2013) and Habermas (Habermas & McCarthy, 1985) amended these ideas to acknowledge that we can never really get into the mind of the writer of a text. Our interpretation must be grounded in understanding our own situational circumstances because no single correct interpretation or objective meaning exists (Packer, 2010). Although we are all hermeneutically inclined whenever we seek to learn the contexts of things, ideas, and feelings, hermeneutic inquiry is relatively rare as a formal approach to research in the social sciences. Ambitious, well-known examples of hermeneutic studies are psychodynamically guided biographies, such as Erik Erikson's *Young Man Luther*, and the work of Carl Jung, who used an archetypal, mythic perspective to describe contemporary problems.

It can be argued that hermeneutics is more of a theoretical perspective than a particular research methodology. According to Martin Packer (1985, 2010), the hermeneutic approach is applicable to the study of all human action, where the action is treated as though it has a textual structure. The investigator studies what people do when they are engaged in everyday, practical activities. What sets hermeneutics apart from more empirical or rational orientations to the study of human behavior is the belief that a particular activity can be understood only in conjunction with understanding the context in which it occurs rather than as an abstraction or a set of causal relationships. As Packer (1985) put it,

> The difference between a rationalist or empiricist explanation and a hermeneutic interpretation is a little like the difference between a map of a city and an account of that city by someone who lives in it and walks its streets. (p. 1091)

The mapmaker's product is formal and abstract; the inhabitant's map is personal and biased.

David Rennie (2012), moreover, recently proposed that all qualitative research can be seen from the perspective of "methodical hermeneutics." Rennie divided qualitative research into three kinds of approaches: (a) "experiential" methods, which conceptualize the meaning of experiences into structures, narratives, categories, or themes and include phenomenology, narrative analysis, and the grounded theory method;

(b) "discursive" methods, which are used to study pragmatics or function of language and include conversation analysis and discourse analysis; and (c) "experiential/discursive" methods, which include thematic analysis and the case-study method. Rennie argued that the hermeneutic circle, originally proposed as a method of analysis by Dilthey (1996), pertains to all discovery-oriented analyses of verbal text and such analyses characterize almost all contemporary qualitative research.

Case Studies

The term *case studies* usually refers to studies that focus on a single individual, organization, event, program, or process or what Stake (2000, p. 436) called a "specific, unique bounded system." Many academic departments are wary of supporting case studies as dissertations because departments are dubious of the likelihood of learning much of conceptual value from a single instance or example. On the other hand, case studies are frequently found in practice-oriented disciplines—such as education, social work, management science, urban planning, and public administration—in addition to some traditional social science disciplines (Yin, 2013). Indeed, there are many ways of thinking about case studies from both quantitative and qualitative perspectives. A quantitative approach in the classic experimental tradition could include what has been called a single-subject or $N = 1$ design. This empirical approach is associated with specific statistical procedures (see Gast & Ledford, 2009; S. B. Richards, Taylor, Ramasamy, & Richards, 2013). Single-subject quantitative studies can be used to assess changes in a phenomenon over time through the use of repeated measures or to assess the impact of a particular treatment by removing or reversing the intervention and then evaluating differences in the dependent variable. Single-subject research strategies are especially appropriate for developing or refining novel interventions and for closely examining the behavior of individual subjects.

Case studies, however, are more commonly associated with qualitative designs, in which there is an intensive effort to understand a single unit of study within a complex context. Research questions vary, but the goal is always to obtain a comprehensive understanding of the case. As Stake (2005) advised, "Place your best intellect into the thick of what is going on" (p. 449) and use your observational and reflective skills to excavate meanings.

How important is generalizing to a larger population? It depends. Stake (2000) described the intrinsic case study as one in which generalization is irrelevant because the attraction is understanding the unique

(or even typical) person, group, or event. He described the instrumental case study as one that is intended to shed light on an issue or test a generalization rather than focus on the case per se. In our opinion, a purely descriptive or exploratory case study does not fulfill the expectations of a doctoral dissertation unless it includes an explanatory element with theoretical implications. This means that the researcher needs to generalize to the world of theory as opposed to other possible cases. It also means that the research question is more apt to be of the "how" or "why" category than the descriptive "who," "what," and "where" questions that pertain, for example, to survey research and many other applied endeavors. However, we are aware that this is not a universal standard. The interested reader is referred to authors on case studies such as Stake (2000) and Yin (2013), who discuss these and related issues from somewhat different perspectives.

It should be said that any number of specific data collection methods might be included in a good case study. These would include interviews, behavioral observations, participant observation (as in ethnographic research), documentation, and the examination of archival records. Classic case studies include the sociological description of Middletown, a small Midwestern town (Lynd & Lynd, 1929); W. F. Whyte's (1955) *Street Corner Society*; and Freud's (1905–1909/1997) *Dora: An Analysis of a Case of Hysteria*. Thus, it is better not to think of your potential dissertation as using the case study method but rather to think of applying a method to a single case. Among case study dissertations at our own institution is a psychobiography of Richard Price, cofounder of the Esalen Institute. This study used the theoretical perspective of intersubjectivity theory and drew from archival documents, personal histories, and interviews with colleagues, friends, and family members to identify the recurring themes and patterns in Price's subjective world so as to illuminate their influence on his contributions to Gestalt theory and practice and the evolution of Esalen (Erickson, 2003). A very different case study dissertation comes from Paula Holtz (2003), who conducted an ex post facto study of three brief psychodynamic psychotherapies that investigated the self- and interactive regulation and coordination of the timing of vocal behaviors of therapist and patient throughout the course of each therapy session. The study used a repeated single-case design, computerized scoring of the vocal behaviors, and time-series analyses. Among other findings, the analyses provided substantial evidence in support of the psychoanalytic dyadic systems view that each therapist or patient self-regulates the timing of his or her vocal behaviors with those of the partner. Finally, Cristina

Balboa (2009), a graduate of Yale University, received a prestigious dissertation award (the Gabriel G. Rudney Memorial Award) for her qualitative comparative case study research on environmental nongovernmental organizations (NGOs) and their governance operations. She studied and assessed the accountability of three private conservation networks in Papua New Guinea, Palau, and the Philippines while drawing upon contemporary theories of organizational structure and ethos.

Mixed Model: Quantitative and Qualitative Study

An increasingly popular approach to designing a dissertation is to use a combination of quantitative and qualitative methodologies. This approach combines the rigor and precision of experimental, quasi-experimental, or correlational designs and quantitative data with the depth understanding of qualitative methods and data. Thus, the methods can inform one another or deal with different levels of analysis. There are many ways of mixing models. Teddlie and Tashakkori (2009) have enumerated several possible designs, including mixed methodology studies that combine aspects of both paradigms throughout the study. Theirs is a pragmatic approach in which questions of method are secondary to the adoption of an overriding paradigm or worldview to guide the investigation. Thus, it might be possible to mix research hypotheses of a confirmatory nature with general questions of an exploratory nature, structured interviews and scales that are quantitative with open-ended interviews and observations that are qualitative, and methods of analysis that draw on both traditions to expand the meaningfulness of the findings. An early example of an innovative mixed methodology was employed by Mary Gergen (1988) to study the way in which women think about menopause. Gergen held a research event by inviting several women to her home to complete questionnaires that addressed attitudes toward menopause, followed by a group discussion on the topic. The research report combined a quantitative analysis of the responses to the questionnaire with a qualitative analysis of themes generated by the discussion. An example from another field would be an analysis of the effect of timber dislocation on a logging community by quantitatively assessing the economic impact and qualitatively assessing the emotional impact on workers in the industry and their families.

The mixing of methods within the mixed model dissertation occurs in the data collection phase, the data analysis phase, and the data interpretation phase of the study. A simplified summary might include two

main options: (a) whether the quantitative and qualitative elements of the study are *sequential* or *concurrent* and (b) whether one method is nested within the other or is used to confirm the findings obtained by the other. In a sequential strategy, a researcher might begin with one approach and subsequently use the other approach to elaborate on or expand those findings. One variation is to add a qualitative component to a fundamentally quantitative study to help explain or extend the findings. Another option is to begin with a qualitative phase and add quantitative data collection at a later point. This design makes it possible to submit an emergent theory from a qualitative study to quantitative validation (Morgan, 1998). It may also be the method of choice when a researcher is designing an assessment instrument using largely rational or qualitative methods for constructing and choosing items and then validating the instrument statistically.

In a concurrent (or "parallel") design, the researcher collects or analyzes both forms of data at the same time. In the most common variation, the quantitative and qualitative approaches are used to supplement one another in the same study, with each method seeking to confirm or validate the findings from the other and strengthen the outcomes of the study. The researcher hopes that advantages of one approach compensate for weaknesses of the other.

In an embedded design (Bazeley, 2009), there is one predominant method, and the other method is nested within it to enable the researcher to obtain a richer perspective on the phenomenon being studied. The researcher may use the embedded method to look at a different question than explored with the dominant method. A common application is assessing a larger group quantitatively and then interviewing a subsample of that group qualitatively to procure further information. Another application is the collection of quantitative data in a predominantly qualitative study to learn more about the participants. Both Bazeley and Teddlie and Tashakkori have enumerated the various kinds of mixed methods designs that have recently found their way into the research literature.

Mixed model studies present many logistical challenges, one of which is simply the burden of collecting data using two very different methodologies. Another is that students choosing this approach must become knowledgeable about and conversant with two different research paradigms. Nonetheless, we find that an increasing number of students are electing this approach to dissertation projects in spite of the increased task demands.

Perhaps the most common application of mixed methodology is to assess a large number of participants using standardized scales and

measures in a field study or an experimental study and then conduct open-ended interviews with a subset of the original sample to derive a richer understanding of the phenomenon in question. A good example is a study by one of our doctoral students who sought to understand what makes "extreme" athletes (e.g., those who scale vertical cliffs without supporting ropes) engage in what laypeople view as self-destructive behavior (Slanger, 1991). The resulting dissertation combined validated measures of sensation seeking and perceived competence, for objective data, with open-ended interviews conducted with a random subsample of the total group, to obtain a qualitative perspective. Slanger discovered that the methods complemented one another: Data from the quantitative scales revealed how the key predictive variables discriminated among extreme-risk, high-risk, and recreational athletes, and the qualitative interviews introduced the concepts of spirituality and flow (Csikszentmihalyi, 1991).

Another graduate (Christensen, 2005) adopted a mixed method design to study conflict at the governance level within Friends schools, which educate children from a Quaker perspective. Christensen gathered intensive data from interviews with trustees and a focus group with consultants who worked with Friends school boards and supplemented those stories with quantitative data from an electronic survey sent to a larger number of school representatives. The combined data enabled her to identify predictors of growth in organizational dynamics and then design a module-based program for board preparation and education.

Similarly, Hardy (2011) studied the experience of boundary crossings and violations in supervisory relationships among graduate students in counseling and clinical psychology. Data collection was performed using a web-based questionnaire that included case vignettes. Three hypotheses relating to the incidence of boundary violations and how they are defined and perceived were tested statistically. Participants also provided narrative accounts of their own experiences with supervisory boundary crossings and violations and the personal and professional impact of these experiences. The qualitative component of the study was a hermeneutic analysis of these narratives.

Finally, David Nobles (2002) took a very different mixed model approach to his dissertation on speech acts of President George W. Bush related to drug control policy implementation. Nobles analyzed 33 rhetorical artifacts consisting of speeches, exchanges with the media, and other public remarks from the perspective of three research models: dramatism and metaphorical analysis, both approaches to rhetorical

criticism, and communication theory, in the form of coordinated management of meaning (CMM) and social constructionism. The findings describe the impact of the *war on drugs* metaphor on drug use and drug control policies.

Students who decide to take a mixed model path to their dissertations have a number of decisions to make, including which method, if any, receives priority; how to decide on a data collection sequence; how to explain and integrate findings that may not be congruent; and whether a larger, theoretical perspective should frame the entire research design. Creswell and Plano Clark (2011) is a helpful reference for those seeking criteria for making these strategic choices.

A major reluctance to adopt the mixed model approach comes from scholars with strong epistemological commitments to either quantitative or qualitative research. They often view the underlying assumptions of the approaches as fundamentally incompatible. At the risk of repetition and oversimplification, quantitative studies generally rest on an objectivist epistemological tradition, which seeks to validate knowledge by matching the knowledge claims of the researcher with phenomena in the real world (the correspondence theory of truth). In this tradition, theories are proposed as universal hypotheses to be tested empirically. Qualitative studies, on the other hand, tend to derive from the constructivist tradition associated with the postmodern movement. Here knowledge is not discovered but invented. Moreover, it is situated within a specific context heavily determined by local practices and validated through internal consistency and social consensus. In practice, this means that the researcher maintains an open curiosity about a phenomenon and the theory emerges from the data; there is no one true reality against which one can validate theories deductively.

Morgan (2007) has discussed the navigation of this dilemma as a paradigm shift within the research community, arguing that a *pragmatic* approach to research design outweighs the merits of adhering to a rigid epistemological position. She has recommended that a pragmatic approach would substitute

- *abductive* reasoning for connecting theory to data for the purely inductive reasoning associated with qualitative research or the purely deductive reasoning associated with quantitative research;
- *intersubjectivity* with regard to the research process for qualitative subjectivity or quantitative objectivity; and
- *transferability* when making inferences from data for solely emphasizing the context (qualitative) or generalizing from samples to populations (quantitative).

In this context, *abduction* refers to going back and forth between induction and deduction, such that observations lead to theories, which then lead to actions in the real world. *Intersubjectivity* refers to emphasizing shared meanings within specific groups rather than either seeking "truth" or relying entirely on the subjectivity of knowledge. *Transferability*, in terms of making inferences from data, refers to emphasizing how things that are learned in one context can be applied to another context; this meaning is in contrast to either generalizing from a sample to a population or being restricted by the contextual limitations of knowledge gained in the study. We recognize that not everyone will agree with Morgan's assumptions, but we appreciate her efforts to find a pragmatic way to improve communication and understanding between what are frequently regarded as irreconcilably polarized research paradigms.

Our own position is that both quantitative and qualitative studies can be approached from a myriad of philosophical perspectives. We encourage students to think clearly about a research topic and then apply the methods that make the most sense for answering their questions of interest and that are consistent with their values. We suggest that you begin your research by asking an essential question and then asking what you must do to convince yourself and others of the validity of the evidence supporting it. Along the journey, be wary of rigid methodological rules and draw on any method with a clear understanding of its advantages, its limitations, and whether it compromises assumptions about the phenomena you are researching.

Theoretical Dissertations

Another possible approach to writing a dissertation is to write a *theoretical dissertation* and bypass the need for data collection entirely. This is by no means an easy alternative. Making an original theoretical contribution is a profound intellectual challenge. One way to consider the difference between the knowledge of the literature required for a standard quantitative or qualitative study and the knowledge required for a theoretical study is to think about the difference between being a native of a country and a tourist in that country. As a tourist in a foreign environment, you might learn as much as possible about the country by studying maps, reviewing the customs, and learning the language, but chances are you will never master the country as well as the native. It's the same with research. To make a genuinely original theoretical contribution, you need to know an area of inquiry inside out and be

intimately familiar with the issues and controversies in the field. If you are beginning to review an area of interest to formulate a study, you are probably better off adopting an empirical design. Of course, most doctoral dissertations need to be derived from theory and have theoretical implications, and the data you gather and analyze may create the opening for a brand-new way of thinking in your field. That, however, is quite different from starting with the expectation of creating, let's say, a new theory of consciousness or, a bit more modestly, a revised theory of short-term memory.

If you choose to pursue a theoretical dissertation, you will be expected to argue from the literature that there is a different way of understanding a phenomenon than has heretofore been acknowledged. Some of the more viable theoretical dissertations in the social sciences are those that bring together or integrate two previously distinct areas. For instance, one of our graduate students believed that there was a significant breach between the theory of psychotherapy and the practice of psychotherapy, and this view led to an ambitious, high-quality theoretical dissertation on the relevance of personal theory in psychotherapy (Glover, 1994). Another student completed a very scholarly, book-length theoretical dissertation titled *Organic Constructionism and Living Process Theory: A Unified Constructionist Epistemology and Theory of Knowledge* (Krebs, 2005). On a less abstract level, Rainaldi (2004) developed a new theory of incorporative female sexuality informed by psychoanalytic drive theory and recent advances in the biological sciences.

Meta-Analysis

Meta-analysis is a form of secondary analysis of preexisting data that aims to summarize and compare results from different studies on the same topic. Meta-analyses have become increasingly common in the social science literature because they pool the individual studies of an entire research community, thus providing the reader with a richer understanding of the status of a phenomenon than any single study can offer.

The term *meta-analysis* has been attributed to Glass (1976), who used it to mean an "analysis of analyses." A more complete description of the various meta-analytic methods is available in Newton and Rudestam (2013). Meta-analyses differ in terms of the units of analysis they use (e.g., a complete study, a finding within a study) and the statistical techniques they use to integrate the results from separate studies to draw conclusions about the entire body of research.

The first step in conducting a meta-analysis is to screen and select existent studies for their methodological rigor. Then statistical techniques are used to convert the findings of all the studies to a common metric. Finally, the summary analysis yields information about the strength of relationships among variables (the effect size) across studies, using the newly expanded sample.

All dissertations, of course, involve a critical review of the literature on the topic in question. In a meta-analysis, it is this review of the literature, including a finely tuned statistical analysis, that constitutes the study. In our opinion, there is no reason why a carefully conducted meta-analysis could not serve as a suitable dissertation. For further information about conducting a scholarly meta-analysis, we recommend an introductory text by Borenstein, Hedges, Higgins, and Rothstein (2009).

Action Research

Action research provides another possible approach to completing a doctoral dissertation, although it may be too prodigious a challenge for most graduate students. *Action research* has been defined as "a form of research that generates knowledge claims for the express purpose of taking action to promote social change and social analysis" (Greenwood & Levin, 2006, p. 6). Because action research is generally stimulated by a wish to address a particular problematic situation within an identifiable organization or community, it is distinct from theoretical research that is carried out as a purely academic exercise. Another distinguishing feature is that action research is never done "to" someone but is done by or in collaboration with insiders from the organization or community. This systematically undertaken, reflective process includes creating theory within a practice context and testing the theory using specific experimental interventions (Herr & Anderson, 2005; Stringer, 2013).

Most action researchers acknowledge the seminal contributions of Kurt Lewin (1948) and his commitment to social change. Action research can be either quantitative or qualitative in nature, drawing on such diverse techniques as surveys, interviews, focus groups, ethnographies, life histories, and statistics. In the early days of action research, the researcher tried to initiate change in a particular direction; more recently, the goals and targets of change are determined by the group members through participatory problem solving. Members of an organization or community that constitutes the focus of the research become coresearchers in the process. Thus, the researcher is a facilitator who needs to possess good group process skills

to effectively mobilize a group of participants to study their own behavior, including their own defensive reactions to change.

A good action research project proceeds according to a cycle of steps, introduced by Lewin (1948), known as the plan-act-observe-reflect cycle.

1. The planning stage involves the identification of a problem and the formulation of hypotheses and procedures for achieving one or more goals.
2. The action stage consists of implementing the intervention(s).
3. The observe stage consists of recording the actions and their impact on achieving the goal(s).
4. Finally, the reflection stage allows for reviewing the data and the action plan and developing new inferences. These lead to a new cycle of research, and research is a continuous learning process.

Herr and Anderson (2005) advised that to serve as a dissertation, an action research study should contribute generalizable, transferable knowledge as well as knowledge that is useful to those in the setting of the study, and we endorse this point. Action research may, for instance, generate new theory that is applicable to similar problems in other contexts, as well as new tools or products that are recommended for broader use. Herr and Anderson also noted that students who envision conducting an action research study for their dissertations should be conscious of certain potential complications. One is that action research studies can be "messy," in the sense that procedures and outcomes are difficult to predict. Thus, committee members may need to stay flexible regarding potential outcomes and understand that the methods and procedure may need to be revised as one goes along. Second, students need to realize that they may be walking a tightrope as they serve the multiple roles of student, researcher, and participant in the research and maybe even employee in the organization. Students must be prepared to make choices with a full awareness of the possible consequences and their ethical implications. Finally, it is important to identify the contributions of the author of the dissertation in spite of the fact that several other individuals may have served as coresearchers.

Within our institution, most action research dissertations have taken place in the fields of education and organization development, although the fields of social work, nursing, and criminology also attract this approach. The action research cycle was used by Judy Witt in her dissertation to explore a community college's use of collaborative organizational

learning in its planning and decision-making processes (Witt, 1997). The student worked as a coresearcher with members of the college administration, faculty, and staff. Each member of the team brought specific skills to the project. The dissertation student, of course, provided her expertise in action research. The team analyzed archival data, as well as data from meetings, journals, interviews, and participant observation field notes, to evaluate the effectiveness of the institution's learning processes.

Notes

1. Numerous other statistical models control for extraneous variables; only two of the most common are presented here.
2. See Holstein and Gubrium (2008) for an overview of many approaches to constructionism.