In reading of scientific discoveries one is sometimes struck by the simple and apparently easy observations which have given rise to great and far-reaching discoveries making scientists famous. But in retrospect we see the discovery with its significance established.

<table>
<thead>
<tr>
<th>Table 3.1</th>
<th>Definition of Terms</th>
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<tbody>
<tr>
<td><strong>Analysis</strong>: Analysis involves examining a substance and its components in order to determine their properties and functions, then using the acquired knowledge to make inferences about the whole.</td>
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<tr>
<td><strong>Analytic Tools</strong>: Analytic tools are thinking devices or procedures that if used correctly can facilitate coding.</td>
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<tr>
<td><strong>Concepts</strong>: Words that stand for groups or classes of objects, events, and actions that share some major common property (ies), though the property (ies) can vary dimensionally.</td>
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<td><strong>Dimensions</strong>: Variations of a property along a range.</td>
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<td><strong>“Feeling right”</strong>: Indicates that after being immersed in the data for some time the researcher believes that the findings arrived at through reflective analysis express what participants are trying to convey through word and action and emotions, as seen through the “eyes” of the analyst.</td>
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<tr>
<td><strong>Microanalysis</strong>: Detailed coding around a concept. A form of open coding used to break data apart and to look for varied meanings of a word or phrase.</td>
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<tr>
<td><strong>Properties</strong>: Characteristics or components of an object, event, or action. The characteristics give specificity to and define an object, event, and/or action.</td>
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Originally the discovery usually has no intrinsic significance; the discoverer gives it significance by relating it to other knowledge, and perhaps by using it to derive further knowledge. (Beveridge, 1963, p.141)

Introduction

A researcher cannot continue to collect data forever. Sooner or later “something” has to be done with that data to give it significance. That something is termed analysis.

What is analysis? Analysis is a process of examining something in order to find out what it is and how it works. To perform an analysis, a researcher can break apart a substance into its various components, then examine those components in order to identify their properties and dimensions. Finally, the researcher can use the acquired knowledge of those components and their properties to make inferences about the object as a whole. In making inferences, analysts rely upon experience and training to recognize and give meaning as stated above in the quote by Beveridge (1963). Without some background, either from immersion in the data or professional/experiential knowledge, the ability to recognize and give meaning is not there.

Another approach to analysis would be to begin with the whole, observe to see what the substance does and how it seems to work, then take it apart to determine its various components, studying the make up and function of the components and their relationship to the whole. Take blood for example. A researcher could examine it for its general properties such as color, viscosity, apparent functions, and distribution within the body. Though helpful, this approach would not tell the whole story of blood. A researcher would have to dig deeper and examine blood more closely in order to determine its components, such as red blood cells, white blood cells, and plasma; and explore their properties and function. The final step would be to determine how the different components relate to each other and the whole. Still another approach would be to take something like blood, hypothesize its various functions, test each hypothesis to determine if any one or more are correct, and finally eliminate those that are wrong. Research is often both an inductive and deductive process.

Analysis is a very dynamic process. The analyst has to brainstorm, try out different ideas, eliminate some, and expand upon others before arriving at any conclusions. To make this point, let us provide the following example. A sculptor friend of Dr. Strauss once invited us to his workshop to see how he worked and there we started talking about creativity. In his workshop were all types of metals of various shapes and forms. He explained how he
works. First, he studies the different pieces of metal to see what possibilities lie within them, letting his imagination run free. Then the imaginary piece of sculpture is given form to see how the actual form holds up to his vision. If the resulting piece doesn’t “work” aesthetically, it is dismantled, and the process repeated again until the piece of sculpture “looks and feels right.”

It is the same with analysis. There are many different stories that can be constructed from data. How an analyst puts together the concepts often requires many tries before the story or findings “feel right” to him or her. Feeling right is a gut feeling. It means that after being immersed in the data the researcher believes that the findings reflect the “essence” of what participants are trying to convey, or represent one logical interpretation of data, as seen through the eyes of this particular analyst.

In this chapter we take analysis apart and examine its various components, a kind of mini-analysis of analysis. The purpose of the chapter is to provide the novice researcher with a strong foundation for what will follow in the remainder of the book.

Some Properties of Qualitative Research

Qualitative research has many different properties. In the remainder of the chapter we’ll explore each in greater depth.

- Analysis is art and a science.
- Analysis is an interpretive act.
- More than one story can be created from data.
- Concepts form the basis of analysis.
- Concepts vary in levels of abstraction.
- There are different levels of analysis.
- Analysis can have different aims.
- Delineating context is an important aspect of analysis.
- Analysis is a process.
- Analysis begins with the collection of the first piece of data.
- A researcher can do microanalysis or more general analysis as the analytic situation demands.

Analysis is an Art and Science

Analysis is both an art and a science (Patton, 1990). The “art” aspect has to do with the creative use of procedures to solve analytic problems and the ability to construct a coherent and explanatory story from data, a story that “feels right” to the researcher. To bring the art aspect into analysis, the researcher must remain flexible in his or her use of procedures. He or she must learn to think “outside the box,” be willing to take risks, and be able
to weave “straw” into “gold,” that is turn raw data into something that promotes understanding and increases professional knowledge. The art aspect of research transcends all forms of research and it is doubtful that any significant piece of research could be accomplished without it. Beveridge (1963) explains it this way:

New knowledge very often has its origins in some quite unexpected observation or chance occurrence arising during an investigation . . . Interpreting the clue and realizing its significance requires knowledge without fixed ideas, imagination, scientific taste and a habit of contemplating all unexplained observations. (p. 147)

Though qualitative research has its art aspect, it comes with certain responsibilities. There must also be the science part to call the product research. Sandelowski (1994) says:

Celebrating the art in qualitative research is not an imprimatur for anarchy or for ignorance. Qualitative researchers are not free to make wild forays into fancy; they make, but cannot fake. Nor are they free to be ignorant of the logic and aesthetic of the varieties of research strategies encompassed by the label qualitative research. (p.58)

The science aspect of qualitative research is not “science” in the traditional sense. The science comes from “grounding” concepts in data. Then, it systematically develops concepts in terms of their properties and dimensions and at the same time validates interpretations by comparing it against incoming data (Blumer, 1969, pp. 25–26; Glaser & Strauss, 1967). When we use the term “validate,” we don’t mean to imply that we are testing hypotheses in a quantitative sense. Validating here refers more to a checking out of interpretations with participants and against data as the research moves along.

In all qualitative research, there has to be some sort of balance between the art and science. Though data and findings are constructed and might be considered “stories,” (Denzin, 1989) they are not “novels” in the traditional sense of imaginative yarns or tales meant to entertain. There can be no flights of fancy. Nor is qualitative research controlled laboratory science either. How far the analysis varies dimensionally from art to science depends upon the philosophic background of the researcher, his or her discipline, and the qualitative method he or she is using.

Analysis Involves Interpretation

Analysis involves interpretation (Blumer, 1969). Interpretation implies a researcher’s understanding of the events as related by participants. As Denzin (1998) states:
Interpretation is a productive process that sets forth the multiple meanings of an event, object, experience, or test. Interpretation is transformation. It illuminates, throws light on experience. It brings out, and refines, as when butter is clarified, the meanings that can be sifted from a text, an object, or slice of experience. (p. 322)

But Denzin (1998) does not stop there. He goes on to say, “So conceived, meaning is not in a text, nor does interpretation precede experience, or its representation. Meaning, interpretation, and representation are deeply intertwined in one another” (p. 322). Though interpretations are not exact replications of data, but rather the analyst’s impressions that data, it does not mean that researchers should give up doing research. Interpretation is not exact science. It can never be, nor should it be. But doing qualitative research with all its flaws remains an important endeavor. As a nurse (Corbin), qualitative research has made a major difference in my practice. It brought me out of the role of an “authority on health care” to one of cocreator or negotiator of care with my patients (Corbin & Cherry, 1997). Through qualitative research, I learned that patients knew more about their illnesses, their bodies’ responses to it, and the regimens designed to control the illnesses than I could ever know because they lived with these every day.

Researchers are translators of other persons’ words and actions. Researchers are the go between the participants and the audiences that they want to reach. As every language translator knows, it is not easy to convey meaning. Words can have different meanings from one language to another and from one situation to another. I (Corbin) learned this from experience. On more than one occasion, I have worked with translators while teaching in a foreign country. Invariably, students will laugh at something I said because the direct translation of a word conveys something other than what I intended. Or, students will tell me that they are not certain how much of my presentation they understood because the translation was so poor. Obviously, something was lost in translation. Though it is discouraging to me when I hear students say the translation of a book or presentation was “not very good,” it does provide a lesson for all of us who are attempting to bring the words of our participants to life through research. Interpretations are often not exact and sometimes researchers are a “bit off” and furthermore, some interpreters are better at it than others. Yet, the possibility of being “a bit off” at times should not discourage researchers from trying. Qualitative researchers have to push forward with analysis. With it we have more to gain than we have to lose.

One additional point about interpretation, before moving on, is that analysis is never quite finished, no matter how long a researcher seems to work on a study. Since researchers are always thinking about their data, they
are always extending, amending, and reinterpreting interpretations as new insights arise and situations change. Such revisions are part of the qualitative process. As Denzin and Lincoln (1998) state in the introduction to Part II of *Collecting and Interpreting Qualitative Data*, “Part II explores the art and politics of interpretation and evaluation, arguing that the processes of analysis, evaluation, and interpretation are neither terminal nor mechanical. They are always ongoing, emergent, unpredictable, and unfinished” (p. 275–76).

More Than One Story Can Be Derived From Data

Qualitative data are inherently rich in substance and full of possibilities. It is impossible to say that there is only one story that can be constructed from the data. Though participants speak through data, the data themselves do not wave flags denoting what is important and what is not. Different analysts focus on different aspects of data, interpret things differently, and identify different meanings. Also, different analysts arrive at different conclusions even about the same piece of data. Furthermore, the same analyst might look at the same data differently at different times. It all depends upon the angle or perspective that the analyst brings to the data. For example, interviews with persons who have chronic illnesses can be examined from the angle of illness management (Corbin & Strauss, 1988), identity and self (Charmaz, 1983), and of suffering (Morse, 2001; Morse 2005; Riemann & Schütze, 1991). If a person examined the interviews conducted by these respective researchers, especially if they are unstructured interviews, that person would find that the interviews are not that much different in substance. What is different is the prism through which the analyst viewed the data. Management, identity, and suffering can all be found in data about chronic illness and all are valid interpretations. Each of these interpretations presents a more rounded picture of what chronic illness is all about. But different researchers tend to focus on different aspects. In other words, data talks to them in different ways. What is different about each study is the level of significance accorded to each of the different phenomenon and how they are put together in a study.

Levels of Analysis

Analysis can range from superficial description to theoretical interpretations. Superficial description tends to skim the top of data and looks more like journalism than research. It does not challenge thinking, present new understandings, or tell us anything we probably don’t already know. More in-depth analysis tends to dig deeper beneath the surface of data (and many
journalists are now doing interpretation). It presents description that embodies well-constructed themes/categories, development of context, and explanations of process or change over time. In-depth analysis is more likely to generate new knowledge and deeper understandings because it tends to go beyond what everyone already knows. Though these authors are biased towards taking the time to do a more in-depth analysis, they also recognize that researchers have different levels of motivation, training, direction, and resources to carry out their research projects and analyses. Many would-be qualitative researchers lack trained mentors to guide them. These researchers are often uncertain about how to proceed, lack confidence, or do not even know what constitutes “good” analysis. They may go from method book to method book, trying to figure out what to do, then finally do what they can best manage on their own, often settling for less than they intended or are capable of if they had proper guidance.

Then too, some research projects do not demand a detailed analysis. There might be a few questions added to a quantitative study that necessitate some degree of qualitative analysis. In such projects, a summary of major themes may be sufficient. At the other extreme, it is possible to overdo analysis, making it so descriptive and detailed that reading the report becomes boring. Minutia is not what we aim for. The art of analysis comes in knowing what ideas to pursue, how far to develop an idea, when to let go, and how to keep a balance between conceptualization and description.

Concepts Form the Basis of Analysis

Concepts/themes are the foundation for the analytic method described in this book. Blumer (1969) emphasizes the importance of concepts to research when he states:

Throughout the act of scientific inquiry concepts play a central role. They are significant elements in the prior scheme that the scholar has of the empirical world; they are likely to be the terms in which his problem is cast; they are the categories for which data are sought and in which data are grouped; they usually become the chief means for establishing relations between data; and they are the anchor points in interpretation of findings. (p. 26)

Concepts are derived from data. They represent an analyst’s impressionistic understandings of what is being described in the experiences, spoken word, actions, interactions, problems, and issues expressed by participants. The use of concepts provides a way of grouping/organizing the data that a researcher is working with. If one thinks of a bird, plane, and a kite and asks
what they all share in common, one can say “flight.” The notion of “flight”
enables the analyst to group these diverse objects together, then to explore
each of these objects in greater depth detailing their similarities as well as dif-
fferences in terms of “flight.” In doing so, the analyst discovers some inter-
esting information about the concept of “flight” in general, as well as the
peculiarities of flight as they apply to each group.

Concepts Vary in Levels of Abstraction

Concepts vary in levels of abstraction. There are basic level concepts and
higher-level concepts that we call categories. Lower level concepts point to,
relate to, and provide the detail for the higher-level concepts. For example, in
the example provided above, flight is a higher-level concept than is bird, kite,
or plane. Flight explains what these objects do. A bird would most likely not
be called a bird if it didn’t fly (though somewhere in the world there might be
a flightless bird). A kite, by virtue of being a kite, should fly, otherwise it would
be a dud. And if a plane did not fly, it would probably be called something
else, such as a car with wings. So flight is integral to each of these objects. But
if we want to understand and describe flight, we have to examine the individ-
ual properties and dimensions of flight as applied to each of these objects and
by doing so develop an understanding of flight under various conditions.

By keeping lower-level concepts in any explanation of our higher-level
concepts, we are never too far removed from the data and provide all of the
detail that adds interest and variation to phenomena we are studying. The
more one moves up the conceptual ladder, the broader and more explana-
tory the concepts become, yet as they move towards greater abstraction con-
cepts, while perhaps gaining in explanatory power, they begin to loose some
of their specificity. However, if the conceptual pyramid is carefully crafted,
the higher-level concepts will rest on a solid foundation of lower-level con-
cepts, which in turn go directly back to the data bringing with them the
detail and the power of description.

At first, analysis is open and free, much like brainstorming. The researcher
identifies concepts, but early in analysis may not be certain if a concept is
a lower-level concept or higher-level one, or what interpretive meaning must
be given to events to group them and subsequently bring them to a higher
level of abstraction. In the example of the bird, plane, and kite, it was easy
to see what the three objects had in common. But when analyzing data often
what events, actions, interactions, emotions share in common is not so evi-
dent. With time and immersion in the data, a researcher gains insight and
sensitivity. It is this insight that enables researchers to group events under
a more conceptual label. Being open to all possible meanings in data, as well
as potential relationships between concepts, is very important early in analysis. It prevents early foreclosure or jumping to conclusions, ones that might prove wrong later on as the analysis proceeds.

The open generative nature of early analysis is difficult for some persons, especially those steeped in rigors of quantitative approaches. Novice qualitative researchers often worry that somehow they are “putting something” into the data if they brainstorm and list all possible meanings implied in certain events or actions. What novice researchers do not realize is how easy it is to jump to conclusions about the meaning of data. Taking the time to consider all possible meanings helps researchers to become more aware of their own assumptions and the interpretations they are placing on data.

Aims of Research

There are different aims of qualitative research. The aim can vary from description, to conceptual ordering, to theorizing. Different researchers have different aims depending upon training, skill, type of qualitative method, and purpose. Since beginning researchers often have difficulty distinguishing between description and theory, we will take the opportunity to present next a few words on these matters. Also, we will touch upon another mode of managing data that is often utilized in qualitative studies, a mode we call conceptual ordering. (For a similar but also somewhat different perspective on these same matters, see Wolcott, 1994.)

People commonly describe objects, people, scenes, events, actions, emotions, moods, and aspirations in their everyday conversations. Not only do ordinary people describe, so do, as part of their daily work, journalists, novelists, technical, travel, and other nonfiction writers. Description draws on ordinary vocabulary to convey ideas about things, people, and places. For example one might hear, “The streets were quiet early in the morning, and I looked forward to hitting the open road in my new convertible automobile.” Description also makes use of similes and metaphors when ordinary words fail to make the point or more colorful word mental pictures are called for (Lakeoff & Johnson, 1981). Consider the following scene described by Márquez (1992), “It was a brilliant morning in early August. One of those exemplary postwar summer Sundays when the light was like a daily revelation, and the enormous ship inched along, with an invalid's labored breathing, through a transparent stillwater” (p. 117). The imagery is colorful, vivid, and it is easy for the reader to put him or herself into the scene.

Persons literally could not communicate without the ability to describe. Description is needed to convey what was (or is) going on, what the setting
looks like, what the people involved are doing, and so on. The use of descriptive language can make ordinary events seem extraordinary. Great writers, like Márquez and Flaubert, know this and strive to make their details so vivid that readers can actually see, taste, smell, and hear what is going on in a scene. Yet, even mere mortals, those of us with less well developed writing skills, use description to relate our adventures, thoughts, and feelings, to others as we encounter new, and sometimes routine, situations.

Descriptions may seem objective, but they are not. Even basic description involves purpose (otherwise why describe?) and audiences (who will see or hear the description?) and the selective eye of the viewer (Wolcott, 1994). For example, police reports are focused on criminal or investigative issues. They are usually relatively straightforward and meant to be read by superiors and other interested parties. Whereas, a journalist account of the same event is likely to be written more colorfully. The latter also tends to reflect some personal, political, or organizational stance, and is meant to inform and move newspaper readers.

In short, the descriptive details chosen by storytellers are usually consciously or unconsciously selective, based on what he or she saw or heard, or thought important. Though description is often meant to convey believability and to portray images, it is also designed to persuade, convince, express, or arouse passions. Descriptive words can carry overt and/or covert moral judgments. This can be true not merely of sentences, but entire books—as in exposés or in serious volumes that aim at reform. Even seemingly objective reports like those of police or journalists may reflect deep prejudice and moral judgments, without the individual being aware of those attitudes and feelings. Aesthetic judgments too are conveyed through descriptions, “The young soprano’s voice was delicate, airy, though at the upper ranges she occasionally wobbled just the slightest, but generally conveyed the spirit of the character; she has a great future in opera.” Sometimes the aesthetic and the moral are joined. Take for example the negative reaction of critics and audiences to early Impressionists paintings. Later these same paintings became the favorites of museum visitors and art collectors throughout the world, bringing to their present owners millions of dollars when they go up for auction.

It is important to understand that description is the basis for more abstract interpretations of data and theory development, though it may not necessarily lead to theory if that is not the researcher’s goal. Descriptions already embody concepts, at least implicitly. Even at the highest levels of abstract science, there could be no scientific hypotheses and theoretical or laboratory activity without prior or accompanying descriptions. Though description is clearly not theory, description is basic to theorizing.

Description is also basic to what we call conceptual ordering. The latter refers to the organization of data into discrete categories (and sometimes rating)
according to their properties and dimensions, then the utilization of description to elucidate those categories. Most social science analyses consist of some variety—and there are many types—of conceptual ordering. Researchers attempt to make sense out of their data by organizing it according to a classificatory scheme, such as types or stages. In the process, items are identified from data and defined according to their various general properties and dimensions. Take restaurant ratings such as the Michelin Guide. Restaurants are often rated dimensionally ranging from three stars to none based on properties such as quality, taste, presentation, ambience, value, and complexity of the wine list. How each restaurant varies dimensionally across each property provides the basis for the more general rating. Ratings of restaurants are often biased towards reviewer’s preferences, which do not necessarily reflect the taste of the general public. Yet to be given three stars, two or even one in the Michelin guide is very prestigious and assures a restaurant’s success. When presenting ratings, researchers are almost certain to include various amounts of descriptive material to explain their ratings. The chief reason to discuss conceptual ordering is because this type of analysis is a precursor to theorizing through its development of properties and dimensions.

Developing theory is a complex activity. What do we mean by theory? For us, theory denotes a set of well-developed categories (themes, concepts) that are systematically interrelated through statements of relationship to form a theoretical framework that explains some phenomenon (Hage, 1972, p. 34). The cohesiveness of the theory occurs through the use of an overarching explanatory concept, one that stands above the rest. And that, taken together with the other concepts, explains the what, how, when, where, and why of something.

Not everyone wants to develop theory. In fact, theory development these days seems to have fallen out of fashion being replaced by descriptions of “live experience” and “narrative stories.” While we acknowledge that theory has its limitations, the relevance of theory development to the advancement of knowledge remained a constant throughout the life of Anselm Strauss (1995). This author agrees that not everything can or should be reduced to one clever theoretical explanatory scheme, as helpful as that scheme might be. However, theory development remains relevant as a research endeavor and should be recognized as such. A researcher considering developing theory should not be frightened off by recent antitheoretical trends. Trends have a way of coming and going. And even though any particular theory may become outdated as new knowledge comes to light, and even though theories do not represent “reality,” and even though theories are reductionistic, they have over the years proven useful. A person has to wonder where the world would be if there were only “stories” and no “theories.” We probably would never have been able to put a man on the moon, developed computers, or
built houses out of glass. A researcher has to make choices and should choose the approach to, and aims for, research that are most suitable to the problem of study and most likely to make a professional contribution.

Theorizing is interpretive and entails not only condensing raw data into concepts but also arranging the concepts into a logical, systematic explanatory scheme. If a researcher is going to construct theory, then he or she should do it well and not settle for some poorly constructed, thin imitation of theory. The construction of theory necessitates that an idea be explored fully and considered from many different angles or perspectives. It is also important to follow through with implications of a theory. The formulations and implications lead to “research activity” that entails making decisions about and acting in relationship to a multitude and variety of questions that enable the researcher to fully explore a topic. Decision making and subsequent action occur along the entire research course. At the heart of theorizing lies the interplay of making inductions (deriving concepts, their properties, and dimensions from data) and deductions (hypothesizing about the relationships between concepts; the relationships too are derived from data, but that data has been abstracted by the analyst to form concepts).

Theories may be substantive, middle range, or formal (Glaser & Strauss, 1967, pp. 32–34). A study of how gays handle disclosure/nondisclosure (information management) of their sexual identity to physicians is an example of a theory derived from one substantive area. The notion of “information management” can also be used to study disclosure or nondisclosure of HIV status by gays to prospective partners. Studying “information management” by gays under varying conditions can lead to the development of a more middle-range theory of “information management” as applied to situations important to gay men’s lives.

More formal theories are less specific to a group and/or place and apply to a wider range of disciplinary concerns and problems. To develop a formal theory of “information management,” researchers could begin with a substantive or middle range theory derived from previous studies, then use the theoretical formulations as a foundation for studying a wider range of related topics. For example, a researcher wishing to develop a general theory about “information management” derived from a study of sexually active adolescents disclosing about having a sexually transmitted disease could take the original framework and expand, making it even more abstract by using it to study parents blocking access of their young children to certain web sites; then secrets between governments; and finally “information management” in political campaigns. Because formal theories are usually derived from investigations of a concept under a variety of different related topics and conditions, they become much more abstract and have greater applicability than do substantive theories or middle-range theories.
Delineating Context is an Important Aspect of Analysis

When doing analysis, delineating the context or the conditions under which something happens, is said, or done, and/or felt is just as important as coming up with the “right” concept. Context not only grounds concepts, but also minimizes the chances of distorting meaning and/or misrepresenting intent. A film maker and a novelist can take a creative license with events taking words or pictures out of context and inserting them into other contexts to make a political or social statement. A filmmaker or novelist can spin, twist, add, subtract, or embellish characters and events as they see fit to shape the story according their creative visions. But researchers are not working with the same creative license. That is what makes the difference between researchers and novelists. Both need a good eye, must be able to convey essence and emotion and feeling, but researchers cannot embellish the words or actions or feelings of participants to make a point. Researchers must locate the expressed emotions, feelings, experiences, and actions within the context in which they occurred so that meaning is clear and accurate. A researcher must stay close to the data during interpretation and present findings fairly even though the data may contradict the assumptions and expectations of the researcher (Sandelwoski, 1994).

Analysis is a Process

Analysis is a process of generating, developing, and verifying concepts—a process that builds over time and with the acquisition of data. One derives concepts from the first piece of data. These same concepts are compared for similarities and differences against the next set of data—either expanding concepts by adding new properties and dimensions, or, if there are new ideas in data, adding new concepts to the lists of concepts. Or, there is still a third option of revising previous concepts if after looking at the new data it appears that another term would be more suitable. It is important to keep in mind that if a researcher knew all the relevant variables and relationships in data ahead of time, there would be no need to do a qualitative study.

Analysis Begins with Collection of the First Piece of Data

Novice researchers often ask, “When should I begin the analysis?” Ideally, the researcher begins the analysis after completing the first interview or observation (Glaser & Strauss, 1967; Strauss, 1987). This sequential approach to data collection and analysis allows a researcher to identify relevant concepts, follow through on subsequent questions, and listen and observe in more sensitive ways. The gathering of data based on concepts
is termed **theoretical sampling** and more will be said about this later in Chapter 7. Though alternating data collection with analysis would be ideal, there is also the reality of sometimes having to collect data without being able to immediately begin the analysis. The danger here lies in the potential inability to follow through on relevant ideas with the final result being that some themes or concepts may be better developed than others. But a researcher does what he or she has to do, and learns to work with what he or she has. Sometimes several interviews come all at once. Or, a researcher may go to another country or city to collect data and there is little or no time between interviews and observations. All we say is that if it is possible, analysis should begin after the first data has been collected.

In addition to allowing the researcher to follow up on, validate, and develop concepts, alternating data collection with analysis prevents the analyst from becoming overwhelmed by data. It is depressing to be faced with a pile of interviews or observations and have no sense of what to do with all that data. Being immersed in data analysis during data collection provides a sense of direction, promotes greater sensitivity to data, and enables the researcher to redirect and revise interview questions or observations as he or she proceeds.

**The Use of Analytic Tools in Analysis**

**Analytic tools** are the mental strategies that researchers use when coding. Codes denote the words of participants or incidents derived from observation or video as concepts. Every analyst, whether conscious of it or not, uses some mental strategies during analysis. In this book we offer a variety of techniques—some our own, others borrowed from other published analysts. In fact, we have devoted a whole chapter to exploring these techniques (see Chapter 4). The choice of tools will depend upon the training, experience, and skill of the researcher. As an analyst becomes more comfortable working with data, he or she is likely to expand the use of tools drawing from a repertoire developed over the years. Some of the analytic tools that we believe are most relevant to analysis are asking questions and making comparisons. In the end, analysts should use those strategies that they feel most comfortable with when matching the analytic tool to the analytic task at hand.

**Microanalysis and More General Analysis**

In the 1998 edition of this book we talked about a form of analysis we termed “microanalysis,” a form of open coding. One of the questions that students often have is, “how does microanalysis differ from other kinds of coding?”
Microanalysis is not a different form of coding. It is just a more detailed type of open coding. It is designed to break open the data to consider all possible meanings. One can say that coding varies in detail from the micro—meaning very detailed—to the more macro—or general—coding less for detail and more for the general essence. Microanalysis is most likely to be used at the beginning of a project, when the analyst is trying to break into the data, to make some sense out of the materials. Microanalysis is a very valuable tool. It is like using a high-powered microscope to examine each piece of data up close. We, the authors, often begin our research projects using microanalysis.

Why do we value microanalysis so highly? We value it because it enables us to think differently about things. Think about Einstein and Darwin. They were able to arrive at conclusions that went against the conventional wisdom of the time because they carefully observed, paid close attention to detail, and kept an open mind. Blumer (1969) says it a little differently but very well:

> How does one get close to the empirical social world and dig deeply into it? This is not a simple matter of just approaching a given area and looking at it. It is a tough job requiring a high order of careful and honest probing, creative yet disciplined imagination, resourcefulness and flexibility in study, pondering over what one is finding, and a constant readiness to test and recast one’s views and images of the area. (p. 40)

Though most persons agree that microanalysis is a valuable analytic tool, especially once they see it in action, there remains the misconception that we advocate the use of microanalysis throughout a project or that we are making up data that are not there. The truth is that microanalysis is used selectively and usually at the beginning of a project. Its purpose is to generate ideas, to get the researcher deep into the data, and to focus in on pieces of data that seem relevant but whose meaning remain elusive. It also helps to prevent early foreclosure because it forces a researcher to think outside of his or her frame of reference. It is time consuming and takes some practice. But the payoff is considerable.

This reminds Corbin of a story often told by her husband. When he was working as an engineering manager, problems often arose in the product line and he would send his engineers to look for the problem. Often the engineers would speculate that the problem was due to “this or that” without closely studying the matter. Based on speculation rather than observation or testing, they wanted to make changes in a procedure, changes that could be very costly if their hypotheses were wrong. Whenever engineers behaved in this way, my husband would ask, “But how do you know this is the problem? Did you study the problem and gather all the data that would confirm or negate your assumptions?” Usually the answer was “no.” My husband would send the engineers back to the “field” and tell them not to return until they microscopically
studied the problem and had all the necessary detail in hand. Studying data closely in the beginning does take time, but it saves time later because the researcher has a solid foundation for progressing forward. In microanalysis we are generating possibilities and at the same time checking out those possibilities against data, discarding the irrelevant and revising interpretations as needed.

Microanalysis complements and supplements a more general analysis. Whereas microanalysis looks at the detail, general analysis steps back and looks at the data from a broader perspective, “What is all this data telling us?” It is easier to do, especially for beginning analysts who might be unsure of themselves. Though microanalysis and general analyses are used together in our approach to analysis, some researchers prefer a more general analysis, especially if they are interested in gross identification of issues and problems, and not so interested in the details involved in concept development. However, even when doing a more general analysis, one must still challenge interpretations. In doing microanalysis, one is less likely to run away with any one interpretation. Rather, each possible interpretation is checked out against incoming data before arriving at any conclusions. With more general analysis, one could easily jump to conclusions because fewer possibilities are generated. Again it gets down to balance, not over- or underdoing micro or general analysis but knowing just when and how to use each.

Below is an example of a class session, probably conducted in the early 1990s in which the class is doing microanalysis under the guidance of Dr. Strauss. (See also Strauss, 1987, pp. 82–108 for a longer example of open-coding.)

Class Session

Before moving into the next chapter we’d like to provide a brief example of microanalysis taken from one of our class sessions. What is so interesting about the session is how many possibilities are generated from just one small piece of data and how words often take on different meanings depending upon how they are used or interpreted. Also note how the variety of interpretations guide deeper exploration of the data and give rise to comparative analysis.

Field note quotation:

When I heard the diagnosis, it was scary. I panicked. Everything was doing well early in this pregnancy and I felt good, no morning sickness and I had a lot of energy. Then all of a sudden I was told I had diabetes. What a shock since this is my first baby. My main concern is for the baby. I worry about the baby. I want this baby so much. I am really scared ’cause I waited so long to have this baby and I don’t want anything to go wrong.
Class Discussion and Commentary

T. = teacher
S. = any student

T. Let's focus on the first word "when." What could "when" mean?
S. It represents time to me. A point in time. Some time, indeterminately, in the past.
T. Well, it could stand for some time in the future. Like, "When the telephone rings I will answer, because I anticipate he will be calling."
S. "When" also stands for a condition, something is happening that a question forced you to look at.
T. Suppose the word isn't "when," but "whenever." What then?
S. Then it means to me there's a repeated time. A pattern of something happening.
T. So, that's a different kind of condition for something that follows because of some event or events.
T. But suppose instead of "when" the speaker said "at the time?"
S. Oh, then it might mean telling a story with the "when" further back in time, maybe.
T. Okay, so far we have been minutely focused on that single word, and some variant alternatives. Now, what about possible properties of "when?"
S. It could be sudden. Or not sudden . . . Or unexpected (or not) . . . Or the accompanying events noticed only by you, and not by others; or noticed by others too . . . Or they might be unimportant—or very important.
T. We could dream up lots of properties of this "when" and its accompanying event(s). There's no end to them, and only some of them might be relevant to your investigation and in the data, though that has to be discovered. But, notice how my question, force you to look at properties and dimensions. Now, let's think about the phrase "I heard the diagnosis." What about that first word, "I?"
S. Could have been we who heard—or was told the diagnosis—or they, like parents. This would have made a difference.
T. And under what conditions maybe would it be told to a kinsmen, or parent, or to the patient? And what might be the different consequences of this? Now what about the verb, "heard?"
S. Oh, a diagnosis might be written. Or shown to the patient (also), like on an X-ray if she were diagnosed for TB or had a shattered hip.
T. Presumably there'd be different conditions in which each of those would occur, as well as perhaps different consequences of them. TB is interesting, because often the diagnosis is accompanied by the listener's skepticism, therefore the physician shows the X-ray. Of course the patient is unlikely to be able to interpret it, so he/she has to take the diagnosis on faith—or reject it if not trusting—so we are talking about the issue of legitimacy of the diagnosis. That gets us methodologically into the question of the possibly different relevant properties of diagnoses. What might some be?

S. A partial list of properties named by the students: “difficult to make, obscure versus well known, symbolic like cancer, or not particularly symbolic, important (to oneself, to others, to the physician, to all), expected or not, awful or actually reassuring when worst is expected or preceded by days of anxious waiting, easily believable.”

T. Then there are some interesting theoretical questions about the announcements of diagnoses, and the structural issues behind the answer to each. Who (and why)? (Your well known family physician, a strange specialist, a resident in the hospital, or if you are a child then your mother?) How (and why this way)? (Think of the difference between a sudden and abrupt announcement in an emergency ward, by an attending resident, to a mother that “your child has died.” As compared to how coroners pace their announcement of death after knocking on the door of a spouse. Another question might be when? Right away, after a judicious interval, etc. Or when other the father had arrived so that both could be told about their child’s death? In hospitals, if someone dies at night, the nurse usually doesn’t announce on the phone but is just likely to signal that things have gotten worse, and waits for the spouse or kin to arrive so that a physician can make the announcement. “When” here also includes a parent or spouse announcing the death to other kinsmen—later, sometimes hours later, and questions about how they do that, and whether face to face or on the telephone etc.

Can those kinds of questions also stimulate questions to be asked in interviews too? Yes, they certainly can stimulate descriptive questions.

T. Now, in the next phrase in that sentence notice “everything was going well.” That could possibly turn out to be an in-vivo concept, a phrase used repeatedly by pregnant woman, and so representing events probably important to them—and so it should be to us as researchers. So we take note of it, just in case it should turn out to be relevant to our work . . . What could this phrase, as such, mean analytically?

S. Well, it strikes me as indicating temporality, a course of something . . . And the course is anticipated, there’s a normal course (as well as ones that go off course) . . . Which means they are evaluating whether it’s normal or not . . .

T. Yes, but that means there must be criteria (properties), which in fact she names later in the sentence . . . But note also that it’s she who locates herself dimensionally on
this course. Analytically we can ask why she (using commonsense criteria) and not the physician or a nurse is doing the locating? What we are talking about here is a locating process and the locating agents. If you think comparatively, you can quickly see that in other situations, for different structural reasons, there will be different locating agents. Like the economists will tell you that you are entering a recession—you might never recognize you were otherwise . . . Now a related phrase here is her “early in this pregnancy.” Leaving aside the “this”—for here she is surely comparing it with other one or ones—think about “early in.” How does she know this!

S. Every mother knows there’s nine months in the course of a pregnancy, and so can locate herself. It is cultural, commonsense knowledge.

T. Again thinking comparatively—and to startle you a little with an extreme but analytically stimulating comparison—think of what happened in Germany when Hitler attained high office. People interpret this event in very different ways, though with hindsight we can see that Germany was by then deep into its evolution of Nazism. Who were the locating agents? How did they know where in the course Germany was? How did they achieve legitimacy for others—or not? What were the consequences for oneself (say you were a Jew) of correctly or incorrectly reading this evolutionary course? Such questions that are raised by these kinds of comparative cases (and even extreme ones are useful early in the research), can stimulate your thinking about the properties of women such as the interviewee who is thinking about and reacting to her pregnancy in the sense of applying the same questions about “locating” to her situation, (not the idea about Nazism) . . . Notice also that these kinds of comparisons, even when not as extreme as this one about Hitler, can stimulate you to ask questions about your own assumptions and interpretations of the pregnancy data. These kinds of questions jolt you out of your standard, taken-for-granted ideas about pregnancies and their nature, and force you to consider the implications of your assumptions in making the analysis.

S. It seems to me that there is a crisscrossing of two temporal courses. There’s the mother’s course of a hopefully successful pregnancy. And there’s the baby’s course, dependent biologically certainly on the mother’s physiology, but involving a different set of concerns. (The rest of the quoted paragraph certainly suggests that.) Socially they involve different actions too, like preparing for the baby’s entry into the family, and acting “right” during the pregnancy for the baby’s foreseen welfare.

T. You are pointing to different phenomena and you could coin two different concepts to stand for these, also a concept to represent what you call “crisscrossing.” I would call it “intersecting” or linking, as in axial coding. You are also pointing to sequence and phases of actions and events, another aspect of the temporality noted earlier. There is also process or movement through phases of action.
Summary of Important Points

Analysis is the act of giving meaning to data. Our version of analysis involves taking data apart, conceptualizing it, and developing those concepts in terms of their properties and dimensions in order to determine what the parts tell us about the whole. In the beginning of a study, analysis is usually more detailed or “microscopic” because before arriving at any interpretation, the researcher wants to explore all possibilities. Later analysis tends to be more “general” in order to fully develop and validate interpretations. In our approach to qualitative analysis, concepts form the basis of analysis and are the foundation of research whether the aim is theory building, description, or case analysis.

In brief, describing is depicting, telling a story—sometimes a very graphic and detailed one—without a lot of interpretation or attempt to explain why certain events occur and not others. Conceptual ordering is classifying events and objects along various explicitly stated dimensions, without necessarily relating the classifications to each other or developing an overarching explanatory scheme. Theorizing is the act of constructing an explanatory scheme from data that systematically integrate concepts, their properties and dimensions, through statements of relationship. Though findings are constructions, interpretations of data as seen through the eyes of the researcher, doing qualitative research remains a valuable endeavor. It is up to us as researchers to do the best that we can, taking our analyses apart and redoing them as necessary, and to remain unwilling to settle for anything less than what “feels right.”

Activities for Thinking, Writing, and Group Discussion

1. Compare and contrast qualitative vs. quantitative methods of analysis.

2. Think through and write a short paragraph describing what you think a researcher is trying to achieve analytically with qualitative analysis and how that differs from the aims of quantitative analysis?

3. From your professional research journals, choose three research articles, one that represents description, one that represents conceptual ordering, and one that represents theory development. Do not necessarily rely on how the article is presented by the author. Sometimes persons call their findings theory when in fact they are not. Bring the articles to group and explain why you think these articles represent examples of description, categorizing, or theory development.