6

What Do I Do With the Information I Collect? Analyzing Data

By this point in your research, you have formulated a well-focused research question and presumably completed your literature review. You have also started gathering data by using at least one of the research tools we discussed in the previous two chapters. In other words, you have begun gathering information that addresses your question from a variety of sources. As a result, you are well on your way to accumulating the pile of transcriptions, observation notes, and/or artifacts and research notes that are at the center of the next step in this process: analyzing data. The task of sitting down to look at all of this material can seem daunting. You might ask yourself: How can I make sense of all the material I've gathered? How will I ever have the time or energy to look at it all? Do I even have enough material? Where will all the reading I did for my literature review fit in? Will others agree with or even find my analysis useful?

Although the task of analyzing data can seem overwhelming, we have found that it can also be one of the most satisfying parts of the research process. During this stage, you have the opportunity to look carefully and systematically at all the data you have gathered and you can begin making sense of it, especially in the context of the questions that gave rise to your research. What we hope to do in this chapter is provide you with some productive tools that will help you make sense of your research findings, both for yourself and for others.

GENERAL ISSUES IN ANALYZING DATA

The following general issues are important when analyzing data:

- Knowing when to start analyzing
- Learning to look deeply
- Getting organized with materials
- Finding time and space

Knowing When to Start Analyzing

Eventually, it is time to stop gathering information and start focusing on analyzing it. But when is the right time to do this? How do you know when you have "enough" material to start? Sometimes this is determined by external factors: the deadline for your thesis is fast approaching; the deadline for an article or conference paper you are doing is coming up; or the time that you had available to work with your participants is coming to an end (e.g., if you are a teacher researcher and the school year is ending). You might also have set deadlines for yourself that you are determined to keep, although we caution you here to be flexible. In any of these cases, you will hopefully know that it's time to move on from gathering information to analyzing it because you will have amassed enough information to begin understanding the questions you have raised.

Most researchers do at least some data analysis, regardless of how preliminary it is, as they gather information. By preliminary analysis, we mean the casual and incidental summaries and interpretations you may do along the way. For example, you might look over a completed interview transcript and begin noting issues that seem to be coming up in the interview. Or you might reread your observation log every few weeks and write summaries of what you are learning. Many researchers believe that this kind of "analyzing as you go" is vital: Reflecting thoughtfully about what you are discovering as you are discovering it allows you to formulate new questions for research participants, create a new focus for your observations, and/or consider aspects of your research through a new lens. Other researchers, however, believe that this kind of ongoing reflection has the potential to create problems: They would argue, for example, that trying to make sense of your findings before you collect all of your data may make you more inclined to see some answers and not others, or may lead you to view your findings too narrowly.

Our stance is balance. Doing some analysis as you go can not only help you begin focusing in a positive way on what you are seeing, it can also help you stay focused and be more productive as you continue doing your research. The trick is to make sure that any preliminary analysis you do is contingent and not cast in stone. Analysis is a way of looking and re-looking that, done throughout the research process, will continue to lead you to new ideas rather than to premature conclusions.

In the sidebar for this section, there are several strategies you can use to carry out the preliminary and ongoing analysis we are suggesting. If, after trying some of these strategies, you still find yourself asking questions to which you can't find answers, then you

Sidebar 1: *Strategies for Carrying Out Preliminary and Ongoing Data Analysis*

Field Note Summaries: Once every 2 weeks or so, it can be useful to reread the field notes you have taken in your research and write a summary of them, one that both makes sense of what you have noticed so far and also raises questions. Taking time periodically to reflect in this way can help you narrow or expand the focus of your research. As an example, in a study Cathy did in which she shadowed a 10th-grade student for a school year, looking to see how the student approached writing in her various classes, she one day wrote the following field note summary:

> Her rules for writing are not so much by subject area but by type and by teacher perception of type: most teachers tell the rules. Not by traditional modes of development but by final form: report, essay, summary, evaluation—defined generally in terms of parts and lengths rather than content.

Research Memos: Although they can take a variety of forms, research memos require the researcher to consider what she has learned so far from her sources and summarize that information briefly. Usually intended for an audience beyond the researcher (e.g., your advisor, an editor, a colleague), research memos allow the researcher, first, to try to make sense of what might be disparate findings and, second, to try to represent those findings to another person who might offer new insights on the research. The casual and questioning nature of these is just right for preliminary analysis. As an example, our student, Julie Caldwell, who was in the midst of her research on the vocabulary of her middle school students, wrote this memo to Cathy:

> Dear Cathy: This week was great in that I had interviews to work with and time to reflect.
>
> I am not sure what I'm driving at in the interviews, and I need to interview more students. I have had three interviews with Isabel, and the benefit is that she is really opening up and becoming more forthcoming. So that is good. ...
>
> I'm really wondering where my data collection is leading, and I truly look forward to glimpsing trends. So far I haven't come around to seeing any, but I think it's because I'm not ready. I want to collect a few more interviews. Also, the students I've chosen to focus on are so different.
>
> As I peruse Isabel's interviews, I see that she is almost afraid to admit that she doesn't know words—she only wants to use words she thinks she knows—so I see this process, this sort of screen through which vocabulary passes into her radar. Then she will recognize it. She is very choosy about the style of words—diction really, I guess. Some words she "likes," others she doesn't. Hmm. That is so interesting to me. Shall I do a case study of Isabel?

Graphic Depictions: Sometimes researchers use sketching as a way to think about the information they have gathered. Representing symbolically what you know so far, what you still want to know, and how you will get there can help you see the big picture of your research and where to go next.

Prompt 1: Doing Some Preliminary Analysis.

If you have already begun gathering data for your research, use one of the strategies described in the sidebar for this section to do some preliminary analysis of that data. Share your analysis with your classmates to get their feedback.

may need to do more data gathering. Keep in mind that the line between these two stages of research is a blurred one: Most researchers move back and forth between them.

Even if you have amassed a good deal of information from your research and have analyzed it all along, you may still have a hard time committing to and beginning the analysis stage of the research process. You may think, as we often do, "but there's more I could do: one more interview, one more observation, one more analysis of a document." If you find yourself hesitant to move on, keep in mind, first, that your ability to obtain more information is rarely cut off. You can still contact a participant one more time or review one more document if you need to. Also, even if you make them flexible, it can be very helpful to set some deadlines for yourself (e.g., saying that by December 1, you will have completed your interviews and observations and started your analysis of them). We also believe that it is much easier to begin your data analysis if you have a handle on some of the tools and strategies that will help you. We address these tools and strategies in this chapter.

Learning to Look Deeply

We liken the process of what you do with all of the information you collect to what the protagonists do in the mysteries we read. All good mysteries, of course, require the detectives both to make sense of the information presented to them and to move beyond the obvious suspect or motive. It is only by digging beneath the surface, trying to put the clues together in a different and unusual way, that the mystery gets solved.

That is how we view the analysis stage of the research process. Part of your job as researcher is to sift through all of the material you've gathered, trying to find the themes that emerge from the multiple research strategies you used and then using those themes, along with other evidence you find, to answer your research questions. This is the moment to look both *within* each of the research strategies you used and *across* them (e.g., to analyze both what an individual interview tells you as well as what all of your interviews tell you). This is when you begin connecting the outcomes of all the strategies you used, including the literature review. It is when you ask, "What have I discovered? What does the evidence I've gathered from all of these sources indicate?" A large part of your job at this point, then, is to begin looking for commonalities—how your multiple ways of looking into your questions may point to a common answer or answers. However, another part of your job at this point is to look beyond the commonalities and to notice the contra-

dictions that may occur. This looking beyond commonalities is generally what will provide you with the kinds of complex understandings you need in order to answer your original questions even more fully.

But how do you know if there's a contradiction? Contradictions inevitably occur when we research real situations with real people. Seldom are such situations totally consistent. For example, a student you interview may tell you one day that revision is the most helpful part of the writing process; however, a week later he may complain that revision is stupid and tell you that he never even does it. A business memo that you analyze may refer to a particular set of office policies that management claims are always followed, but the individuals who work in that office demonstrate no understanding of those policies. Part of our jobs as researchers in these situations is to dig deeper, to try to find out why the contradictions exist. Did the student revisers change their minds about revision after getting a paper back from their teacher that was covered in red ink? Was the business memo never actually circulated to the office workers? Asking additional questions or observing the situation more closely can help you think deeply about what is really going on and why the contradiction might exist.

This kind of analysis is not always an easy task for at least two reasons. First, it's much easier and quicker to look through the evidence you have collected with a particular answer in mind and to focus primarily on the data that supports that answer. It is satisfying to find supporting information and to feel as if you have discovered a "truth." The other challenge relates to the fact that we all bring multiple perspectives, backgrounds, and experiences to our work that inevitably influence how we look at our data and what we see in it. In short, as qualitative researchers, we have both the advantage and the disadvantage of seeing the evidence we gather through our own lenses.[1] Therefore, what we see may not be what others see. We might then ask, "Is our answer or approach the right one?" If our findings can be viewed in multiple ways, how can we ever know that what we're seeing in them has any real meaning?

As long-time researchers, we continue to struggle with these issues. We worry that we have not dug deeply enough or that our interpretations of our findings might be idiosyncratic. We worry that our experiences and perspectives may limit our ability to look at our data with fresh eyes and open minds. We talk more about these issues in the lenses section of this chapter, but for now we just want to acknowledge that feeling some insecurity and even resistance at this stage is very normal. The most successful researchers are those who learn to accept and even revel

[1] We want to argue that although this criticism of personal bias in research is most often directed at qualitative researchers, we believe *all* researchers bring bias to their work. Our view is that researchers should always be attuned to the biases that they bring to their work—whether those biases are part of the questions they ask, the participants they include, the methodologies they employ, or the approaches to analysis they take. Researchers must also bring that awareness to the forefront of what they do. For more on this issue, see a later section in this chapter on lenses and triangulation.

in the uncertainty, through what Hubbard and Power (1999) call the "murkiness of data analysis": "The murkiness of data analysis is what scares any researcher. If it doesn't spook you at least a little, you're not opening yourself up enough to the new learning that can come during analysis. If the analysis seems very easy, you've probably only found what you already knew before the project began" (p. 117).

It may also help to remember that analysis, like every other part of research, is a process. There is no single correct meaning to be found in your data. By looking and re-looking at the information you have gathered, you will find that consistent patterns begin to emerge. This chapter offers you multiple tools for finding those patterns and for feeling more confident in looking deeply at the material that has been gathered.

Getting Organized With Materials

During data analysis, all of the ways in which you have organized your research up to this point will serve you well. Analyzing data is, in many respects, like putting together a puzzle. Some put puzzles together by randomly searching for pieces, but experience usually teaches us to adopt a more strategic approach: for example, to put all of the pieces that form edges in one pile and all of the pieces of similar color in another pile. Whereas serendipity plays a role—we occasionally just reach in and find a piece that fits perfectly—most of the time we need to look carefully to discover an underlying pattern.

Getting organized for data analysis means not only having the materials you need easily accessible (interview transcripts, observation notes, artifact analyses), it also means having time and space to immerse yourself in the data. Putting together the pieces of your research findings is like finding the pattern of a puzzle: It requires both time and careful attention on your part.

In order to make data analysis less overwhelming, it helps to do some organizing as you are gathering your data. If you have not done so, you certainly want to before you begin looking at your data. Different researchers have different strategies for organizing and keeping track of data. Next, we present a few strategies that we have found useful.

The first involves using the computer to get organized. These days, many researchers find it useful to put all of their materials onto the computer, creating separate files and folders, for example, for different kinds of data. Researchers can scan or retype observations notes into a file, or even use a laptop to make the notes in the first place. A key advantage to having your materials on the computer is that many of the analysis tools you use might themselves be on the computer, either as distinct software programs or as tools or functions within other programs that help you accomplish tasks like sorting through and categorizing information.

A second strategy entails organizing data using file folders. If you prefer to work with hard copies, one easy way to organize your data is to use different colored file folders depending on the source of the data. For example, you might use red folders for interview transcripts, with a separate red folder for each participant. You could use green folders then for observations, and so on. You may also choose to arrange your materials chronologically, alphabetically, by participant or setting, and so forth. One advantage to using file folders is that they allow you to quickly access documents so you can review and compare them easily. Of course, you can also do similar kinds of reviews and comparisons with a computer.

A third strategy entails organizing by notebooks. Some researchers use research logs or notebooks that they have written in by hand or kept on the computer. They use them for observation notes as well as for notes from interviews. The ideal here is to use different notebooks or files for different kinds of research. If you put everything into one notebook or file, then one way to organize the material is to place different colored and different sized Post-it® notes on particular pages or sections to indicate various kinds of information. You can place the Post-its® on the beginning page of each new type of material (e.g., red for interviews, green for observation notes, etc.). If you have kept electronic notebooks, you can easily divide them into separate files, label the parts for easy searching, and so on.

As we talked to a number of researchers about how they organize their data, what we discovered is that what works well for one researcher is not necessarily successful for another. What is most important is to create a system that works for you. The sidebar for this section presents several researchers' strategies for organizing their data. Note the variations.

Finding Time and Space

Another important issue in data analysis relates to the context in which you will carry out the analysis—in other words, the space where you will do your work and the time you will be able to devote to it. Analyzing data in the manner discussed here requires that you immerse yourself in the information that has been collected, that you go as deeply as you can into the information, and that you take the time that is needed to do this.

This is not the kind of work that can be done sporadically or in limited chunks of time, such as an afternoon here or there (although it's true that something valuable might occur to you in those moments when you're in the shower or walking the dog). Immersion generally requires large blocks of regularly scheduled time (ideally on a daily basis) so that you can lose yourself in your data. The reality of most of our lives, however, often precludes this ideal. Very few of us can put our lives on hold completely to do our research. The best advice we can offer is that you think carefully about how to

Sidebar 2: *Researchers' Strategies for Organizing Data*

Robert Yagelski, SUNY Albany: In the last few studies I've done, I've used Microsoft Excel as a way to organize notes, some data, and procedures. So in the case of one study that required taking field notes in a class, I would write the notes out in longhand during the class, then that evening rewrite them in MS Excel, using the program to organize the notes into the broad categories that my co-researcher and I were working with. In a way, I was doing some low-level data analysis as I rewrote those field notes.

Bob Fecho, University of Georgia: Most of my research is on my own practice and it's qualitative in nature. More and more, I keep both hard copies and e-copies of my data. Having the e-copies helps me later when I'm writing up my work or excerpts for close looking. I tend to keep the hard copies in milk-crate-like containers (I've found ones that allow for folders to stand up easily). In such a container, I can keep everything in files and/or binders and even keep any audio or videotapes. I've been using email quite a bit as a data source these days, so I keep mailboxes either by project name or by the names of participants in the project. I also keep a hard copy binder of every email usually in chronological order. In general, how I label any folder has much to do with the intent of the project.

Rebecca Sipe, Eastern Michigan University: I'm a notebook and box organizer. All the quotes, comments, and excerpts from the spelling research, for example, made their way into category sections of a notebook. Other pieces are categorized in file folders in plastic boxes that line the sides of my office. When I'm writing I can get to things quickly and easily that way. It looks like a real mess, but there is organization.

Todd Destigter, University of Illinois at Chicago: I ... use a bunch of files in which I collect stuff that I'm thinking about. Once I begin to see the concepts "rise from the data" (i.e., once I start identifying ... conceptual categories), I actually use different colored highlighters to flag specific stuff that would illustrate and help me explore/explain the bigger concept. For instance, right now I'm looking at a number of things at Latino Youth, among them how the few black kids feel about being at a traditionally Latino school. My notes and artifacts that deal with that are highlighted in light blue. The stuff that is about why this one particular girl I'm working with doesn't come to school is in yellow, etc. Every two or three weeks, I print out my notes and musings, punch binder holes in them, and put them in a notebook, where I also highlight them with the color codes.

carve out the time you need to do your analysis. Think about breaks in your schedule. Is it possible to work for an hour each morning before your work day begins? Or, how about taking an hour in the evening? Can you set aside one night a week? It also helps if you can set a regular time for your work and establish a routine for it.

Prompt 2: ***Identifying Your Organizational Strengths and Weaknesses.***

Think about your own organizational strengths and challenges. How have you organized your academic or personal work in the past? What have you liked about how you organize your work? What problems have arisen in your organizational strategies? What changes would you like to make? Compare your ideas with the ideas of others in the class. What have they done so far to organize the information they have collected?

You should also think about the physical space in which you will do your work. Many researchers like to spread out their materials and have them readily accessible. This can be done electronically as well, but many researchers still like to have the physical materials spread out in front of them. Much like working on a jigsaw puzzle, we like to have all of the pieces handy so we can search through them, looking for missing pieces by hand, physically moving them around so we can visualize patterns and relationships, and moving back and forth among documents. All of these physical activities help us see how the various ideas, quotes, and sections fit together. Because most of us analyze data recursively, having the data physically arrayed so that it's easy to manipulate and manage is essential.

What you use for your physical space will depend on your own context and circumstances. You might set up a card table in a corner of a room, use one half or all of the dining room table, or use the floor in your family room or bedroom. Find some space that is both comfortable and workable for you and that you can take over for a period of time so that you don't need to keep cleaning up your materials. The ideal situation is to have a space that you can work in whenever it's convenient, someplace where you can easily come and go.

Prompt 3: ***Getting Organized for Analyzing Your Data.***

First, create a calendar for your analysis work. Put in due dates and deadlines, add any additional tasks you need to complete (e.g., more reading, interviews, surveys), note times when you might be very available or not available at all to do your work (e.g., vacations). Next, create a weekly work schedule that indicates days of the week and times that you can devote to your work. Indicate what you will do during those times (e.g., Saturday morning—reread transcripts from initial interviews). Finally, develop a plan for organizing your research materials for analysis (e.g., will you create folders for each research method—interviews, artifacts—or for each participant). Also, make a list of the supplies you will need (e.g., Post-it® notes, file folders, legal pads, different colored pens, or perhaps a specific data analysis software program). Keep in mind that your calendar and schedule will likely change, so be prepared to be flexible.

TOOLS FOR ANALYZING DATA

The following tools are useful for analyzing data:

- Reading/Immersion
- General thematizing
- Coding, indexing, and writing research memos

Reading/Immersion

Now that you've carved out time, created space, and organized all of your materials, it is time to determine what to actually do to make sense of your data. One thing you need to do early on is to read through everything that has been gathered. There are various ways to do this. Initially, for example, you may read through all of your data just to get a sense of the whole and to get a general understanding of what your participants told you or what your observations revealed. At some point, however, you need to start reading more closely, paying attention to the particular meanings contained in your data. This kind of reading usually does not proceed linearly but, rather, recursively. You begin reading for specific information, seeking answers to the questions you have raised, looking for connections both within and across research documents, and looking for nuances (e.g., what was said versus what wasn't said or mentioned). In short, the reading of data usually is done on several levels. Researchers read broadly, searching for general themes and meanings and, closely, looking for subtle points and connections and going beyond what is on the surface. Such close reading requires enough concentration so you can make connections and recall earlier ideas. Most researchers also take notes as they read, constantly adding to and modifying their notes because reading is a cumulative activity: With each new reading, you bring with you the context of what you have already read.

We can't stress enough the value of reading the same material multiple times. We both have experienced that moment in our research when, in our third (or fourth or fifth) time over the same material, we suddenly saw the material in a new way. There is also value in spending time away from your data, time reflecting on and thinking about what all the various words and images might mean. It is important, therefore, both to immerse yourself in your data and to think deeply about it. Immersion and reflection are what enable researchers to make connections, even when those connections occur at times other than when you are actually doing your research (e.g., while you are walking the dog or cooking dinner). Thinking about your data when you are away from it can trigger a creative leap, moving you away from the obvious and allowing you to notice a previously unseen connection.

Prompt 4: Rereading.

Return to a reading you did previously (e.g., for your literature review). Reread the piece, consciously slowing yourself down as you read. Take note of things you notice this time that you missed last time and look for connections between what you are reading and the data you have been collecting. Reflect on your activity: What was different in your reading this time and why? Also, how was it different and how did the meaning of the reading change for you?

Prompt 5: Reading Your Own Data.

Select some of the interview transcripts, surveys, research log entries, or artifacts that you have collected for your research. Read through them several times. After the initial reading, write a summary of what you read. After each subsequent reading, record what you notice that you hadn't noticed the first time through. Discuss your experiences and findings with your classmates.

General Thematizing

The kind of purposeful reading described in the previous section leads to the essence of data analysis for qualitative researchers: creating a system to help make sense of the material you have collected. Reading, then, is an important initial step in data analysis. As a next step, qualitative researchers often begin looking for themes, a step that entails combing your data for ideas that keep cropping up. With this strategy, you look for general connections among and between the pieces of information that have been collected. As we explain what is entailed in finding themes, we will draw on the prompt for this section, using the responses you give to illustrate how to uncover themes in your own research.

Prompt 6: Finding Themes.

Take 5 minutes to write about your earliest memory of learning to read. Describe as clearly as you can where you were, who was with you, what you and others did, and how you felt. Share your reflection with your classmates. As individuals share their reading memories, have someone record on the board the key points from each reflection. Look at what is written on the board and think about what you heard. What points of commonality exist across the stories? What themes seem to emerge from your collective experiences of early reading?

What you will probably notice in doing the prompt is that there are certain common themes in your early literacy stories. These commonalities might relate to *others who were involved in the literacy experiences*, to whether these *experiences were in or out of school*, or to whether the *experiences evoked positive or negative memories*. Common themes might also emerge around certain kinds of books (like Dr. Seuss) or certain television shows (like *Sesame Street*) that were a part of your youth. The themes you identify, whatever they are, can help you begin forming a picture about this concept of early literacy, a picture you could explore further by looking at other kinds of information: in-depth interviews with people in the class, observations of small children learning to read, discussions with children and parents about their reading, and so on. In other words, the general themes you identify can help you begin seeing what might be in your research and can help you situate yourself more deeply in the information you have gathered.

After identifying themes, many researchers move back into their research, looking to develop more specific categories from these themes. These categories are generally narrower than the themes. For example, working from the theme of *others involved in early literacy experiences of children*, you might identify several categories: parents, siblings, friends, and teachers. You can then use these categories to sift more deeply through your research, uncovering, for example, how these various others influenced the reading development of the participants in your research.

Cathy's project that focused on teacher outreach, described earlier, offers an example of this kind of analysis. The project looked at the question, "How can teachers be more effective in their outreach to parents so that parents can receive a more realistic picture of what happens in literacy pedagogy than they are currently getting from media reports?" Concerned that too much of parents' knowledge seemed to emerge from inaccurate or incomplete reporting of how reading and writing are taught, she began working with a group of teachers who were equally concerned about this issue. She interviewed these teachers about what they were doing and collected numerous artifacts from their classrooms, especially the handouts they sent home to parents. After pouring through the interview transcripts and artifacts, she started her analysis by listing all of the different means of outreach the teachers used (e.g., notes sent home with positive feedback about children, anthologies of student work with letters from the teacher, picnics at the start of the school year, books written by teachers about curriculum, etc.). After studying the lists she constructed and going back to her interview transcripts and notes, she began to recognize that the teachers seemed to have a staged approach to outreach, using different strategies at different stages. She eventually identified the following categories: strategies for community building, strategies for informing parents, and strategies for involving parents. Going back and forth between her research notes and these categories, she discovered that nearly all the

strategies mentioned in interviews and demonstrated in artifacts fit neatly into one of these categories, which thus provided a way of organizing the material that was not previously apparent to Cathy or to the teachers.

What Cathy recognized, and what all researchers should recognize when they attempt to categorize their findings, is that, first, the process is recursive. The initial categories you develop will give you a way to look at the material, but re-immersing yourself in your findings may reveal additional or different categories. At that moment, your job is to ascertain what a new look into the material will tell you and how you can restructure your categories to better fit the information. It is not uncommon to go back and forth, changing and adapting categories as you come to understand your data more fully.

Also remember that not all of your material will fit neatly into your categories. Because qualitative research deals with the stories of real people and real situations, it is not an exact science. Seldom will there be entirely neat or exact fits. If there are, then that may be your first clue that you may be forcing a fit. As mentioned previously, these moments of discontinuity or contradiction are actually the job of this kind of research. When there is an exception, a piece of the puzzle that doesn't quite fit, qualitative researchers usually hone in on that piece, trying to figure it out. Exceptions often lead to the most important moments in research, the journey to figure out why the exception exists.

Coding, Indexing, and Writing Research Memos

Reading and looking for themes, and creating categories in a flexible and recursive manner, are important first steps in the analysis stage of research. Your next step as a researcher is to look through your data with a careful and critical eye to discover the evidence that supports the themes and categories you have identified. This sounds at first like a circular process: You look closely at the data to come up with themes, and then once they are identified, you go back to the data to discover evidence for them. The process is indeed circular, but we would distinguish the two steps in this way: You look initially at your interviews, observation notes, and discourse analyses to develop a general sense of the patterns that may be present. To begin discovering these patterns, you certainly have to read deeply, but your goal at this point is simply to discover general tendencies and connections. Once you move to the next stage, your job is twofold: First, you immerse yourself in the data even more fully (e.g., to consider how the details of the interviews, observations, and/or artifact analyses fit into the general themes and categories identified and, if necessary, to adjust and adapt those themes and categories). During this stage, it is vital to note specific moments, ideas, words, and phrases that support your themes and categories. Second, as you begin noting these moments, ideas, words, and

phrases, you begin theorizing about the information you are uncovering; you begin considering "why": why these categories, why your participants responded as they did, why your observations revealed the information they did, and so on. Thus, while you search your notes for specific evidence to support the themes and categories you have named, you also start adding your own perspectives on possible questions and explanations.

Ruth Hubbard and Brenda Power (1999) distinguish between the notes you take as you research and the notes you develop as you analyze. They refer to the former as raw notes and the latter as cooked notes. "Raw notes," they explain, "are just what you've written, as quickly as possible, without any analysis. Cooked notes are the analysis of these raw materials" (p. 129). They continue:

> Cooking notes can ... be as simple as adding questions to them, to extend and expand your thinking about what you are seeing.... Cooking with questions in mind extends your sight about what patterns are emerging. Questions to consider while cooking your notes might include, Why did I think this was important to write down? How does this connect with what I saw earlier in the day, week, year? Based upon what I'm seeing, what action should I take to change the curriculum or my research question? (p. 129)

The researchers we know use a number of methods to cook notes in order to deepen their analysis of the data they have collected. Some methods that are particularly useful are coding, indexing, and constructing research memos.

Coding

We define coding as a systematic way of indicating in your data the themes and categories that you have identified. In other words, with coding you mark all of the occurrences of the particular themes and categories that you have identified as important in your research, either through your early readings of your data or through your secondary research (e.g., reading of the literature and theory in your field). For example, for the early literacy prompt, you may have identified themes such as *influences of people on early literacy* and *influences of place on early literacy*. Perhaps some of the categories you identified for *influences of people* were teachers, parents, and peers. Under *influences of place*, you may have identified classrooms, bedrooms, and libraries as categories. Moving from this initial step of identifying themes and categories to marking these themes and categories through coding merely means returning to the data, reviewing it closely, and, while reviewing it, marking in some manner the various statements that relate to each of your themes and categories. Of course, it is also possible that you will find evidence while you are coding that does not relate to your themes and categories, so you will also want to make note of that evidence and consider adding new categories. It is important to

remember that all aspects of data analysis are recursive, so you may end up revisiting your initial themes and categories. In other words, as you continue to re-immerse yourself in the information gathered, you may replace some of your categories with others that better describe the patterns you are seeing. Coding, then, can be a messy process because you will continue to move back and forth between the themes and categories you have identified and the specifics of your data.

When you code, you will also raise questions and do some initial theorizing about what the data means. In fact, your theorizing may be the driving force in the coding scheme you develop. For example, for the early literacy prompt, you may be influenced by theories of early brain development that suggest that the act of reading to children at a very young age is significant for a child's cognitive development. Holding this perspective might cause you to focus particular attention in your coding on the roles of parents and siblings in an individual's early literacy experience.

We also want to offer a side note with respect to coding. To reduce the messiness of coding and to keep yourself organized, make sure you have copies of the data you are analyzing. Because this step involves actually marking the documents that have been gathered, either electronically or by hand, and because you may very well end up changing your categories and/or how you are coding as you go, always have a clean set of originals on hand.

Ways to Code

At the simplest level, coding involves looking through the data and marking themes and categories in the margins. The marks indicate how particular words, phrases, and even segments of the data support the theme. The example in this section is taken from a response to the early literacy prompt (see Box 6–1). Our markings of it demonstrate how a researcher might code the occurrences of words and phrases that tie to the themes of influence of place and influence of people.

The first paragraph focuses on the library and conveys a clear sense of the influence of place. In her coding, the researcher begins to explore why this place is important to the respondent as an early reading memory: because it was comfortable with "chairs, pillows, comfortable rugs"; because it was "cool and inviting." In the next paragraph, however, a contrast appears. Although the researcher also marks this as an example of the influence of place, she notes some differences as well. This part of the library was "all concrete and metal shelves ... a little dusty." The less comfortable environment of this part of the library didn't seem to deter the respondent's desire to read: "sitting in a corner, a pile of books at my feet, and reading and reading." But the respondent does note that "this was the place for serious research" where the books were "hardback and nonfiction." Noting these statements helps the researcher ask the following question: "Nonfiction = less comfortable? I wonder if this association happened at other times?"

Box 6.1

One early memory I have of learning to read is going to the public library. I can remember **times when my mother took me** and times when I went with my class, but what I remember most is just being in that building. *I grew up in this tiny town, and so the library was even more impressive than it would have been had I grown up in a city.* The library was huge—with marble and wood everywhere. It had two children's rooms with wooden book cases filled with picture books and print books, and *it had space everywhere to hang out and read: chairs, pillows, comfortable rugs.* The ceilings must have been 20 feet high, so it always felt *cool and inviting.* **My mom used to go to meetings in the library, so I remember just being on my own in the children's room** and going through shelf after shelf of books. I felt so grown up when I got my first library card. It meant that I could take all these amazing books home!	Influence of place Influence of people Library mattered to her Comfortable place Fiction = comfort? Mom being there but also giving her time to be alone with the books
I also remember when I was a little older discovering the *stacks of the library.* You had to walk down these metal steps into the basement where there were rows and rows of books. I can remember sitting in a corner, a pile of books at my feet, and reading and reading. It was so different from the upstairs part of the library.	The influence of place is different from the previous paragraph. Non-fiction = less comfortable?
This part had *all concrete and metal shelves,* always seemed *a little dusty,* and the books were *hardback and nonfiction.* This was the place for *serious research,* I used to think.	I wonder if this association happened at other times?

Looking carefully at the words, fitting them to the themes and categories, and using all of this to ask additional questions is all a part of coding. A piece of data coded and organized in this way will help researchers look back on this response later and see how it connects to other responses they have coded.

As you do this kind of coding, you might use one of a number of techniques to make your job easier. Many researchers, for example, develop and use *abbreviations* (e.g., PL might stand for place; P might stand for people, etc.). Other techniques include *coding by highlighting*, where researchers use different colored pencils or highlighting and have a coding chart that indicates which colors relate to which themes. This kind of coding provides clear visual cues indicating which themes are occurring and with what frequency. The colors make it easy to summarize your findings by simply looking at the data. For example, if you want to ascertain how frequently a place is mentioned as an influence on early literacy, and if you have marked this category with a certain color highlighting, then it becomes very easy to flip through your data to note all of the instances you see. Color can also make it easy to identify quotes you might wish to use when you write up your findings.

Many researchers code using Post-it® notes or Post-it® flags and text markers. We know some researchers who stock several different sizes and colors of Post-its®, which they use throughout their research. During analysis, researchers can use different colored flags or the small rectangular notes to mark passages that connect to different themes and categories. Again, this approach can help you think more deeply about each category when you view your coding and analysis. Picking up an observation log or series of transcripts and flipping to all of the pages marked with a particular color can expedite your analysis.

Another option researchers have is to use a *coding chart,* as seen in see Table 6–1. These charts let you see how many times certain themes occur and how the themes move across the various kinds of data that have been collected. Generally, creating a coding chart involves these steps: naming the themes you are interested in looking at, naming the pieces of data to be examined, and noting the incidences of the themes in these pieces of data. It is also a good idea with this approach to leave room for questions and additional information. Returning to the early literacy prompt, a researcher, after looking at the responses of five people, could create a code sheet that looks like Table 6–1. The plus signs indicate evidence of the theme.

This kind of coding chart can let you see what themes and subthemes are most common and can help you think about why that's so. These charts can also help you raise questions about your data and categories. For example, Table 6–1 suggests the following questions: What is the role of night-time reading by parents? Do kids whose parents read to them like reading more as adults? Do they associate reading with comfort? What role do librarians play? Are they more prominent influences in situations in which parents are not influences on a child's reading? Such questions can lead you to review your data again as you seek a deeper understanding of these issues.

Whereas we are presenting these examples of coding as separate strategies, in reality many researchers use combinations of them. For example, it might be useful to code words or phrases first and then move on to creating a coding chart. Or you might find that highlighting works well for you, but that you want to add questions and ideas in the margins. The important point about coding is that it lets you mark the data in a strategic and systematic way so that you can keep returning to it as you dig more deeply into the materials you have gathered.

Coding also works best if you approach it flexibly, realizing that its purpose is to lead you to the next steps in the research process: making meaning of your research and then conveying that meaning to others. If your coding seems overly complex or difficult, then it may be a sign that your themes and categories don't truly represent what's in the data. If this happens, then you may want to return to your data and try

TABLE 6.1

Name	*Influences of People: Parents*	*Influences of People: Teachers*	*Influences of People: Peers*	*Influences of Place: Bedroom*	*Influences of Place: Classroom*	*Influences of Place: Library*
Michelle	+ (especially her mother, who bought her books every week)	+ (second-grade teacher, who suddenly helped her make sense of plot)		+ (found it "safe") nobody else in family read, so she could hide this "odd activity" from others		
Anthony		+	+ (competition to read the most books really got him inspired to read)		+ (coach in corner felt comforting)	
Michael	+ (mother took him to library every week) (I might need new category here for librarian's influence because he notes that the librarian helped him pick books)					+
Rachel	+			+		+
	(mother read every night before bed)			(night time reading; comfort of bed)		(librarian took under wing) (I might need librarian category)
Carolyn	+ (father told stories every night before bed) (I wonder about the connection between story telling and reading!)					

to ascertain if there are other, more appropriate themes that cut across the information collected. Alternatively, if your coding seems to proceed too easily, then it might be a sign that you have gotten locked into certain categories early on and you may not be seeing all of the things your data has to offer. Again, it is probably a good idea to review your data multiple times to see what other information or issues emerge.

Prompt 7: Practicing Coding.

Choose one text from your research (interview transcript, log entry, writing sample). Read over the text searching for themes and categories. Make three copies and try out several of the strategies for coding. Did one strategy work better than another? Why? Did you find yourself using a combination of approaches?

Coding With Technology. Coding, and qualitative data analysis more generally, are increasingly being supported by technology. There are a number of software programs available now that support qualitative research (searching in Google for "qualitative data analysis software" brings up several pages of hits). Quantitative researchers have long had statistical programs like SPSS available, but it has taken much longer for a standard to emerge for qualitative research (primarily, we believe, because it is so contextual and contingent). It is beyond the scope of this text to name and review all of these programs; however, we do encourage you to consider what might be available. For example, some universities purchase site licenses for particular programs in order to make them available free of charge to their students and faculty. Our university recently purchased site licenses for Nvivo 7, a fairly popular qualitative program. Other common applications that qualitative researchers use include NUD*IST, The Ethnograph, and ResearchWare. Some of these programs have free trial periods, so it may be useful to try them out first and see what they are capable of doing.

We caution that these programs are just that, programs, or tools, essentially. They can assist you with analyzing your data, but the expertise and skill that you bring to the analysis stage, and the theoretical perspectives you apply in analyzing your data, are still the key elements. You need, ultimately, to determine categories and themes and to develop and evaluate coding schemes that make sense for your work. You also need to interpret what you analyze and find. In other words, the intellectual tasks involved in analyzing qualitative data cannot be performed entirely by a computer. You also should be knowledgeable about what these programs can and cannot do and know about their advantages and limitations. Different programs have different strengths and weaknesses. Your job as researcher is to evaluate the tools to determine which might work best for you. Knowing as much as you can about these tools can help you make informed decisions that will enhance, and hopefully simplify (and perhaps speed up), your data analysis.

Indexing

Another approach to systematically reviewing your data is what some researchers call indexing. Indexing is a way of keeping track of both the themes and the categories you have identified in your data and where these themes and categories can be found. When you index, you produce a table of contents of sorts that records the themes and categories. Indexing can be particularly useful as a way to organize a lengthy observation journal or a series of interviews with a single individual. Indexing is a tool that a researcher can use in conjunction with or independent of coding. It sometimes follows coding and at other times is done by itself.

Hubbard and Power (1993) describe indexing in this way:

> The first step is to go back through your notes to date, reading through them and making notes in the margins. ... Then, on a separate sheet of paper, list the categories and themes that you have noted and each page on which these categories appear. After completing this index, jot down a few paragraphs about what you have noticed from these categories. (p. 74)

Dawn Putman, a student whose research centered around student reflection in writing, developed an index for her field notes, an excerpt of which, called "Dawn's Journal Entry Index," appears in the sidebar for this section. After reading her notes carefully and jotting down the themes she noticed in them, she eventually settled on seven categories that she believed warranted further study. She then went back through her notes and recorded the page numbers where examples of each theme could be found. For Dawn, this approach to categorizing her findings was important because it helped her see graphically the many examples she had found relating to her various themes and categories. She was able both to support her belief that these themes were indeed weighty cues and to develop a system that would allow her to return to those pages easily for further study.

Dawn used another kind of index to organize and make sense of the writing logs of individual students. After reading through one student's reflective writing log, she noticed that the entries weren't all of the same kind—that what she had initially called reflection actually played out in numerous ways for this student. She began by noting the number of entries the student had written and then separated them into what she called *reflective* and *summative* entries (see the "Writer's Logs" entry in the sidebar for this section). Next, she began to think about the purposes for these entries and then named and defined categories for the various *purposes* she was beginning to recognize (see "Purposes" in the sidebar). Again, she counted the number of entries that served various purposes. Finally, she went back and noted the *key words* that the student actually used and inserted those into each category. This further elaboration helped Dawn understand the student's purposes even more fully (see "Key Words Determining Purposes" in the sidebar). Dawn then went on to do this same process for all of the students

on whom she was focusing for this study. Eventually, she was able to identify a pattern of word choice across her students' reflective writing; this knowledge helped her understand the topic of student reflection in new ways.

Sidebar 3: *Examples of Indexing*

Dawn's Journal Entry Index

Problems with student thought: 1, 2, 11, 14, 24, 35
Student motivation/investment: 1, 14–15, 52, 54, 51, 66–67
Question of whom reflection is for: 36, 35
Examples of reflective thinking: 2, 4, 14, 24–25, 27–28, 32–34, 49, 70, 72–74
Questions relating to reflection: 6, 9, 21, 25, 58
Questions relating to format of assignment: 29, 31, 47, 48
Problems with reflective assignments: 9, 10, 29, 44, 45, 50, 53–54, 55

Writer's Logs

Number of Entries: 80
Reflective: 48
Summative: 30

Purposes (note that some entries served two or more purposes):
Evaluate—make judgments—22
Compare—similarities/differences between tasks—4
Plan/predict—determine what may happen—8
Analyze—determine why something is how it is, draw conclusions—6
Problem solve—determine alternatives—13

Key Words Determining Purposes:
Evaluate: easier, good, love, don't like, I think, helped, hard, easy, helpful, harder, poor, interesting
Compare: similar, than, compared to, easier [than]
Plan/predict: I think, I will, going to, if I
Analyze: realize, this is because, because, sometimes you have to, I realized, they seem
Problem solve: I didn't know, I started … so, I might, I am, think about, it seems, I am having to, I can see how, that, I found, I began, I realized, I thought maybe

Writing Research Memos

As mentioned earlier, research memos can be useful analytic tools throughout the research process. They are designed to help you look through the data you have collected and write about what you are noticing. Research memos can also serve as useful tools as you are analyzing your data. A research memo is simply a report to yourself, generally written as a narrative, that summarizes the issues that have been identified so far and that explores how the data collected supports or raises questions about the themes you have named.

Whereas researchers often write memos to themselves as a way to come to terms with that they are seeing, it is also beneficial to write them to other audiences—a professor or a classmate, perhaps—as a way of learning what other people make of the analysis you have begun. In either case, the very act of summarizing your findings and attempting to explain why you have come to the tentative conclusions (or to the tentative questions) you have is an important strategy for making sense of your data.

We see the research memo functioning as a tool for digging more deeply into your data for at least two reasons. First, centering a research memo around a particular theme or category requires you to delve back into the actual words found in your observation logs, interview transcripts, and artifacts. As you reread these words, looking for the kinds of connections necessary to write the research memo, you will begin to uncover the patterns and explanations needed to answer your research question. A second reason to use the research memo for analyzing data is that it's a tool you can use throughout your research, thus giving you an opportunity to keep track of your interpretations of and perspectives on your data. In short, if you have kept your research memos over a series of weeks or months, then you may find that revisiting them at this point in the research process will help you keep track of your thinking and bring to light issues that might have gotten lost along the way.

Some variations of the research memo include the *one-page research memo*, in which you limit yourself to a single page, focusing on the very important issues in your research. Another type is the *dialogic research memo*, which can help you think through the evidence and arguments of two potentially important but contradictory themes. With these you can set up the memo on two facing pages, writing the rationale for one perspective and then the other. A third type is the *visual research memo*, which provides a graphic depiction of the work. These are useful for making sense of projects with complex interrelationships. They are especially useful with projects that have numerous themes connected in ways you have not yet ascertained. Finally, as with the other strategies discussed in this section, research memos are probably most valuable when used in combination with other strategies.

Prompt 8: Creating Research Memos.

Look through several pieces of data that you have collected for your research. Try creating two kinds of memos from the information in those pieces of data: a narrative with an intended audience, a one-page memo, a dialogic memo, or a visual depiction. After you have written the memos, reflect on which seemed most useful to you. What could you capture in one and not the other?

VIEWING DATA THROUGH VARIOUS LENSES

In our minds, analyzing data is one of the most creative and exciting parts of the research process, an occasion for you to make sense of all the work done so far. Immersing yourself in the nuances of meaning and making creative leaps across findings can be a truly satisfying experience, an opportunity for you to begin to find answers to the questions you initially posed. After spending many hours developing a research question, doing a literature review, and gathering data through multiple means, you finally have the opportunity to see the big picture and to learn new information that might help you, and others, to understand a particular phenomenon or event more clearly.

We urge you, however, to approach this step with caution, ever aware of the lenses which, of necessity, inform your analysis. As all of us begin the search for connections and patterns, we run the risk of seeing our data through a specific lens that may shroud other viewpoints or that may cause the conclusions we reach to be a narrow representation of what is really in our data. Of course, as we have mentioned in previous chapters, we all approach the world with certain biases and predispositions. The analysis stage of research is not unique in this way. In short, no analysis is ever completely objective. However, as researchers, it is vital that you be aware of the predispositions you bring to this stage so that you can be vigilant about the effect those predispositions might have on your work. In other words, it is important to reflect continually on the predispositions and perspectives you bring and to acknowledge them in your work.

Earlier chapters suggested some prompts to help you think about your stances toward the world, both personal perspectives and more theoretical ones. As you reach this stage in your research, it may be useful to revisit those prompts as a means of thinking through how your various biases and perspectives may influence both what you see in your data and how you interpret what you see (see, in particular, prompts 9, identifying bias, and 12, identifying personal theories, in chap. 2).

One bias peculiar to this stage of research arises from your relationships with your research participants. You may find yourself, for example, giving more weight to the responses of certain individuals who were interviewed or observed because of your personal response to them: the woman who graciously invited you

into her home and seemed to open up to you immediately, the work colleague with whom you had a complicated and sometimes hostile relationship, the teacher down the hall whose approach to kids runs counter to everything you believe about how children learn, the expert in the field whose work you admire and who complimented you on your articulate approach to your research question. Although we can't always help how we react to the people with whom we interact in our research, we can be aware of those reactions and make a concerted effort to approach their responses as objectively as possible. We have to ask constantly if we are valuing the responses of some participants more than others and why that's so. Sometimes it may help to write about why you seem to react in the ways you do to certain people, to try to separate out your response to someone's personality from your response to the information they are providing.

Prompt 9: Reflecting on Your Biases in Your Relationships With Your Participants.

Think about some of the people you interviewed or observed during your research. Are there certain people whose responses you valued more highly than those of others? Why do you think that was so? Are there people whose stances were very different from your own? How did you respond to the information they offered?

Being aware and self-conscious also applies to another frequent dilemma for researchers at this sage. Because as researchers we inevitably develop some preliminary interpretations as we collect artifacts, observe others, and conduct interviews, we may find ourselves formulating answers to our questions prematurely. When that occurs, we run the risk of approaching data analysis with answers already in mind. We are inclined, then, to see the data in certain ways before we even have a chance to really immerse ourselves in all of the information that has been gathered. We can, in those instances, easily miss some of the intriguing patterns and dissonances that are right in front of us. Again, whereas completely avoiding these moments of bias is not always easy, it is important to recognize that it is natural for them to occur. It is also important to take steps that will make us more aware of them either by talking with others or writing about and reflecting on them. The research memos that we discussed offer one opportunity for both reflecting on these moments ourselves and sharing them with others.

Another partial solution to these dilemmas entails triangulating your data in your research. *Triangulation* is a term that has many nuances, depending on the kind of research. In our view, triangulation means looking at an issue in your research from multiple perspectives. By multiple perspectives we mean, for example, that you consider a tentative conclusion about how middle school students spell by

looking at the experiences of not just a few, but of several, students. If you are trying to determine how collaboration affects professional writers' writing style, it might mean that you look carefully not only at their own description of their writing, but also at your observation of their writing and their actual written products. In other words, triangulation implies looking at issues in your research in multiple ways to see if what you think you recognize through one source is also present as you look through others, whether those sources are other data collection tools or the experiences of other participants.

Another approach to triangulation is to ask others to look at your tentative findings so that you quite consciously draw on multiple lenses. For example, you may ask colleagues in your program, a professor, or a trusted friend to look through some of your materials to see if they see what you see. Many qualitative researchers even turn to their participants for feedback, to see whether their representations are "accurate," at least from the perspectives of the participants. This issue of participant feedback is important on many levels. For example, who better to give you their perspective than the individuals you interviewed or observed? However, it is also very complicated, which is discussed further in the next section. At this point, let us just say that the feedback you receive from participants can be a useful check on your own biases and one way to achieve triangulation.

Many of our students ask us if triangulation is achieved by simply looking at the data in three ways (three participants, three data sources, etc.). The answer is that it's not quite that simple. Triangulation means making your best effort to look at issues in your research from multiple perspectives. Further, the more perspectives you can bring, the better. Three is not a magic number. As a researcher, you should explore multiple perspectives on the issues you investigate as much as you can throughout your research.

Prompt 10: ***Considering Others' Perspectives.***

Select one source of data that has intrigued you. You might see multiple ways of interpreting the information, you might be confused at contradictions in the material, or you might worry that your interpretation is leaving out some important piece of the puzzle. Share an unmarked copy of that source with several classmates. What interpretations do they bring? How are their interpretations different from yours? Can their explanations add anything to your own?

In addition to moments of personal bias, researchers also bring theoretical bias to data analysis. As has been mentioned many times throughout this book, we always bring theory to our research. When we analyze data, we inevitably read it through the eyes of our theoretical stances. Again, this is by no means bad. However, it is important that we be aware of our stances and cognizant of how they might interfere with

how we view and interpret our data. For example, many feminist researchers in communication and writing are up front about their practice of looking at data with a woman's perspective and, in relation to classroom discourse, these researchers have discovered intriguing patterns that may not have emerged with a different perspective (e.g., see Finders, 1997; Gilligan, 1982). Likewise, researchers who are deeply concerned with justice might look at the same data in a very different light (e.g., see R. Bomer & K. Bomer, 2001). Researchers who work from particular perspectives are most successful when they identify for their readers the perspectives from which they come so that their theoretical lenses are not hidden.

ANALYZING DATA ETHICALLY

Whereas ethical issues should concern you throughout the research process, the ethical decisions you make during data analysis are serious and sometimes complicated. Especially if you are doing research that involves other people, complex issues about representation will inevitably arise—issues that have led researchers over the past decade to think hard about what research means and who has the right to conduct research. Essentially, the argument is this: Researchers who gain access to the words and lives of others have an ethical obligation to include those others in the process. Referred to sometimes as emancipatory, or participatory, research, this paradigm suggests that researchers should practice *research with* rather than *research on*, making sure that the conclusions they reach truly tell a story that takes into account the perspectives of those whose beliefs and lives they are attempting to represent. Unless research is participatory in this way, the argument continues, researchers reduce research participants to lab rats or guinea pigs, whose only role in the process is that of distanced subjects.

If we agree with this premise, then the implications for data analysis are huge. Who actually gets to tell the story of participants' experience: the researcher or the research participant? Whose themes, selection of quotes, arrangement of details, and biases and subjectivities get to count in the retelling? Many researchers have begun to argue that data analysis should be done in collaboration with research participants so that both the researcher and the participants can share ideas and come to some agreement.

However, the question at this stage of the research process (and sometimes in the writing stage as well) becomes how to do that kind of collaboration and how to achieve a co-construction. What are the obligations involved in that? And what are the mechanics of how to make it happen? Also, is it even always feasible or desirable? Again, a number of researchers have taken on these issues, and the suggestions they offer are important ones. Primarily, they suggest that we include research participants at various points along the way in the research process, especially dur-

ing data analysis. Asking participants to read through our tentative conclusions, engaging them in conversations about our findings, or even asking them to write their own analysis of the data can help us create more participatory moments and, ultimately, a fuller interpretation of our findings. As Ann wrote, with Cole and Conefrey (1996), in "Constructing Voices in Writing Research: Developing Participatory Approaches to Situated Inquiry," certain strategies can help, such as asking research participants for clarification, asking participants to read the research searching for their own voice, modifying portions of the texts if the participants find them questionable or inaccurate, making certain to demonstrate the expertise of participants in their own lives and ideas, and stepping back from promoting oneself as "the" interpreter of knowledge (p. 147).

However, even with this self-awareness, dilemmas can arise when a researcher is confronted with the realities and complexities of negotiating meaning with participants and of understanding and taking into account multiple perspectives when analyzing data, some of which we might even take issue with. What happens, for example, when there is a conflict in the interpretations: Is the researcher understanding a particular idea one way because of the expertise she holds or because of the many interviews, observations, and readings she has done, and are the participants perhaps understanding the story differently because of their view of it? Katherine Borland (1991) talks about this dilemma in her important article, "'That's Not What I Said': Interpretive Conflict in Oral Narrative Research." Borland demonstrates the best of what researchers suggest in regard to including the words of others: Offer research participants a chance to see what we have written, what conclusions we are coming to, and how we are interpreting the information that they have offered us. However, what Borland's article also shows us is what can happen when a research participant—in this case her grandmother—is offered that opportunity and disagrees vehemently with the researcher's interpretation. Borland's grandmother sees the writing as a "definite and complete distortion, ..." claiming that Borland "read into the story what you [she] wished to" (p. 70).

We wish we could offer you easy answers to the ethical dilemmas that arise from this kind of approach, but we cannot. Every qualitative researcher we know struggles with these same issues and comes to different conclusions. Borland ended up modifying some of the words, but her own interpretation prevailed. For Robert Yagelski (2001), a literacy researcher whose conclusions in a published article were questioned publicly by former students in the class he was describing (the students claimed he didn't do enough to include the voices of others), the answer lies in the concept of representation in the first place: "I know that neither their story nor mine is anything but a construction of the experience that inevitably misrepresents it. And to include more or different voices would only change that misrepresentation rather than make it 'more true'" (p. 657). For us, the best a researcher can do is to keep in mind the specific suggestions offered earlier: to ask research partic-

ipants about the interpretation you have arrived at and about how their interpretations might intersect and differ. And, as we listen to their responses, we need to strive for a balance: We need to balance our own expertise with the expertise of those we have asked to tell us about their lives. We also need to listen attentively and with open minds to what our participants have told us, to question our interpretations constantly, and to realize that *truth* is a pretty elusive concept. In short, we need to acknowledge and appreciate that, at best, the answers to our research questions are carefully constructed representations. The way we construct and present those representations to various audiences is the subject addressed in chapter 7.