CHAPTER 5

FINDING THEMES

Authors' note: We rely heavily in this chapter on our article Ryan and Bernard, *Field Methods* *15*(1): 85–109. Copyright © 2003 Sage Publications.

♦ INTRODUCTION

Analyzing text involves five complex tasks: (1) discovering themes and subthemes; (2) describing the core and peripheral elements of themes; (3) building hierarchies of themes or codebooks; (4) applying themes—that is, attaching them to chunks of actual text; and (5) linking themes into theoretical models.

In this chapter, we focus on the first task: discovering themes and subthemes. Then, in Chapter 6, we discuss methods for describing themes, building codebooks, and applying themes to text. In Chapter 7, we move on to building models.

In Chapter 19, we'll show you how to use some computer methods (cluster analysis and multidimensional scaling) to find themes in text. In this chapter, we'll focus on techniques, like line-by-line analyses, that (so far) only people can do, and on simple word counts that can be done by a computer and that support human coders in their search for themes in texts. Each technique has advantages and disadvantages. As you'll see, some methods are better for analyzing long, complex narratives, while others are better for short responses to open-ended questions. Some require more labor and skill, others less (see Box 5.1).

But first . . .

Box 5.1

Automated Text Analysis . . . Not Quite Around the Corner, But on Its Way

Computer analysis of text has been going on since the 1960s (see Ogilvie et al. 1966), but things really got rolling in the 1990s (Salton et al. 1996) and this now is a fast-moving area of artificial intelligence in engineering and informatics. These new systems can read free text created by physicians and offer support for clinical decisions for specific illnesses, like pneumonia and cervical cancer (Aronsky et al. 2001; Wagholikar et al. 2012).

They can do this because the guidelines for diagnosis of these illnesses are so clearly established. There are, after all, only so many words in the vocabulary of diagnosis that a physician can choose from to diagnose any particular illness. There is a long way to go before machines replace human coders in parsing texts about human experiences (see Noll et al. 2013), but work on this problem is advancing quickly, with obvious applications in the social sciences. Many programs are available today that plow through mountains of text—all of Shakespeare's work, for example, or tens of thousands of blog pages—and isolate potential themes. (See Box 11.5 for more on automated content analysis.) (**Further Reading**: automated text analysis)

WHAT'S A THEME?   ♦

This question has a long history. Thompson (1932–36) created an index of folktale motifs, or themes, that filled six volumes. In 1945, Morris Opler, an anthropologist, made the identification of themes a key step in analyzing cultures. He said:

> In every culture are found a limited number of dynamic affirmations, called *themes*, which control behavior or stimulate activity. The activities, prohibitions of activities, or references which result from the acceptance of a theme are its *expressions*. . . . The expressions of a theme, of course, aid us in discovering it. (Opler 1945:198–99)

Opler established three principles for analyzing themes. First, he observed that themes are only visible (and thus discoverable) through the manifestation of expressions in data. And conversely, expressions are meaningless without some reference to themes. Second, Opler noted that some expressions of a theme are obvious and culturally agreed on, while others are subtler, symbolic, and even idiosyncratic.

And third, Opler observed that cultural systems comprise sets of interrelated themes. The importance of any theme, he said, is related to (1) how often it appears; (2) how pervasive it is across different types of cultural ideas and practices; (3) how people react when the theme is violated; and (4) the degree to which the number, force, and variety of a theme's expression is controlled by specific contexts (see Box 5.2).

Box 5.2

Terms for Themes

Today, social scientists still talk about the linkage between themes and their expressions, but use different terms to do so. Grounded theorists talk about "categories" (Glaser and Strauss 1967), "codes" (Miles and Huberman 1994), or "labels" (Dey 1993:96). Opler's "expressions" are called "incidents" (Glaser and Strauss 1967), "segments" (Tesch 1990), "thematic units" (Krippendorf 1980), "data-bits" (Dey 1993), and "chunks" (Miles and Huberman 1994). Lincoln and Guba refer to expressions as "units" (1985:345). Corbin and Strauss (2008:51) call them "concepts" that are grouped together in a higher order of classification to form categories.

Here, we follow Agar's lead (1979, 1980) and remain faithful to Opler's terminology. To us, the terms "theme" and "expression" more naturally connote the fundamental concepts we are trying to describe. In everyday language, we talk about themes that appear in texts, paintings, and movies and refer to particular instances as expressions of goodness or anger or evil. In selecting one set of terms over others we surely ignore subtle differences, but the basic ideas are just as useful under many glosses.

♦ WHERE DO THEMES COME FROM?

Induced themes come from data, while **a priori themes** (also called **deduced themes**) come from prior understanding of whatever phenomenon we are studying. A priori themes come from characteristics of the phenomena being studied—what Aristotle identified as essences and what dozens of generations of scholars since have relied on as a first cut at understanding any phenomenon. If you are studying the night sky, for example, it won't take long to decide that there is a unique, large body (the moon), a few small bodies that don't twinkle (planets), and millions of small bodies that do twinkle (stars).

A priori themes can come from the literature about a topic; from local, commonsense constructs; and from researchers' values, theoretical orientations, and personal experiences (Bulmer 1979; Maxwell 1996; Strauss 1987).

The decisions about what topics to cover and how best to query people about those topics are a rich source of a priori themes (Dey 1993:98). In fact, the first pass at generating themes often comes from the questions in an interview protocol (Coffey and Atkinson 1996:34). Even with a fixed set of open-ended questions, there's no way to anticipate all the themes that will come up before you analyze a set of texts (Dey 1993:97–8).

Andriotis (2010), for example, explored the way newspapers reported the activities of British spring-breakers at Greek resorts. A review of the literature on spring-break-type behavior across the world turned up four major themes: alcohol consumption (and especially binge drinking), drug use, sexual behavior, and other risk taking (like unprotected sex, ledge walking, stunt driving, etc.). After preliminary coding, however, Andriotis dropped drug use (it was reported rarely in the 186 newspaper articles he was studying) and added a new theme: host community reaction to the behavior of the tourists.

The act of discovering themes is what grounded theorists call **open coding**, and what classic content analysts call qualitative analysis (Berelson 1952) or **latent coding** (Shapiro and Markoff 1997). There are many recipes for arriving at a preliminary set of themes (Tesch 1990:91). We'll describe eight observational techniques—things to look for in texts—and four manipulative techniques—ways of processing texts. These 12 techniques are neither exhaustive nor exclusive. They are often combined in practice. (**Further Reading**: finding themes)

♦ EIGHT OBSERVATIONAL TECHNIQUES: THINGS TO LOOK FOR

Looking for themes in written material typically involves pawing through texts and marking them up, either with different colored pens or by swiping words and phrases

in different colors on the computer screen. Sandelowski (1995b:373) says that text analysis begins with proofreading the material and simply underlining key phrases "because they make some as yet inchoate sense." For recorded interviews, the process of identifying themes begins with the act of transcription. Whether the data come in the format of video, audio, or written documents, handling them physically is always helpful for finding themes.

Here's what to look for:

1. Repetitions

"Anyone who has listened to long stretches of talk," says D'Andrade, "knows how frequently people circle through the same network of ideas" (1991:287). Repetition is easy to recognize in text. Claudia Strauss (1992) did several in-depth interviews with Tony, a retired blue-collar worker in Connecticut. Tony referred again and again to ideas associated with greed, money, businessmen, siblings, and "being different." Strauss concluded that these ideas were important themes in Tony's life. To get an idea of how these ideas were related, Strauss wrote them on a piece of paper and connected them with lines to snippets of Tony's verbatim expressions—much as researchers today do with text analysis software.

Owen (1984) used repetition and forcefulness as indicators of a theme in his study of narratives about family relationships. If a concept occurred at different places in a narrative and was emphasized by the informant (in vocal inflection, or dramatic pauses or volume), then he took that as evidence of a theme. Owen distinguished between what he called recurrences and repetitions—where recurrences are different uses of a concept or theme in a narrative, using different words—and repetitions involve the use of the *same* words for a concept—but the idea is the same: The more the same concept occurs in a text, the more likely it is a theme. How many repetitions makes an important theme, however, is a question only you can decide.

2. Indigenous Typologies or Categories

Another way to find themes is to look for unfamiliar, local words, and for familiar words that are used in unfamiliar ways—what Patton calls **indigenous categories** (2002:454–56; and see Linnekin 1987). Grounded theorists refer to the process of identifying local terms as **in vivo coding** (Corbin and Strauss 2008:65; Strauss 1987:28). Ethnographers call this the search for typologies or classification schemes (Bogdan and Taylor 1975:83) or **cultural domains** (Spradley 1979:107–19).

In a classic ethnographic study, Spradley (1972) recorded conversations among tramps at informal gatherings, meals, and card games. As the men talked to each

other about their experiences, they kept mentioning the idea of "making a flop," which turned out to be the local term for finding a place to sleep for the night. Spradley searched through his recorded material and his field notes for statements about making a flop and found that he could categorize them into subthemes such as kinds of flops, ways to make flops, ways to make your own flop, kinds of people who bother you when you flop, ways to make a bed, and kinds of beds. Spradley returned to his informants and asked for more information about each of the subthemes.

For other classic examples of coding for indigenous, categories, see Becker's (1993) description of medical students' use of the word "crock" and Agar's (1973) description of drug addicts' understandings of what it means to "shoot up."

3. Metaphors and Analogies

In pioneering work, Lakoff and Johnson (2003 [1980]) observed that people often represent their thoughts, behaviors, and experiences with **metaphors and analogies**. Analysis, then, becomes the search for metaphors in rhetoric and deducing the schemas, or broad, underlying themes that might produce those metaphors (D'Andrade 1995; Strauss and Quinn 1997).

Naomi Quinn (1996) analyzed over 300 hours of interviews from 11 couples to discover themes in the way Americans talk about marriage. She found that when people were surprised that some couple had broken up, they said they thought the couple's marriage was "like the Rock of Gibraltar" or that the marriage had been "nailed in cement." People use these metaphors, says Quinn, because they know that their listeners (people from the same culture) understand that cement and the Rock of Gibraltar are things that last forever.

Agar (1983) examined transcripts of arguments presented by independent truckers at public hearings of the Interstate Commerce Commission on whether to discontinue a fuel surcharge. One trucker explained that all costs had risen dramatically in the preceding couple of years and likened the surcharge to putting a bandage on a patient who had internal bleeding. With no other remedy available, he said, the fuel surcharge was "the life raft" that truckers clung to for survival (Agar 1983:603).

Natural human speech is full of metaphors. More on this in Chapter 12, on schema analysis.

4. Transitions

Naturally occurring shifts in content may be markers of themes. In written texts, new paragraphs may indicate shifts in topics. In speech, pauses, changes in tone of voice, or the presence of particular phrases may indicate transitions and themes.

In semistructured interviews, investigators steer the conversation from one topic to another, creating transitions, while in two-party and multiparty natural speech, transitions occur continually. Analysts of conversation examine features such as turn-taking and speaker interruptions to identify these transitions. More about this in Chapter 14.

5. Similarities and Differences

What Glaser and Strauss (1967:101–16) labeled the "**constant comparison method**" involves searching for similarities and differences by making systematic comparisons across units of data. Typically, grounded theorists begin with a line-by-line analysis, asking: "What is this sentence about?" and "How is it similar or different from the preceding or following statements?" This keeps the researcher focused on the data rather than on theoretical flights of fancy (Charmaz 1990, 2000; Glaser 1978:56–72; Strauss and Corbin 1990:84–95).

Here's an exchange from our study of what people say about helping the environment (Bernard et al. 2009):

Interviewer: So, what can people do to help the environment?

Informant: (long pause) Ya' know the thing that's interesting to me is I don't understand toxic waste roundup, but if there could be more of that . . . it seems that only once a year they round up toxic waste and I know I poured stuff down the sink I shouldn't (laughing) and poured it like on the (pointing to the ground) (pause). Also reporting violations. (pause) I had a friend who reported these damn asbestos tiles (which were on her apartment building roof).

The reference to asbestos is different from the reference to the toxic waste roundup. On the other hand, asbestos is a toxic substance. At this point, we might tentatively record "getting rid of toxic substances" as a theme.

Another comparative method involves taking pairs of expressions—from the same informant or from different informants—and asking: "How is one expression different or similar to the other?" Here's another informant in our study of what Americans think they can do to help the environment:

Interviewer: Any pressing issues that you can think of right now?

Informant: well I don't know what you can do to solve it but the places for hazardous waste are few and far between from what I understand—that some people are dumping where they shouldn't (pause) and I don't know what you can do because nobody wants any of the hazardous wastes near them.

In comparing the two responses, we asked: "Is there a common theme here, in hazardous waste and toxic waste?" If some theme is present in two expressions, then the next question to ask is: "Is there any difference in degree or kind in which the theme is articulated in both of the expressions?"

Degrees of strength in themes may lead to the naming of subthemes. Suppose you compare two video clips and find that both express the theme of anxiety. Looking carefully, you notice that anxiety is expressed more verbally in one clip and more through subtle hand gestures in the other. Depending on the goals of your research, you might code the clips as expressing the theme of anxiety or as expressing anxiety in two different ways.

You can find some themes by comparing pairs of whole texts. As you read a text, ask: "How is this one different from the last one I read?" and "What kinds of things are mentioned in both?" Ask hypothetical questions like: "What if the informant who produced this text had been a woman instead of a man?" and "How similar is this text to my own experiences?" These hypothetical questions will force you to make comparisons, which often produce moments of insight about themes.

Bogdan and Biklen (1982:153) recommend reading through passages of text and asking: "What does this remind me of?" Below, we'll introduce more formal techniques for identifying similarities and differences among segments of text, but we always start with the informal methods, underlining, highlight, and comparing.

6. Linguistic Connectors

Look carefully for words and phrases that indicate attributes and various kinds of causal or conditional relations (Casagrande and Hale 1967).

Causal relations: "because" and its variants 'cause, 'cuz, as a result, since, and so on. For example: "Y'know, we always take 197 there 'cuz it avoids all that traffic at the mall." But notice the use of the word "since" in the following: "Since he got married, it's like he forgot his friends." Text analysis that involves the search for linguistic connectors like these requires very strong skills in the language of the text because you have to be able to pick out very subtle differences in usage.

Conditional relations: In conditional relations, the occurrence of one thing, A, is conditional on another thing, B. This shows up as "if" or "then" (and if–then pairs), "rather than," and "instead of." For example: "If you pass the bar exam on the first try, you'll get lots of job offers." "You can drink a lot more [alcohol] if you coat your stomach with milk first."

Taxonomic categories: The phrase "is a" (as in "a moose is a kind of mammal") is often associated with taxonomic categories: "Vitamin C is a great way to avoid colds." Again, watch for variants. Notice how the "is a" relation is embedded in the following: "When you come right down to it, lions are just big pussy cats."

Time-oriented relations: Look for words like "before," "after," "then," and "next." "There's a trick to that door. Turn the key all the way to the left, twice, and then push hard." The concept of time-ordered events and relations can be very subtle: "By the time I bike home, I'm sweating like a pig." "It's so damn hot, your glasses fog when you go out."

X-is-Y relations: Casagrande and Hale (1967) suggested looking for attributes of the form X is Y: "Lemons are sour," "The Greek islands are still a bargain," "This is just bullshit," "He's lucky he's alive."

Contingent relations: Look for phrases of the form if X, then Y follows, or X causes Y or Y is caused by X: "If mortgage rates go above 7%, people will rent instead of buying houses." "For a strong harvest, plant with the full moon." This relation can be expressed in the negative, too: "They won't wear a condom, no matter what you do."

Spatial relations: Look for phrases of the form X is close to Y: "I found my way around pretty good in the new place [supermarket] because stuff is together. Milk and cheese and eggs and stuff are always together and all that stuff is near the meat" (see Box 5.3).

Box 5.3

More Linguistic Connectors

Operational definitions: X is a tool for doing Y: "You can use Excel to do basic stuff, but if you really wanna work on text you gotta get a real program for that."

Example definitions: X is an instance of Y: "So now [referring to undergraduates] they're using the Internet to find papers they can use; new technology, same old plagiarism."

Comparison definitions: X resembles Y: "Iraq is like Vietnam in some ways, but we need to remember the differences."

Class inclusions: X is a member of class Y: "Geeks and nerds are both dorky, but a geek is a nerd who can get hired."

Synonyms: X is equivalent to Y: "Telling me you can't afford to go is just a wimpy way of saying kiss off."

Antonyms: X is the negation of Y: "Not picking up after your dog is the definition of a bad neighbor" [the implication is that the act is the negation of "good neighbor"].

Provenience: X is the source of Y: "A foolish consistency is the hobgoblin of little minds" (Emerson's famous dictum [see Emerson 1907:89]).

Circularity: X is defined as X: "Yellow means like when something is lemon colored."

SOURCE: Casagrande and Hale (1967).

7. Missing Data

This method works in reverse from typical theme-identification techniques. Instead of asking "What is here?" we can ask "What is missing?" Women who have strong religious convictions may fail to mention abortion during discussions of birth control. In power-laden interviews, silence may be tied to implicit or explicit domination (Gal 1991). In a study of birth planning in China, Greenhalgh reports that she could not ask direct questions about resistance to government policy. People made "strategic use of silence," she says, "to protest aspects of the policy they did not like" (1994:9). Obviously, themes discovered like this need to be looked at critically to make sure that we are not finding only what we are looking for (see Box 5.4).

Box 5.4

Data Can Be Missing on Themes We Think Are Important

In Lyn Richards's pioneering study of a new suburb outside Melbourne, Australia, one of the driving research questions was "How do residents in a new outer suburb cope with isolation and loneliness?" This was to be a five-year study, but by the end of the first year "none of those talking to the researchers were reporting that they were lonely" (Singh and Richards 2003:10–11). Perhaps a year was just not enough for loneliness to set in. Perhaps informants were hiding something. Or was the theory wrong? Maybe nobody was lonely in the new suburb? This challenge to the theory guided Richards in the subsequent years of the study.

Gaps in texts may not indicate avoidance at all, but simply what Spradley (1979:57–58) called **abbreviating**—leaving out information that everyone knows. As you read through a text, look for things that remain unsaid and try to fill in the gaps (Price 1987). This can be tough to do. Distinguishing between when people are unwilling to discuss a topic from their simply assuming that you already know about it requires a lot of familiarity with the subject matter. If someone says, "John was broke because it was the end of the month," they're assuming that you already know that many people get paid once a month and that people sometimes spend all their money before getting their next pay check.

When you first read a text, some themes will simply pop out at you. Highlight them—with highlighters, if you prefer to work with paper, or in your text management program. Then read the text again. And again. Look for themes in the data that remain

unmarked. This tactic—marking obvious themes early and quickly—forces the search for new and less obvious themes in the second pass (Ryan 1999).

8. Theory-Related Material

By definition, rich narratives contain information on themes that characterize the experience of informants, but we also want to understand how qualitative data illuminate questions of theoretical importance. Spradley (1979:199–201) suggested searching interviews for evidence of social conflict, cultural contradictions, informal methods of social control, things that people do in managing impersonal social relationships, methods by which people acquire and maintain achieved and ascribed status, and information about how people solve problems.

Bogdan and Biklen (1982:156–162) suggested examining the setting and context, the perspectives of the informants, and informants' ways of thinking about people, objects, processes, activities, events, and relationships. Strauss and Corbin (1990:158–75) urge us to be more sensitive to conditions, actions/interactions, and consequences of a phenomenon and to order these conditions and consequences into theories. "Moving across substantive areas," says Charmaz, "fosters developing conceptual power, depth, and comprehensiveness" (1990:1163).

There is a trade-off, of course, between bringing a lot of prior theorizing to the theme-identification effort and going at it fresh. Prior theorizing, as Charmaz says (1990), can inhibit the forming of fresh ideas and the making of surprising connections. And by examining the data from a more theoretical perspective, researchers must be careful not to find only what they are looking for. Assiduous theory avoidance, on the other hand, brings the risk of not making the connection between data and important research questions.

The eight techniques just described require only pencil and paper. Next, we describe four techniques that require more physical or computer-based manipulation of the text itself.

FOUR MANIPULATIVE TECHNIQUES: ♦ WAYS TO PROCESS TEXTS

Some techniques are informal—spreading texts out on the floor, tacking bunches of them to a bulletin board, and sorting them into different file folders—while others require software to count words or display word-by-word co-occurrences. And, as we'll see, some techniques require a fair amount of skill in computer analysis. But more of that later . . .

9. Cutting and Sorting

After the initial pawing and marking of text, cutting and sorting involves identifying quotes or expressions that seem somehow important—these are called **exemplars**—and then arranging the quotes/expressions into piles of things that go together (Lincoln and Guba 1985:347–51). By the way, this kind of work can be done with cards or with computer software. There is no right way to do it. What matters is that the process feels comfortable and productive.

There are many variations on this technique. We cut out each quote (making sure to maintain some of the context in which it occurred) and paste the material on a small index card. On the back of each card, we write down the quote's reference—who said it and where it appeared in the text. Then we lay out the quotes randomly on a big table and sort them into piles of similar quotes. Then we name each pile. These are the themes.

When it comes to pile sorting, there are two kinds of people: **splitters and lumpers**. Splitters maximize the differences between items and generate more fine-grained themes, while lumpers minimize the differences and identify more over-arching themes. The objective is to identify the widest possible range of themes at the end of the process. To accomplish this, some researchers find it best to split first and lump later, while others find it best to lump first and split later.

In a project with two or three researchers, each member of the research team should sort the exemplar quotes into named piles independently. This usually generates a longer list of themes than you get in a group discussion. After sorting the piles independently, the researchers can decide together which piles can be merged, which should be split, and which are good candidates for further analysis.

Barkin et al. (1999) interviewed clinicians, community leaders, and parents about what physicians could say to adolescents, during routine well-child exams, to prevent violence among youth. There were three questions at the center of the project: (1) What could pediatricians potentially do to deal with youth violence? (2) What barriers did they face? (3) What resources were available to help them?

Two coders read through the transcripts and pulled out all segments of text associated with these questions. The two coders identified 84 statements related to potential, 74 related to barriers, and 41 related to resources. All the statements were pulled out and put onto cards.

Next, four other coders independently sorted all the quotes from each major theme into piles of things that they thought were somehow similar. Talking about what the quotes in each pile had in common and naming those piles helped Barkin et al. identify subthemes. In really large projects, have pairs of researchers sort the quotes and decide on the names for the piles. Record and study the conversations that researchers have while they're sorting quotes and naming themes in order to understand the underlying criteria they are using (see Box 5.5). (**Further Reading**: pile sorting [card sorting] for themes)

> **Box 5.5**
>
> ### Formal Analysis of Pile Sorts
>
> **Pile sorts** produce **similarity data**—that is, a matrix of what goes with what—and similarity data can be analyzed with some formidable visualization methods, like **multidimensional scaling** and **cluster analysis**. These methods let you see patterns in your data.
>
>   Barkin et al. (1999) converted the pile-sort data 199 statements (84 potential + 74 barriers + 41 resources) into a quote-by-quote similarity matrix, where the numbers in the cells indicated the number of coders (0, 1, 2, 3, or 4) who had placed the quotes in the same pile. They used multidimensional scaling and cluster analysis to identify groups of quotes that the coders thought were similar.
>
>   More about **matrix analysis**, including multidimensional scaling and cluster analysis, in Chapters 7 and 18.

10. Word Lists and Key-Words-in-Context (KWIC)

Word lists and the **key-word-in-context (KWIC)** technique draw on a simple observation: If you want to understand what people are talking about, look closely at the words they use. To generate word lists, you identify all the unique words in a text and then count the number of times each occurs.

As part of a 12-year longitudinal study, Thomas Weisner and Helen Gamier (1992) told parents of adolescents: "Describe your children. In your own words, just tell us about them." From the transcripts, Ryan and Weisner (1996) produced a list of all the unique words. Then they counted the number of times each unique word was used by mothers and by fathers. The idea was to get some clues about themes that could be used for coding the full texts.

Overall, the words that mothers and fathers used to describe their children suggested that they were concerned with their children's independence and with their children's moral, artistic, social, athletic, and academic characteristics, but mothers were more likely to use "friends," "creative," "time," and "honest" to describe their children while fathers were more likely to use "school," "good," "lack," "student," "enjoys," and "independent." Ryan and Weisner used this information as clues for themes that they would use later in actually coding the texts. (Details about this study are in Chapter 9.)

Word-counting techniques produce what Tesch (1990:139) called **data condensation** or **data distillation**. By telling us which words occur most frequently, these methods can help us identify core ideas in researchers a welter of data. But condensed data like word lists and counts take words out of their original context, so if you do word counts, you'll also want to use a KWIC program.

The classic KWIC method is essentially a modern version of a **concordance.** A concordance is a list of every substantive word in a text, shown with the words surrounding it. Concordances have been done on sacred texts from many religions and on famous works of literature from Euripides (Allen and Italie 1954), to Beowulf (Bessinger and Smith 1969), to Dylan Thomas (Farringdon et al. 1980).

Before computers, concordances were arranged in alphabetical order so you could see how each word was used in various contexts. These days, KWIC lists are generated by asking a computer to find all the places in a text where a particular word or phrase appears and printing it out in the context of some number of words (say, 30) or sentences (say, two) before and after it. You (and others) can sort these instances into piles of similar meaning to assemble a set of themes. More about the KWIC method and word lists in Chapter 17.

11. Word Co-Occurrence

Word co-occurrence, also known as **collocation**, comes from linguistics and **semantic network analysis**. It's based on an observation, by J. R. Firth (1935, 1957), that many words commonly occur with other words to form an idea that would not be obvious from the individual words—collocations like "green with envy," "shrouded in mystery," "maiden voyage," and "vaguely remember."

In 1959, Charles Osgood created word co-occurrence matrices—i.e., matrices that show how often every pair of words co-occurs in a text—and analyzed those matrices to describe the relation of major themes to one another. It was rather heroic work back then, but computers have made the construction and analysis of co-occurrence and collocation matrices easy today and have stimulated the development of semantic network analysis (Barnett and Danowski 1992; Danowski 1982, 1993). More about this, too, in Chapter 19.

12. Metacoding

Metacoding examines the relationship among a priori themes to discover potentially new themes and overarching metathemes. The technique requires a fixed set of data units (paragraphs, whole texts, pictures, etc.) and a fixed set of a priori themes, so it's less exploratory than many of the techniques we've described.

For each data unit, you ask which themes are present and, where appropriate, the direction and strength of each theme. The data are recorded in a unit-by-theme matrix. This matrix can then be analyzed statistically.

Factor analysis, for example, indicates the degree to which themes coalesce along a limited number of dimensions. Visualization methods—like multidimensional scaling

and correspondence analysis—show graphically how units and themes are distributed along dimensions and into groups or clusters. (More on multidimensional scaling in Chapters 7 and 18.)

Jehn and Doucet (1996, 1997) asked 76 U.S. managers who worked in Sino–American joint ventures to describe recent interpersonal conflicts with their business partners. Each person described two conflicts: one with a same-culture manager and another with a different-culture manager.

Two coders read the 76 intracultural and 76 intercultural conflict scenarios and evaluated them on a 5-point scale for 27 themes that Jehn and Doucet had identified from the literature on conflict. This produced two 76x27 scenario-by-theme matrices—one for the intracultural conflicts and one for the intercultural conflicts. Jehn and Doucet analyzed these matrices with factor analysis. This method reduced the 27 themes to just a handful. Jehn and Doucet then pulled out quotes from their original data to illustrate the most important themes.

Quotes that characterized the first factor for intercultural relations were: "There is a lot of hate involved in this situation," and "The dislike is overwhelming," and "I was very angry." Quotes that characterized the second factor were: "I was very frustrated with my co-worker" and "Their inconsistencies really aggravated me." And quotes that characterized the third factor were: "She's a bitch" and "We are constantly shouting and screaming." Jehn and Docuet labeled these factors personal animosity, aggravation, and volatility in intercultural business relations (1997:2).

Numerical methods like these work best when applied to short, descriptive texts of one or two paragraphs. They tend to produce a limited number of large, meta-themes, but these are just the kind of themes that may not be apparent, even after a careful and exhaustive reading of a text. Metacoding is a nice addition to our theme-finding tool kit.

SELECTING AMONG TECHNIQUES ♦

Figure 5.1 and Table 5.1 lay out the characteristics of the techniques to help you decide which method is best in any particular project, given your own time and skill constraints. Looking for repetitions and similarities and differences and cutting and sorting can be applied to any kind of qualitative data and don't require special computer skills. It is not surprising that these techniques are the ones used most frequently in qualitative research.

There are five things to consider in selecting one or more of these 12 techniques: (1) the kind of data you have; (2) how much skill is required; (3) how much labor is required; (4) the number and types of themes to be generated; and (5) whether you are going to test the reliability and validity of the themes you produce.

Figure 5.1 Selecting Among Theme Identification Techniques

Textual Data?

- Yes
- No (e.g., sounds, images, objects)

Verbatim Text?

- Yes
- No (e.g., field notes)

No (e.g., sounds, images, objects):

Easy
1. Repetitions
5. Similarities and Differences
9. Cutting and Sorting

Difficult
7. Missing Data
8. Theory-Related Material
12. Metacoding

Rich Narratives?

- Yes
- No

No (e.g., field notes):

Easy
1. Repetitions
5. Similarities and Differences
9. Cutting and Sorting

Rich Narratives? Yes:

Easy
1. Repetitions
4. Transitions
5. Similarities and Differences
9. Cutting and Sorting

Difficult
2. Indigenous Typologies
3. Metaphors
6. Linguistic Connectors
7. Missing Data
8. Theory-related Material
10. Word Lists and KWIC
11. Word Co-occurrence

Brief Descriptions? (1–2 paragraphs)

- Yes
- No

Brief Descriptions? Yes:

Easy
1. Repetitions
5. Similarities and Differences
9. Cutting and Sorting

Difficult
2. Indigenous Typologies
3. Metaphors
7. Missing Data
8. Theory-Related Material
10. Word Lists and KWIC
11. Word Co-occurrence
12. Metacoding

Brief Descriptions? No:

Easy
1. Repetitions
5. Similarities and Differences
9. Cutting and Sorting

Difficult
2. Indigenous Typologies
10. Word Lists and KWIC
11. Word Co-occurrence

Table 5.1 Practical Characteristics of Theme Discovery Techniques

	Technique	Labor Intensity	Expertise			Stage in Analysis	Number of Themes Produced	Type of Theme Produced
			Language	Substantive	Methodological			
1	Repetitions	Low	Low	Low	Low	Early	High	Theme
2	Indigenous Typologies	Low	High	Low	Low	Early	Medium	Theme, Subtheme
3	Metaphors	Low	High	Low	Low	Early	Medium	Theme
4	Transitions	Low	Low	Low	Low	Early	High	Theme
5	Similarities and Differences	Low-High	Low	Low	Low	Early	High	Theme
6	Linguistic Connectors	Low	High	Low	Low	Late	High	Theme
7	Missing Data	High	High	High	High	Late	Low	Theme
8	Theory-Related Material	Low	Low	High	High	Late	Low	Theme
9	Cutting and Sorting	Low-High	Low	Low	Low	Early or late	Medium	Theme, Subtheme, Metatheme
10	Word Lists and KWIC	Low	Medium	Low	Low	Early	Medium	Theme, Subtheme
11	Word Co-Occurrence	Medium	Medium	Low	High	Late	Low	Theme, Metatheme
12	Metacoding	Medium	Medium	High	High	Late	Low	Theme, Metatheme

1. Kind of Data

With the exception of metacoding, all 12 of the techniques we've described here can be applied to lengthy narratives. However, as texts become shorter and less complex, looking for transitions, metaphors, and linguistic connectors is harder to do. Discovering themes by looking for what is missing is inappropriate for very short responses to open-ended questions because it is hard to say whether missing data represents a new theme or is just the result of the way the data were elicited. And short texts are inefficient for finding theory-related material.

For audio and video data, we find that the best methods involve looking and listening for repetitions, similarities and differences, missing data, and theory-related material—and doing metacoding.

One more reminder about field notes as texts: In writing field notes, we choose what data are important to record and what data are not. Any patterns (themes) that we discover in field notes may come from our informants—but may also come from biases that we brought to the recording process.

2. Skill

Not all techniques are available to everyone. You need to be truly fluent in the language of the text to look for metaphors, linguistic connectors, and indigenous typologies or to spot missing data. If you are working in a language other than your own, it's best to stick to the search for repetitions, transitions, similarities and differences, and etic categories (theory-related material) and to have native speakers do any sorting of exemplars. Word lists and co-occurrences, as well as metacoding, also require less language competence and so are easier to apply.

Using word co-occurrence or metacoding requires know-how about producing and managing matrices, as well as skill in using methods for exploring and visualizing data. If you don't have training in the use of multidimensional scaling, cluster analysis, factor analysis, and correspondence analysis, then use techniques like cutting and sorting, word lists, and KWIC.

Word lists and KWIC are easily done on a computer with many of the popular **CAQDAS** packages. CAQDAS (pronounced "cactus") stands for "computer assisted qualitative data analysis software." Consult the CAQDAS Networking Project website (http://www.surrey.ac.uk/sociology/research/researchcentres/caqdas/) for information on these resources. (**Further Reading**: computer-assisted qualitative data analysis software)

3. Labor

A generation ago, observation-based techniques required less effort than did process techniques. Today, computers and software have made counting words and co-occurrences of words, as well as analysis of matrices very easy, though the cost, in time and effort, to learn these computer methods can be daunting.

Some of the observation-based techniques (searching for repetitions, indigenous typologies, metaphors, transitions, and linguistic connectors) are best done by eyeballing, but this can be really time consuming. In team-based applications research, the premium on getting answers quickly often means a preference for methods that rely on computers and less on human labor.

In our own work, we find that a careful look at a word frequency list and some quick pile sorts are goods ways to start. Studying word co-occurrences and metacoding

require more work and produce fewer themes, but they are excellent for discovering big themes that can hide in mountains of texts.

4. Number and Kinds of Themes

In theme discovery, more is better. It's not that all themes are equally important. You still have to decide which themes are most salient and how themes are related to each other. But unless themes are discovered in the first place, none of this additional analysis can take place.

We know of no research comparing the number of themes that each technique generates, but in our experience, looking for repetitions, similarities and differences, transitions, and linguistic connectors that occur frequently in text produces more themes, while looking for **indigenous metaphors** and indigenous categories (which occur less frequently) produces fewer themes. Of all the observation techniques, searching for theory-related material or for missing data produces the smallest number of new themes.

Of the process techniques, the cutting-and-sorting method, along with word lists and KWIC analysis, yield many themes and subthemes, while word co-occurrence and metacoding produce a few, larger, more inclusive metathemes. But at the start of any project, the primary goal is to discover as many themes as possible. And this means applying several techniques until you reach saturation—that is, until you stop finding new themes.

Cutting and sorting expressions into piles is the most versatile technique. You can identify major themes, subthemes, and even metathemes with this method and although the analysis of this kind of data is enhanced by computational methods, much of it can be done without a computer. In contrast, techniques that apply to aggregated data such as word co-occurrences and metacoding are particularly good at identifying more abstract themes but really can't be done without the help of good software.

5. Reliability and Validity

"There is," says Ian Dey (1993:110–11) "no single set of categories [themes] waiting to be discovered. There are as many ways of 'seeing' the data as one can invent." In their study of Chinese and American managers (above), Jehn and Doucet (1996, 1997) used three different discovery techniques on the same set of data and each produced a different set of themes. All three of their theme sets have some intuitive appeal, and all three yield analytic results that are useful. But Jehn and Doucet might have used any of the other techniques we've described here to discover even more themes.

How can we tell if the themes we've identified are valid? That is, are the concepts we've identified really in the text? The answer is that there is no ultimate demonstration of validity. The **validity of a concept** depends on the utility of the device that measures it and on the collective judgment of the scientific community that a concept and its measure are valid (Bernard 2012:51; Denzin 1970:106).

Reliability, on the other hand, is about agreement among coders and across methods and across studies. Do coders agree on what theme to assign a segment of text? Strong interrater reliability—about which more in Chapter 11—suggests that a theme is not just a figment of your imagination and adds to the likelihood that the theme is also valid (Sandelowski 1995b).

Lincoln and Guba's (1985) team approach to sorting and naming piles of expressions is so appealing because agreement need not be limited to members of the core research team. Jehn and Doucet (1996, 1997) asked local experts to sort word lists into themes, and Barkin et al. (1999) had both experts and novices sort quotes into piles. The more agreement among team members, the more confidence we have that emerging themes are internally valid.

Some researchers recommend that respondents be given the opportunity to examine and comment on themes (Lincoln and Guba 1985:351; Patton 1990:468–69). This is certainly appropriate when one of the goals of research is to identify and apply themes that are recognized or used by the people whom one studies, but this is not always possible. The discovery of new ideas derived from a more theoretical approach may involve the application of etic rather than emic themes—that is, understandings held by outsiders rather than those held by insiders. In these cases, researchers should not expect their findings necessarily to correspond with the ideas and beliefs of study participants. (**Further Reading**: reliability and validity in qualitative research)

♦ AND FINALLY . . .

We have much to learn about the process of finding themes in qualitative data. Since the early 1960s, researchers have been working on fully automated, computer-based methods for identifying themes in text. These computer-based content dictionaries, as they're known, may not sit well with some. After all, if the "qualitative" in qualitative methods means analysis by humans, then how can we give over such an important piece of qualitative analysis—theme identification—to machines?

The answer, of course, is that ultimately, we are responsible for all analysis. We are comfortable using text management software to help us recognize connections in a set of themes, and we are comfortable letting machines count words and create matrices for us from texts. Text analysts of every epistemological persuasion can hardly wait for voice recognition software to become sufficiently effective that it will relieve us of all transcription chores. Computer-based content dictionaries that can parse a text

and identify its underlying thematic components will, we believe, be just another tool that will (1) make the analysis of qualitative data easier and (2) lead to much wider use and appreciation of qualitative data in all the social sciences.

Key Concepts in This Chapter

induced themes	contingent relations	cluster analysis
a priori (deduced themes)	spatial relations	matrix analysis
open coding	operational definitions	word lists
latent coding	example definitions	key-word-in-context
indigenous categories	comparison definitions	(KWIC)
in vivo coding	class inclusions	data condensation
cultural domains	synonyms	(data distillation)
metaphors and	antonyms	concordance
analogies	provenience	collocation
constant comparison	circularity	semantic network
method	abbreviating	analysis
causal relations	exemplars	metacoding
conditional relations	splitters and lumpers	CAQDAS
taxonomic categories	pile sorts	indigenous metaphors
time-oriented relations	similarity data	validity of a concept
x-is-y relations	multidimensional scaling	reliability

Summary

- Analyzing text involves five tasks: (1) discovering themes and subthemes; (2) describing the core and peripheral elements of themes; (3) building hierarchies of themes or codebooks; (4) applying themes—i.e., attaching them to chunks of actual text; and (5) linking themes into theoretical models. This chapter focuses on the first task: discovering themes and subthemes.
- There are two kinds of themes: Induced themes come from data, while a priori themes (also called deduced themes) come from prior research, from commonsense constructs and from researchers' experiences. Research projects may involve both kinds of themes.
- In looking for themes, there are at least eight things to look for in texts. These include (1) repetitions; (2) indigenous categories (local words for topics of importance); (3) the use of metaphors and analogies; (4) naturally occurring shifts in content; (5) similarities and differences in pairs of statements about a topic; (6) use of linguistic connectors, like "because," "rather than," and "instead of," is a kind of,

time statement (like "before" and "after that,"), if–then statements, spatial statements (like "close to"), comparisons, synonyms, and antonyms; (7) missing data; and (8) theory-related material (like evidence of social conflict, cultural contradictions, informal methods of social control, things that people do in managing impersonal social relationships, methods by which people acquire and maintain achieved and ascribed status, and information about how people solve problems).

  o Other techniques in looking for themes require more physical or computer-based manipulation of the text itself. These include (1) creating cards with quotes from a text, sorting them into piles of similar quotes, and naming each pile; (2) creating word lists and concordances with a key-words-in-context program; (3) looking for co-occurrences and collocations; and (4) metacoding (examining the relationship among themes to discover potentially new themes and overarching metathemes).

- Consider five things in selecting techniques for finding themes: (1) the kind of data you have; (2) how much skill is required; (3) how much labor is required; (4) the number and types of themes to be generated; and (5) whether you are going to test the reliability and validity of the themes you produce. For example, looking for transitions, metaphors, and linguistic connectors is hard to do in short responses to open-ended questions because it is hard to say whether missing data represent a new theme or is just the result of the way the data were elicited. And short texts are inefficient for finding theory-related material.

- Cutting and sorting expressions into piles is the most versatile technique for finding major themes, subthemes, and even metathemes. Cutting-and-sorting, along with word lists and KWIC analysis, yields many themes and subthemes, while word co-occurrence and metacoding produce a few, larger, more inclusive metathemes. At the start of any project, use several techniques until you reach saturation—that is, until you stop finding new themes.

Exercises

1. This is an exercise in coding induced themes. Download 10 stories from newspapers in any country about some current event that is making national or international news. With another student, read the stories line by line and highlight words and phrases that seem to you to indicate various themes. Name the themes as you go.

   Start by doing just one story together with your colleague. After you finish high-lighting one story, compare your notes and discuss each theme. Whenever there's a discrepancy between coders, discuss the issues and come to an agreement. Then go on to the next story and repeat the process. Some new themes may come up in the second story. Be sure that you and your colleague resolve any disagreements before moving on to the next story.

The idea here is simply to reduce a set of texts to a set of themes and to do so in a way that is agreed upon by two people. Don't be surprised if you wind up with a few themes that you can't agree on.

2. This is an exercise in understanding the concept of deduced themes. With a colleague, read 10 studies based on classic content analysis and isolate the codes that were used in those studies. There are thousands of studies based on classic content analysis of print media, films, blogs, and social media. You can find examples by going to scholar.google.com and searching for "content analysis." Limiting the entries to the most recent year will get you several hundred possibilities.

3. This is another exercise in understanding the concept of deduced themes. Download 20 stories from nationally known newspapers in any country about some current event that is making national or international news. Ten of those stories should come from a newspaper with a conservative (right-wing) editorial policy, and 10 should come from a left-wing paper.

In the United States, for example, the *Wall Street Journal* and the *New York Times* would fit this description. In Canada, the *National Post* and the *Toronto Star* would fill the bill. In the United Kingdom, you might use the *Daily Mail* and the *Daily Mirror*. With a colleague, discuss the content of the story and develop a small set of a priori themes.

Further Reading

Finding themes. Bradley et al. (2007), Yeh and Inman (2007). Finding themes in group research: Carey and Gelaude (2008), MacQueen et al. (2008), Necheles et al. 2007.

Automated text processing. Colley and Neal (2012), Grimmer and Stewart (2013), Van Holt et al. (2013).

Pile sorting. Eastman et al. (2005), Hsiao et al. (2006), Nolle et al. (2012), Patterson et al. 1993, Sayles et al. (2007).

Computer-assisted qualitative data analysis software. Text analysis info (http://www.textanalysis.info/), CAQDAS Networking Project (http://www.surrey.ac.uk/sociology/research/researchcentres/caqdas/).

Reliability and validity in qualitative research. Kirk and Miller (1986), Long and Johnson (2000), Moret et al. (2007), Ryan (1999).

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