

# Handbook of Methods in Cultural Anthropology

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## Text Analysis

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THERE IS ENORMOUS INTEREST ACROSS THE SOCIAL SCIENCES IN THE SYSTEMATIC analysis of text. Little wonder: Most of the recoverable data about human thought and human behavior are texts of one kind or another. In this chapter, we survey methods of text analysis in the social sciences and discuss how anthropologists in particular have used those methods to look for meaning and pattern in written text.

We cover two broad types of text analysis: the *linguistic tradition*, which treats text as an object of analysis itself, and the *sociological tradition*, which treats text as a window into human experience. For the linguistic tradition, we review how anthropologists have collected and produced texts, analyzed indigenous literatures, discovered patterns and structures in performance styles, and compared the production of narratives within and across cultures. (Another major tradition grounded in linguistics is the analysis of discourse, or language in interaction. See the chapter by Graham and Farnell, this volume.) For the sociological tradition, we review the methods of schema analysis, grounded theory, classical content analysis, and analytic induction. We also discuss the ways in which computer programs facilitate these analyses and make light work of labor-intensive methods like word-based analysis and semantic network analysis.

Throughout, we focus on methods for collecting and analyzing written texts such as political speeches, song lyrics, personal diaries, transcriptions of interviews, newspaper editorials, and so on. Many of these methods, however, serve just as well in dealing with images, such as photographs, video, commercial movies, kinescopes of old television shows, and so on. And the methods we review span the inductive-to-deductive continuum. Inductive approaches, like analytic induction, are used to identify and develop theories from on-the-ground observations. Deductive approaches, like classical content analysis, typically are used to test hypotheses. Both approaches have much to add to the advancement of theory.

### THE LINGUISTIC TRADITION

#### *Anthropology: A Passion for Collecting Texts*

Debates about the value of structuralism, functionalism, historical particularism, materialism, and postmodernism come and go, but the value of faithfully produced texts is undisputed. Among Franz Boas's lasting contributions is the corpus of texts he collected, translated, and published (or deposited in archives) from speakers of Bella Bella (Boas 1928b), Sahaptin and Salishan (Boas 1917), Keresan (Boas 1928a) and, with George Hunt, Kwakiutl (Boas and Hunt 1902–1905, 1906; see also Boas 1910,

1935–1943). In 1893, Boas taught Hunt to write Kwakiutl, Hunt's native language. By the time Hunt died in 1933, he had produced 5,650 pages of text—a corpus from which Boas produced most of his reports about Kwakiutl life (Rohner 1966).

To the extent possible before the invention of voice-recording devices, Boas trained his students and collaborators to collect verbatim texts. Following Boas's example with Hunt, Paul Radin worked with Sam Blowsnake, a Winnebago. Blowsnake wrote the original manuscript (in Winnebago) that became (in translation) *Crashing Thunder: An Autobiography of a Winnebago Indian* (Blowsnake and Radin 1983 [1920, 1926]). Among Boas's other students, Swanton (1909), Goddard (1911), Kroeber (1907), Lowie (1930), and Sapir (Sapir and Curtain 1974 [1909]; Sapir and Dixon 1910; Sapir and Swadesh 1978 [1939]) collected and analyzed indigenous language text, and Margaret Mead and Gregory Bateson produced hours and hours of cinema verité about Bali dance (see the South Pacific Ethnographic Archives, U.S. Library of Congress)—a rich, textual record that can be turned to again and again as new insights and new methods of analysis become available.

The concern for the collection and archiving of text remains undiminished in linguistic anthropology. In the 1970s, Eric Hamp edited the Native American Tests Series of the *International Journal of American Linguistics* (see, e.g., Bernard and Salinas Pedraza 1976; Furbee-Losee 1976). As the literary language of a pre-colonial-era civilization, Maya has attracted particular attention. Munro Edmonson's translations of the books of *Chilam Balam* (1982, 1986) and Dennis Tedlock's translation of the *Popol Vuh* (1985) are outstanding examples.

Following the example of Boas with Hunt and Radin with Blowsnake, Bernard (Bernard and Salinas Pedraza 1989; Salinas Pedraza and Bernard 1978), El Guindi (El Guindi and Hernández Jiménez 1986), Lurie (1961), and Sexton (Bizarro Ujpán and Sexton 1981, 1985, 2001), among others, have helped indigenous people create narratives themselves in indigenous languages. Bernard (1997) provided indigenous people with the computer technology and training to produce books in their own languages. Here again, the emphasis is on the production of texts, not on their analysis (see Salinas Pedraza 1997).

Computing resources facilitate the production of texts by native speakers of previously nonliterary languages. González Ventura (1997), the first contemporary Mixtec to produce a book in Mixtec, discussed the challenges and possibilities presented by the production of indigenous-language text by computer. Numerous language revitalization programs have undertaken the task of cataloguing and making native-language texts available online (Eisenlohr 2004). Massachusetts was no longer spoken by the mid-1800s, but members of the Wampanoag nation have reconstructed the language through the analysis of historical documents. They have also begun to translate English-language Wampanoag texts such as the *Wampanoag Prayer* into Massachusetts (Jennings and O'Brien 1998). The Archive of the Indigenous Languages of Latin America, developed by Joel Sherzer and colleagues at the University of Texas (see AILLA 2012), has brought together texts, images, and recordings of hundreds of languages. Together, these texts constitute a widening and increasingly available corpus of new data ready to be analyzed.

### *Analysis of Indigenous Literature*

Some 389 languages in the world are spoken by a million people or more (Lewis 2009). Some, like Uyghur (about 8 million speakers), Kurdish (about 9 million speakers), and Yoruba (about 19 million speakers), have active literary traditions. Others, like Quechua (about 10 million speakers), have very few literary works. Almost all the known literary works in Somali (14 million speakers) are from the last 50 years (Andrzejewski 2011). Indigenous literary traditions, however, continue to emerge. Māori, for example, has perhaps 60,000 native speakers, but was named a national language in Aotearoa/New Zealand in 1987 and is developing quickly as a literary language. These developments, too, produce text for anthropological analysis.

Postel-Coster (1977), for example, drew on an indigenous tradition of novels in Indonesia that began with western Sumatran, or Minangkabau, writers in the 1920s. He saw novels as the modern continuation of the myth in nonliterary societies, rather than a source of factual information. Novels dealing with young couples' struggles to marry, he said, reveal "problems of Minangkabau culture" such as "matrilineal succession, polygynous marriage, the enormous impact of the extended family on an individual's life, and the question of *merantau*—the traditional emigration of young people" (1977, 137).

Besnier (1995) studied an indigenous literacy tradition on the Polynesian atoll of Nukulaelae. The texts produced by the people of Nukulaelae include letters, sermons, and announcements of events. Besnier analyzes correspondence by identifying and presenting exemplars of structural regularities. For example, the main body of letters on Nukulaelae:

usually begins with a greeting identical to the greeting used in face-to-face interactions (*taalofa* "hello," a Samoan borrowing). This is followed by references to the health of everyone at the writer's and recipient's ends, and sometimes by a very long series of invocations to God's grace and kindness. (Besnier 1995, 86)

Besnier follows this with a series of exemplars.

Besnier noticed that letter writers:

always adhere to a religious reference scheme in opening themes, Christian for the majority, or Baha'i, etc., for the handful of religious converts. In letters written by younger people, the introduction is usually much shorter and more predictable in content than that of letters written by older individuals. These introductions bear many similarities to the beginning of formal speeches. (1995, 87)

Using literary methods of analysis, then, Besnier identifies covariation between certain elements of style in text and independent variables like religious affiliation and age.

### *Patterns in Performance*

The discovery of regularities in narrative performance is achieved mostly through the analysis of written text. The work of Dell Hymes is of singular importance. Based on his analysis of texts from speakers of Shoalwater, Kathlaket, and Clackamas Chinook (collected by Boas, Sapir, and others over 80 years), Hymes (1977, 431) found

that the narratives are “organized in terms of lines, verses, stanzas, scenes, and what many call acts.” He argued further that the three languages share a common “fabric of performance style” and “form of poetic organization” (Hymes 1977, 431). This was a truly significant discovery, for it made clear that Native North American texts have something to contribute to a general theory of poetics and literature.

In a series of publications (1976, 1977, 1980a, 1980b, 1981), Hymes showed that historical and contemporary texts of Native American narrative performances are organized into verses and stanzas and form groups of either fives and threes or fours and twos. Virginia Hymes’s analysis (1987, 67–68) of Dell Hymes’s comparative techniques makes clear the importance of “working back and forth between content and form, between organization at the level of the whole narrative . . . lines within a single verse . . . even words within a line.” Hymes’s approach revealed that the method of Boas and others, which organized Native American narratives into lines of text, hid from view “a vast world of poetry waiting to be released by those of us with some knowledge of the languages” (V. Hymes 1987, 65).

Boas and his students did not document narrative organization, but they did innovate conventions for marking paralinguistic features of performance such as nonphonemic vowel length and stress—an uncommon practice among linguists of the time (Hymes 1977, 452–53). In his study of Zuni narratives, Tedlock (1972, 221) found that such paralinguistic features as voice quality, loudness, and pausing are key indicators of performance. Later, using a sixteenth-century Quiché Maya manuscript called the *Popol Vuh*, Tedlock (1987) demonstrated that an analysis of paralinguistic features among modern performers can reveal how ancient texts were meant to be narrated. As was true of many medieval manuscripts in Europe, the *Popol Vuh* had been written as an undifferentiated mass of text with almost no punctuation—that is, there are no clues about how a performer might have used techniques such as intonation, timing, or pauses.

Tedlock’s solution was to capture oral narratives—speeches, prayers, songs, stories—from modern speakers of Quiché and look for patterning that hinted at how the *Popol Vuh* may have been enunciated. Additionally, Tedlock relied on Andrés Xiloj, a native speaker who learned to read Quiché, to narrate the *Popol Vuh* following the dictates of modern Quiché performance. Tedlock devised conventions for marking pauses, accelerations, verse endings, and so on, and used this new text to determine that Quiché verse has the same structure as ancient Middle Eastern texts—texts that predate Homer. Indeed, he concluded that the same structure is found in all living oral traditions that have not yet been influenced by writing. This is a contribution to a general theory of poetics and literature of the sort that Hymes had envisioned a decade earlier for ethnopoetics.

A key method of text analysis in ethnopoetics is text presentation. In his presentation of *The Hot Pepper Story* as told in Kuna by Chief Mastayans, Sherzer (1990, 178) used a highly literal translation. The text repeats a small number of words and themes, and Sherzer felt that a more liberal translation would fail to capture the poetics of performance. So, Sherzer describes the thematic elements he sees in the text but uses the device of literalness in the translation to draw the reader’s attention to those elements. In later work on a Kuna gathering-house chant, Sherzer (1994) worked with

his assistant, Alberto Campos, to produce a Kuna transcription and Spanish translation. By studying Campos's translation against the original Kuna, Sherzer found that verse breaks are determined by a regular melodic shape and by turn-taking between the narrator, Chief Olopinikwa, and the responding chief. In his presentation of the performance, Sherzer uses the convention of beginning verses and lines flush on the left of each page and indenting the lines of the responding chief.

Anthropologists are constantly experimenting with methods for presenting text of indigenous performance that capture the subtleties of performance. In translating Ñähñu (Otomí) parables, folk ales, and jokes, Bernard and Salinas (1976) presented a fully literal translation and a fully liberal translation, in addition to a transcription of the Ñähñu. At the time, Bernard felt that there was no way to mediate between the characteristics of the original, free Ñähñu and a free English translation. Later, in translating Salinas's four-volume ethnography of the Ñähñu, Bernard tried a middle course—one in which the English is grammatical but also one that makes clear from the style that it is a translation (see Bernard and Salinas 1989). Text analysis produces new text, which can, in turn, be analyzed.

#### *Intra- and Intercultural Comparisons of Narratives*

Understanding differences in how members of a culture construct and relate narratives has long been of interest to anthropologists. Quinn's (2005) edited volume *Finding Culture in Talk* explores different methods for cultural analysis of discourse. For example, Mathews (1992, 2005) collected 60 tellings of *La Llorona* (Weeping Woman), a morality tale told across Mexico. Mathews focuses on two versions of the tale: one (typically told by men) in which an irresponsible wife commits suicide, freeing her husband from a bad marriage, and a second (typically told by women) in which a mistreated wife commits suicide and her ghost goes on to lead bad men to their deaths (thus freeing their wives and children). Mathews developed a "story grammar" to examine how "the motives of the main characters draw upon culturally shared schemas about gendered human nature" (1992, 129). Her analysis explores the ways in which men and women use "the tales to communicate with each other about contested views of male dominance" (2005, 151).

Herzfeld (1977) studied variations in renditions of the *khelidonisma*, or swallow song, sung in Greece to welcome spring. He collected song texts from ancient, medieval, modern historical, and contemporary sources across Greece. His purpose was to show that inconsistencies in the texts emerge from the structural principles that underlie the *rite de passage* for welcoming spring in rural Greece. To make his point, Herzfeld looked for anomalies—like "March, my good March" in one song compared to "March, terrible March" in another. Herzfeld claims that good refers ironically to a source of anxiety. Herzfeld argues there is strong evidence that March is a source of anxiety for Greek villagers, such as the avoidance of certain activities during the *drimata* (the first three days of March, a transition from winter to summer) and the association of the *drimes* (the first three days of August, a transition from summer to winter) with malevolent spirits. Herzfeld concludes that there is symbolic danger associated with these transition months. His approach to symbolic analysis requires deep involvement with the culture, including an intimate familiarity with the language, so

that the symbolic referents emerge during the study of those expressions. You can't see the connections among symbols if you don't recognize the symbols or what they mean.

In addition to intracultural variants in the *composition* of narratives, analyses may examine variation in the *structuring* of narratives, such as temporal sequence in conversational narratives (Hill 2005). For example, Ochs and Capps (2001), in their book *Living Narrative*, examine linearity as a key dimension in the construction and analysis of narratives. Drawing on an analysis of quotidian narratives, they illustrate how linearity can range from closed to open temporal and causal order. This approach has been used to examine linearity in adolescent life histories (Habermas et al. 2009) and schizophrenia patients' narratives of emotional events (Gruber and Kring 2008).

Furbee (1996, 2000) studied a new cult originating in Lomantán, a Tojolab'al Maya village in Chiapas, Mexico. According to the local story, Dominga Hernández was cutting wood in 1994 when God appeared and gave her religious images, including the Christ Child, the Virgin Mary, Saint Joseph, and animals of the crèche, to care for and charged her with building a new church. Within 43 days, Hernández had mobilized the financial support and donated labor needed to build the church that now houses the images. Furbee collected 26 Tojolab'al language accounts of the Lomantán miracle from 18 villages, including 8 that were loyal to the PRI (then the ruling political party) and 10 that were loyal to the PDR (an opposition party). Furbee argues that the use of Spanish terms is associated with the authoritativeness of the speaker—given that the dominant Spanish language signals power—and the speaker's political alignment with the ruling party. The relative absence of Spanish loan words among speakers from the PDR villages, which were sympathetic to Zapatistas, is “just what one might predict from those who oppose the prevailing hegemony and who are engaged in a revitalization movement” (Furbee 1996, 13).

Bletzer and Koss (2006) compared the narratives of 62 impoverished women in the United States who had survived rape, including 25 Cheyenne women, 24 Anglo women, and 13 Mexican American women. Bletzer and Koss analyzed the narratives for similarities and differences in themes and in narrative structures. For example, Anglo and Mexican American women expressed thoughts of revenge against their assailants, but none of the Cheyenne women did (Bletzer and Koss 2006, 17).

Chafe (1980) and five colleagues hired a professional filmmaker and produced a simple, wordless film called *The Pear Story*. They showed it to speakers of English, Chinese, Japanese, Malay, Greek, Thai, German, Haitian Creole, Persian, and Sacapultec Maya. Participants were asked to tell the story to a third person within 30 minutes of viewing the film. Those stories were transcribed verbatim, including pauses, pause filters, stutterings, and such. Based on that research, Chafe (1980) identified the existence of *idea units* (about six seconds long and containing about six words) commonly marked by intonation that involves a rise in pitch or a fall. Chafe suggested “that these idea units, these spurts of language, are linguistic expressions of focuses of consciousness” (1980, 15) that are packaged into sentences. *The Pear Story* method has been used to generate narratives for comparison in linguistics (Chappell 1988; Chui and Lai 2008; Maroney 2004; McGregor 2006) and in a range of cultural contexts (e.g., Erbaugh 1990; Orero 2008).

*The Pear Story* method was inspired by the pioneering work by F. C. Bartlett (1967 [1932]) on how people remembered and retold folktales, and that work was the basis for Bartlett's development of schema analysis.

## THE SOCIOLOGICAL TRADITION

### *Schemas, Metaphors, and Mental Models*

Schema analysis is based on the idea that people use shortcuts or simplifications in their thinking to help them deal the complexities of reality (Casson 1983, 430). Bartlett's (1967 [1932]) work on how people remember things suggested the existence of such simplifications or "building blocks of cognition" (Rumelhart 1980). In an influential book, Schank and Abelson (1977) postulated that schemas—or scripts, as they called them—enable culturally skilled people to make assumptions that fill in missing details of a story. We often say things like "Fred lost his data because he forgot to save his work." We know that Fred's forgetting to save his work didn't actually cause him to lose his data. A whole set of links are left out, but they are easily filled in by any listeners who have the background to do so.

Some schemas may be universal (e.g., Piaget's [1970] findings on cognitive schemas in children), and some are surely personal and idiosyncratic. Somewhere between universal and idiosyncratic schemas are *cultural schemas*: They are developed through experience but are held by a population (D'Andrade 1995, 130; Quinn 2005, 38; Rice 1980, 154). Cultural schemas comprise shared rules for interpersonal behavior—rules that provide the kind of flexibility that allows for immediate changes of response as people react to one another's actions (Ridgeway 2006). In this way, cultural schemas are analogous to generative grammars, where a finite and shared set of rules, operating on a finite and shared lexicon produces an infinite number of acceptable utterances (Chomsky 1957, 13).

Analyzing cultural schemas requires close attention to linguistic and paralinguistic features such as metaphors, proverbs, repetitions, pauses, speaker transitions, turn taking, and interruptions (D'Andrade 1984, 1987, 1995). In her study of American marriage, Quinn (1982, 1987, 1992, 1996, 1997) exemplifies schema analysis in anthropology. Working with 11 married couples, she produced over 300 hours of recorded interview narratives. Quinn and her students searched this corpus of text for repeated words, phrases, and patterns of speech. They paid particular attention to metaphors and the underlying principles that might produce patterns in those metaphors. For instance, Quinn found that people talk about their surprise at the breakup of a marriage by saying that they thought the couple's marriage was "like the Rock of Gibraltar" or had been "nailed in cement." People use these metaphors because they assume that their listeners know that cement and the Rock of Gibraltar are things that last forever.

Quinn's emphasis on metaphor owes much to the work by Lakoff and Johnson (2003 [1980]). Using this approach, Quinn found that the hundreds of metaphors in her corpus of texts fit into just eight linked concepts (lastingness, sharedness, compatibility, mutual benefit, difficulty, effort, success [or failure], and risk of failure)—and that these concepts are linked together in a schema that guides the discourse of ordinary Americans about marriage.

Metaphors are not the only linguistic features used to infer meaning from text. Price (1987) observes that when people tell stories, they leave out information that everyone knows. Thus, in her study of 14 narratives of illness and misfortune in a Mestizo community in Ecuador, Price looks for what is *not* said in narratives (but is observable in ethnography) to identify underlying cultural assumptions (1987, 314). D'Andrade notes that the "repetition of associative links" may be "the simplest and most direct" sign of cultural schemas (1991, 294). For instance, in C. Strauss's (1997) research into whether late capitalism has produced a fragmented, postmodern consciousness, she examines the associative links in one former factory worker's views on being a workingman, having to pay a disproportionate share of taxes and struggling to get by. Other examples of inductive research engaged in the search for cultural schemas in texts include Holland's (1985) study of Americans' reasoning about interpersonal problems, Swartz's (1997) study of Mombasa Swahili understanding of the role the four humors play in body function, and Izquierdo and Johnson's (2007) study of envy and sorcery in Matsigenka illness narratives in the Peruvian Amazon.

Garro combined schema analysis with cultural consensus analysis (Romney et al. 1986) in her studies of high blood pressure (1988) and diabetes (1995, 2000) within and across Anishinaabe communities in Canada. Garro (2000) argues that schema analysis "provides more insight into the nature of individual and cultural knowledge," but "no explicit grounds for determining if something is shared" (p. 285). In contrast, consensus analysis "helps to corroborate claims about shared cultural understanding, while pointing out areas where there is less agreement" (p. 312). A similar approach was adopted by Handwerker and Wolfe (2010) in their study of cultural understandings of "bad teeth," by Worthman et al. (2002) in their research on American family life, by Kempton et al. (1995) in their study of American environmental values, and by Stone-Jovicich et al. (2011) in their study of two groups in South Africa on opposing sides of intensive water use.

Some cognitive scientists—including anthropologists—test schemas in experiments. Rice (1980) hypothesized that "comprehension of a story" would depend on its "assimilation to the schemata of the hearer" (p. 156). Using an experimental design, she presented Americans with two Eskimo stories, "Kayatuq and the Red Fox" and "Nakkayuq and Gis Sister," in a range of formats that conformed more closely to either the American or Eskimo storytelling schema. Then she asked participants to recall certain passages from the stories. When the passages fit the American story schema, Rice found—as she predicted—that participants agreed about the events they remembered and recalled more exactly worded phrases than when the stories fit the Eskimo story schema.

Schema analysis provides a powerful approach to determine how people think, where this thinking comes from, and what happens when someone thinks differently. In research on imprisoned sex offenders, Waldram (2008) observed inmates whose therapists required them to tell their life stories in a way that was consistent with a treatment schema focused on why people commit sex offenses. A prisoner who failed to construct a life history that conformed to this schema (e.g., by omitting drunkenness) became ineligible for early parole. Related methods, such as voice-centered analysis (Brown and Gilligan 1993) and personal semantic network analysis (C. Strauss 1992, 2005), help researchers compare respondents' views to idealized (or schematic) understandings of how one should

experience the world. Examples of such research include Anderson-Fye's (2003) exploration of how Belizean girls resist globalizing thin-body norms and Beauboeuf-Lafontant's (2008) examination of how black American women's experiences of depression interact with the dominant discourse about "strong black women."

Similar to schema analysis, a thread of research in the linguistics tradition of text analysis deals with the discovery of mental models through systematic examination of text (Carley and Palmquist 1992; Johnson-Laird 1983, 2010; Jones et al. 2011). Anthropologists participated early on in the development of what is today the cross-disciplinary field of cognitive science (for a review, see Tyler 1969) but interest in cognitive studies waned in anthropology after about 1980 (see Bender et al. 2010; Boster 2011). There has been a revival of interest among anthropologists in recent years in mental models and related topics as anthropologists work in teams with psychologists and other scholars (e.g., Atran and Medin 2008; Bang et al. 2007).

### *Grounded Theory*

Grounded theory is a set of techniques for inducing meaning—concepts, connections, models—from people's own words. The goal is to create new theories that predict people's beliefs or behaviors (Glaser and Strauss 1967). Since its inception, grounded theory has flourished across the social sciences, but particularly in disciplines in which inductive studies are common, such as education (e.g., Blase 1982), nursing (e.g., Beck 1993), and management (e.g., Maznevski and Chudoba 2000).

Inductive approaches have a long history in ethnographic case studies (Agar 1979, 1980, 1983; Becker et al. 1961). In fact, we find that grounded theory formalizes many of the techniques that ethnographers use—in-depth interviewing, purposive sampling, negative case analysis, constant comparison, identifying commonalities and differences across texts, and developing theories from on-the-ground experience—though ethnographers seldom discuss these methods explicitly. There are some controversies about the extent to which grounded theory should be radically inductive (Glaser 1992, 1999), allow some deduction (Corbin and Strauss 2007; Strauss 1987; Strauss and Corbin 1990), or treat elicited narratives as partial, co-constructed, and subjective (Charmaz 1990, 2006; see Boychuk Duchscher and Morgan [2004] for a comparison). Nevertheless, all these approaches share a commitment to understanding people's views of themselves and the meaning they ascribe to their experiences and to using this knowledge to generate theory.

As a method, grounded theory involves a process by which the analyst becomes increasingly "grounded" in the data, developing ever-richer concepts and models of how the phenomenon being studied really works. Typically, grounded theory studies begin with one or a few respondents in a target population. Markovic (2006), for example, studied women with gynecological cancer in Australia. She interviewed one woman she called Tipani and, reading the transcript line by line, identified *in-vivo codes*—that is, codes drawn from the respondent's own words (Bernard and Ryan 2009; Bogdan and Biklen 1992; Lincoln and Guba 1985; Lofland and Lofland 1995; Sandelowski 1995a; Strauss and Corbin 1990; Taylor and Bogdan 1984).

Markovic concentrated on repetitions of ideas in Tipani's narrative, things like "I've had blood now and again" and "I started bleeding" to develop themes such as "physical symptoms" (2006, 416–17). Throughout this process, researchers keep detailed *memos*

that document their questions about the data, methodological decisions, and hunches about how things are connected (Montgomery and Bailey 2007; Strauss and Corbin 1990). For example, Markovic mentions making notes to document “the similarities and dissimilarities in the way women expressed each theme” (2006, 417).

Once some emerging themes are identified, the next step is to select new respondents who can add novel ideas or connections to the data—a technique called *theoretical sampling* (Coyne 1997; Draucker et al. 2007). Markovic explains how her first interview with Tipani yielded basic themes and a set of hypotheses about the conditions under which immigrant and native-born women in Australia decide to seek professional medical help for symptoms of gynecological cancer. Then, with the specific hypotheses in mind, Markovic analyzed the transcript of her second interview, with Betty. That interview yielded new themes, as did her third interview with Tulip, about the conditions under which women immediately sought care, and so on. The process—coding, memoing (writing field notes about codes), constant comparison, testing hunches about how themes predict outcomes, and developing impressions about themes connect to one another (Boeije 2002)—continues until there is *theoretical saturation* (Fontanella et al. 2008, 2011), and new narratives yield no new categories or insights. It took Markovic (2006) 30 interviews (with 13 Australians and 17 immigrants) to finalize her model of the conditions under which women in Australia seek care for gynecological cancer. Once researchers have a model, they check it using *negative case analysis* (Becker 1961; Miles and Huberman 1994; Strauss and Corbin 1990) to ensure that there are no cases that disprove the model or disconfirm parts of it. Models can also be checked through consultation with ethnographic experts (e.g., participants in the study) or expert scholars (for an example, see Kearney et al. 1994).

The overarching goal of grounded theory is to induce a testable theory, but scholars present their findings in different ways. Some concentrate on inducing categories, or a typology, from narrative data. For example, Boeri’s (2004) study of aging heroin users yielded nine ethnographically derived categories, such as “weekend warriors,” who only occasionally lose control while bingeing, and “junkies” whose lives revolve completely around drug use. Another approach is to build and present a model detailing the connections among a set of concepts. For instance, Eyre et al.’s (1998, 467) study of adolescent sexuality in a California high school yielded “a model of sex-related behavior as a set of interrelated games,” including courtship, duplicity, disclosure, and prestige.

In addition to identifying concepts and connections among them, some grounded theorists also conduct comparative analyses that seek to identify or explain differences in models across groups. Markovic and colleagues, for example, found no salient differences between Australian and immigrant women’s models of the causes of gynecological cancer (Manderson et al. 2005). Based on their analysis, the researchers were able to suggest some conditions (e.g., recent immigrants or those of non-European origin) under which differences might emerge. This provided solid hypotheses for future researchers to test.

### *Classical Content Analysis*

While grounded theory is concerned with inducing hypotheses from data, content analysis typically comprises techniques for deductive theory-building. The object is to

test hypotheses about differences across the contexts from which the texts arise, across the people who produced them, or across changes in meaning over time or space. In addition to written texts, the raw data in content analysis can come from sources like clay pots, song lyrics, advertisements, political cartoons, or television shows.

Netzley (2010), for example, examined the depiction of gay and straight characters in 98 episodes of primetime television programming in the United States. Two observers coded for traits like the character's gender, sexual identity, and involvement in sexual situations. Netzley found that, contrary to her hypothesis, gay characters were more likely than straight ones to be depicted in sexual situations. The methodological issues associated with content analysis are all evident here. Does Netzley's sample of 98 episodes justify generalizing to all primetime programming? Did the coders make valid and reliable judgments about when sexual situations were depicted (or not)? These two issues in particular, sampling and coding, are at the heart of content analysis.

Sampling in content analysis involves two steps. The first step is the identification of the *corpus* of texts. If a small number of texts is collected (e.g., 40 life histories), then they all can be analyzed. When hundreds or thousands of texts are involved, a representative sample of records is required. For instance, Waitzkin and Britt (1993) randomly selected 50 transcripts from 336 audio recordings for an analysis of doctor-patient interactions about patients' self-destructive behaviors. Sometimes purposive sampling is appropriate; it is particularly common in non-statistical content analyses. For example, Trost (1986) selected five cases to represent each of the 32 possible combinations of five binary variables in his study of teenagers' relationships with their parents, yielding a dataset of 160 interviews. Patton (1990, 169–86) and Sandelowski (1995b) provide useful reviews of nonrandom strategies for sampling texts, and see Guest's chapter, this volume.

The second step in sampling is called “segmenting” (Tesch 1990) or “unitizing” (Krippendorff 2013) and is designed to identify the basic, nonoverlapping units of analysis *within* the texts. The units may be the entire texts (books, interviews, responses to an open-ended survey question) or segments (words, word-senses, sentences, themes, paragraphs). Where the object is to compare across texts—to see *whether or not* certain themes occur—the whole text (representing an informant or an organization) is the appropriate unit of analysis. When the object is to compare the *number of times a theme occurs* across a set of texts, then what Kortendick (1996) calls a “context unit”—a chunk of text that reflects a theme—is likely to be the appropriate unit of analysis.

Coding is the heart and soul of sociological text analysis, whether it is classical content analysis, grounded theory, or schema analysis (Berelson 1952, 147–68; Holsti 1969, 95–126). In classical content analysis, codes are typically developed from definitions given in the literature. In exploratory content analysis, inductive coding (*open coding* in grounded theory terms) is appropriate (see Ryan and Bernard [2003] for a review of theme identification techniques). In either case, after an initial period of scrutinizing key resources (academic publications, the dataset itself, or both), researchers must make some tough decisions to define each code: What are the inclusion and exclusion criteria for this code? Is a particular instance of meaning “in” or “out”? What values can the code take (e.g., present/absent or high/medium/low) (Bernard 2011, 429–32;

Bernard and Ryan 2009, Chapter 4; Seidel and Kelle 1995)? This process involves a lot of forethought to determine what the research questions are asking exactly and how they will be tested at the end of the analysis.

The codes are then assembled into a codebook. While the temptation to construct a huge, exhaustive codebook (that captures every possible code of interest) can be great, this is not a good idea. On a practical level, coders can only apply a limited number of codes without getting overwhelmed or forgetting important information. As a rule of thumb, limiting codebooks to 30–60 themes keeps them manageable (Bogdan and Biklen 1992, 166; Miles and Huberman 1994, 58). In addition to containing lists of codes and their definitions, the codebook contains important macro-level information about when and how the codes can be applied to text. For instance, the codebook should make clear how texts should be segmented for coding. It specifies which codes are allowed to co-occur, which must be exclusive, and which should be hierarchical (Richards and Richards 1991). Codebook development is covered in detail by Dey (1993, 95–151), Crabtree and Miller (1992), Miles and Huberman (1994, 55–72), and Bernard and Ryan (2009).

Once the coding instructions—those contained in individual codes and in the overall codebook—are finalized, they can be tested. The standard for doing this is to have multiple coders apply the codes independently to set of texts and then measure the amount of intercoder agreement (Ryan 1999). Typical measures of intercoder agreement include Cohen's kappa (Cohen 1960), Krippendorff's alpha (Krippendorff 2004), and simple percent agreement (see Lombard et al. [2002] for a comparison of measures). By analyzing misunderstandings and disagreements, researchers can identify and correct omissions and fuzzy definitions. Through iterative work with codes, codebooks, and coders, these codebook definitions become sharper and more robust—and ready to be applied in a real analysis (Carey et al. 1996; Krippendorff 2004).

In classical content analysis, researchers typically test a hypothesis derived from the literature. Margolis (1984), for example, tested the hypothesis that changes in mothers' social roles in the United States were driven by economic, technological, and demographic changes from colonial times to the present. She tested the hypothesis by examining advice manuals and columns aimed at mothers over the last 200-plus years on deductively identified topics such as breastfeeding, giving affection, and schedule-setting. Gravlee and Sweet (2008) used classical content analysis in their longitudinal study of the concepts of race, racism, and ethnicity in medical anthropology journals, and Cruz (2002) examined the treatment of Latinos and Latin Americans in U.S. history textbooks.

Because anthropologists are often concerned with inducing meaning from texts, they may use exploratory approaches to content analysis. Nichter and colleagues (2009) identified 12 key themes—such as “control of emotions” and “expressing critical political views”—in advertisements for clove cigarettes in Indonesia. They determined whether each theme occurred in advertisements targeting four predetermined age groups in the country.

Anthropologists and other scholars who work with the Human Relations Area Files (HRAF) typically use a mixed deductive-inductive approach to content analysis. The *Outline of Cultural Materials* (OCM) provides a list of topics that are tagged (i.e.,

identified) in the HRAF texts (Ember and Ember 2009). From there, researchers may refine the tags inductively to develop new codes for hypothesis testing. For example, in his cross-cultural study of friendship, Hruschka (2010) began with codes, such as “gift-giving” and “tit-for-tat,” which he had identified deductively from the literature. After reading the HRAF texts tagged with the OCM codes for “friendship” and “artificial kinship,” he inductively developed additional codes, such as “ritual initiation” and “touching,” based on ethnographic depictions of friendship.

### *Analytic Induction*

Analytic induction is a formal method to build up causal explanations of phenomena from a small number of cases by applying some rules of logic formalized by John Stuart Mill (1898, 259). Analytic induction was proposed as an alternative to statistical analysis by Znaniecki (1934, 249–331), and Robnson (1951) laid out the steps in the method clearly:

1. Study a single case and develop a theory to account for it.
2. Test the theory on a second case. If the theory fits, test it on a third and a fourth, and so on until you find a case that doesn't fit.
3. Modify the theory to accommodate the case that doesn't fit or redefine the phenomenon you're trying to explain so that it includes the rogue case.
4. Repeat until the theory explains all new cases.

Usually, between 18 and 50 cases are needed to establish a stable theory (Caren and Panofsky 2005). Of course, no matter how many cases you explain, you never know if some case will turn up that falsifies your theory. However, a theory built on, say, 20 cases that explains another 20 independent cases, would be strong in any field of scholarship.

Classic examples of analytic induction include Lindesmith's (1968 [1947]) study of drug addiction, Cressy's study of embezzling (1953), and McCleary's (1978) study of parole violation. More recently, ethnographers have used the method to examine issues ranging from dowry practices (Lang 1993), to risk management among pastoralists (Moritz et al. 2011), to the success of the Brazilian landless movement (Kröger 2011).

Ragin (1987, 1994, 2000; Rihoux and Ragin 2009) formalized the logic of analytic induction. His method, called qualitative comparative analysis (QCA), allows both “crisp set” (i.e., binary) and “fuzzy set” (i.e., continuous) conditions. Other recent innovations include the inclusion of temporal reasoning in QCA (Caren and Panofsky 2005). Computer programs like FS/QCA (Ragin et al. 2006), TOSMANA (Cronqvist 2011), and ANTHROPAC's truth tables function (Borgatti 1992) perform versions of analytic induction analysis.

Schweizer (1991, 1996) used analytic induction in his analysis of social status in Chen Village, China. Starting with qualitative data—Chan et al.'s (1984) history of Chen Village—Schweizer coded to determine whether each of 13 actors experienced an increase or a decrease in status after each of 14 events (such as the Great Leap Forward, land reform and collectivization, and an event known locally as “the great betrothal dispute”). Over time, 9 people consistently won or lost, while 4 lost sometimes and won other times. This produced 17 unique combinations of actors and

outcomes. Schweizer coded the 17 cases according to three binary conditions (urban vs. rural origin, proletarian vs. nonproletarian background, presence vs. absence of external ties) and one dependent variable (whether the actor was a success or failure overall). In 88% of cases, successful people either came from a city OR had a proletarian background AND had good external ties. If an actor had failed in the Chen Village disputes, then, in all cases, he or she came from a village AND came from a nonproletarian family OR had no ties to authorities beyond the village. In short, in a communist revolutionary environment, it pays to have friends in high places; people from urban areas are more likely to have those ties; and it helps to have been born into a politically correct (i.e., proletarian) family.

### *Computer-Assisted Text Analysis*

One problem with text as data, as all fieldworkers know, is that it piles up quickly. The sheer volume and problems of handling and sorting through so much information made text analysis less popular in the past than it is now. What has changed is the development of software for managing, coding, and analyzing text.

Programs for text analysis tend to come from two traditions: Programs like Atlas.ti and Nvivo came from the grounded theory tradition, while programs like WordStat and Crawdad came from the data-mining tradition. Programs like MAXQDA and Dedoose sought to bridge these two traditions. Today, text processing programs are converging in the tasks they perform. The CAQDAS (Computer Assisted Qualitative Data Analysis Software) Network Project (<http://www.surrey.ac.uk/sociology/research/researchcentres/caqdas>) and Lewins and Silver's guides to using software (2007) and choosing software (2009) provide information on the features of popular programs.

Some scholars prefer to conduct their analyses on paper, and for many methods (e.g., schema analysis, grounded theory) there are few differences between rigorous paper-based analyses and those conducted using software. Software, however, facilitates clear record-keeping. This allows us to document the micro-level decisions we make during the course of a study—how we built codebooks, why we decided to collapse two concepts together or split them apart, how our understanding of a model emerged over months of analysis. This, in turn, lets our colleagues restudy our data or reproduce our work—activities that are crucial to building cross-cultural theories in anthropology.

These programs also make it possible to do some analyses that would be otherwise impossible (or, at least, very unpleasant). To illustrate the possibilities, we briefly discuss three methods below.

### **WORD-BASED ANALYSIS: COUNTING AND KWIC STUDIES**

Counting the words people use can reveal much about how they think and feel, but this deceptively simple technique is daunting to do by hand. Ryan and Weisner (1996) told fathers and mothers of adolescents: "Describe your children. In your own words, just tell us about them." Mothers were more likely than fathers to use the words "friends" and "creative," while fathers were more likely than mothers to use the words "school" and "student." These word counts became clues to the themes that were used in coding the texts. Pennebaker et al. (1997) examined narratives collected longitudinally from HIV-negative men whose romantic partners had recently died of AIDS

complications. They found that men who initially used more words associated with insight (e.g., “realize”) and causation (e.g., “effect”)—and fewer of these words as time went on—tended to have a more “positive state of mind” (i.e., more pleasure, productivity, etc.) one year after their partner’s death.

The KWIC (key word in context) technique is another simple but revealing technique: Every use of a substantive word in a text or set of texts is displayed in a context of some specified length—like the sentence or paragraph in which each word occurs, or ten words on either side of each key word, and so on. This technique was used for centuries to produce concordances of literary works, like the Bible (Merbecke 1550) or the works of Shakespeare (Clarke 1881). As with word counts, software now makes light work of the KWIC technique. C. Strauss (2005) argued that a KWIC-like analysis could help identify shared but unspoken cultural assumptions, such as the way the word “work” is used in the context of “work ethic” or “hard work” in discussions of welfare in the United States. Wegerif et al. (1999) used the KWIC technique in their study of why students in one Mexican preschool developed more problem-solving skills than students in another, similar preschool. Teachers in the problem-solving preschool used phrases like *vamos a ver* (let’s look) more often and to convey “the shared nature of exploration and discovery of knowledge”; in the other class, teachers used *vamos a ver* infrequently and in ways designed “to control (wait until I tell you what to do) and direct (look at the blackboard)” students’ thinking (Wegerif et al. 1999, 140).

#### CONTENT DICTIONARIES

Content dictionaries combine word-based analysis and classical content analysis. Using software, a researcher builds a code definition that contains an unlimited number of words, word stems, or word combinations. Even simple words, like “cold” or “horse” or “think” require many definitions and contexts, but once a computer-based dictionary is built, the software can automatically code a set of texts—like transcribed interviews or downloaded web sites. In pioneering work that demonstrated the potential for computer-based coding of text, Stone and colleagues (Ogilvie et al. 1966; Stone et al. 1966) showed that a computer program was better than human coders at differentiating real suicide notes from fakes designed to imitate them. In anthropology, Colby (1966) showed that the Navajo regarded their homes as havens and places of relaxation, whereas the Zuni depicted their homes as places of discord and tension. Much of the work with content dictionaries, however, is in psychology (e.g., Gottschalk and Bechtel 2002; Rosenberg et al. 1990) and criminology (Dixon et al. 2008; Maruna 2010). Recent studies by Gottschalk and colleagues have demonstrated that software can be trained to employ DSM-IV categories to make neuropsychiatric evaluations from writing samples. In a study of Napoleon Bonaparte’s adolescent writings, for example, the computer program detected that “Napoleon felt depressed, isolated, self-critical, and alienated” (Gottschalk et al. 2002, 546).

#### SEMANTIC NETWORK ANALYSIS

Semantic network analysis treats “words as actors” (Schneegg and Bernard 1996) and involves measuring and plotting relationships among words across one or more texts. As early as 1959, Charles Osgood (1959) created word co-occurrence matrices

and applied factor analysis and dimensional plotting to describe the relation of major factors to one another.

Semantic network analysis is also used to examine the relationship among codes applied to texts. García-Álvarez and López-Sintas (2002) analyzed transcripts of lengthy interviews conducted with retiring founders of family businesses in Spain. They coded the transcripts for values like “hard work,” “honesty,” and “risk-taking” and analyzed the co-occurrence matrix of codes with multi-dimensional scaling (MDS). The researchers interpreted the two dimensions of the MDS graph as self-fulfillment (e.g., determination) versus group orientation (e.g., constancy) and business-as-an-end (e.g., growth) versus business-as-a-means (e.g., family orientation). The development of software has made the construction and analysis of co-occurrence matrices much easier and has stimulated the development of this field (Barnett and Danowski 1992; Danowski 1982, 1993).

#### *Teamwork, Collaboration, and Interdisciplinary Research*

Any project that involves coding also requires the development of codes and a codebook—and this is an exercise that is best done through teamwork. At a minimum, a code-based text analysis might require a few days of work with a colleague who is willing to help perform intercoder agreement checks for a small subsample of texts. A large text analysis project might require a team of assistants—interviewers, transcriptionists, translators, and coders. To design and manage such a project requires skills beyond the basics of text analysis, including hiring, training, and data quality checks. Guest and MacQueen’s (2008) *Handbook for Team-based Qualitative Research* lays out the challenges of teamwork in text analysis and provides suggestions to how those challenges can be met. Researchers who develop teamwork skills have new opportunities for collaboration and interdisciplinary work.

Since Boas’s work with George Hunt on the Kwakiutl texts, there has been a tradition of collaboration in anthropological text analysis. Much early collaboration involved native and nonnative ethnographers working side by side to produce transcriptions, translations, and interpretations of texts recorded in written form for the first time. This tradition has continued, particularly in the realm of linguistic anthropology, as in Bernard and Salinas’s (1976) work on Nāhñu parables and humor. In addition, anthropologists share a rich history of inter-subdisciplinary collaboration. For example, Jane Hill (1992) proposed the existence of a Uto-Aztecan Flower World complex, in which flowers and related images were used to symbolize the Spirit Land, vital life forces, and masculine strength in Uto-Aztecan song and oratory. In collaboration with archaeologist Kelley Hays-Gilpin, Hill established the presence of Flower World imagery in a wide range of Mesoamerican and southwestern contexts, including ceramics, ritual regalia, and murals (Hays-Gilpin and Hill 1999, 2000).

A recent collaborative trend involves interdisciplinary research by anthropologists working with colleagues from many disciplines, including medicine, ecology, and law. On large interdisciplinary teams, anthropologists often take the lead on ethnographic research, including participant observation, interviewing, and text analysis. For example, anthropologists in the Long-term Ecological Research Network have led text analyses on Arizona water decision-makers’ understandings of climate-related risk (Wutich et al. 2010) and on locals’ role in constructing scientific knowledge about

the Florida Everglades (Ogden 2008). These collaborations help us expand both the breadth of the questions we ask as anthropologists and the potential audience and impact of our findings. Yet, as Sillitoe (2007) argues, interdisciplinary research can be challenging because it requires that we explain our methods to colleagues who may not share our assumptions—it forces us to be explicit about how we know what we know. Skills in systematic methods of collecting and analyzing qualitative data are essential to interdisciplinary teamwork for anthropologists.

### **SOME GENERAL OBSERVATIONS**

One of our goals for this chapter has been to show the common foundations and complementary contributions of different methods for text analysis. Scholars in the linguistic anthropology tradition rarely cite the work of colleagues in the sociological tradition, and vice versa. Even within the sociological tradition, the literatures on schema analysis, grounded theory, and content analysis are essentially distinct, though they all involve identifying and refining concepts, marking (coding, tagging) concepts in text, and linking concepts into theoretical models. Anthropologists have much to gain by reading, working, and innovating across these methodological boundaries.

There is increasing interest among anthropologists, as there is across the social sciences, in mixing methods for text analysis (Creswell and Clark 2007; Denzin 2010; Teddlie and Tashakkori 2003). From the time of Boas and Kroeber, there has been a strong mixed methods tradition in anthropology, and today, anthropologists may combine open coding (a qualitative technique) with meta-coding or semantic network analysis (quantitative techniques) to identify key themes early in an analysis (Ryan and Bernard 2003). Recent examples of the mixed methods approach include Hruschka's (2010) cross-cultural study of friendship, Gravlee and Sweet's (2008) research on the concept of race in medical anthropology, and Wutich's (2009) research on gender and emotional distress in water-insecure Cochabamba, Bolivia.

### **CONCLUSION**

Text analysis as a research strategy permeates the social sciences, and the range of methods for conducting text analysis is remarkable. Investigators examine words, sentences, paragraphs, pages, documents, ideas, meanings, paralinguistic features, and even what is missing from the text. They interpret, mark, retrieve, and count. By turns, they apply interpretive analysis and numerical analysis; they use text analysis to explore for themes and to confirm hypotheses. Improvements in methods for capturing and mining qualitative data are making these tasks easier. Voice recognition software, for example, is lessening the burden of transcription. Such developments will make it easier for scholars to explore for and explain patterns in texts and will, we believe, support methodological innovation in a new generation of anthropologists.

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