CHAPTER 1

INTRODUCTION TO TEXT

Qualitative Data Analysis

IN THIS CHAPTER

INTRODUCTION: WHAT IS QUALITATIVE DATA ANALYSIS? ♦

Because of a quirk in the English language, the phrase "qualitative data analysis" is mischievously ambiguous. It can mean "**the analysis of qualitative data**" or it can mean "**the qualitative analysis of data**." The confusion can be eliminated by clearly distinguishing between data and analysis. Figure 1.1 lays out the possibilities.

Cell A is the **qualitative analysis of qualitative data**. When ecologists pore over satellite images of the Earth's surface; when astronomers listen to recordings of sounds

Figure 1.1 Key Qualitative and Quantitative Distinctions

Analysis	Data	
	Qualitative (Texts)	Quantitative (Ordinal/Ratio Scale)
Qualitative	A	B
	Interpretive text studies (e.g., Hermeneutics, Grounded Theory, Phenomenology)	Search for and presentation of meaning in results of quantitative processing
Quantitative	C	D
	Turning words into numbers (e.g., Classic Content Analysis, Word Counts, Free Lists, Pile Sorts, etc.)	Statistical and mathematical analysis of numeric data

SOURCE: Adapted from: Bernard, H. Russell. 1996. Qualitative data, quantitative analysis. *Cultural Anthropology Methods Journal* 8[1]:9–11.

from other galaxies; and when medical researchers listen to heart beats they are all looking for regularities in qualitative data. "Looking for regularities" is analysis. It's the quintessential qualitative act, and it's common to all traditions of scholarship, across the humanities and the sciences.

In the social sciences, interpretive studies of texts, like transcriptions of interviews, are of this kind (Cell A). Investigators focus on and name themes in texts. They tell the story, as they see it, of how the themes are related to one another and how characteristics of the speaker or speakers account for the existence of certain themes and the absence of others. Researchers may deconstruct a text, look for hidden subtexts, and try to let their audience know—using the power of good rhetoric—the deeper meaning or the multiple meanings in it.

For many scholars, the phrase "qualitative data analysis" refers exclusively to Cell A, but for us, and for everyone in the **mixed-methods movement**, it also includes Cell C, the **quantitative analysis of qualitative data** (see Box 1.1).

Box 1.1

The Mixed-Methods Movement?

In fact, the unselfconscious mixing of qualitative and quantitative data and qualitative and quantitative analysis is the natural order of all science. When Galileo first trained his then-brand-new telescope on the moon, he noticed what he called lighter and darker areas. The large dark spots had, Galileo said, been seen from time immemorial and so he said "These

I shall call the 'large' or 'ancient' spots." He also wrote that the moon was "not smooth, uniform, and precisely spherical" as commonly believed, but "uneven, rough, and full of cavities and prominences," much like the Earth. No more qualitative description was ever penned (Galileo Galilei 1610:3).

Social scientists of the 19th and early 20th centuries combined qualitative and quantitative data in their research—see Florence Nightingale's great work (1871) on training midwives and the monumental ethnography of Middletown (Muncie, Indiana), by Robert and Helen Lynd (1929). In 1957, Martin Trow wrote "let us be done with the arguments of 'participant observation' versus interviewing" and get on with using the methods that are best suited to the job. A generation later, Reichardt and Cook (1979:19) argued that there was "no reason to choose between qualitative and quantitative methods."

And still another generation later, the mixed-methods movement today inherits this noble pedigree. The term "mixed methods" itself, however, only showed up in the *Social Science Citation Index* in 1993. Today, there are over 5,000 hits on that term, with over 70% of them since 2010. There is a *Journal of Mixed Methods Research* (mmr.sagepub.com), several textbooks on mixed methods research (Creswell and Plano Clark 2011; Greene 2007; Hesse-Biber 2010; Morse and Niehaus 2009), and a handbook of mixed-methods research (Tashakkori and Teddlie 2010). Now *that's* a movement.

Cell C involves turning words, images, sounds, or objects into numbers and then using statistical and numerical tools to analyze those numbers (Boyatzis 1998). Scholars in communications, for example, regularly tag television ads from various countries to test for differences in how sex roles are portrayed across the world (Furnham and Mak 1999; Paek et al. 2011). Political scientists code the speeches of candidates for president to detect appeals to various constituencies (Calfano and Djupe 2009). They may even code the facial expressions of political candidates to test whether those expressions affect how potential voters feel about those candidates (Weaver et al. 2015) (see Box 1.2).

Box 1.2

Quantitative Testing of Hypotheses Using Qualitative Data

Are adolescents who express a strong desire to "fit in" with their peers more likely to start smoking than are adolescents who express a strong streak of independence? This can be tested by interviewing adolescents about reasons for smoking or not smoking, coding the texts for themes (like independence or being concerned about looking good to peers), and then doing statistical analysis to test relations among the themes. This is the basis for classical content analysis—about which, much more in Chapter 11.

Cell D refers to the **quantitative analysis of quantitative data**. Closed-ended questions in surveys, for example, produce quantitative data directly—that is, they are collected initially as numbers, not as text or other qualitative data. National censuses produce numerical data about people's ages, education, income, family size, and so on. Organizations, from businesses to charities to zoos, produce gobs and gobs of numerical data, too—about the socioeconomic characteristics of people who use their products or services, about how often they have to replace managers, about how much time secretaries spend on the phone and on email, and on and on. When qualitative data are turned into numbers (Cell C), the work of analysis is indistinguishable from the work done in Cell D.

Cell B is the **qualitative analysis of quantitative data**. It's what quantitative analysts do after they get through doing the work in Cells C and D, and it involves the search for, and the presentation of, meaning in the results of quantitative data processing. Cell B includes everything from the finding of regularities in a scatter plot to the interpretation of meaning and substantive significance of statistical tests. Without the work in Cell B, Cell D studies are sterile and vacuous.

Increasingly, Cell B involves turning quantitative data into still or moving images—qualitative data—to make the quantitative data easier to analyze. When you see a weather forecaster on television standing in front of a multicolor, moving picture of temperature and precipitation, that image is produced from millions of numbers transmitted from a satellite. Techniques—like multidimensional scaling—for visualizing very complex numerical data are easily available today for social scientists. More on this in Chapters 7, 18, and 19.

♦ WHAT ARE DATA AND WHAT MAKES THEM QUALITATIVE?

Data—qualitative and quantitative alike—are **reductions of our experience** (Bernard et al. 1986). Electrons and DNA are things. With a little help from some instruments, we can look at electrons and DNA and we can record what we see. Whatever we choose to record about things like these—their shape, their size, their weight, their speed—are data. If we record numbers, we get quantitative data; and if we record sounds, words, or pictures, we get qualitative data.

In the social sciences, we are interested in people's behavior, thoughts, emotions, and artifacts (the physical residue of people's thoughts, emotions, and behavior) and the environmental conditions in which people behave, think, feel, and make things.

When we reduce our experience of those things to numbers, the result is quantitative data. And when we reduce people's thoughts, behaviors, emotions, artifacts, and environments to sounds, words, or pictures, the result is qualitative data.

We create data by chunking experience into recordable units. Consider three researchers observing children at play in a schoolyard or playground. One of them watches the children and writes up field notes on what she saw. Another records the frequency of particular behaviors using a checklist. The third uses a video camera to record the children playing. The phenomena of interest—the behavior, the words, the laughter, and the crying of children on a playground—are ephemera, disappearing as they happen. The records of the phenomena—the notes, the checklist, the video recording—remain for us to analyze and understand. Data are the **archeological record of experience**.

Some qualitative data are produced on purpose—we interview people and transcribe their words; we put children together in a room full of toys and videotape or take notes about what they do—but most of the record about human thought and behavior comes to us as naturally occurring qualitative data. The paintings produced during the first hundred years of the Italian Renaissance; the television ads that aired last week in Mexico that contained images of old people; the articles in the *Wall Street Journal* over the last 20 years that contain the phrase "corporate culture"; the diaries of U.S. Civil War soldiers; and the blogs of today's soldiers around the world are all naturally occurring, qualitative data.

The images and texts on Facebook and Twitter and the millions of blogs produced every day across the world are all qualitative data. Those data are being used by researchers to investigate questions such as presentation of self (Chen 2010; Escobar and Roman 2011), how fans engage with sports teams and artists (Bennett 2012; Stavros et al. 2014), and how brands become trusted (Habibi et al. 2014). Making sense of Big Data from social media is a big industry today, and Big Data isn't just for numbers anymore.

Across the sciences, from anthropology to zoology, from sociology to physics, data—all data, qualitative and quantitative—are selections of what's available. Satellites don't record everything going on below them any more than observers of human behavior record everything they see. People—real human beings—decide to measure some things and not others. These decisions are not random. They are sometimes based on unadulterated scientific curiosity, and they are sometimes based on what's fundable. They are sometimes motivated by humanitarian instincts and sometimes by greed.

This does not invalidate the effort to produce data. It does, however, remind us that there is a human component to science, just as there is in art, or government, or commerce.

ABOUT NUMBERS AND WORDS ♦

Every reader of this book is aware of the long-standing debate in the social sciences about the relative merits of quantitative versus qualitative data. **The qual–quant**

debate reflects principled stands by those who identify with the **positivist tradition in the social sciences** and those who identify with the **humanist tradition**.

These principled discussions on matters of **epistemology**—how we know things at all—have a noble tradition dating to the famous dictum of the Greek philosopher, **Protagoras** (485–410 BCE) that "**man is the measure of all things**"—meaning that truth is not absolute but is decided by individual human judgment—and to the Roman poet, **Titus Lucretius's** (94–49 BCE) insistence on the **material nature of all things**, including the mind. (**Further Reading**: the qualitative–quantitative issue)

In the social and behavioral sciences, the humanist position has been historically at odds with the philosophy of knowledge represented by science. In psychology, most *research* is in the positivistic tradition, while much *clinical work* is in the humanist tradition because, as its practitioners cogently point out, it works. In sociology, there is a growing tradition of interpretive research, but most sociology is done from the positivist perspective. In cultural anthropology, most *data collection* is done by fieldworkers—which makes cultural anthropology thoroughly empirical—but much of the *data analysis* is done in the humanist tradition.

Notice in the last paragraph our use of phrases like "positivist perspective," and "humanist tradition." Not once did we say that "research in X is mostly quantitative" or that "research in Y is mostly qualitative." We never use the distinction between quantitative and qualitative as cover for talking about the difference between science and humanism. Lots of scientists do their work without numbers; and many scientists whose work is highly quantitative consider themselves to be morally committed humanists.

Numbers do not make an inquiry scientific (searching the Bible for statistical evidence to support the subjugation of women doesn't turn the enterprise into science), and the use of qualitative data does not diminish the scientific credibility of any piece of research.

Scholars in the physical and biological sciences wonder what all the fuss is about. They already know how powerful qualitative data are. Satellite images inform geology, meteorology, astronomy, ecology, archeology, and oceanography. Images from electron microscopes inform chemistry, molecular biology, and physiology. Lengthy narratives dictated into a tape recorder by observers inform students of volcanoes, hurricanes, gorillas, and crime scenes.

♦ RESEARCH GOALS

There are **four main objectives in qualitative research**. The questions associated with each are shown in Table 1.1.

Table 1.1 Goals of Qualitative Research

General Aim	Type	Questions
1. Exploration		What kinds of things are present here? How are these things related to one another?
2. Description		Are there natural groups of things here?
	Case	What does a case look like?
	Group	What does a set of cases look like? Is a particular kind of thing (A) present or not? How much of that kind of thing (A) is there?
	Cultural	What does the culture look like?
3. Comparison	Case	How is case X different from case Y?
	Group	How is a group of Xs different from a group of Ys?
4. Testing models	Case	To what degree does a particular case conform to the proposed model?
	Group	To what degree does a group of cases conform to the proposed model?

1. Exploration

At this early stage, the goal is to discover themes and patterns and to build initial models of how complex systems work—that is, how themes are related to one another. Whether we're talking about astronomers scanning the night sky in search of new comets and asteroids, or grounded theorists studying how people experience illness, exploring means following leads and hunches, taking a step forward and then backtracking, uncovering what's there, experiencing the phenomenon we're studying, and identifying both its unique features and the features it shares with other phenomena.

2. Description

Every field of science depends vitally on good description. Long before the physics of avian flight were worked out, people watched and recorded as faithfully as

possible just how birds managed not to fall out of the sky. Every new comet and asteroid that's discovered is described in the scientific literature, as is every new bug and plant and disease.

Descriptions can be qualitative or quantitative, or both, and detailed case studies—with their listings of typical features, idiosyncrasies, and exceptions—are used widely in the teaching of law, medicine, and management. Ethnographic field notes are typically filled with individual case studies.

How much detail should you shoot for in a good description? When you're collecting data, you should get as much as possible. You can always back off on the level of precision later, when you write up your findings. It may be enough in your write-up to say something like "Cambodian refugees comprise the largest ethnic group in this neighborhood." But if you need to know the percentage of each ethnic group in the neighborhood, then you'd better collect that data from the start by asking every refugee what his or her ethnicity (or language, or country of origin) is. You can always generalize from specifics, but you can never go the other way.

In describing cultural beliefs and practices, we focus on what people share and what they don't share. Here again, it pays to get as much as possible from the start—and for the same reason: You can only generalize if you have the specifics.

3. Comparison

Qualitative comparison involves identifying features that individuals or groups share and don't share. In the 1930s, Wayne Dennis, a psychologist, collected observational data on 41 Navajo and Hopi babies and on a similar group of white American babies in a study of child-rearing practices. Here's a thoroughly qualitative, comparative statement from his study: "Whereas some American infants are bottle-fed almost from the beginning and many are breast fed but a short time, all Hopi infants are breast fed, none are weaned under one year of age and many are not weaned before two years" (Dennis 1940:307).

Quantitative comparison involves testing whether (and how much) measurements of variables track each other. Does the weight of children between the ages of 10 and 16 vary with their height? If so, how closely do the two variables (height and weight) track each other? Does the tracking vary by ethnic group? By family income?

Just as with description, it pays to collect specific data and not rush to generalize.

4. Testing Models

This is where we test hypotheses against observations. We can do this with only qualitative data, with only quantitative data, or with both. Here is Wayne Dennis again:

> American infants are usually placed on a rigid time schedule of feedings with an interval of several hours between feedings [and are] . . . often expected to cry for a period before being fed. The Hopi infant, on the other hand, is nursed as soon as he cries, and consequently nurses frequently and cries very little. (Dennis 1940:307)

Dennis has tested his hypothesis—without reporting a single number—about the relationship between crying and feeding in American and Hopi society and he has drawn a strong conclusion. In fact, he was testing a much, much larger model, or set of hypotheses, about the care of infants. After reporting on Hopi, Navajo, and white American practices for carrying, feeding, and toilet training of infants, Dennis says that: "Beginning roughly at one year of age the patterns of the infant begin to vary in accordance with the culture of the group" as children begin to learn a language and to imitate their parents' distinctly cultural behavior. Dennis concludes that: "This corroborates the view that the characteristics of infancy are universal and that culture overlays or modifies a more basic substratum of behavior" (1940:316).

Many projects involve all four of these activities—**exploration, description, comparison, and model testing**. Some scholars rely on qualitative data for exploration and discovery and rely on quantitative data for testing models. Increasingly, though, research across the social sciences relies on a balanced, commonsensical mix of both kinds of data.

KINDS OF QUALITATIVE DATA ♦

Qualitative data come to us in five forms: (1) **physical objects**; (2) **still images**; (3) **sounds**; (4) **moving images**; and, of course (5) **texts** (see Box 1.3).

Box 1.3

Live Behavior, Tastes, and Smells

Live behavior can be considered a kind of qualitative data. Like physical artifacts, still images, video, sounds, and text, live behavior comes to us whole and can be studied qualitatively or quantitatively. Judges of gymnastics or figure skating or diving evaluate behavioral events qualitatively. Then, they boil down their qualitative analysis into a single proxy number (from 1 to 10).

(Continued)

(Continued)

Much of the research done on live behavior starts with a search for nameable patterns (themes), followed by coding of the behavior stream and analysis of the codes. This is really the same exercise as coding artifacts or texts. The qualitative study of the data (the naming of themes) allows us to tag the data and look for patterns.

Live behavior has to be observed in order to be recorded, but since much of it is impossible to observe directly, most research on behavior is actually based on **reported behavior** or on videos.

Interestingly, until recently, there has been no way to collect data outside the laboratory on taste or smell. The only easily accessible olfactory and gustatory data we have come from our memories. Wine aficionados have developed an elaborate vocabulary about tastes and smells—a vocabulary that turns memory into exchangeable information. We know how important taste and smell are to people—try talking about ethnicity in the United States without referring to burritos and lasagnas and bagels and mousakas and pirogis. Kern et al. (2014), however, are developing easy-to-use tools for collecting olfactory data in the field, and we expect this to create opportunities for research.

Table 1.2 shows the **five kinds of qualitative data**, broken down by size and accessibility. Material objects range from personal trinkets to grass huts to vast remains of ancient cities. Videos can be 30-second commercials or three-hour epic pictures. Still images range from stick figures drawn by children to magazine covers to the work of graffiti artists on the walls of a city.

Texts can be single-word answers to questions, the complete works of Shakespeare, or transcribed narratives from ethnographic interviews. Data from public sources are more accessible than are data from private ones.

1. Physical Objects

For archeologists who study preliterate societies—societies that flourished prior to written communication—physical remains may be the only data available. The study of material culture, however, is not limited to societies of the distant past. Beginning in the late 15th century, the Age of Discovery in Europe produced an enormous market for material objects from societies around the world, and by the late 19th century, anthropologists in Germany, Britain, and the United States were avid collectors of artifacts for public museums.

Today, museums are repositories of data about ancient cultures and about everyday life in modern societies across the world. They provide us with a living record of

Table 1.2 Kinds of Qualitative Data Based on Form, Size, and Accessibility

	Small		Large	
	Accessibility			
Form	Public	Private	Public	Private
Physical Objects	Park sculptures, street signs, pottery shards, store merchandise	Personal jewelry, pill bottles, blood samples	Archaeological ruins, buildings, houses, universities, skyscrapers	Household garbage, clothing
Still Images	Magazine ads, cave art, billboards, web pages, paintings hung in museums	Doodles, line sketches, family portraits, patient X-rays	Large detailed murals, art exhibits	Family albums, art portfolios, CAT scans
Sounds	Jingles, radio ads, intercom announcements, messages you hear while on hold	Memo dictation, answering machine messages, elevator conversations	Political speeches, sports play-by-plays, music albums, focus group tape recordings	Oral histories, demo sound-tracks, in-depth conversations, clinical interviews
Moving Images: Video	TV ads, news footage, sitcoms	Home-movie clips	Full-length movies, documentaries, television programs	Long video recordings of family reunions and special events, like weddings
Texts	Epitaphs, obituaries, personal ads, political buttons, parking tickets	Thank-you letters, shopping lists, short responses to interview questions, emails	Books, manuals, religious tomes, court transcripts, congressional record, newspapers	Diaries, detailed correspondence, private chat-room discussions

the diversity of human religious, political, and economic activity, and social scientists from many disciplines continue to study human interaction with material objects.

Researchers in marketing and consumer behavior, of course, are vitally interested in material culture (D. Miller 1987). Students of the world's religions collect and analyze icons and talismans (Handloff 1982; McColl 1982). Education researchers study the consumer habits of students (Pedrozo 2011).

Anthropologists have long used material possessions as indicators of status, prestige, and wealth in a community (DeWalt 1979). Ryan (1995), for example, found that the presence or absence of certain material objects—things like toilets, televisions, cars, corn mills, lamps—in the homes of African villagers predicted the kind of medical treatment that people sought. (**Further Reading**: material culture and museums)

2. Still Images

For art historians, media and communication specialists, and those who study popular culture, images, both still and moving, are a standard form of data. As early as 1919, Alfred Kroeber analyzed pictures in American and French fashion magazines and found "an underlying pulsation in the width of civilized women's skirts, which is symmetrical and extends in its up and down beat over a full century; and an analogous rhythm in skirt length, but with a period of only about a third the duration" (Kroeber 1919:257).

Since then, there have been hundreds of social science studies using still images as basic data. These data include greeting cards (Bridges 1993; West 2010), comic strips (Yasumoto and LaRossa 2010), pictures in ads (Goffman 1979), photographs (Drazin and Frolich 2007), and images from photo-sharing web sites (Stepchenkova and Zhan 2013).

Malkin et al. (1999) analyzed the covers of 12 popular women's magazines (*Ladies Home Journal*, *Cosmopolitan*, etc.) and nine popular men's magazines (*Esquire*, *Sports Illustrated*, etc.). The culturally patterned messages are clear: Men are enjoined to expand their knowledge, hobbies, and activities, while women are enjoined to improve their life by losing weight and doing other things to change their appearance. (**Further Reading**: analyzing still images)

3. Sounds

Audio data—electrical representations of sounds—include recordings of things like music, narratives, jokes, speeches, radio programs, and interviews. We're not talking here about the substantive content of these data. If you record and transcribe doctors and patients during examinations or husbands and wives during counseling sessions or pupils and teachers in classrooms, you create a set of texts. You can analyze those texts for their thematic content (we'll talk about this in Chapters 5 and 6), but important parts of these interactions can be found only in their **prosodic features**—tone of voice, pitch, cadence, rhythm, and so on.

In a classic study, Labov and Waletzky (1997) used recorded narratives to understand differences in class and ethnic markers of black and white American speech. Joel Sherzer (1994) compared a recorded, two-hour traditional chant by Chief Olopinikwa of the San Blas Kuna Indians in Panama, with a phonetic transcription of the event. The transcription left out the chanted utterances of the responding chief (usually something like "so it is"), which was key to understanding the verse structure of the chant.

This may seem like an exotic example, but it really isn't. It's just an example from a language that's exotic to speakers of English of something that goes on in all

story-telling, in all languages: The use of prosodic features convey meaning in human speech. If you want to pursue this kind of linguistic analysis of discourse, see Wennerstrom (2001a). (**Further Reading**: prosody and narrative)

4. Moving Images: Video

Moving images, or what we call video in the rest of this book, combines the power of images and sounds through time. Scholars in film studies, sociologists, political scientists, and researchers in gender and media studies have become expert in analyzing video documents such as films, television programs and commercials, political ads, and even home-made movies.

Cowan and O'Brian (1990), for example, studied 474 cases of "victims" in slasher movies. Surviving as a female slasher victim, it turns out, is strongly associated with the absence of sexual behavior and with being less physically attractive than nonsurviving women. The male nonsurvivors were cynical, egotistical, and dictatorial. Cowan and O'Brien conclude that, in slasher films, sexually pure women survive and that "unmitigated masculinity" ends in death (1990:195).

The Third International Mathematics and Science Study, or TIMSS, was a massive study of how math and science were taught in the 1990s in 41 countries around the world. One part of the TIMSS effort was the intensive study of instructional practices and lesson content in three countries, Japan, Germany, and the United States. Researchers studied videotapes of eighth-grade classrooms in the three countries and found very different teaching styles.

In the United States and Germany, students spent nearly all their time practicing routine procedures to learn math. In Japan, students spent less than half their time on this kind of learning and a lot of time figuring out new solutions to standard problems—an effort that stimulates conceptual, rather than rote, thinking about mathematics (Jacobs et al. 2007; Stigler et al. 1999:vii). (**Further Reading**: analyzing video)

5. Texts

By far the largest trove of qualitative data are the mountains of written texts that have been produced over the centuries. Scholars from across the social and behavioral sciences—humanists and positivists alike—have analyzed newspaper articles, novels, congressional reports, brochures published by hate groups, personal want ads, court records, diaries, email messages, personal web-pages, blogs, and so on.

Most of this book is about analyzing this kind of qualitative data, but almost everything we have to say about finding themes, coding themes, and analyzing text can be applied as easily to objects, images, and sounds as they can to words.

Key Concepts in This Chapter

analysis of qualitative data
qualitative analysis of data
qualitative analysis of qualitative data
mixed-methods movement
quantitative analysis of qualitative data
quantitative analysis of quantitative data
qualitative analysis of quantitative data
reductions of our experience
archeological record of experience
the qual–quant debate
positivist tradition in the social sciences
humanist tradition in the social sciences
epistemology
Protagoras' dictum that "man is the measure of all things"
Lucretius's observation about the material nature of all things
four main objectives in qualitative research
exploration, description, comparison, model testing
physical objects, still images, sounds, moving images, text
reported behavior
five kinds of qualitative data
prosodic features

Summary

- The phrase "qualitative data analysis" can mean "the analysis of qualitative data" or "the qualitative analysis of data."
  - Since data and analysis can be either qualitative or quantitative, there are four possibilities: qualitative analysis of qualitative data; qualitative analysis of quantitative data; quantitative analysis of qualitative data; and quantitative analysis of quantitative data.
- Looking for regularities is analysis. Regularities can be detected in either qualitative or quantitative data.
- The phrase "mixed methods" is barely 25 years old, but all sciences rely on qualitative and quantitative data and on qualitative and quantitative analysis.
- Data are reductions of experience.
  - When we reduce our experience or observations of things to numbers, the result is quantitative data. When we reduce our experience of things to words or images, the result is qualtitative data.
  - Most of the record about human thought and behavior comes to us as naturally occurring qualitative data
- All data, qualitative and quantitative, are selections of what's available and are constructed by researchers to address specific questions.
  - People make those selections. This subjective component does not invalidate the effort to produce data. It reminds us that there is a human component to science, just as there is in art, or government, or commerce.

- The qual–quant debate reflects principled stands by those who identify with the positivist, or scientific tradition in the social sciences, and humanist tradition, dating to the Roman poet, Lucretius (94–49 BCE) and the Greek philosopher, Protagoras (485–410 BCE), respectively.
    - The distinction between quantitative and qualitative is not the same as the difference between science and humanism. Much of science is based on qualitative data and qualitative analysis, and many scientists whose work is highly quantitative consider themselves to be humanists.
- There are four main objectives in qualitative research: exploration, description, comparison, and testing of models.
    - At the start of a research project, a lot of detail in data collection is desirable. You can always generalize from specifics, but you can never go the other way.
- Qualitative data come to us in five forms: physical objects, still images, sounds, moving images, and written words.
    - These five kinds of qualitative data are distinguished by size and accessibility (public vs. private).

Further Reading

The qual–quant problem. Allwood (2012), Bryman (1984, 1988), Hanson (2008), Howe (1988), Guba and Lincoln (1994), King et al. (1994), Rossi (1994), Sandelowski et al. (2012), Tashakkori and Teddlie (1998).

Material culture and museums. Some examples of the role of museums and their artifacts in shaping culture include Coombes (1994), Hilden and Huhndorf (1999), and Taylor (1995).

Modern material culture. See the *Journal of Material Culture*, the *Journal of Social Archaeology*, and the *Journal of Consumer Culture*. See Dant (2005, 2006) for an overview. On clothing and fashion, see Crane and Bovone (2006). See Haldrup and Larsen (2007) on the importance of material objects in the study of tourism. For example, Holly and Cordy (2007) analyze the detritus left by visitors to gravesites as a way to document behavior (like vandalism, magic, legend tripping, and partying) that would be difficult to observe directly without long-term, participant observation research. On culture and consumption, see McCracken (1988, 2005).

On material culture as a reflection of gender roles, see Chatterjee (2007). See Cavanaugh (2007) on how the production of a particular kind of food became a symbol for a town in Italy. See Öztürkmen (2003) for how material artifacts are used in the creation of nostalgic narratives about the past.

Analyzing still images. Work on using still images as data include Ball and Smith (1992), Capello (2005), Clark and Zimmer (2001), Gardner (1990), Lawson and Wardle (2013), Rendon and Guerda (2012), Táboas-Pais and Rey-Cao (2013), and Wondergem and Friedlmeier (2012).

Prosody and narrative. Examples of research on prosodic features of narrative include Attardo et al. (2011), Lawson (2012), Pickering et al. (2009), and Wennerstrom (2001b).

Analyzing video. There is a very large literature on the use of film, video, and still images as qualitative data. Major works covering all of these media include Chaplin (1994), Collier and Collier (1986 [1967]), El Guindi (2004), Harper (2012), Hockings (2003), and van Leeuwen and Jewitt (2001). Some recent studies based on analyzing video include DeCuir-Gunby et al. (2012), Henry and Fetters (2012), and Lomax et al. (2011). See also the journals *Visual Studies*, *Visual Anthropology*, and *Visual Anthropology Review*.

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