Institute of Education

UCL

Copyright Notice

Staff and students of the Institute of Education are reminded that copyright subsists in this extract and the work from which it is taken. This digital copy has been made under the terms of a CLA licence which allows you to:

- Access and download a copy:
- Print out a copy

This digital copy and any digital or printed copy supplied to or made by you under the terms of this licence are for use in connection with this course of study. You may retain such copies after the end of the course, but strictly for your own personal use.

All copies (including electronic copies) shall include this Copyright Notice and shall be destroyed and/or deleted if and when required by the Institute of Education.

Except as provided for by copyright law, no further copying, storage or distribution (including by email) is permitted without the consent of the copyright holder.

The author (which term includes artists and other visual creators) has moral rights in the work and neither staff nor students may cause, or permit, the distortion, mutilation or other modification of the work, or any other derogatory treatment of it, which would be prejudicial to the honour or reputation of the author.

Course of Study: Qualitative Social Science Research Methods

Name of Designated Person authorising scanning: Andrew Welshman

Babbie, E. R. (2007). ‘Qualitative Data Processing’. In E. R. Babbie, *The Practice of Social Research,* (pp. 384-390). Belmont, CA: Wadsworth Publishing.

available to researchers. Now let's look at some of the data-processing and data-analysis techniques commonly used in qualitative research.

Qualitative Data Processing

Let me begin this section with a warning. The activity we're about to examine is as much art as science. At the very least, there are no cut-and-dried steps that guarantee success.

It's a lot like learning how to paint with watercolors or compose a symphony. Education in such activities is certainly possible, and university courses are offered in both. Each has its own conventions and techniques as well as tips you may find useful as you set out to create art or music. However, instruction can carry you only so far. The final product must come from you. Much the same can be said of qualitative data processing.

This section presents some ideas relating to the coding of qualitative data, writing memos, and mapping concepts graphically. Although far from a "how-to" manual, these ideas give a useful starting point for finding order in qualitative data.

Coding

Whether you've engaged in participant observation, in-depth interviewing, collecting biographical narratives, doing content analysis, or some other form of qualitative research, you'll now be in the possession of a growing mass of data—most typically in the form of textual materials. Now what do you do?

The key process in the analysis of qualitative social research data is *coding*—classifying or categorizing individual pieces of data—coupled with some kind of retrieval system. Together, these procedures allow you to retrieve materials you may later be interested in.

Let's say you're chronicling the growth of a social movement. You recall writing up some notes about the details of the movement's earliest beginnings. Now you need that information. If all your notes have been catalogued by topic, retrieving those you need should be straightforward. As a simple format for coding and retrieval, you might have created a set of file folders labeled with various topics, such as "History." Data retrieval in this case means pulling out the "History" folder and rifling through the notes it contains until you find what you need.

As you'll see later in this chapter, there are now sophisticated computer programs that allow for a faster, more certain, and more precise retrieval process. Rather than looking through a "History" file, you can go directly to notes dealing with the "Earliest History" or the "Founding" of the movement.

Coding has another, even more important purpose. As discussed earlier, the aim of data analysis is the discovery of patterns among the data, patterns that point to theoretical understandings of social life. The coding and relating of concepts is key to this process and requires a more refined system than a set of manila folders. In this section, we'll assume that you'll be doing your coding manually. The next section of the chapter will illustrate the use of computer programs for qualitative data analysis.

Coding Units

As you may recall from the earlier discussion of content analysis, for statistical analysis it's important to identify a standardized unit of analysis prior to coding. If you were comparing American and French novels, for example, you might evaluate and code sentences, paragraphs, chapters, or whole books. It would be important, however, to code the same units for each novel analyzed. This uniformity is necessary in a quantitative analysis, as it allows us to report something like "23 percent of the paragraphs contained metaphors." This is only possible if we've coded the same unit—paragraphs—in each of the novels.

Coding data for a qualitative analysis, however, is quite different. The *concept* is the organizing principle for qualitative coding. Here the units of text appropriate for coding will vary within a given document. Thus, in a study of organizations, "Size" might require only a few words per coding unit, whereas "Mission" might take a few pages. Or, a lengthy description of a heated stockholders meeting might be coded as "Internal Dissent."

Realize also that a given code category may be applied to text materials of quite different lengths. For example, some references to the organization's mission may be brief, others lengthy. Whereas standardization is a key principle in quantitative analysis, this is not the case in qualitative analysis.

Coding as a Physical Act

Before continuing with the logic of coding, let's take a moment to see what it actually looks like. John and Lyn Lofland (1995: 188) offer this description of manual filing:

> Prior to the widespread availability of personal computers beginning in the late 1980s, coding frequently took the specific physical form of *filing*. The researcher established an expanding set of file folders with code names on the tabs and physically placed either the item of data itself or a note that located it in the appropriate file folder. . . . Before photocopying was easily available and cheap, some fieldworkers typed their fieldnotes with carbon paper, wrote codes in the margins of the copies of the notes, and cut them up with scissors. They then placed the resulting slips of paper in corresponding file folders.

As the Loflands point out, personal computers have greatly simplified this task. However, the image of slips of paper that contain text and are put in folders representing code categories is useful for understanding the process of coding. In the next section, when I suggest that we code a textual passage with a certain code, imagine that we have the passage typed on a slip of paper and that we place it in a file folder bearing the name of the code. Whenever we assign two codes to a passage, imagine placing duplicate copies of the passage in two different folders representing the two codes.

Creating Codes

So, what should your code categories be? Glaser and Strauss (1967: 101f) allow for the possibility of coding data for the purpose of testing hypotheses that have been generated by prior theory. In that case, then, the codes would be suggested by the theory, in the form of variables.

In this section, however, we're going to focus on the more common processes of *open coding, axial coding* and *selective coding*. Strauss and Corbin (1998: 102) describe **open coding** as follows:

> To uncover, name, and develop concepts, we must open up the text and expose the thoughts, ideas, and meanings contained therein. Without this first analytic step, the rest of the analysis and the communication that follows could not occur. Broadly speaking, during open coding, data are broken down into discrete parts, closely examined, and compared for similarities and differences. Events, happenings, objects, and actions/interactions that are found to be conceptually similar in nature or related in meaning are grouped under more abstract concepts termed "categories."

Although the analysis of data will quickly advance to an iterative interplay of the three types of coding, open coding is the logical starting point. Beginning with some body of text (part of an interview, for example), you read and reread a passage, seeking to identify the key concepts contained within it. Any particular piece of data may be given several codes, reflecting as many concepts. For example, notice all the concepts contained in this comment by a student interviewee:

> I thought the professor should have given me at least partial credit for the homework I turned in.

Some obvious codes are "Professor," "Homework," and "Grading." The result of open coding is the identification of numerous concepts relevant to the subject under study. The open coding of more and more text will lengthen the list of codes.

open coding The initial classification and labeling of concepts in qualitative data analysis. In open coding, the codes are suggested by the researchers' examination and questioning of the data.

Axial coding aims to identify the *core* concepts in the study. Although axial coding uses the results of open coding, more concepts can be identified through continued open coding after the axial coding has begun. Axial coding involves a regrouping of the data, in which the researcher uses the open code categories and looks for more analytical concepts. For example, the passage just given also carries the concept of "perceptions of fairness," which might appear frequently in the student interviews, thereby suggesting that it's an important element in understanding students' concerns. Another axial code reflected in the student comment might be "power relationships," because the professor is seen to exercise power over the student.

Selective coding seeks to identify *the* central code in the study: the one that the other codes all related to. Both of the axial codes just mentioned might be restructured as aspects of a more general concept: "professor–student relationships." Of course, in a real data analysis, decisions such as the ones we've been discussing would arise from masses of textual data, not from a single quotation. The basic notion of the Grounded Theory Method is that patterns of relationships can be teased out of an extensive, in-depth examination of a large body of observations.

Here's a concrete example to illustrate how you might engage in this form of analysis. Suppose you're interested in the religious bases for homophobia. You've interviewed some people opposed to homosexuality who cite a religious basis for their feelings. Specifically, they refer you to these passages in the Book of Leviticus (Revised Standard Version):

18:22 You shall not lie with a male as with a woman; it is an abomination.

20:13 If a man lies with a male as with a woman, both of them have committed an abomination; they shall be put to death, their blood is upon them.

Although the point of view expressed here seems unambiguous, you might decide to examine it in more depth. Perhaps a qualitative analysis of Leviticus can yield a fuller understanding of where these injunctions against homosexuality fit into the larger context of Judeo-Christian morality.

Let's start our analysis by examining the two passages just quoted. We might begin by coding each passage with the label "Homosexuality." This is clearly a key concept in our analysis. Whenever we focus on the issue of homosexuality in our analysis of Leviticus, we want to consider these two passages.

Because homosexuality is such a key concept, let's look more closely into what it means within the data under study. We first notice the way *homosexuality* is identified: a man lying with a man "as with a woman." Although we can imagine a lawyer seeking admission to heaven saying, "But here's my point; if we didn't actually lie down . . ." it seems safe to assume the passage refers to having sex, though what specific acts might or might not be included isn't clear.

Notice, however, that the injunctions appear to concern *male* homosexuality only; lesbianism is not mentioned. In our analysis, then, each of these passages might also be coded "Male Homosexuality." This illustrates two more aspects of coding: (1) Each unit can have more than one code and (2) hierarchical codes (one included within another) can be used. Now each passage has two codes assigned to it.

An even more general code might be introduced at this point: "Prohibited Behavior." This is important for two reasons. First, homosexuality is not inherently wrong, from an analytical standpoint. The purpose of the study is to examine the way it's made wrong by the religious texts in question. Second, our study of Leviticus may turn up other behaviors that are prohibited.

There are at least two more critical concepts in the passages: "Abomination" and "Put to Death." Notice that although these are clearly related to "Prohibited Behavior," they are hardly the same.

axial coding A reanalysis of the results of open coding in Grounded Theory Method, aimed at identifying the important, general concepts.

selective coding In Grounded Method Theory, this analysis builds on the results of open coding and axial coding to identify the central concept that organizes the other concepts that have been identified in a body of textual materials.

Parking without putting money in the meter is prohibited, but few would call it an abomination and fewer still would demand the death penalty for that transgression. Let's assign these two new codes to our first two passages.

At this point, we want to branch out from the two key passages and examine the rest of Leviticus. We therefore examine and code each of the remaining chapters and verses. In our subsequent analyses, we'll use the codes we have already and add new ones as appropriate. When we do add new codes, it will be important to review the passages already coded to see whether the new codes apply to any of them.

Here are the passages we decide to code "Abomination." (I've boldfaced the abominations.)

7:18 If any of the flesh of the sacrifice of **his peace offering is eaten on the third day**, he who offers it shall not be accepted, neither shall it be credited to him; it shall be an abomination, and he who eats of it shall bear his iniquity.

7:21 And if any one **touches an unclean thing**, whether the uncleanness of man or an unclean beast or any unclean abomination, **and then eats of the flesh of the sacrifice** of the LORD's peace offerings, that person shall be cut off from his people.

11:10 But **anything in the seas or the rivers that has not fins and scales**, of the swarming creatures in the waters and of the living creatures that are in the waters, is an abomination to you.

11:11 They shall remain an abomination to you; **of their flesh you shall not eat, and their carcasses you shall have in abomination**.

11:12 **Everything in the waters that has not fins and scales** is an abomination to you.

11:13 And these you shall have in abomination among the birds, they **shall not be eaten**, they are an abomination: the **eagle**, the **vulture**, the **osprey**,

11:14 the **kite**, the **falcon** according to its kind,

11:15 every **raven** according to its kind,

11:16 the **ostrich**, the **nighthawk**, the **sea gull**, the **hawk** according to its kind,

11:17 the **owl**, the **cormorant**, the **ibis**,

11:18 the **water hen**, the **pelican**, the **carrion vulture**,

11:19 the **stork**, the **heron** according to its kind, the **hoopoe**, and the **bat**.

11:20 **All winged insects that go upon all fours** are an abomination to you.

11:41 **Every swarming thing** that swarms upon the earth is an abomination; it shall not be eaten.

11:42 Whatever goes on its belly, and whatever goes on all fours, or whatever has many feet, all the **swarming things** that swarm upon the earth, you shall not eat; for they are an abomination.

11:43 You shall not make yourselves abominable with **any swarming thing that swarms**; and you shall not defile yourselves with them, lest you become unclean.

18:22 You shall not **lie with a male as with a woman**; it is an abomination.

19:6 It shall be eaten the same day you offer it, or on the morrow; and anything left over until the third day shall be burned with fire.

19:7 **If it is eaten at all on the third day**, it is an abomination; it will not be accepted,

19:8 and every one who eats it shall bear his iniquity, because he has profaned a holy thing of the LORD; and that person shall be cut off from his people.

20:13 **If a man lies with a male as with a woman**, both of them have committed an abomination; they shall be put to death, their blood is upon them.

20:25 You shall therefore make a distinction between the clean beast and the unclean, and between the unclean bird and the clean; **you shall not make yourselves abominable by beast or by bird or by anything with which the ground** teems, which I have set apart for you to hold unclean.

Male homosexuality, then, isn't the only abomination identified in Leviticus. As you compare these passages, looking for similarities and differences, it will become apparent that most of the abominations have to do with dietary rules—specifically those potential foods deemed "unclean." Other abominations flow from the mishandling of ritual sacrifices. "Dietary Rules" and "Ritual Sacrifices" thus represent additional codes to be used in our analysis.

Earlier, I mentioned the death penalty as another concept to be explored in our analysis. When we take this avenue, we discover that many behaviors besides male homosexuality warrant the death penalty. Among them are these:

20:2 Giving your children to Molech (human sacrifice)
20:9 Cursing your father or mother
20:10 Adultery with your neighbor's wife
20:11 Adultery with your father's wife
20:12 Adultery with your daughter-in-law
20:14 Taking a wife and her mother also
20:15 Men having sex with animals (the animals are to be killed, also)
20:16 Women having sex with animals
20:27 Being a medium or wizard
24:16 Blaspheming the name of the Lord
24:17 Killing a man

As you can see, the death penalty is broadly applied in Levicitus: everything from swearing to murder, including male homosexuality somewhere in between.

An extended analysis of prohibited behavior, short of abomination and death, also turns up a lengthy list. Among them are slander, vengeance, grudges, cursing the deaf, and putting stumbling blocks in front of blind people. In chapter 19, verse 19, Leviticus quotes God as ordering, "You shall not let your cattle breed with a different kind; you shall not sow your field with two kinds of seed; nor shall there come upon you a garment of cloth made of two kinds of stuff." Shortly thereafter, he adds, "You shall not eat any flesh with the blood in it. You shall not practice augury or witchcraft. You shall not round off the hair on your temples or mar the edges of your beard." Tattoos were prohibited, though Leviticus is silent on body piercing. References to all of these practices would be coded "Prohibited Acts" and perhaps given additional codes as well (recall "Dietary Rules").

I hope this brief glimpse into a possible analysis will give you some idea of the process by which codes are generated and applied. You should also have begun to see how such coding would allow you to better understand the messages being put forward in a text and to retrieve data appropriately as you need them.

Memoing

In the Grounded Theory Method, the coding process involves more than simply categorizing chunks of text. As you code data, you should also be using the technique of **memoing**—writing memos or notes to yourself and others involved in the project. Some of what you write during analysis may end up in your final report; much of it will at least stimulate what you write.

In GTM, these memos have a special significance. Strauss and Corbin (1998: 217) distinguish three kinds of memos: code notes, theoretical notes, and operational notes.

Code notes identify the code labels and their meanings. This is particularly important because, as in all social science research, most of the terms we use with technical meanings also have meanings in everyday language. It's essential, therefore, to write down a clear account of what you mean by the codes used in your analysis. In the Leviticus analysis, for example, you would want a code note regarding the meaning of "Abomination" and how you've used that code in your analysis of text.

memoing Writing memos that become part of the data for analysis in qualitative research such as grounded theory. Memos can describe and define concepts, deal with methodological issues, or offer initial theoretical formulations.

Theoretical notes cover a variety of topics: reflections of the dimensions and deeper meanings of concepts, relationships among concepts, theoretical propositions, and so on. All of us have ruminated over the nature of something, trying to think it out, to make sense out of it. In qualitative data analysis, it's vital to write down these thoughts, even those you'll later discard as useless. They will vary greatly in length, though you should limit them to a single main thought so that you can sort and organize them later. In the Leviticus analysis, one theoretical note might discuss the way that most of the injunctions implicitly address the behavior of *men*, with women being mostly incidental.

Operational notes deal primarily with methodological issues. Some will draw attention to data-collection circumstances that may be relevant to understanding the data later on. Others will consist of notes directing future data collection.

Writing these memos occurs throughout the data-collection and analysis process. Thoughts demanding memos will come to you as you reread notes or transcripts, code chunks of text, or discuss the project with others. It's a good idea to get in the habit of writing out your memos as soon as possible after the thoughts come to you.

John and Lyn Lofland (1995: 193f) speak of memoing somewhat differently, describing memos that come closer to the final writing stage. The *elemental memo* is

> a detailed analytic rendering of some relatively specific matter. Depending on the scale of the project, the worker may write from one to several dozen or more of these. Built out of selective codes and codings, these are the most basic prose cannon fodder, as it were, of the project.
>
> *(1995: 194)*

The *sorting memo* is based on several elemental memos and presents key themes in the analysis. Whereas we create elemental memos as they come to mind, with no particular rhyme nor reason, we write sorting memos as an attempt to discover or create reason among the data being analyzed. A sorting memo will bring together a set of related elemental memos. A given project may see the creation of several sorting memos dealing with different aspects of the project.

Finally, the *integrating memo* ties together the several sorting memos to bring order to the whole project. It tells a coherent and comprehensive story, casting it in a theoretical context. In any real project, however, there are many different ways of bringing about this kind of closure. Hence, the data analysis may result in several integrating memos.

Notice that whereas we often think of writing as a linear process, starting at the beginning and moving through to the conclusion, memoing is very different. It might be characterized as a process of creating chaos and then finding order within it.

To explore this process further, refer to the works cited in this discussion and at the end of the chapter. You'll also find a good deal of information on the web. For Barney Glaser's rules on memoing, for example, you might go to http://www.vlsm.org/gnm/gnm-gtm3.html. Ultimately, the best education in this process comes from practice. Even if you don't have a research project underway, you can practice now on class notes. Or start a journal and code it.

Concept Mapping

It should be clear by now that qualitative data analysts spend a lot of time committing thoughts to paper (or to a computer file), but this process is not limited to text alone. Often, we can think out relationships among concepts more clearly by putting the concepts in a graphical format, a process called **concept mapping**. Some researchers put all their major concepts on a single sheet of paper, whereas others spread their thoughts across several sheets of paper, blackboards, magnetic boards, computer pages, or other media. Figure 13-3 shows how we might think out some of the concepts of Goffman's

concept mapping The graphical display of concepts and their interrelations, useful in the formulation of theory.

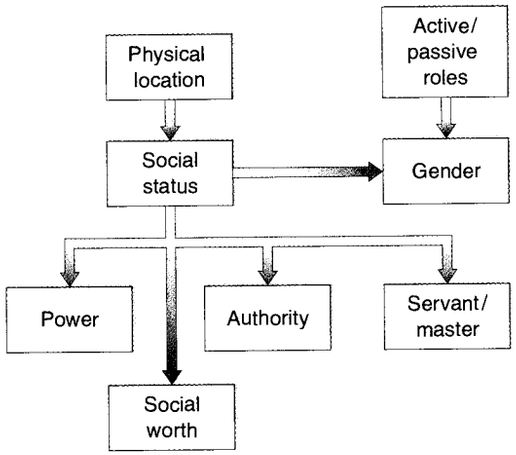

FIGURE 13-3
An Example of Concept Mapping

examination of gender and advertising. (This image was created through the use of Inspiration, a concept-mapping computer program.)

Incidentally, many of the topics discussed in this section have useful applications in quantitative as well as qualitative analyses. Certainly, concept mapping is appropriate in both types of analysis. The several types of memos would also be useful in both. And the discussion of coding readily applies to the coding of open-ended questionnaire responses for the purpose of quantification and statistical analysis. (We'll look at coding again in the next chapter, on quantifying data.)

Having noted the overlap of qualitative and quantitative techniques, it seems fitting now to address an instrument that is primarily associated with quantitative research but that is proving quite valuable for qualitative analysts as well—the personal computer.

Computer Programs for Qualitative Data

The advent of computers—mainframe and personal—has been a boon to quantitative research, allowing the rapid calculation of extremely complex statistics. The importance of the computer for qualitative research has been somewhat more slowly appreciated. Some qualitative researchers were quick to adapt the basic capacities of computers to nonnumerical tasks, but it took a bit longer for programmers to address the needs of qualitative research per se. Today, however, several powerful programs are available.

Let's start this section with a brief overview of some of the ways you can use basic computer tools in qualitative research. Perhaps only those who can recall hours spent with carbon paper and White-Out can fully appreciate the glory of computers in this regard. "Easier editing" and "easier duplication" simply do not capture the scope of the advance.

Moving beyond the basic recording and storage of data, simple word-processing programs can be used for some data analysis. The "find" or "search" command will take you to passages containing keywords. Or, going one step further, you can type code words alongside passages in your notes so that you can search for those keywords later.

Database and spreadsheet programs can also be used for processing and analyzing qualitative data. Figure 13-4 is a simple illustration of how some of the verses from Leviticus might be manipulated within a spreadsheet. The three columns to the left represent three of the concepts we've discussed. An "X" means that the passage to the right contains that concept. As shown, the passages are sorted in such a way as to gather all those dealing with punishment by death. Another simple "sort" command would gather all those dealing with sex, with homosexuality, or any of the other concepts coded.

This brief illustration should give you some idea of the possibilities for using readily available programs as tools in qualitative data analysis. Happily, there are now a large number of programs created specifically for that purpose. Here's an excellent list prepared by sociologists at the University of Surrey, England (http://www.soc.surrey.ac.uk/sru/SRU1.html):

The Ethnograph
HyperQual
HyperResearch
HyperSoft

sex	homosex	death	Verse	Passage
X	X	X	20:13	If a man lies with a male as with a woman, both of them have committed an abomination; they shall be put to death, their blood is upon them.
X		X	20:12	If a man lies with his daughter-in-law, both of them shall be put to death; they have committed incest, their blood is upon them.
X		X	20:15	If a man lies with a beast, he shall be put to death; and you shall kill the beast.
		X	20:09	For every one who curses his father or his mother shall be put to death; he has cursed his father or his mother, his blood is upon him.
		X	20:02	Any man of the people of Israel, or of the strangers that sojourn in Israel, who gives any of his children to Molech shall be put to death.
X	X		18:22	You shall not lie with a male as with a woman; it is an abomination.

FIGURE 13-4
Using a Spreadsheet for Qualitative Analysis

NUD*IST
Qualrus
QUALOG
Textbase Alpha
SONAR
Atlas.ti

This website also provides a brief description of each of the programs listed, along with the price and contact, where available.

*Leviticus as Seen through NUD*IST*

Let's take a closer look at how qualitative data analysis programs operate, by considering one of the programs just mentioned, NUD*IST (Nonnumeric Unstructured Data, Index Searching, and Theorizing). Although each of the programs has somewhat different features and different approaches to analysis, NUD*IST is one of the most popular programs, and it offers a fairly representative view of the genre. We'll begin with a brief examination of Leviticus, and then we'll examine a project focused on understanding the experiences of women film directors.

Although it is possible to type directly into NUD*IST the text materials to be coded, usually materials already in existence—such as field notes or, in this case, the verses of Leviticus—are *imported* into the program. Menu-based commands do this easily, though the text must be in a *plaintext* format (i.e., without word-processing or other formatting).

Figure 13-5 shows how the text is displayed within NUD*IST. For the illustrations in this section, I've used the Macintosh version of NUD*IST. I'll use the Windows version in the film director illustration, so you can note the difference and similarities in the two platforms.

To see the document, select its name in the "Document Explorer" window and click "Browse." The text window can be resized and moved around the screen to suit your taste.

Note the set of buttons in the upper right corner of the illustration. These allow you to select portions of the text for purposes of editing, coding, and other operations.

Now let's create a concept code: "homosex." This will stand for references to male homosexuality. Figure 13-6 shows what the creation of a concept code looks like.

As we create codes for our concepts, we can use them to code the text materials. Figure 13-7 illustrates how this is done. In the document browser, you can see that verse 20:13 has been