

**Doing Real Research:  
Relentlessly Practical Guide to Social Research**

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***Chapter 12 – How to do Qualitative Data Analysis***

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## Chapter 1: How to do Qualitative Data Analysis

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**This chapter covers the following topics:**

- Accounting for context in your analysis
- Identifying and evidencing patterns in your data
- Using comparisons to understand your data
- Developing explanations
- Using qualitative data analysis software
- Ensuring the quality of your qualitative data analysis
- Evaluating alternative models of qualitative analysis

**1.1 Introduction**

Qualitative data analysis is the process of identifying patterns in written information, audio recordings, videos or images. There are no universally accepted rules for this process that define step-by-step what you must do. You should be thorough and detailed in your approach. But there are different, fully valid pathways to arrive at a good understanding of your data.

Qualitative research is open-ended by nature and relies on your judgement to find patterns through the haze of words in your audio recordings or transcripts. While such judgement can be personal and subjective, techniques specified in this chapter can help ensure your analysis is systematic. Qualitative analysis is not about writing an opinion on a research topic, or selecting a couple of quotes that support an argument you already wanted to make. You must develop a clear analytical route from your data to specific patterns, and ultimately to a written report containing representative examples from your data that show these patterns.

In this chapter, we walk you through how to analyze common types of qualitative data, such as interview transcripts, qualitative survey responses and images (e.g., photographs or drawings). For advice on conducting qualitative analysis of video data,

see *Video in Qualitative Research* (Heath, Hindmarsh, & Luff, 2010). For guidance on full-scale ethnographic analysis, see *For Ethnography* (Atkinson, 2015) and *Ethnography: Step-by-Step* (Fetterman, 2010). These sources are discussed in the Further Readings section.

We explain in detail how a close reading of your qualitative data can draw out its nuances in order to reveal:

- How people perceive their world and their place in it.
- How people make sense of their experiences.
- How people interact with each other and their communities.
- How social, political and economic forces affect people's lives.

It's easy to feel overwhelmed when you start your qualitative data analysis, but if you follow this chapter's step-by-step advice you'll find the process manageable and even enjoyable!

**Top Tips: Start thinking analytically early on**

Even during your data collection, you should be thinking critically and analytically about the data you're gathering. Ask yourself questions such as, how does information collected in an interview align with previous interviews you've conducted? What trends are beginning to emerge? This process can be aided by starting to transcribe recordings of your interviews or focus groups during the data collection phase (transcription often takes longer than you anticipate so it makes sense to start early anyway).

The ideas you have at the early stages of your research can give you a strong head start on your main analysis phase so that you don't feel you have such a steep hill to climb when you reach that phase. There are a number of other benefits to laying down some initial seeds for your data analysis during the data collection phase. First, you can identify gaps in your data that could be filled through your remaining data collection. Second, it gives you a sense of the types of themes and data trends that are emerging from the data so that you can start reflecting on their importance, implications and relevance for your research. These themes and trends can also be further explored in subsequent data collection. Third, starting your data analysis early gives your initial observations and explanations time to mature in the back of your mind before you have to press ahead with full-scale data analysis and write-up. Be sure to write down any initial thoughts you have about the analysis so you know where your ideas developed and so you don't forget them!

## 1.2 Take stock of your qualitative data and background information

Your first step in qualitative analysis is to take stock of the data and contextual information available to you. Written qualitative data can be anything from interview transcripts, field notes or a broad range of other written materials including diaries and meeting minutes. Whatever form your data take, you'll need to organize them to make sense of what you have (see Chapter 11 on Managing your Data).

### **Top Tips: Always save a new version**

Qualitative analysis is an iterative process. It can be easy to go down a promising pathway, only to hit a dead-end. To avoid losing some of your work when this happens, routinely 'save as' a new version at the end of each analysis session. The resulting series of saved versions can create an audit trail for you, like slow motion snapshots of your data analysis as it unfolds. If you later need to retrace the route your analysis has taken, you can refer to these prior saved versions of your analysis. Also, you'll be very thankful you've done this if you change part of your analysis, save it and then change your mind!

When you think of qualitative data, your initial vision might be interview recordings and transcripts. However, you may be surprised at how much additional information you can collect along the way. You can find yourself with information such as diaries, photographs and a range of personal, business or government documents. Such unplanned data is part of the open-ended nature of qualitative research. Just be sure to document how you gathered any new data sources that you may draw upon in your analysis.

At this point it is worth distinguishing between background information you use to provide context and data that you systematically scrutinize through the data analysis process. Data are comprised of pieces of information you have defined in your methods section as the focus of your research. Your results will be based on these data.

Background information can help you *understand the data* and provide *context*. For example, miscellaneous historical information or notes you come across wouldn't necessarily be analyzed systemically. However, they can still play a role by providing insights into the broader picture of how your participants' lives are constructed. On a practical level, you will need to add a citation for *background information* you use in your research report. For *data*, your methods section provides your basis for using it as a source of information.

**Real World Experience: Separating 'data' from 'background information'**

Charles used both qualitative interviews and quantitative surveys for his research on politically motivated farm invasions in Zimbabwe. Without being asked, his survey respondents sent Charles numerous pieces of additional information including photographs, legal documents, letters, emails, personal diaries, ledgers, notes, government documents, etc. Thus, Charles found himself with much more data than expected.

In deciding whether and how to use this unanticipated bonanza of information, Charles first applied the criterion of *relevance*. That is, he thought carefully about whether this information would help him answer his research question. He also sorted the extra information into the categories of *data* (to be accounted for in his methods section) and *background information* (to be cited in his bibliography).

Ultimately, Charles decided not to use any of the extra *data*, as he didn't think it was directly applicable to his research question. However, he did use the background information, with each element appearing in his bibliography. This additional background information helped to explain the context around Charles' data, thereby giving his research greater depth.

### **1.3 Use context to lay the foundation for your qualitative data analysis**

Once you have separated out your data from background information you are ready to begin analysis of these data. With a qualitative project, your analysis begins in the methods section. Here you explain who you collected data from and why, in what circumstances and over what period of time. This context orients your analysis and establishes the boundaries of the kinds of knowledge claims you can make. Your data only holds meaning when it can be situated within the context of its collection. For example, if you conducted an interview with an elderly person in a care home in order to understand perceptions of ageing, you would need to take account of the location in which the interview was conducted, that is, within the walls of the home where the participant is cared for by staff. If the participant reported that she felt well cared-for by the staff, was this answer influenced by the environment in which was collected, such as the possible presence of staff? Participants may have felt pressure to give certain answers, felt 'guilty' about giving negative feedback while in this setting, or may have felt none of these things and have given a completely frank interview.

Location is just the tip of the iceberg when it comes to the role of context in qualitative research. Because gathering data for qualitative research relies so heavily on the researcher's subjectivity, the analysis often needs to address the way that the

researcher influences the results. Indeed, there is an extensive academic literature on how the qualities of the researcher can influence results (see for example, Russel & Mewse, 2009, in the Suggestions for Further Reading section). For example, Ann Stoler (2002), a cultural anthropologist from the United States, conducted interviews with men and women in Indonesia who had been employed as domestic workers in Dutch households during the colonial era. She found that the Indonesian participants were reluctant to criticize their former colonial employers even though there were hints that they had complaints, perhaps because a white American researcher conducted the interviews. How might the interviews have been different if an Indonesian anthropologist had conducted them?

As this example highlights, the identity and demeanour of the person(s) collecting the data can be a key aspect of context, affecting how data are generated. For example, the researcher's perceived social class, ethnicity, gender, accent, clothing or other factors, might influence participants. Participants may respond differently based on whether they feel the researcher understands and empathizes with their concerns, or is an uncaring outsider. Female respondents might be uncomfortable discussing certain topics with a male researcher, or vice versa. Imagine a qualitative study on bachelorette parties; the results might be quite different depending on whether the researcher was male or female. Such issues should be openly and thoroughly addressed in your methods section, with the implications also discussed and accounted for in the results and discussion sections. Clearly articulating how your data were collected, why they were gathered that way and contextual factors wrapped up in these data will put you on a good path to accurate qualitative data analysis.

## 1.4 Build from data to codes, to comparisons, to concepts, to explanations

Now that you've accounted for contextual influences affecting your data, you can begin your focused analysis of the content of your data. There are many possible ways to do this. Here, we take you through a widely used approach we are calling *pattern analysis*. In this stage, you take the words, images, etc. comprising your data and categorize them using *codes*, which are specific categories for grouping your data that apply across a number of individual quotations. 'Code' can be a confusing piece of qualitative research jargon because 'code' has other meanings (e.g., in the context of computers). In social research, 'coding' simply means making and applying categories to your data. You can use your codes to develop comparisons and connect your data to relevant theoretical concepts you've located in your literature review. Taken together, these codes, comparisons and concepts help you build explanations that address your research question.

### 1.4.1 Analyze the patterns in your data through coding

Once you've accounted for context and taken stock of your available data, you can begin your main data qualitative analysis. After refreshing your memory by re-reading your field, interview or focus group notes, you begin reading transcripts and other written data, listening to audio or viewing video data. Your aim is to establish a firm grounding in your data by understanding what your participants are saying and why, before you start constructing explanations about what's going on. We advocate following Kelle's (2000, p. 295) six steps when coding with qualitative analysis software:

1. **Format textual data.** Prepare your text for analysis by ensuring it is consistently formatted (see Chapter 11 – Managing data).
2. **Open code of data.** Categorize your data to arrive at a set of themes that characterize the information in your interviews.

3. **Memo writing.** Record thoughts and ideas that come to mind as you code. These include interesting connections you are making with other participants, links to theory, ideas for further lines of enquiry or issues you want to highlight in your write-up.
4. **Compare text segments that have been assigned the same code.** Comparisons enable you to situate accounts relative to each other. You can see where the extreme viewpoints of an issue lie and where ideas in this spectrum of viewpoints are clustered.
5. **Integrate codes, and attach memos to codes.** Once you've finished coding you will want to integrate the codes with their relevant memos. This way as you begin your analysis in earnest all the relevant information is clustered.
6. **Developing a main theme.** After coding and integrating your memos, and after you've made enough comparisons that you understand the different aspects of your code, you can develop the main theme for that code.

### **Code your qualitative data to understand key themes**

'Coding' is the process of identifying words, phrases or passages of text (or any other unit of meaningful data) and applying labels ('codes') to them. You begin by setting up a series of initial code categories of issues you are expecting to see (this again highlights the value of beginning your analysis, or at least the careful reading, of your data early on so your thinking can be well-developed by this stage).

Before beginning coding you should have already formatted all your textual data so that it is uniform (see Chapter 11 – Managing your Data). Have a consistent and unified electronic format for your content as you start off to avoid confusion and wasted time later on. Open an interview transcript (or other written qualitative data) in your qualitative analysis software (see section 1.5) and begin applying these codes. As you progress you will quickly see that the codes you initially came up with will need to evolve to capture the new patterns you are identifying. Sometimes you will add an entirely new code to define an emergent category, such as if you discovered a new theme. In other instances, you might want to combine codes when the distinction

between them is no longer relevant. You may also decide to re-label existing categories to further enhance their meaning. Throughout the process you will want to continuously think about the patterns and connections between the categories. Are the differences in code categories meaningful and distinct? If not, how can you sharpen the differences?

For example, if you had conducted an interview with soldiers returning from war in order to understand the re-socialization of former combatants, you might have initial codes for 'Feelings of detachment', 'Pride for serving the nation', 'Positive perceptions of military service' and 'Negative perceptions of military service'. You would begin by applying these codes. But if you find in practice that, for example, 'Positive perceptions of military service' was too vague, you could instead use more specific codes such as 'public attributions of heroism'. Or, if the participants reported both a range of general positive views, you could apply the general code to all instances of 'Positive perceptions of military service' and then develop one or more specific codes such as 'attributions of heroism' to distinguish a particular type that was very common. In this scenario, you would apply both the general and the specific code to a quotation exemplifying 'attributions of heroism'. Likewise, you may initially think that the code 'Negative perceptions of military service' would include both public perceptions and those of the soldiers, but you may later want to divide the code as follows: 'Negative perceptions of military service – by public' and 'Negative perceptions of military service – by soldiers' (note that if you did this and had already coded some content you would need to re-apply these codes to the specific quotations for each of the new codes).

After coding your first transcript and adapting the codes as needed in this first pass, you then move onto the next transcript and continue the process of applying codes until all your transcripts have been coded. Once you've finished a complete first pass

you would then start again doing one pass after another until you are certain that you've captured as much depth as possible for all your transcripts (or until you run out of time allocated to this phase of your research in your research plan).

**Top Tips: Define your codes**

It's important that your codes are clearly defined. As your research progresses and your understanding shifts, it's very easy for your code definitions to shift as well. This can result in your data analysis becoming muddled and hazy. As such, when coding your data, keep a separate, physical copy of your code descriptions with you. This will help you to organize and connect your codes to your data in a coherent, consistent manner. You may find that over time there is a need to create new codes, or split a code into two different codes to accommodate the data you have. Similarly, if you begin a new code, but find you do not have a substantial amount of data to work from within that code, you may consider combining it with another code.

Referring back to the previous topic about soldiers returning from war, you could, for example, start off with the codes 'Pride in serving nation' (summarized as 'nationalism') and 'Doing one's duty' (summarized as 'duty'). Over time you may find that the distinction between these two codes is not very clear in your interview transcripts. In this circumstance, you could combine the codes or delete one if it rarely appears in your data.

Having a clear list of your code definitions will make this process of adapting your coding scheme much easier and ensure you have a complete record of definitions used.

Keep noting down analytical thoughts that occur to you during the coding process, however raw or incomplete the thought might seem. Are you finding interesting connections? Have the accounts inspired you to do some additional readings? Are you seeing connections between the data and theory you've been reading about? It's essential to record these thoughts as you go because they are often fleeting and can be easily forgotten. Also, by recording these 'memos' within your qualitative data analysis software they will all be in one place, and you can electronically connect them to the piece of data that sparked the thought within the software. You will be grateful for this easy access to your memos when during the writing up phase (see Section 1.5).

The following two questions are frequently asked about coding:

- How many coding passes through the data should I take?
- How many codes should I end up with at the end of the process?

After you come up with your initial set of codes by drawing upon theory or through your first careful read through your data, you can start applying these codes on your next time going through the data. On this time through, don't feel like you have to apply your codes to every bit of text in your data. Use this pass to make sure your codes are working as you would like them to and not missing anything important. Also, use this opportunity to refine the initial set of codes as needed to suit the data you encounter on this pass. Your second pass through the data with a full set of codes should be much more thorough, applying the codes to all relevant content you encounter in your data. If you still have time, a third, often much lighter pass, with your codes be useful to ensure you have captured everything relevant in your analysis. In sum, if you're short of time, once you have a set of initial codes, two passes through the data can usually suffice.

The number of codes you should end up with largely depends on the depth and richness of your data. You may want only a few codes because you are only searching for a handful of key themes. If you are exploring the transcripts though, you don't want to end up with only a handful of codes or your 'themes' would be very broad. On the other hand, if you end up with dozens of codes the distinction you are making between codes may not be very important.

#### ***1.4.2 Use comparisons to develop your analysis***

As you continue with your coding, start thinking about how you can make more sense of the emerging patterns. This is important from an analytical perspective so your analysis can be thorough and in-depth. But it also helps you tell the story of your qualitative data in order for them to come to life for your readers.

One way you can clarify what is interesting about your results is to present comparisons. Many different types of comparisons can be used to do this. For example, Eric compared what US and UK journalists said about their practices with what actually appeared in print in news media. The gap between word and deed revealed by this comparison became a key part of Eric's results and the focus of the explanations he developed. You can also do this kind of comparison by gathering viewpoints from different stakeholders in the same topic. For example, in Charles' study on political violence during farm seizures in Zimbabwe, he had three main categories of participants: farm workers, farm owners and those associated with the government. Since all three groups were asked about the same issues, he could compare perspectives within and across the three categories. For instance, Charles found that all the farm owners he interviewed believed that the government's farm seizures were illegal and morally wrong. Yet, farm workers' views were more diverse and nuanced, with many expressing

regret about the violence but support for the general policy of seizing farms to change the historically white-dominated structure of land ownership.

**Real World Example: Use comparisons to develop your qualitative analysis**

Vlad Glăveanu's (2010) research on how people understand creativity involved asking different types of professionals whether they think Romanian Easter egg decorating (i.e., traditional forms of wax decoration and printing using leaves) is 'creative'. He describes his research method as a 'multiple feedback methodology that involves the use of different groups of "appropriate assessors" to evaluate the creativity of a certain product or class of products' (p. 342).

His research question was 'How do ethnographers, priests, art teachers and folk artists evaluate the creativity of Easter eggs?' (p. 342). He addressed this research question using semi-structured qualitative interviews with people from each of these four professional backgrounds, analyzing the similarities and differences in what they said. His analysis **begins with areas of agreement**: 'Across the four groups of "evaluators", a high consensus was found in appreciating that there is creativity in Easter egg making' (p. 343). He then explains the **main areas of disagreement** across the four groups, reporting a 'complex picture of divergent views' (p. 344). The core point Vlad is able to show using this approach is that there are shared cultural expectations about creativity, but different professional groups develop their own more specific account of what it means to be creative. He can present this kind of qualitative research finding by comparing what different participants (and groups of participants) said on the same topic.

### **1.4.3 Connect to theoretical concepts**

During the coding process, think about how you can connect your findings to theoretical concepts. Go back to concepts in your research question and literature review, and look for other related theoretical concepts that you could apply to see if they fit your data. If existing concepts don't help explain your data, then you may need to develop new or adjusted concepts to explain your findings.

For instance, imagine a qualitative researcher is addressing a topic relating to social class. She might start with the idea (or concept) that class identities are passed on from one generation to the next because the upper class oppresses the poorer class (the concept of oppression). If her data shows that the poorer class takes pride in its identity and values, she could conclude the concept of oppression is insufficient to explain the data. In this case, a new explanation might require using a different analytical concept, such as the idea of a 'working class subculture' (e.g., Willis, 1977). In this way, qualitative analysis must draw upon, modify or create theoretical concepts that are useful in developing explanations that may be applicable beyond the immediate context of the project.

### **1.4.4 Use data extracts to evidence your qualitative research claims**

One of the many advantages of coding is that the process allows you to closely engage with the actual words and ideas of your participants. This means that as you code you will be able to use data extracts to develop your emerging analysis. Never cherry pick your data extracts based on what fits your pre-existing assumptions about a topic. This is all too easy to do, but good qualitative research faces up to the uncertainties, contradictions, or unexpected patterns in the data, rather than pretending results are clear and simple. For instance, imagine a comparative analysis of men's and

women's attitudes about marriage based on semi-structured interviews. Perhaps the researcher expects that men would display more "commitment phobia", while women would be more eager to tie the knot, but the results of the analysis indicate that women and men who were interviewed were both equally "commitment phobic". Rather than trying to make the data fit the theory by excluding interviews with "commitment-phobic" women from the analysis, the best strategy here would be to seek explanations for the unexpected findings. Also, the researcher might seek to clarify the analysis by conducting follow-up interviews or by reading up on the literature about gender roles to find existing explanations that this study might support or challenge.

### **1.5 Rely on qualitative analysis software**

There are several qualitative analysis software (sometimes referred to as Computer-assisted qualitative data analysis software, CAQDAS) products that you can use to help you get from raw qualitative data to results you can use in your research report. Some qualitative researchers have criticized such software for alienating researchers from their data and sometimes causing an overemphasis on coding to exclusion of other aspects of qualitative analysis (Kelle, 2000, p. 294). However, the predominant opinion in the methodological literature indicates that any minor limitations stemming from qualitative analysis software are more than outweighed by increases in productivity, reliability, consistency and transparency (Carmel, 1999, p. 148).

We can't go into all of the qualitative analysis software options, so we've selected one of the most commonly used products, NVivo, to demonstrate how this kind of software works. For information on the broader range of qualitative analysis software options, use this website: [www.sagepub.com/qdas](http://www.sagepub.com/qdas). Whichever software you choose, it

is generally a good idea to take the time to learn how to use qualitative analysis software as it is likely to save you time and improve the quality of your research in the long-term.

**Top Tips: Get training in qualitative analysis software early in your project**

We strongly recommend taking a training course on how to use the qualitative software of your choice before you begin analyzing your data. This training can provide you with many handy tools, as well as tips and tricks that will make your data analysis process easier. By taking a training course, you will have the opportunity to ‘test drive’ the software you want to use before investing your resources into obtaining the software. These courses can also offer expert advice specific to your needs. It also means that when you are ready to begin analysis you can focus all your time on your data and not on fumbling with the software. You can usually find training at a reasonable cost, and this may even be provided free of charge by your research institution. If not, use whatever resources you can find online. This website is a good place to start: [www.sagepub.com/qdas](http://www.sagepub.com/qdas).

Like the other qualitative software products, NVivo enables both data management and analysis. You can use NVivo to explore and analyze patterns in your data, whilst also giving you the tools to illustrate your findings in your report. You can use this kind of software for analyzing your qualitative data using either qualitative or quantitative (i.e., content analysis) approach.

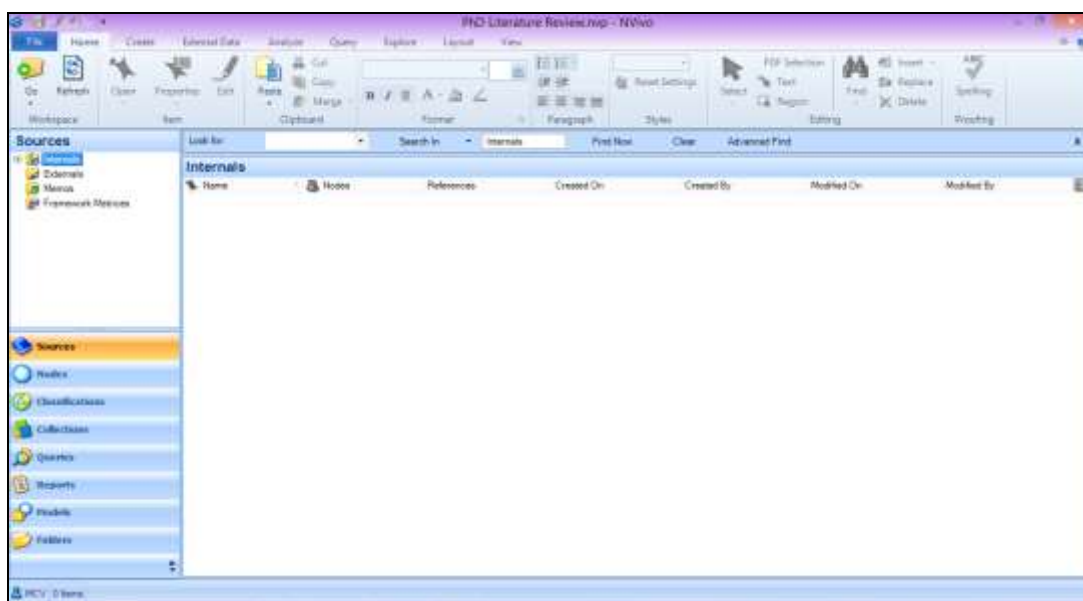
First, you need to know five key terms that NVivo uses:

- **Sources** are your data. You can import sources such as PDFs, Word documents, audio recordings, photos and any other electronic item you want to analyze in NVivo.
- **Coding** is the focus of the analysis process. It can be conducted by topic or case.
- **Nodes** are sets of codes grouped by category. Nodes assist you in organising the patterns you've identified in your data.
- **Source classifications** are used to record information about each of your data sources.
- **Node classifications** are used to document information about sets of codes you are grouping together under a higher level category.

Start by selecting 'new project' from the first screen when NVivo opens. Save the project in a location on your computer or cloud account where you can put all files you will use in your project. For instance, a project evaluating the experience of patients in privately operated hospitals might include 7GB of video recordings of interviews, 20MB of audio files and several photographs at 30MB each. In this scenario, you'd want a minimum of 9GB of space to be on the safe side. NVivo project files are saved as: filename.nvpx.

The Workspace window is the homepage for all of your data analysis work. It provides access to all the functions you need to conduct your analysis, including importing, coding and editing your data. The Workspace has four components: the Ribbon, Navigation View, List View and Detail View (Figure 0.1).

**Figure 0.1 NVivo Workspace Window**



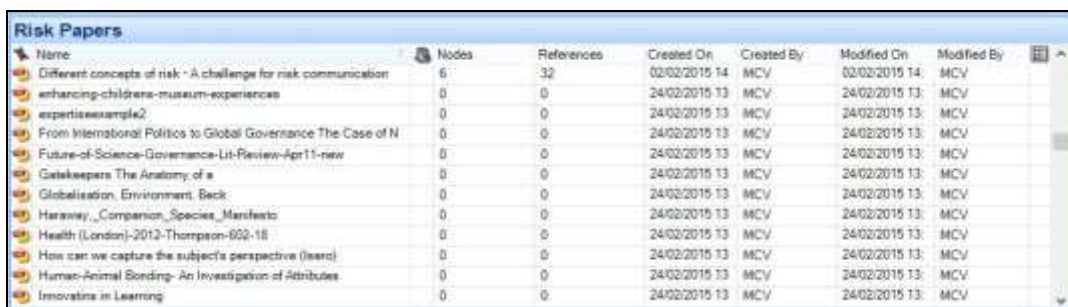
The 'Ribbon' hosts the commands you'll need to analyze your data. These commands are organized into similar tasks, such as the 'Media Tab', which contains commands to customize the display of audio-visual media data (e.g., video), playback functions (e.g., play/pause) and develop transcripts (Figure 0.2).

**Figure 0.2 'Media' tab on the 'Ribbon'**



The 'Navigation View' provides an organized account of each analytical component of your project. The analytical components include: sources, nodes, classifications, collections, reports, queries, models and folders. The contents of each component are displayed in the List View (described below). In the List View, you can organize items. The List View also displays all of the contents of a component, for example your codes and the number of items in each code (Figure 0.3). The List View is where you can organize your data by their characteristics.

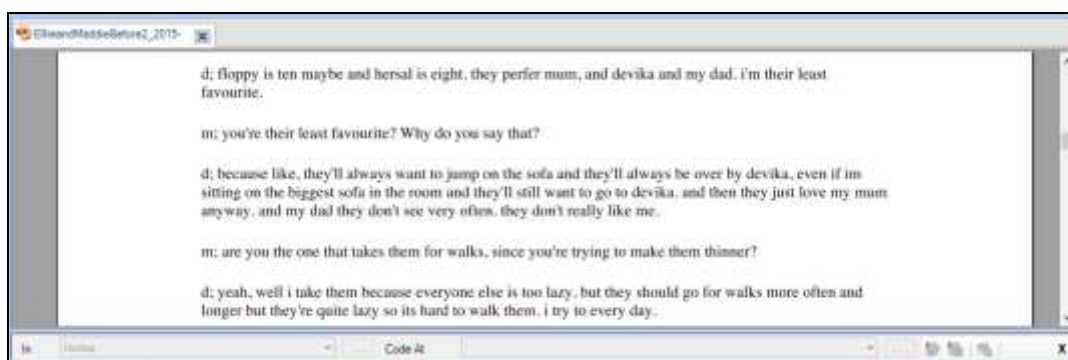
Figure 0.3 List View



Name	Nodes	References	Created On	Created By	Modified On	Modified By
Different concepts of risk - A challenge for risk communication	6	32	02/02/2015 14	MCV	02/02/2015 14	MCV
enhancing-childrens-museum-experiences	0	0	24/02/2015 13	MCV	24/02/2015 13	MCV
expertisexample2	0	0	24/02/2015 13	MCV	24/02/2015 13	MCV
From International Politics to Global Governance The Case of N	0	0	24/02/2015 13	MCV	24/02/2015 13	MCV
Future-of-Science-Governance-Lit-Review-Apr11-new	0	0	24/02/2015 13	MCV	24/02/2015 13	MCV
Gatekeepers The Anatomy of a	0	0	24/02/2015 13	MCV	24/02/2015 13	MCV
Globalisation, Environment, Beck	0	0	24/02/2015 13	MCV	24/02/2015 13	MCV
Haraway, Companion Species, Manifesto	0	0	24/02/2015 13	MCV	24/02/2015 13	MCV
Health (London)-2012-Thompson-602-18	0	0	24/02/2015 13	MCV	24/02/2015 13	MCV
How can we capture the subject's perspective (Iisari)	0	0	24/02/2015 13	MCV	24/02/2015 13	MCV
Human-Animal Bonding- An Investigation of Attributes	0	0	24/02/2015 13	MCV	24/02/2015 13	MCV
Innovating in Learning	0	0	24/02/2015 13	MCV	24/02/2015 13	MCV

The Detail View is where you can explore and analyze each component of your data (Figure 0.4).

Figure 0.4 Detail View



In this view you are able to code your data, as well as see all of the content that has been coded at a specific node.

### 1.5.2 Import, create and organize your data sources

'Sources' is the term NVivo assigns to the materials used in your research.

Sources can include most materials, including (but not limited to): transcript documents, videos, photographs, webpages, hand-written journals, drawings and books.

#### Create new folders

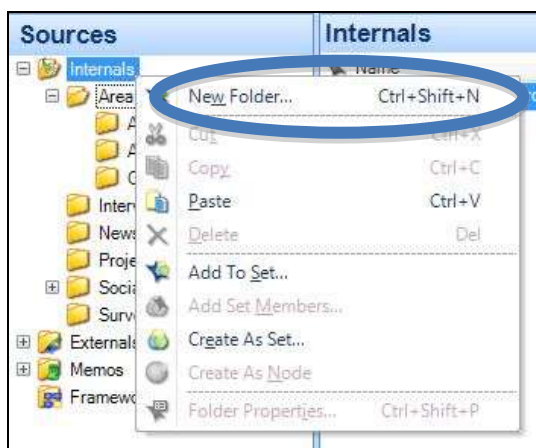
When you import your data, it is best to organize your sources into subfolders.

These subfolders help you organize and visualize your data by dividing your data into manageable portions. For instance, if you have carried out a set of qualitative

interviews, it's a good idea to have a folder for each participant. To create new folders (Figure 0.5), you need to:

1. Locate the 'Navigation View', right-click the folder in which you would like to add a new subfolder.
2. Select 'New Folder'. The 'New Folder' dialog box will open.

**Figure 0.5 Creating a New Folder**



3. Enter a name and description for the new folder.
4. Click OK.

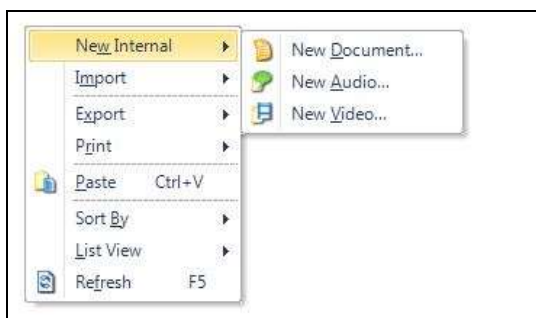
New folders can be created under any folder and reorganized as many times as you need.

### **Use Primary Data Sources**

Primary sources can be organized into one of two folders: internal and external sources. Internal sources are materials that are imported, or created, within your project. The file sizes of these sources are small enough to be saved with your project as a package. If you decide you would like to create a source in NVivo, follow these steps:

1. In 'Navigation View', click the name of the folder into which you want to create the new document.
2. In the List View, right-click, and select New Internal (Figure 0.6).
3. Next, select the type of file you would like to import.
4. In the Properties dialog box, enter the name and description of the source.
5. Click OK.

**Figure 0.6 Creating a New Internal Source**

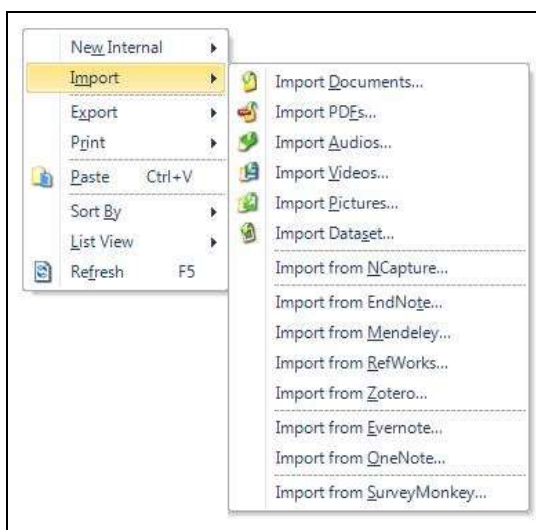


The most frequently used sources are internal sources imported into NVivo.

There are several different file types that can be imported into NVivo's 'Internal Sources'. Each file type must be selected separately, but follows a similar sequence to import the file.

1. In 'Navigation View', click the name of the folder into which you want to import the document.
2. In the List View, right-click, and select Import.
3. Next, select the type of file you would like to import (Figure 0.7).

**Figure 0.7 Import an Internal Source**



4. Then select the file you want to import. Click the open button.
5. In the properties dialog box, change the name and description of the file, as needed (Figure 0.8).
6. Click OK.

**Figure 0.8 Import Internal Document Properties**

The screenshot shows a 'Document Properties' dialog box with two tabs: 'General' and 'Attribute Values'. The 'General' tab is selected. The 'Name' field is filled with 'Animal Accommodation'. The 'Description' field is empty. The 'Location' field is filled with 'Internals'. The 'Size' field is '2 KB', 'Color' is 'None', 'Created On' is '10/04/2015 17:28', and 'Modified On' is '10/04/2015 17:28'. The 'By' field for both 'Created On' and 'Modified On' is 'MCV'. There are 'OK' and 'Cancel' buttons at the bottom right.

External sources are data files that you link to your project. These sources are too large to be saved within your project or sources that cannot be imported, for example, a 2-hour film. With external sources, NVivo lets you record notes or summaries about the source, but not directly edit it. Follow these steps to add an external source:

1. In 'Navigation View', under Sources, select the Externals folder.
2. In the List View, right-click, and select New External.
3. Fill out the External Properties (Figure 0.9). Note, not all property features need to be described. At minimum, fill in the external source's name and a short description.
4. Click OK.

**Figure 0.9 External Source Properties**

The screenshot shows the 'External Properties' dialog box with the following details:

- General:** Name: Untitled (2); Description: (empty text area); Location: Externals; Size: 9 KB; Color: (dropdown menu).
- External:** Type: Other; Location: (empty text field); Location Description: Unknown; Contents: (dropdown menu); Unit: (dropdown menu); Start range: 0; End range: 0.
- Attribute Values:** Classification: No Value; A table with columns 'Attribute' and 'Value' (empty rows).
- Modification History:** (empty list area).
- Buttons: Cancel, Done.

### **Use Secondary Data Sources**

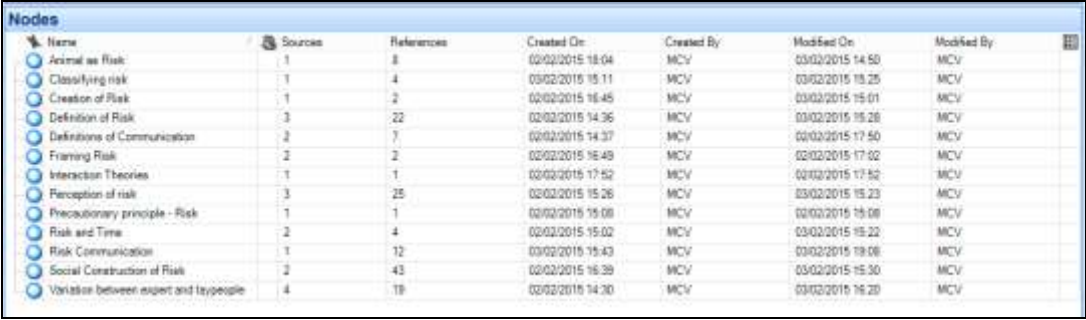
Secondary research materials, such as newspapers, book reviews and journal articles can be stored through memos and framework matrices. Memos can be thought of as digital sticky-notes. Memos are linked to specific sources and/or nodes and are used to record observations and insights on your sources. Framework matrices are an ideal way to organize your sources by cases. Cases represent your level of analysis such as individuals or organizations. Framework matrices help you organize your data and evaluate possible systematic relationships between different variables.

#### ***1.5.3 Assign nodes and annotate your data sources***

Your qualitative analysis involves labelling and coding your data sources to identify patterns. Identifying patterns can be accomplished using what NVivo calls nodes (Figure 0.10). Nodes fulfil one of two functions. They can be used to link codes (ideas, themes or specific attributes) to specific pieces of data or as higher level codes to

encompass a set of more specific codes. In the 'Nodes' category, you can create new folders. You may want to create several folders for different purposes of analysing your data. For instance, you may want to create a folder that will contain your coding scheme and create another to represent specific people or organizations.

**Figure 0.10 Nodes View**



Name	Sources	References	Created On	Created By	Modified On	Modified By
Animal as Risk	1	8	02/02/2015 18:04	MCV	03/02/2015 14:50	MCV
Classifying risk	1	4	03/02/2015 15:11	MCV	03/02/2015 15:25	MCV
Creation of Risk	1	2	02/02/2015 16:45	MCV	03/02/2015 15:01	MCV
Definition of Risk	3	22	02/02/2015 14:36	MCV	03/02/2015 15:26	MCV
Definitions of Communication	2	7	02/02/2015 14:37	MCV	03/02/2015 17:50	MCV
Framing Risk	2	2	02/02/2015 16:48	MCV	02/02/2015 17:02	MCV
Interaction Theories	1	1	02/02/2015 17:52	MCV	03/02/2015 17:52	MCV
Perception of risk	3	25	02/02/2015 15:26	MCV	03/02/2015 15:23	MCV
Precautionary principle - Risk	1	1	02/02/2015 15:08	MCV	03/02/2015 15:08	MCV
Risk and Time	2	4	02/02/2015 15:02	MCV	03/02/2015 15:22	MCV
Risk Communication	1	12	03/02/2015 15:43	MCV	03/02/2015 15:06	MCV
Social Construction of Risk	2	43	02/02/2015 16:29	MCV	03/02/2015 15:30	MCV
Variation between expert and laypeople	4	19	02/02/2015 14:20	MCV	03/02/2015 16:29	MCV

Nodes primarily act as a basis for linking ideas to points in your NVivo sources.

Using nodes in this way often means other training manuals will use nodes, codes, and themes interchangeably. To begin, you need to decide if you are going to conduct your analysis inductively or deductively. There are several options to create nodes, the most basic of which are to either create codes 'as you go' (inductively) or 'prior to analysis' (deductively).

### **Use deductive coding**

If you have a predetermined set of codes you want to apply to your data, it's easiest to set up the nodes before you begin coding. Enter your codes into your codebook, beginning with one parent code. In Figure 0.11 below, the first parent code is 'Social Construction of Risk'.

Figure 0.11 Multi-level nodes

Name	Sources	References	Created On	Created By	Modified On	Modified By
Animal as Risk	1	8	02/02/2015 18:04	MCV	03/02/2015 14:50	MCV
Classifying risk	1	4	03/02/2015 10:11	MCV	03/02/2015 15:29	MCV
Definition of Risk	3	22	02/02/2015 14:36	MCV	03/02/2015 15:28	MCV
Definitions of Communication	2	7	02/02/2015 14:37	MCV	02/02/2015 17:00	MCV
Interaction Theories	1	1	02/02/2015 17:52	MCV	02/02/2015 17:52	MCV
Perception of risk	3	20	02/02/2015 10:25	MCV	03/02/2015 15:23	MCV
Precautionary principle - Risk	1	1	02/02/2015 15:08	MCV	02/02/2015 15:08	MCV
Risk and Time	2	4	02/02/2015 10:02	MCV	03/02/2015 15:22	MCV
Risk Construction	1	16	02/02/2015 16:45	MCV	03/02/2015 15:22	MCV
Social Construction of Risk	2	43	02/02/2015 16:39	MCV	03/02/2015 15:30	MCV
Creation of Risk	1	3	02/02/2015 16:45	MCV	03/02/2015 15:01	MCV
Framing Risk	2	2	02/02/2015 16:49	MCV	02/02/2015 17:02	MCV
Interaction Communication and Perception	1	10	02/02/2015 11:05	MCV	02/02/2015 10:00	MCV

The way you do this in NVivo is to go to the 'Nodes' category under the 'Navigation View'. In the 'Nodes' category, select the folder that will hold your codes. Then to create a parent (or root level) code:

1. Click on the 'Create' tab on the 'Ribbon'
2. Click 'Node'
3. A pop-up 'Nodes Properties' window will appear.
4. Enter the name of your code and description. By entering a description you will ensure anyone who works on your project is consistent in their coding and saves you from having to frequently refer to your codebook.
5. Optionally, you can select a colour to correspond with the code.
6. If you will be using sub-codes (referred to as child nodes) you will most likely want to aggregate your coding from the child nodes. This will include your coding at the child node at the parent node.
7. Click Done.

Repeat this step for each parent code. The next step is to add in your sub-codes (also referred to as child or branch codes). In Figure 0.11, there are four sub-codes ('Mixed', 'Negative', 'Neutral' and 'Positive'). To begin, select the parent code in 'List View', and then follow the same steps you used to create the parent code. You are now ready to begin coding. To do so, follow the instructions below to 'Code at an Existing Node'.

## Use inductive coding

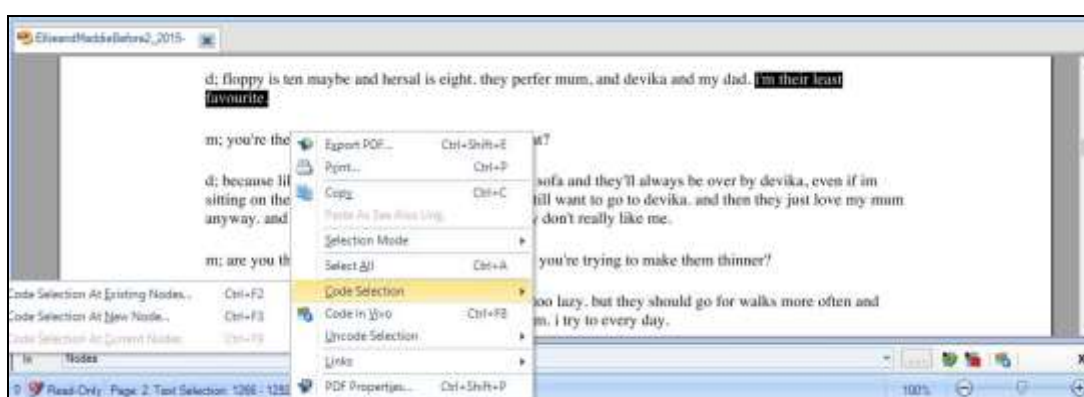
In NVivo, inductive coding is easily accomplished using the functions 'code selection at existing node' and 'code selection at new node'. When you begin your analysis, you will primarily be coding your data at a new node.

### 'Code Selection at New Node'

Coding your selection at a new node indicates that you need to code a selected piece of data with a new code. For instance, you may be coding feedback from an event. The first piece of feedback you code is 'Positive'. To create a new code, follow these steps:

1. Select the data you want to code.
2. Right-click the selection, and select Code Selection (Figure 0.12)

**Figure 0.12 Code Selection at New Node**



3. Select 'Code Selection at New Node'
4. The 'New Node' properties will be displayed (Figure 0.13).

**Figure 0.13 New Node properties**

1. You can choose where you want to store the node by changing the location. This is not recommended at this stage. If you need to change the location, you can always drag and drop the node in a new location later.
2. Enter a name and description for the node.
3. Click OK.

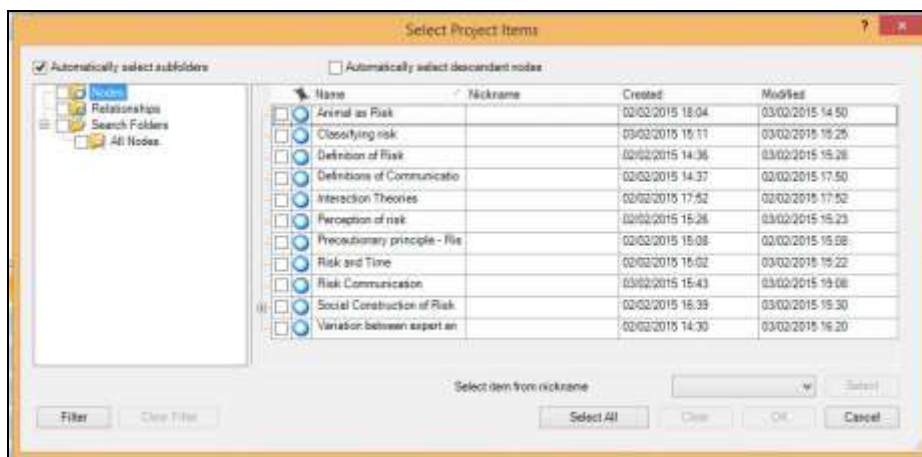
This node will now be stored in your nodes. To code this code again, you will code at an existing node. You will need to repeat this process for each new node you wish to add.

For instance, you have just created a node for 'Positive', but you soon discover a 'Negative' comment in your research. You would then need to create a 'Negative Node'. However, you will spend most of your time coding with existing nodes.

Once you've created your new nodes, you need to apply those nodes to further analyze your data. In NVivo, this is called 'code selection at an existing node'. To do this, take the following steps:

1. Select the data you want to code.
2. Right-click the selection, and select Code Selection.
3. Select 'Code Selection at Existing Node'
4. The existing nodes will be displayed (Figure 0.14). Locate the node (or child-node) at which you would like to code your data.
5. Click Select.

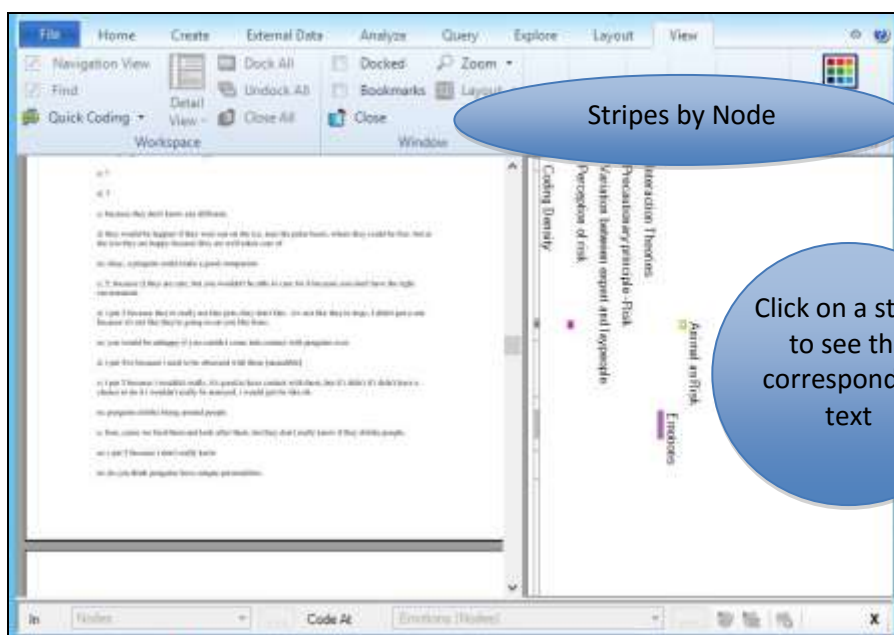
Figure 0.14 Existing Nodes



### Visualize your coding using 'Coding Stripes'

Once you have coded your data it is useful to be able to see what nodes you have coded and where you have coded those nodes. To do so, you simply need to turn on coding stripes (Figure 0.15). Coding stripes are displayed to the right of the source.

Figure 0.15 Node stripes



Each stripe links a section of the source to a corresponding node. Stripes that overlap indicate the data source is coded at multiple nodes. To see which section of data

corresponds to which stripe, click the stripe and the coded data will become highlighted.

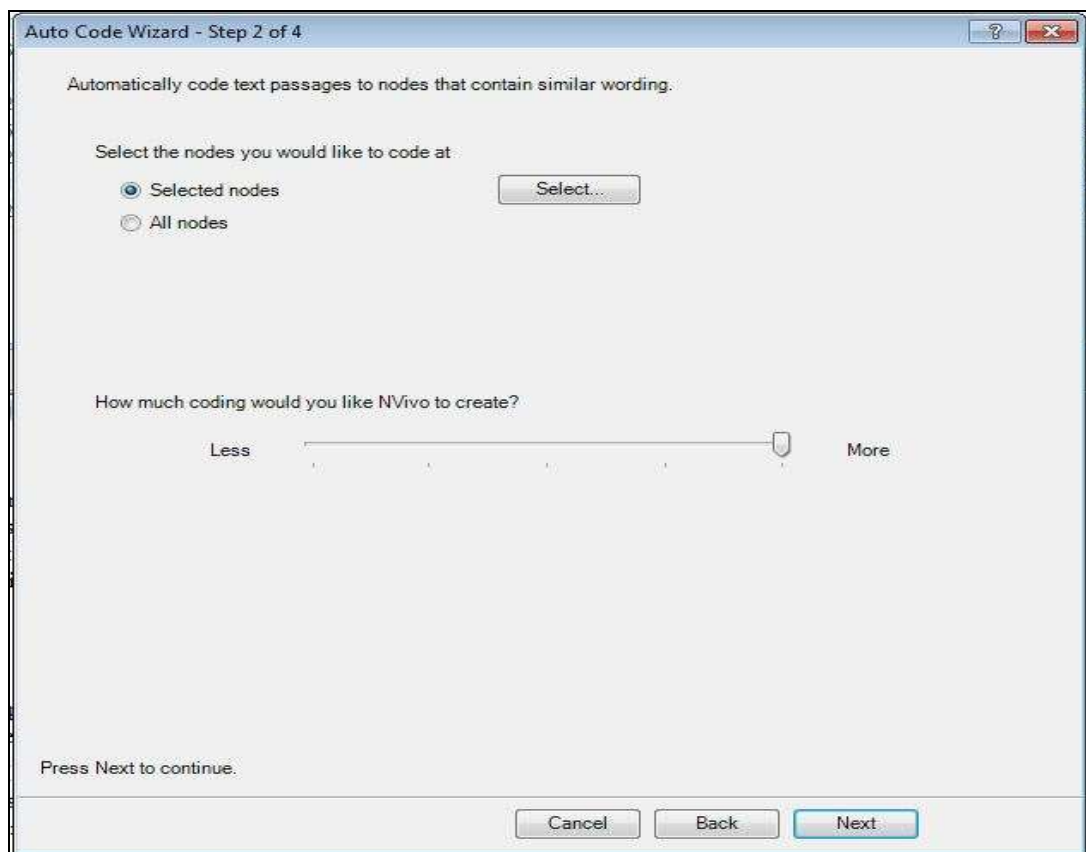
This view also allows you to see which user coded which section of data.

### **Use automatic coding for large data sets**

You may want to have a large data set of very similar responses, such as a large number of open-ended survey responses. Such responses are likely to have a similar structure. Although they each may hold a different opinion, they still discuss the same thing (for example attitudes toward environment). Rather than code all of the interviews individually, you may choose to code a subset of the interviews and auto code the others. To do this you need to have accurately coded the subset of interviews at that node (in this case attitudes). You then select the 'Auto Code Wizard' from the 'Analyze' tab. To run the wizard, follow these steps:

1. On the first screen select 'Auto code using existing coding patterns'.
2. Click Next.
3. Select the node you would like to code. You may choose to code at all nodes or an individual node. If this is your first time auto-coding, it is easier to code at one node. If the resulting auto-coding is dissatisfactory, you will more easily be able to fine-tune your coding if you have just coded at one node.
4. Adjust the 'How Much Coding Would You Like NVivo to Create' slider. If you would like NVivo to be highly discriminatory in its coding select 'Less'. If you would like NVivo to include a broader definition of your code, select 'More'.
5. Click Next (Figure 0.16).

**Figure 0.16 Automatic Coding Wizard**



1. Next, NVivo will check the existing coding patterns to determine if your selected node is suitable for this function. You may find that your node is unsuitable for auto-coding (this is often due to too few codes at that node). If this is the case, you will need to include more sources in your manual coding procedures.
2. Click Next.
3. In this final step, you have the option to select how your text sources will be coded. You need to select if you would prefer a fine coding procedure (individual sentences only) or a broader coding procedure (entire paragraphs will be coded).
4. Click Finish.

Automatic coding results are saved as a matrix, which is displayed in the 'Detail View'. You can use this matrix to review the automatic coding. You should always review the results of your automatic coding to detect any problems with the results. Correcting these problems before moving on with your data analysis is essential. As always, try to catch and fix problems as early as possible. In looking at your results you may find they

vary from your expectations due to a number of factors, including:

- Quality of your coding. Have you been consistent? Or have you stretched the definitions of your codes to include items that appear to be unrelated?
- Amount of coding you have completed. Have you coded at least 10% of your sources?
- Definitions of words you've coded. Some words have multiple meanings. In these cases, you normally use context to identify the most appropriate meaning. However, automatic coding can't do this for you.
- Whether your codes are distinctive. Do two of your codes contain very similar items? If so, automatic coding will find it difficult to determine differences between them.
- Use of non-standard English. Did your participants use slang words or are they using English as a second language for instance?

To review what has been coded, double-click a cell in the automatic coding matrix to see the content that was coded for that node. If you are satisfied with the results you need not do anything further. However, if you're unsatisfied with the results you can choose to 'uncode' a piece of text by highlighting the coded text, right-clicking the text and selecting 'uncode'. You can also choose to 'undo' the entire automatic coding action.

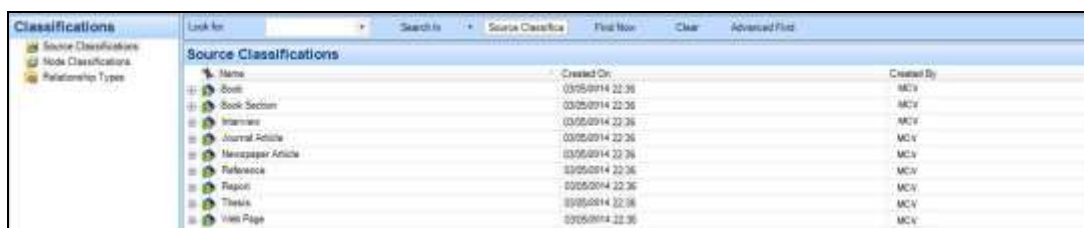
#### ***1.5.4 Use classifications to document key information about sources and nodes***

Use classifications to store information about your sources and nodes (e.g., demographics, authors, dates). Classifications help when you run queries by making it easier to find and sort your sources and elements of your analysis. There are two primary classification types: source classifications and node classifications.

## Apply source classifications

To apply source classifications, begin by selecting 'Source Classifications' from the 'Navigation View'. Once selected, you have the option to choose a predetermined source type (e.g., book or interview) or create your own source type (Figure 0.17).

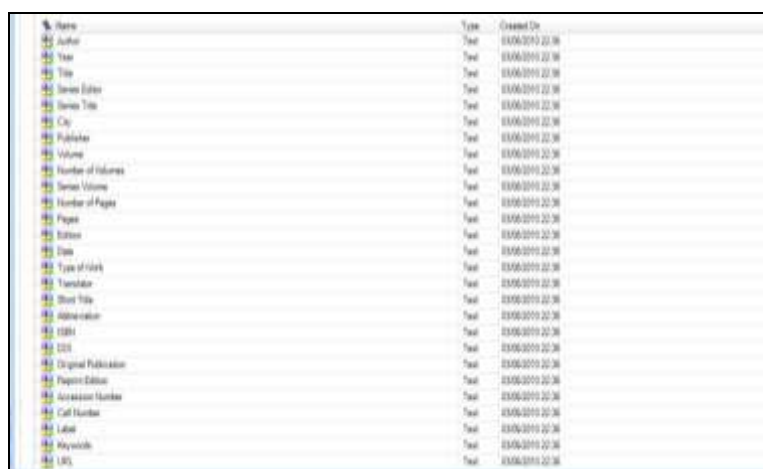
**Figure 0.17 Source Classifications**



Name	Created On	Created By
Book	03/05/09 14:22:36	MCV
Book Section	03/05/09 14:22:36	MCV
Interview	03/05/09 14:22:36	MCV
Journal Article	03/05/09 14:22:36	MCV
Newspaper Article	03/05/09 14:22:36	MCV
Performer	03/05/09 14:22:36	MCV
Report	03/05/09 14:22:36	MCV
Thesis	03/05/09 14:22:36	MCV
Web Page	03/05/09 14:22:36	MCV

Each classification has its own unique set of attributes. For example, if you expand the classification setting for a book (Figure 0.18), you will see attributes such as author, year and title. Classification attributes can be added or deleted to suit your research needs.

**Figure 0.18: Classification attributes example**



Name	Type	Created On
Author	Text	03/05/09 14:22:36
Year	Text	03/05/09 14:22:36
Title	Text	03/05/09 14:22:36
Series Editor	Text	03/05/09 14:22:36
Series Title	Text	03/05/09 14:22:36
City	Text	03/05/09 14:22:36
Publisher	Text	03/05/09 14:22:36
Volume	Text	03/05/09 14:22:36
Number of Volumes	Text	03/05/09 14:22:36
Series Volume	Text	03/05/09 14:22:36
Number of Pages	Text	03/05/09 14:22:36
Pages	Text	03/05/09 14:22:36
Edition	Text	03/05/09 14:22:36
Date	Text	03/05/09 14:22:36
Type of File	Text	03/05/09 14:22:36
Translator	Text	03/05/09 14:22:36
Short Title	Text	03/05/09 14:22:36
Abbreviation	Text	03/05/09 14:22:36
ISBN	Text	03/05/09 14:22:36
OCLC	Text	03/05/09 14:22:36
Original Publication	Text	03/05/09 14:22:36
Page(s) Edition	Text	03/05/09 14:22:36
Accession Number	Text	03/05/09 14:22:36
Call Number	Text	03/05/09 14:22:36
LABEL	Text	03/05/09 14:22:36
Keywords	Text	03/05/09 14:22:36
URL	Text	03/05/09 14:22:36

## Apply node classifications

Similarly to source classifications, 'Node Classifications' describe characteristics of your participants or the places in your research. 'Node Classifications' are established in the same manner as 'Source Classifications', except 'Node Classifications' describe demographic details, such as income level or gender.

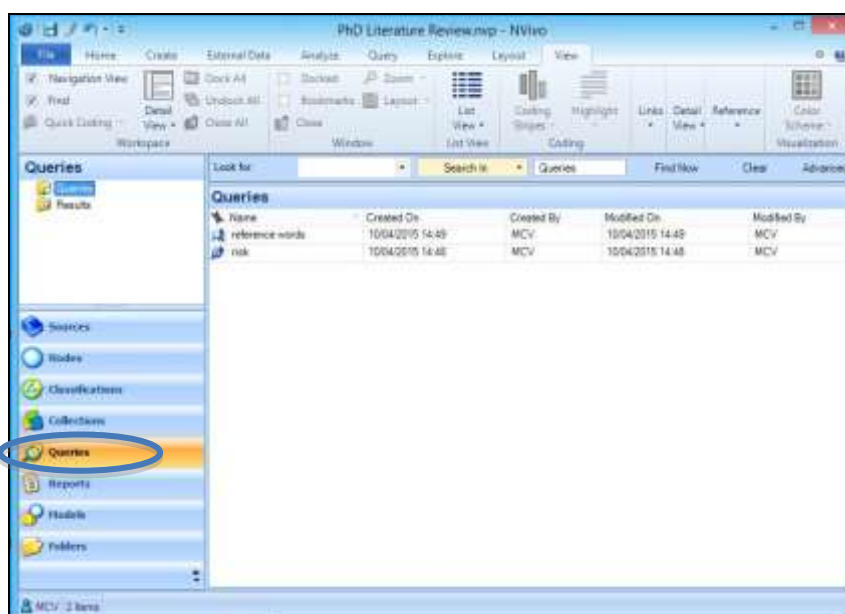
### 1.5.5 Use queries to explore your data

You can go beyond coding to extract deeper insights from your data using queries. Queries search and analyze your data in several different ways:

- ‘Text Search’: the ability to see where terms occur
- ‘Word Frequency’: identifies how frequent terms occur
- ‘Coding’: searches for content based on how it has been coded
- ‘Matrix Coding’: analyzes systematic trends in coding

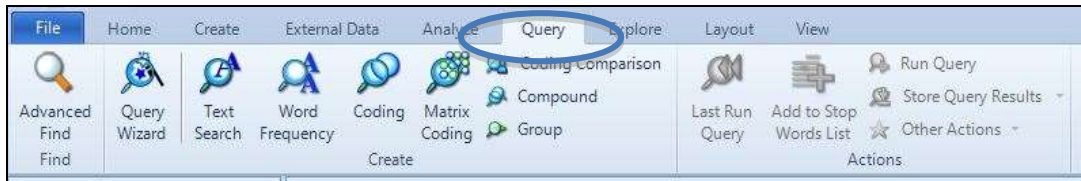
Each of these queries can be run using all of your sources or can be explored by a particular source, node or attribute. To begin queries, you need to locate the queries component in the ‘Navigation View’ (Figure 0.19).

**Figure 0.19 Query Component and Query List View**



Once selected, a list of queries run will appear in the ‘List View’. To open a previously run query double-click the query, which will appear in the ‘Detail View’. You can run new queries by locating the ‘Query’ tab on the ‘Ribbon’ (Figure 0.20). Here you can see your query options.

**Figure 0.20 'Query Tab'**



### Use the text search query feature

The 'Text Search' query feature allows you to search for particular words or phrases within your sources. To run the text finder, select the 'Query' tab on the 'Ribbon', and then select 'Text Search'. From this point you will have the option to choose how you search for text:

1. In the 'Text Search' options 'Search' box, click the first tab 'Text Search Criteria' to enter the word or phrase you would like to analyze.
2. Below your search, you have a number of options to adjust the scope of the search:
  - a. Select to search text, annotations or both.
  - b. In the 'Of' box, you can select which project sources you wish to search. You can search all of your sources or just a single source.
  - c. Adjusting the 'Matches Slider' will adjust your search from an 'exact match' to broad-spectrum synonyms of your word.
  - d. The 'Special' option will allow you to: combine words, exclude words or include words with special characters.
  - e. The 'Where' box gives you the option to only search items created by specific users.
3. Select the tab 'Query Options' (Figure 0.21) to:
  - a. Define how you would like to store the results of your query. You have the option to store the query as either a new node,
  - b. Define the 'Spread Coding' (i.e., would you like to just analyze the code or a greater space around the code to provide detailed context?).
  - c. Click Run.

**Figure 0.21 'Text Search' query property box**

Text Search Query

Add to project

Text Search Criteria | Query Options

Results

Option: Create Results as New Node

Location: Results

Name:

Description:

Spread Coding

Spread to: None

Open results

Create results if empty

Aggregate coding from child nodes

The results of your 'Text Search' query will be displayed in the 'Detail View' (Figure 0.22).

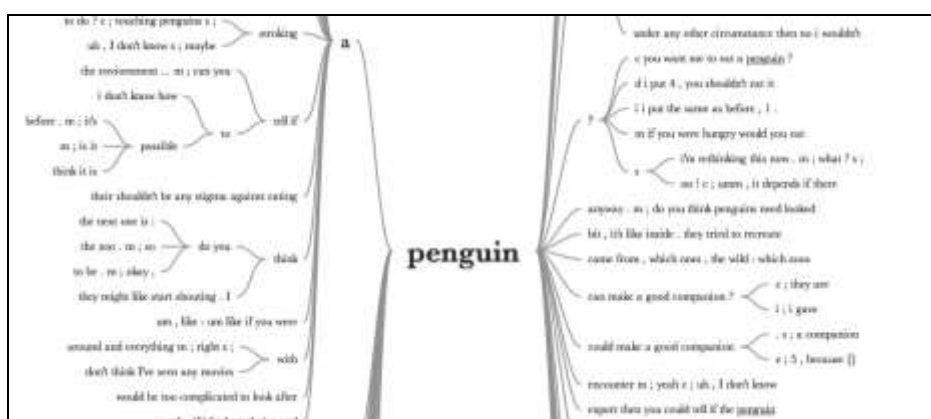
The 'Detail View' displays the sources, the number of times the word was referenced in that source and the amount of coverage within that source by that reference. On the far right-hand side of the 'Detail View', you have the option to view your data in its raw form, from its individual sources (such as in videos or interviews) and as a 'Word Tree'.

**Figure 0.22 Example 'Text Search' result**

Name	In Folder	References	Coverage
Abstractbook2014	Internals\Risk Papers	47	0.02%
Gatekeepers The Anatomy of a	Internals\Risk Papers	36	0.04%
Review_December_2011_Vol9_Nos_1an	Internals\Risk Papers	30	0.02%
j.1467-954X.2002.tb02807.x	Internals\Risk Papers	26	0.08%
Future-of-Science-Governance-Lit-Review	Internals\Risk Papers	25	0.04%
17105107	Internals\Risk Papers	22	0.05%
PUS	Internals\Risk Papers	20	0.05%
CPDF	Internals\Risk Papers	10	0.01%

A 'word tree' visualizes the words surrounding your search word. For example, in the word tree below (Figure 0.23) the word 'rules' is diagrammed. The most common surrounding words are automatically placed nearest to the focal word (rules), are the phrases 'and regulations' and 'they got in before any'. Similar to concept maps, word trees are useful for illustrating how ideas connect together in your data.

**Figure 0.23 Rules example 'Word Tree'**



You shouldn't expect this kind of automated analysis to provide you with fully satisfying results, but it can provide a useful jumping off point for your manual analysis.

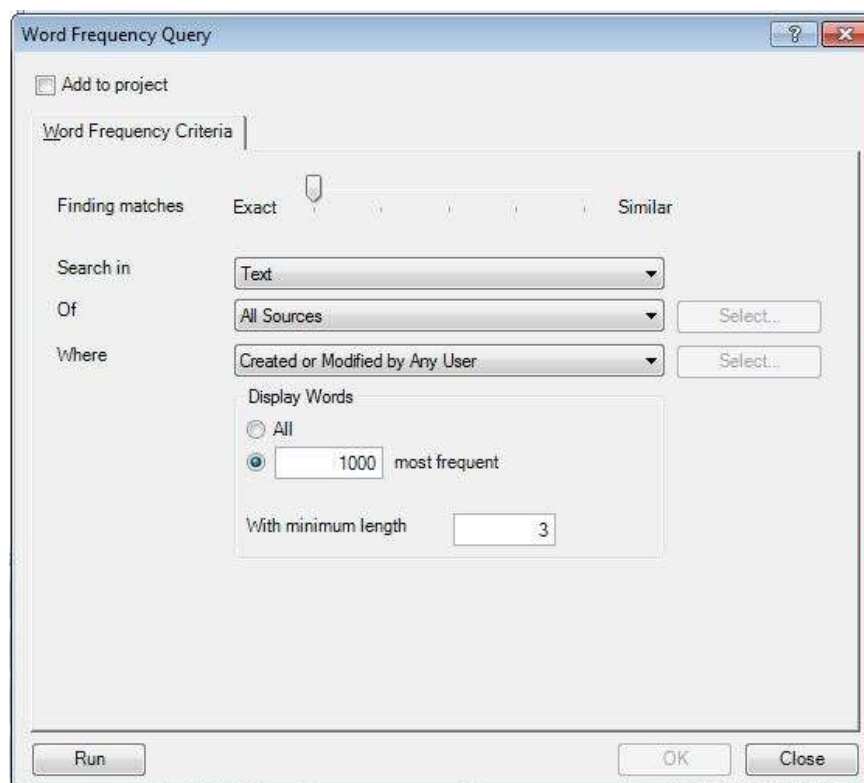
### **Determine word frequencies using queries**

Understanding how frequently words, phrases or concepts are used in your sources can give you a sense of the relative importance of certain ideas. NVivo can create such frequency counts while automatically categorizing by source, attribute or node.

To do this, select the 'Query' tab on the 'Ribbon', and then select 'Word Frequency'. 'Word Frequency' analyzes all of the words you specify in your search criteria. To set your search criteria (Figure 0.24):

1. Adjust the 'Matches Slider' to change your search from an 'exact match' to similar words.
2. In the 'Of' box, select the project sources you wish to search. You can search all of your sources or just a single source.
3. The 'Where' box gives you the option to only search items created by specific users.
4. You can edit 'Display Words' to change the properties of the words displayed:
  - a. You can choose how many words to display.
  - b. You can choose the minimum length of the words in your results.
5. Select Run.

**Figure 0.24 'Word Frequency' properties box**



The 'Data View' will list (Figure 0.25), in the far left column, in descending order, the most common words. The middle column lists the number of times each word

appears. The far right column lists the frequency, displayed as a percentage, based on the number of times that word appears in the data. You can also view your results as visual diagrams, such as word clouds, tree maps and cluster analyzes.

**Figure 0.25 'Word Frequency' results table**

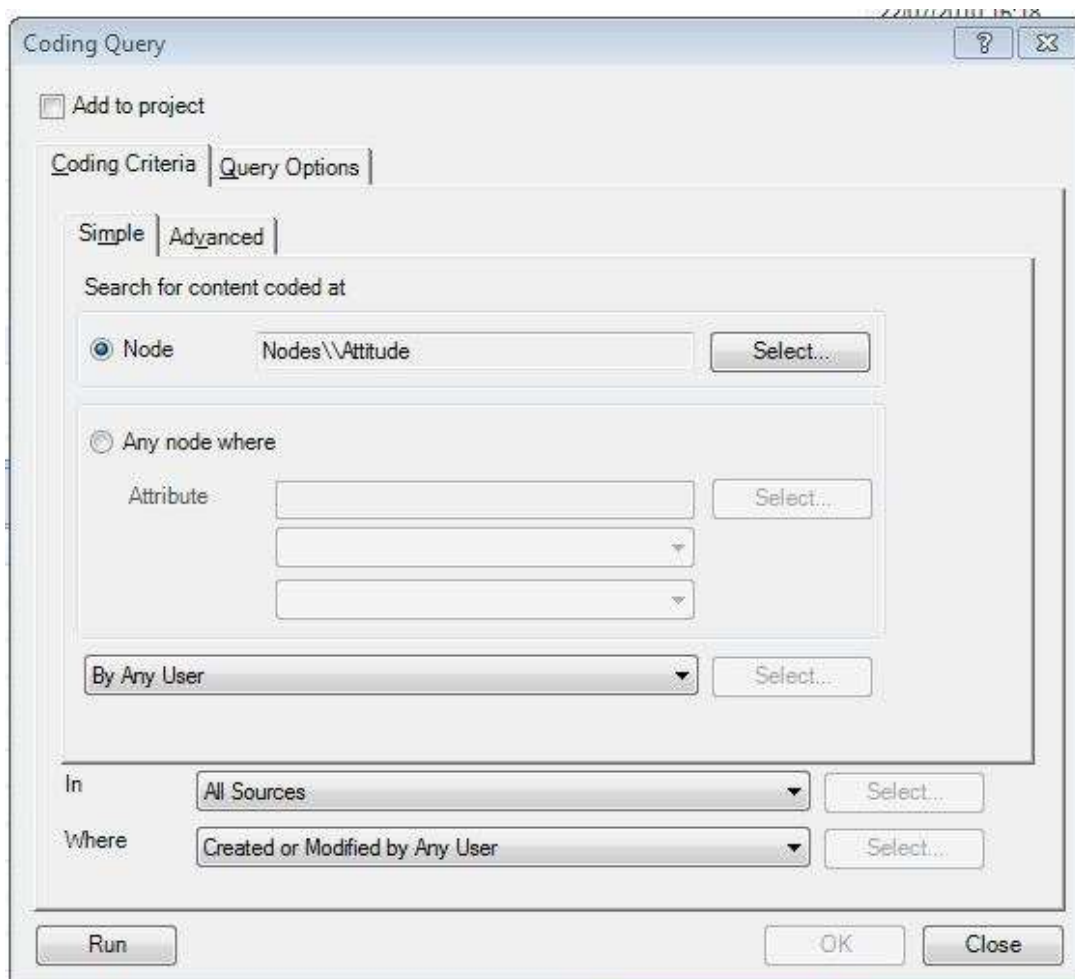
Word	Length	Count	Weighted Percentage
like	4	527	5.32%
think	5	157	2.58%
yeah	4	128	2.05%
really	6	102	1.66%
penguins	8	73	1.19%
just	4	71	1.16%
penguin	7	51	0.83%
know	4	48	0.78%
people	6	46	0.75%
maybe	5	40	0.65%
animals	7	35	0.57%
around	6	35	0.57%
good	4	35	0.57%
wild	4	35	0.57%

### Use coding queries

'Coding' queries show how your data has been coded, and enables you to find intersections between codes. To run a 'Coding' query, select the 'Query' tab on the 'Ribbon', and then select 'Coding'. 'Coding' queries can analyze codes by a specific node or nodes by attribute value. To conduct your simple analysis (Figure 0.26):

1. Select to either conduct your query at specific node
2. Or analyse nodes by attributes (such as age).
3. In the 'In' box, you can select which project sources you wish to search. You can search all of your sources or just a single source.
4. The 'Where' box gives you the option to only search items created by specific users
5. Select Run.

**Figure 0.26 'Coding' query properties box**



Results of the 'Coding' query are displayed as individual coded components. Each component can be double-clicked to view in the original source. Viewing the results of the 'Coding' query can help you decide where nodes overlap, how intersect and how they apply to your different sources.

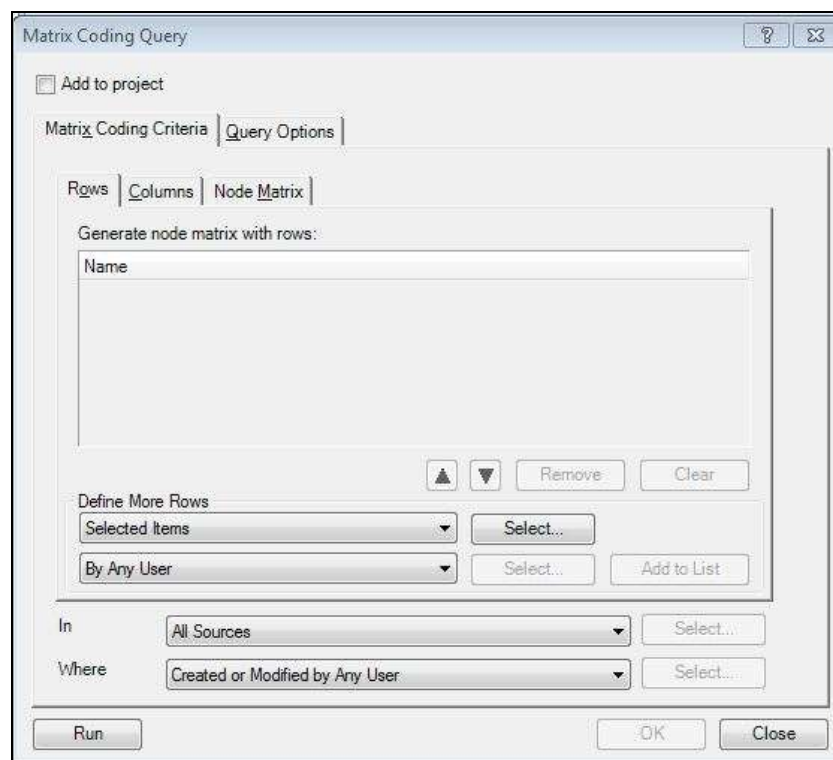
### **Use matrix queries to identify systematic relationships in your data**

Similar to running chi-square analysis (see Chapter 13, How to do Quantitative Data Analysis) with quantitative data, you may want to evaluate whether there is a systematic relationship between the different variables you've identified in your qualitative data. To do this with NVivo, use 'Matrix Coding' queries. This type of query produces a contingency table showing the frequencies across two categories. To run this

query, select the 'Query' tab on the 'Ribbon', and then 'Matrix Coding'. Once the 'Matrix Coding' dialog box opens, select your variables (see Figure 0.27).

1. Start with the 'Rows' tab:
2. Under 'Define More Rows', select the items you would like to compare in rows.
3. Leave the next dropdown at 'By Any User'.
4. Select 'Add to List'.
5. Click the 'Columns' tab, repeating the 'Rows' tab process described above.
6. On the 'Node Matrix' tab, select the sources you would like included in your query.
7. Select Run.

**Figure 0.27 'Matrix Coding' query properties**



The results will appear as a contingency table (Figure 0.28), which you can use to explore the quantitative relationships in your data.

**Figure 0.28 'Matrix Coding' query results table**

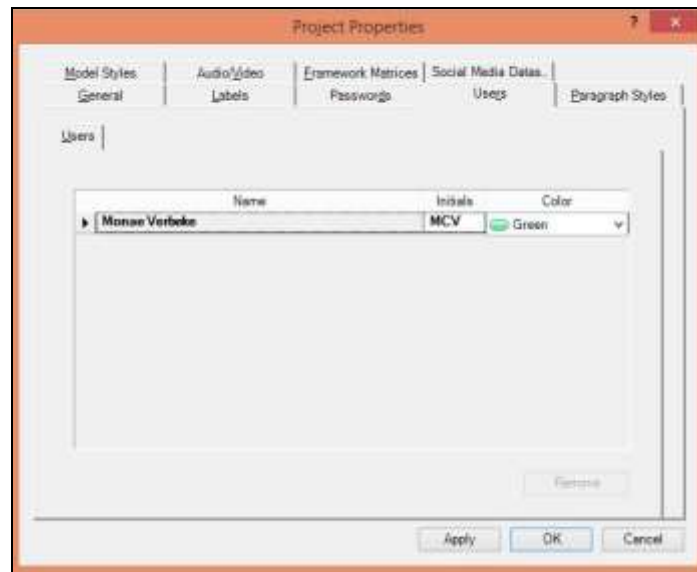
	A : Never Visited Zoo - Pr...	B : Never Visited Zoo - No...	C : Visited Zoo - Previous...	D : Visited Zoo - No Expe...
1 : Positive	25	26	14	70
2 : Mixed	1	1	0	5
3 : Negative	10	5	5	35

These results can also be displayed as a chart: Select 'Chart' from the right-hand side of the 'Detail View'. Such charts can illustrate trends in your data clearly and concisely.

### ***1.5.6 Evaluate inter-rater reliability for quantitative analyses***

If you follow a content analysis approach to quantify your qualitative findings, you'll need to evaluate the reliability of your analysis to demonstrate its objectivity and quality. This is done using a procedure assessing your project's 'inter-rater reliability' (intercoder reliability) (see Chapter 13, How to do Quantitative Data Analysis).

To evaluate inter-rater reliability with NVivo, team members must use their individual user accounts for their analysis work. The user account window opens each time you run NVivo. In this window, you need to identify yourself by name and initials. If necessary, users can be added, deleted or edited under 'Project Properties' (Figure 0.29).

**Figure 0.29 User settings**

The next step is to run a query called 'Coding Comparison'. This query evaluates the coding of two or more users, giving a visual illustration of where users differ in their coding. To run this query, follow these steps:

1. From the Query tab select Coding Comparison.
2. The 'Coding Comparison Query Properties' box will appear (Figure 0.30).

**Figure 0.30 'Coding Comparison' query properties**

- You can set up the query to compare two user groups. This can either be two individual users, or can be two grouping of users. Fill in 'User group A/B' with your selected users.
- Choose 'At' which nodes you would like to compare your users. You can choose to compare at all nodes; however, it is often more productive to compare one node at a time.
- Choose your 'Scope'. Would you prefer to compare at all sources or a select few? It's often more productive to compare with a selection of sources, rather than all your sources.
- To determine your inter-rater reliability result, select to 'Display Kappa Coefficient' and 'Display percentage agreement'.
- Select Run.

The result of your query is displayed in a table, as in Figure 0.31.

**Figure 0.31 'Coding Comparison' query results**

Node	Source	Source Folder	Source Size	Nodes	Agreement (%)	Agreed B (%)	Not A and Not B (%)	Disagreement (%)	Agreed A (%)	Not A (%)
Unlabeled	Pre-Viol 2486	Interact's Interview	1181 chars	1	100	0	0	0	0	0
Unlabeled	Post-Viol 2486	Interact's Interview	8873 chars	1	100	0	0	0	0	0
Unlabeled	Inter-Viol 2486	Interact's Interview	1182 chars	1	100	0	0	0	0	0
Unlabeled	Pre-Viol 1842	Interact's Interview	1188 chars	0.4721	84.88	8.9	75.88	15.12	8.91	15.12

The results illustrate each place where coders agree or disagree on the coded content.

Each of these comparisons can be further examined by double-clicking on the line to view individual coding stripes. This provides you with a great tool to discuss your coding as a team, see the differences between users' coding at a glance and dig for further detail.

## 1.6 Prepare your data for further analysis

At this stage you'll have completed your coding passes and ended up with a set of patterns you have identified within your data. You will have combined or adjusted codes along the way and created memos to document any initial ideas you had. You may also have made comparisons between perspectives within each sample (or between samples) to get a clearer sense of the range of views emerging from your data. In addition, you should have started making connections to key ideas from your literature review, especially theoretical concepts that can help you account for your data. These are the first crucial steps in developing a systematic analysis of your data. However, there are still several more steps to take in your qualitative analysis to ensure that it's as robust and insightful as possible.

While qualitative data analysis software is an excellent tool to help you manage and make sense of your data, your analysis extends into the writing up process (see Chapter 14). Moving your analysis, code-by-code into your research report document is an essential step, which can also result in new insights. Lay out your ideas on the page, thinking them through as you write each paragraph and then repeatedly reviewing and re-thinking what you have written to deepen your analysis and sharpen your claims. This chapter sets out the basic building blocks of a qualitative analysis, but the real value of your analysis comes through during the writing up process (see Chapter 14).

As you begin laying out the elements of your analysis on the page, ensure that you clearly link your reported findings to your data. Provide specific representative examples from the data to illustrate your analysis, using quotes from interviews, descriptions of encounters with research participants and any other relevant material. If

you find that you lack the material to support your conclusions, this can be a clue that you need to rethink your analysis or find more data: This is another reason why your analysis does not end with coding.

Concrete qualitative data extracts not only give you a solid basis for your conclusions, they can also breathe life into your analysis by showing your participants' perspectives in their own words. If you're having a hard time deciding which parts of your data use in your research report, remember that you only need content *directly relevant* to your reported findings. If you have a lot of similar examples, summarize them and pick only the most interesting to illustrate your key statements (as long as the most interesting is representative of the others). You may wish to structure your thesis or article around several sub-points so that each section includes one or more specific examples drawn from your research to illustrate that particular point.

Although your participants' accounts are the primary source of information for your project, don't assume that they offer an unvarnished picture of social reality (see also Silverman, 2007). People are constantly re-constructing their memories of events and developing narratives to present themselves in the moment to you as a researcher. For example, sociologist Erving Goffman (1990) showed that we are always managing the way we present ourselves to others, and qualitative data collection is no exception to this. When you don't have first-hand observations, video or written documentation and are relying exclusively on your participants' accounts, you should be cautious in how you describe events or activities. In such cases, it is often appropriate to describe your participants' perspective, construction or framing of events, rather than implying you know what actually happened. In qualitative research, the point is usually what participants believe, reported experiences, etcetera, so what 'really happened' may not

be important anyway for answering your research question. Comparisons between different people's perspectives and direct observations can help to reveal the constructive process at play in your participants' accounts.

**Top Tips: Key steps when conducting qualitative data analysis**

1. Begin to read through and analyze your data from the moment you complete your first bit of data collection. Your first step should be taking notes about your immediate impressions from the data collection experience, followed by transcribing any audio recordings you gather. Transcription often takes longer than you anticipate (and it can be exhausting), so start on it early in your project. By beginning to analyze your data from the start, you can identify gaps in your data collection that you may want to fill during subsequent interviews, focus groups or observations.
2. Pick an analysis method from the outset and stick to it. If you change the method of analyzing your data frequently, you will struggle to finish your research or arrive at any conclusions. There is always time to try a new method later!
3. Don't be afraid to experiment with your coding scheme. Remember codes can easily be merged later, if you find you don't have enough matching data for a code to stand on its own.
4. If you are struggling to analyze a specific set of data, don't be afraid to discuss your struggle with a colleague. Often a fresh set of eyes can help you see connections in your data that you're missing.

### **1.7 Ensure quality in your qualitative analysis**

Many factors can intervene to undermine the quality of your analysis. First, let's consider your role as the decision-maker about how your data will be collected and analyzed. You're likely to have some ideas about what you expect to find from your research before you start your project. You need to practice letting go of those ideas and being completely open to where your data will take you. While you won't be able to completely achieve this goal, striving to keep an open mind is valuable in itself.

You can help ensure the quality of your analysis by employing these strategies:

1. Transcribe and read your qualitative data during the data collection process can put you in a strong position to remember relevant contextual details you can add to your field notes. It can also help create a feedback loop, so that your on-going analysis feeds back into your data collection in the form of revised or new interview or focus group questions.
2. Read up on methodology in your sub-field. For example, if you're using blogs as your data, delve into articles or books on methodology in web-based research to ensure you're fulfilling quality expectations in this area.
3. Don't try to tie up every loose end or smooth over every rough patch. Qualitative analysis should allow for diversity in people's perspectives and experiences. Also, you don't have to account for every scrap of data you have collected. At some point, you'll have to make a judgement about which aspects of your findings are most relevant to addressing your research question. The patterns relevant to these findings will then become your priority as you prepare the headings in your research report, select example quotations to use, etc.
4. Don't try to do everything. Don't be afraid to make the judgement that something is "beyond the scope of your analysis". Just as you must narrow the scope of your project during the research design phase, your qualitative analysis will also need a tight focus so you can complete it on time.

There is a growing body of methodological literature advocating quality assurance techniques to help in "distinguishing properly from improperly conducted qualitative research" (Thorne, 1997, p. 117). There is agreement in qualitative methodology literature about some ways you can ensure quality in a qualitative study. Gaskell and Bauer (2000, p. 342) note that qualitative research requires its own quality assurance criteria, distinct from the longstanding quantitative criteria of validity and reliability. Qualitative research is devoted to developing valid (i.e., accurate) accounts of participants' perspectives, meaning-making processes, etc., but there is no reason to think that even the best qualitative research would achieve reliability (consistent results from applying the same methods of data collection). Each qualitative researcher is different, and every instance of generating qualitative data will develop in different ways due to the dynamic between the researcher, participant, research questions and

situation. Therefore, instead of validity and reliability, Gaskell and Bauer (2000) recommend using techniques such as: thick description, transparency and procedural clarity, deviant-case analysis and reflexivity.

### ***1.7.1 Thick Description***

Thick description involves the use of extended verbatim extracts from the data, which empower the reader to either agree with the researcher's conclusions or to come to different interpretations. The idea behind thick description is that it brings the readers "into the social milieu of the social actors," by providing "insights into the local colour, the language and the life world" of the people under study (Gaskell & Bauer, 2000, p. 347). To allow the reader to gain this insight, you need to provide longer segments of text rather than brief, isolated quotations (e.g., you should normally provide interview extracts that are closer in size to a paragraph than a single sentence). On a practical level, lengthy data extracts (e.g., a four-paragraph back-and-forth discussion in a focus group) showing the basis for your analysis will need to be broken down into smaller segments that can then be discussed piece-by-piece. It is your responsibility to walk your readers through the data extracts to show them the patterns you've identified.

### ***1.7.2 Transparency and procedural clarity: Maintain an audit trail***

In numerous instances in this book we advocate keeping an 'audit trail' of the decisions you make at all key junctures in your research. This can help you maintain a good record of the rationale behind your decision-making to refer back to in the future. The audit trail also serves as key means of establishing quality in your analysis because it allows you, your supervisor and potentially your readers to follow your analysis process. In this way, an audit trail helps you establish the quality of your qualitative analysis.

Using qualitative data analysis software, such as Nvivo, can automate part of the process of creating an audit trail. NVivo stores the steps in the analysis process, and you can add a 'memo' to document your rationale at key decision points in the process. For example, memos can be used to describe a change to your coding structure). Records are date and time stamped, allowing you to re-trace your steps if necessary. Lincoln and Guba (1985, pp. 319-310) highlight six categories to consider for your audit trail:

1. **Instrument development information:** includes all materials developed to conduct your research, including: pilot data collection tools, preliminary methods and research frameworks.
2. **Raw data:** all internal and external sources, as well as 'meta-data' that describes the nature of the data and the context of its collection.
3. **Data reduction and analysis products:** What information did you use to conduct your analysis? These details are essential for your audit trail.
4. **Data reconstruction and synthesis products:** For an NVivo-based analysis, this would include descriptions of your node structures (definitions, relationships and themes).
5. **Process notes:** Keep memos documenting your methodological decisions and the associated rationales, including those affecting methodological procedures, research design and strategies.
6. **Materials relating to intentions and dispositions** – Keep personal memos about your personal expectations, motivations and observations during the data collection and analysis processes.

These categories should allow an auditor to easily follow your research decisions, ensuring they stand up to scrutiny.

The audit trail can be straightforwardly demonstrated using NVivo. You are able to assign a category to all of your sources using nodes named with these six categories. You can run a query (see 1.5.5) on each node to visualize the records in each category. You are also able to view previous versions of your project, allowing you to trace the development your folders and subfolders, as they emerged. Qualitative analysis software such as NVivo not only allows you to establish an audit trail, but also assists

you in conceptualizing your own thought processes. You can ensure you have a robust audit trail by employing these strategies:

1. **Save a new version of your project file after each working session.** Saving multiple copies of your files (1) ensures you have a copy of your project if NVivo suddenly closes while you are working, and (2) allows you to revisit a previous version if you decide you are unsure of an analysis decision. For instance, if you decide you don't want two codes to be combined after all you can 'undo' the action by revisiting a previously saved version of your project.
2. **Create an organizational system for your memos.** You should record all of your decisions regarding your research and analysis using memos. The memos should be organized systematically for easy access. You may choose to organize memos by the stage of your research or by date. You need to choose a method that works best for you and your project.
3. **Record your decisions as you go along.** You may make physical notes or think of a new idea for your research. To provide an accurate portrayal of your research decisions you need to record these decisions as soon as possible. If you do not do this, the dates of your decisions will be inconsistent. Remember, the benefit to using NVivo for an audit trail is the aggregation of all your notes and data.
4. **Clarify your nodes from the beginning.** If you need to adjust your nodes, such as what they do or do not include, create a new memo or annotation.
5. **Assign category nodes** to your memos and data to establish an automated audit trail. Once nodes are assigned you can run queries to understand your decisions by over time.

Using these strategies, you are easily able to visualize your analysis process using NVivo.

This software-based capability is invaluable when it comes to maximizing procedural clarity and transparency in the data analysis process, and can save you a lot of time.

### **1.7.3 Deviant-case analysis**

To further enhance quality and accountability in your qualitative data analysis, you can use a technique known as deviant-case analysis (also called 'disconfirmatory data cases'). After coming up with your main analysis, this technique involves search through your data looking for cases that point in the *opposite direction* to your initial

findings. You then use these low frequency examples to try to improve and refine your the interpretations and categories and categories in your main analysis, or to try to disprove them completely (Green, 1998).

If you find opposing cases that you cannot reconcile with your main findings, you should then re-evaluate your initial categories. You may need to re-code your data to account for these cases. Accounting for deviant cases can create a stronger explanation by covering the full range of responses within your data.

Alternatively, you can choose to keep your main analysis in place. This means adding into your research report your smaller analysis of a pattern pointing away from your main conclusions. If you follow this approach, you should use the 'deviant cases' to demonstrate the diversity in your data (rather than pretending all your data stack up neatly in, for example, three categories).

Your personal perspective inevitably affects the selection and prioritization of patterns to present as your results. Specifically seeking out and explaining deviant cases can give you a kind of discipline by encouraging you to consider alternative explanations. It is also an important acknowledgement of the fact that any subject of social research can be open to multiple interpretations. In this way, this quality assurance procedure enacts the qualitative research's underpinning assumptions of multiple subjective viewpoints directly affecting social reality in a given situation.

#### **1.7.4 Reflexivity**

Reflexivity involves acknowledging your central role in the construction of knowledge (Tindall, 1994, p. 151). Many qualitative researchers view self-reflection as an essential type of quality assurance because it encourages the open acknowledgement of biases that all researchers inevitably bring to a study (Angen, 2000; Flick, 2002;

Johnson & Waterfield, 2004). You can achieve this reflexivity by periodically evaluating and writing down your assumptions, feelings and other ways in which your personal response to your research participants and situation might affect how you collect and analyze your data. You can present these personal reflections in your research report, either alongside your results (most likely in ethnographic research) or within your methods section. Reflexive sections in qualitative research reports can take many different forms. However, the main point is to disclose the role of your subjective response to the key aspects of your research, rather than trying to deceive the reader and yourself into believing you are able to take a purely objective stance. For a more extensive discussion of the opportunities and challenges involved in employing reflexivity within your project, see Finlay (2002).

#### ***1.7.5 Account for quality in your qualitative write-up***

Researchers specializing in methodology have worked over the last twenty years to define standards for ensuring quality in qualitative analysis. In other words, how can you demonstrate to your readers that you are presenting them with high quality research? Elliot, Fischer and Rennie (1999) set out guidelines for producing good qualitative research to help researchers improve the rigour of their analysis when writing up findings:

1. **Acknowledge your assumptions.** Your theoretical orientations, biases and expectations always affect the knowledge you create. You should clearly identify these factors and how they may have affected your analysis.

For example, in Charles' research report on political violence on commercial farms in Zimbabwe he made clear that he comes from a farming background in this country. He explicitly acknowledged how his personal background affected his ability to access certain kinds of participants, as well as his assumptions. If he hadn't, readers later discovering this background may wonder about its effect on Charles' research. Furthermore, they would have been robbed of the

opportunity to take this information into account when considering Charles' interpretations of his data.

2. **Situate your sample.** Describe the research participants and their circumstances to help the reader understand where their perspectives are coming from. In addition, you should provide demographic information about your sample such as age, gender and ethnicity and any other information you think could be relevant in interpreting the data.
3. **Ground your analysis in examples.** In presenting your data always give concrete examples to 'ground' the reader in the basis for your interpretation of events. Providing data extracts is essential for establishing the link between the data and your interpretations in a way that empowers the reader to challenge your interpretations.
4. **Conduct credibility checks.** Don't accept everything your participants tell you at face value. You need to display a probing academic scepticism in your analysis, subjecting your participants' claims to scrutiny and comparing them with other participants' accounts, relevant documents and other sources of evidence (see also Silverman, 2007). In addition to this practice of 'triangulation', demonstrate that you've carefully assessed how participants' backgrounds and social positioning may be shaping their accounts of a situation. Finally, invite alternative viewpoints on your interpretations from your supervisors, colleagues and other students.

For example, if you're studying prison sub-cultures by interviewing current prisoners, these participants may have an interest in highlighting certain aspects of their social realities, downplaying or hiding other aspects and even intentionally lying to you. You can increase the credibility of your research by:

- Understanding the background of each participant
  - Gaining perspectives from other prisoners
  - Interviewing prison officials
  - Having your interpretations checked by other researchers with experience studying similar topics
5. **Establish a coherent structure for your report.** Your qualitative research report needs a coherent structure to avoid confusing the reader with a series of disconnected points. Establish an overarching narrative to bring your research story together for your reader. Integrate and connect individual examples and smaller points within larger issues. Visualizations, such as flowcharts and diagrams, can be very helpful for showing your reader how the different pieces of the story fit together. In your write-up we recommend that you 'deep dive' on an issue and give detailed examples and context, but then

‘come back to the surface’ to orient the reader with discussion about what it all means and how the pieces are connected.

6. **Align your research claims to your evidence.** All research involves compromises. There are limits on the kinds of research claims you can accurately make based on your data. For example, if you’re studying commercial sex workers in Edinburgh you won’t be in a position to make valid research claims about sex workers throughout the UK or Europe. This is because your knowledge claims need to be directly supported by your data. However, you could use this kind of localized study to develop a more general theoretical model, for example, of sex worker identity formation. This model could then provide a starting point for future researchers investigating this topic in different locations. Likewise, you could use your research in Edinburgh to call into question or support and elaborate existing models or theories.
7. **Provide vivid, insightful accounts.** When you write up your research, you should vividly bring to life your participants’ experiences and perspectives. Use your interview extracts, descriptions of the research setting, photographs, etc. to transport your reader into the social world you’re studying. While you do this, remember your focus as a social scientist is on addressing questions such as ‘how?’ and ‘why?’, not letting your research report become like a soap opera revelling in emotion for its own sake.

Strategies for maintaining quality in qualitative research are still evolving (e.g., see Yardley, 2007, p. for further discussion of the role of validity in qualitative research).

When thinking about quality in your qualitative analysis, keep in mind that every research project is different. You need to adopt quality assurance strategies selectively based on what seems appropriate for your research topic and context. You don’t need to employ all the techniques specified in this section to produce good qualitative research. But you should always be honest with your reader and yourself about your decision-making, data collection and analysis. Identifying and explaining an issue is vastly better than trying to conceal it. This indicates that you are aware of the problem, even if you can’t remedy it. Such awareness and acknowledgement of limitations makes a problem with your research much more acceptable as the reader can take it into account when weighing your knowledge claims.

## 1.8 Look to qualitative data analysis options beyond this chapter

This chapter has focused on outlining one commonly used way of conducting qualitative data analysis. However, there is a treasure trove of different options you could choose from within the qualitative methods literature. Table 0.1 summarizes three commonly used approaches to help get you started finding the qualitative analysis approach that's right for your project.

**Table 0.1 Three common approaches to qualitative analysis**

Approach		Key literature
<b>Grounded Theory</b>	Originally developed by Glaser and Strauss (1967; 2001), the grounded theory tradition is based on the goal of developing theory from the 'ground' up. That is, you start from concrete data and then work up to more abstract ideas. The aim of this approach is to limit the imposition of prior assumptions (whether personal, professional or theoretical) on the data. That is, grounded theory research starts at the descriptive, micro-level of the data and then ultimately makes its way to a mid-level 'grounded theory', that is, a theoretical model explaining the social problem or event that is the focus of the research. Grounded theory has very clearly defined steps and is widely accepted in qualitative research methodology. However, it can be problematic if you want to investigate specific theoretical ideas.	<ul style="list-style-type: none"> <li>• Strauss, A., &amp; Corbin, J. (1998). <i>Basics of qualitative research: Techniques and procedures for developing grounded theory</i>. Thousand Oaks, CA: SAGE.</li> <li>• Charmaz, Kathy. (2001). 'Grounded theory'. In N K. Denzin and Y. S. Lincoln, <i>The American tradition in qualitative research</i> (pp. 244-270). Thousand Oaks, CA: SAGE.</li> <li>• Glaser, Barney G., and Anselm Strauss. (1967). <i>The discovery of grounded theory</i>. Chicago: Aldine.</li> <li>• Green, J. (1998). 'Grounded theory and the constant comparative method'. <i>British Medical Journal</i>, 316: 1064-1065.</li> </ul>
<b>Discourse Analysis</b>	In discourse analysis, the goal is to understand the reality constructed in the text (Gill, 2000). Broadly speaking, "the discourse analyst is after the answers to social or sociological questions rather than to linguistic ones" (Potter & Wetherell, 1994, p. 48). There are as many as 57 varieties of discourse analysis (Gill, 2000, p. 173), so you will need to specify the type you are using when you write up your methods. The discourse analytic paradigm emphasizes the larger	<ul style="list-style-type: none"> <li>• Fairclough, N. (2003). <i>Analysing discourse. Textual analysis for social research</i>. London: Routledge.</li> <li>• Gill, R. (2000). Discourse analysis. In M. W. Bauer &amp; G. Gaskell (Eds.), <i>Qualitative researching with text, image and sound: A practical handbook</i> (pp. 172-190). London: SAGE.</li> <li>• Hammersley, M. (2003). Conversation analysis and discourse analysis: methods or paradigms?. <i>Discourse &amp; Society</i>, 14: 751-781.</li> <li>• Jupp, V., &amp; Norris, C. (1993). Traditions</li> </ul>

	<p>social context surrounding the text, which is revealed through a careful reading of the text. Discourse analysis also considers the functions and consequences of the discourse.</p> <p>Discourse analysis is characterized by the following (Gill, 2000, p. 73):</p> <ul style="list-style-type: none"> <li>• “Critical stance towards taken-for-granted knowledge”.</li> <li>• Recognition that current understandings of the world are historically and culturally constructed.</li> <li>• Belief that knowledge is constructed through social and cultural processes.</li> <li>• Commitment to studying the ways in which these social constructions are linked to action.</li> </ul>	<p>in documentary analysis. In M. Hammersley (Ed.), <i>Social research: Philosophy, politics and practice</i> (pp. 37-51). London: SAGE.</p> <ul style="list-style-type: none"> <li>• Potter, J., &amp; Wetherell, M. (1994). Analyzing discourse. In A. Bryman &amp; R. G. Burgess (Eds.), <i>Analyzing qualitative data</i> (pp. 47-66). London: Routledge.</li> </ul>
<p><b>Interpretative Phenomenological Analysis (IPA)</b></p>	<p>Eatough and Smith (2008, p. 179) define interpretative phenomenological analysis (IPA) as ‘the detailed examination of individual lived experience and how individuals make sense of that experience’. This approach draws on the philosophical traditions known as ‘phenomenology’ and ‘hermeneutics’. Researchers in this tradition often emphasize what they call ‘lived experience’, a term they use to ‘encompass the embodied, socio-culturally and historically situated person who inhabits an intentionally interpreted and meaningfully lived world’ (Eatough &amp; Smith, 2008, p. 181). While other qualitative analysis approaches have similar underpinnings, IPA stays more closely and explicitly connected to its philosophical roots.</p>	<ul style="list-style-type: none"> <li>• For a general introduction to IPA, see: Eatough, V., &amp; Smith, J. (2008). Interpretative Phenomenological Analysis. In C. Willig, &amp; W. Stainton-Rogers (Eds.), <i>The SAGE Handbook of Qualitative Research in Psychology</i>. (pp. 179-195). London: SAGE.</li> <li>• For discussion of how it can be applied in the particular context of health, see: Biggerstaff, D. &amp; Thompson, A. R. (2008). Interpretative Phenomenological Analysis (IPA): A qualitative methodology of choice in healthcare research, <i>Qualitative Research in Psychology</i>, 5(3): 214-224.</li> <li>• For an example study to see what IPA looks like in practice, see: Omari, O., &amp; Wynaden, D. (2014). Interpretative Phenomenological Analysis: The lived experience of adolescents with cancer. In <i>SAGE Research Methods Cases</i>. London: SAGE.</li> </ul>

This is just the tip of the iceberg within the diverse landscape of qualitative analysis methods. For example, Interpretive Phenomenological Analysis (IPA) is one of several traditions of qualitative analysis that focus on the level of the individual case, rather than splitting individuals’ data into codes applied across participants. This

tradition of 'idiographic' analysis is an important alternative to the mainstream approach to qualitative analysis using coding procedures (Valsiner, 2000; Wagoner, 2009). If you have the time, it is well worth exploring the range of available qualitative analysis options to find one that feels right for you and your project.

### **1.9 Conclusion**

Qualitative methods are central to social science disciplines such as sociology or social anthropology, while in other academic disciplines such as economics they are more often used to complement quantitative data. In fact, qualitative methods can be used to identify potential blind spots in quantitative analysis. Either way, qualitative analysis requires both rigorous thinking and open-mindedness at every stage. You have to be sensitive to hidden issues that lurk beneath the surface of what people say and do. Be prepared to modify your focus as you go through the analysis process, following interesting threads relevant to your research question as they emerge.

While at some level qualitative research findings stem from the researcher's personal judgements, those judgements must be based on clearly identified data and defined analytical processes. To support your qualitative knowledge claims, use quotes from research participants or written content, images and/or detailed descriptions of first-hand observations of the activities you're studying further. Good qualitative research links social scientific concepts to data at every stage.

We provide instructions to walk you through a commonly used method of analysing qualitative data that we call 'pattern analysis'. It involves breaking your data (often sentences and paragraphs) down into pieces that connect together in some logical way. Once you decide on the patterns to include in your report, you reconnect the pieces with their original context in order to explain how the pattern(s) play out and

should be interpreted. You will then need to select particular quotations to include in your report to represent the patterns you have identified. You should select quotations that very clearly show the pattern you are explaining. Resist the temptation to select well-phrased quotations from your participants that don't represent the overall pattern very well. Your goal should be to provide your reader with a general description of the pattern, and then a set of representative quotations (or image elements) that demonstrate the various facets of that pattern.

Ensuring robust analysis is just as essential in qualitative research as it is in quantitative studies. One reason it's so important to follow rigorous procedures in qualitative analysis is to 'counter claims that you have simply cherry-picked your data for instances that support [your original assumptions and] interpretations' (Maxwell, 2010). This means that you as the researcher need to be systematic and disciplined from the outset of your research project. For example, we advocate keeping an audit trail of your key research decisions and the rationale behind them. This is something you need to start at the beginning of your study and continue methodically throughout your work. You can't start part way through or do it sporadically or you will end up with a patchy record of your decisions. Ultimately, your goal should be to avoid expecting your readers to simply trust that you've interpreted your data accurately. Rather, you should present your readers with the context and evidence you're using as the basis for your interpretations. This empowers your readers to decide for themselves whether they accept your knowledge claims.

<b>Suggestions for Further Reading</b>
<b>Importance of Context for Interpreting Qualitative Data</b>
<ul style="list-style-type: none"><li>• Russel, A., &amp; Mewse, A. J. (2009). Evaluating internet interviews with gay men. <i>Qualitative Health Research</i>, 19(4), 566-576. This article reflects on the ways qualitative data can be affected by who is being</li></ul>

interviewed, about what and by whom, using an internet-based interview study with gay men as an example. This article will help you think about the kinds of contextual factors that may have affected your data collection, and therefore need to be reflected upon and acknowledged in your methods section and data analysis.

- Riley, M. (2010). Emplacing the research encounter: Exploring farm life histories. *Qualitative Inquiry*, 16(8), 651-662. This article argues for the importance of the physical setting in which a study takes place for interpreting the resulting qualitative data during the analysis process. This article will help sensitize you to the importance of this element of context when you're conducting qualitative data analysis.

#### **Using Software for Qualitative Data Analysis**

- Sandelowski, M. (2009). On quantizing. *Journal of Mixed Methods Research*, 3, 208-222. If you're considering using qualitative software to quantify your data as outlined in this chapter, this article will help you work through epistemological and methodological issues affecting this process.

#### **Quality in Qualitative Research**

- Clary-Lemon, J. (2010). 'We're not ethnic, we're Irish!': Oral histories and the discursive construction of immigrant identity. *Discourse Society*, 21(1), 5-25. This article shows how you can present your participants' accounts as 'constructions' or framing, rather than implying they are giving you direct access to what happened.
- Silverman, D. (2007). *A very short, fairly interesting and reasonably cheap book about qualitative research*. London: Sage. This is a very well-written and insightful book that will help you reflect on the quality of the qualitative research you are producing. It raises important questions about common qualitative research practices that have developed, particularly within ethnographic and postmodernist qualitative traditions.

#### **Other Types of Qualitative Analysis**

- Atkinson, P. (2015). *For ethnography*. Thousand Oaks: SAGE. Paul Atkinson is an authority on ethnography and this comprehensive book reflects his extensive experience. The chapter on Accounts and Narratives is particularly useful for students doing ethnographic research for the first time.
- Fetterman, D. M. (2010). *Ethnography: Step-by-step* (3rd ed.). Thousand Oaks: SAGE. Fetterman's text is appropriate for beginner and experienced researchers. His writing is approachable and capably breaks down complex ethnographic concepts into easy to understand explanations. Students may find his chapter on analysis especially useful.
- Heath, C., Hindmarsh, J., & Luff, P. (2010). *Video in qualitative*

*research*. London: SAGE. For all qualitative researchers using video, this book is an essential read. The authors provide useful advice, especially on how to navigate practical problems when analyzing video data.

- Phillips, N., & Hardy, C. (2002). *Discourse analysis: Investigating processes of social construction*. Thousand Oaks, CA: SAGE. If you decide to use discourse analysis for your qualitative data, this book offers a good introduction to get you started. In particular, this book shows you how to analyze discourse to identify the social construction that lies beneath the surface.

### Glossary

- *Audit Trail* – An audit trail documents the steps you took during the process of conducting your qualitative data collection and analysis, as well as the reasons for the decisions you made.
- *Background Information* – Facts, figures, records, visual images, brochures, website information, etc. that are not the specific focus of your analysis but still help you understand the issue you're researching. You cite this information just like other literature, with full references provided in your bibliography.
- *Computer-assisted qualitative data analysis software (CAQDAS)* – Software specifically designed to help you analyze qualitative data, such as Nvivo, ATLAS.ti, etc.
- *Data* – In this chapter *data* is what you systematically analyze. You can either gather data yourself (primary data collection) or use what other people have gathered for different reasons (secondary analysis).
- *Data extract* – This term is used to describe a quotation or equivalent piece of qualitative data that is presented directly in a qualitative research report to represent a pattern identified by the researcher.
- *Deviant-case analysis* – A method of quality control where you specifically seek out deviant cases in your data, the cases that do not conform to the predominant body of findings, and explore why they do not conform. Through this process you are able to test the strength of your findings. You may ultimately re-define your views, re-code data in light of the deviant cases, or cite the cases in your research as deviant with an explanation of why.
- *Discourse analysis* – This is a qualitative research method associated with the perspective that our reality is socially constructed through discourse, that is through the link between words, thoughts and social structures. Many different types of analysis are called 'discourse analysis' so you may need a more specific term to indicate what *type* of discourse analysis you're using (e.g., critical discourse analysis).

- *Grounded theory* – This approach to qualitative research is based on the idea of the researcher starting the process with a blank slate. The goal is to begin with data, rather than with reading about the existing research and theory on a topic. The goal with this kind of approach is to build up from data to a mid-level theoretical explanation about your topic.
- *Memo writing* – The process of recording emerging thoughts, ideas, connections, areas of future research and links to theoretical concepts and other literature that arise when coding qualitative data. Memos are an integral feature in most qualitative data analysis software.
- *Nvivo* – A brand of computer-aided qualitative analysis software.
- *Reflexivity* – A method of quality assurance where you as the researcher acknowledge your central role in the knowledge generation process and identify areas where you may have biases, pre-conceived notions or other ideas that may influence your interpretation of the data.
- *Pattern analysis* – The term we are using to refer to the method of qualitative analysis presented in detail in this chapter. The method we articulate here is not taken from a single approach in the methodological literature, but it does correspond to often-used practices in published qualitative research across different social science disciplines. We have presented this approach because we feel it is straightforward and usable across social scientific disciplines.
- *Thick description* – A quality assurance technique where you provide the reader with extended verbatim extracts from your data. This way the reader can have a broader perspective on the context of the quotations so the reader can decide to what extent you have made an accurate interpretation of the participant's account.
- *Transparency and procedural clarity* – A quality assurance method in which researchers keep records, clear descriptions and evidence of their key decision-making to enable themselves (and potentially others) to assess their procedural pathway through their research.

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