CHAPTER 9

Qualitative research: data analysis

Stage 1
Problem definition

Stage 2
Research approach developed

Stage 3
Research design developed

Stage 4
Fieldwork or data collection

Stage 5
Data preparation and analysis

Stage 6
Report preparation and presentation

Objectives

After reading this chapter, you should be able to:

1 understand the importance of qualitative researchers being able to reflect upon and understand the social and cultural values that shape the way they gather and interpret qualitative data;

2 describe the stages involved in analysing qualitative data;

3 describe the array of data types that qualify as qualitative data;

4 explain the nature and role of coding in the stage of reducing qualitative data;

5 appreciate the benefits of being able to display the meaning and structure that a qualitative researcher sees in their data;

6 understand why qualitative data analysis pervades the whole process of data gathering and why the stages of analysis are iterative;

7 appreciate the strengths and weaknesses of analysing data using qualitative analysis software and have the means to experiment further with a number of online demonstrations;

8 understand the ethical implications of the ways that qualitative researchers interpret data.

Qualitative analysis involves the process of making sense of data that are not expressed in numbers.

Overview

The application of qualitative techniques can see researchers changing direction as they learn what they should focus their attention on. The techniques, the nature of respondents and the issues explored can change and evolve as a project develops. This chapter starts by examining how the researcher reflects upon what happens to the way they perceive and observe as these changes occur. It discusses how these reflections form a key source of qualitative data to complement the narrative generated from interviews and observations.

The stages involved in the process of analysing qualitative data are outlined and described. The first stage of the process involves assembling qualitative data in its rich and varying formats. The second stage progresses on to reducing the data, i.e. selecting, classifying and connecting data that researchers believe to be of the greatest significance. A key element of this stage is the concept of coding. Coding qualitative data is described and illustrated in some detail, including coding for the concept of grounded theory as introduced in Chapter 6. The third stage involves display data, i.e. using graphical means to display the meaning and structure that a researcher sees in the data they have collected. Manual and electronic means of displaying data are discussed. The final stage involves verifying the data. The marketing researcher aims to generate the most valid interpretation of the data they collect, which may be supported by existing theories or through the concept of theoretical sampling. Though these stages seem quite distinct, the reality is that they are iterative and totally interdependent upon each other; the stages unfold in 'waves' to produce an ultimate interpretation of great value to decision-makers.

The use of computers in the stages of qualitative data collection and analyses is described. To be able to cope with the great amount of data generated from qualitative techniques, a great variety of software packages are available. Examples of analysis software are briefly described followed by Internet addresses that allow demonstration versions of the software to be downloaded and explored. There are many distinct advantages to the use of qualitative data analysis software, but many researchers contend that it should be a 'hands-on' process that cannot be mechanised. The arguments from both of these perspectives are presented. The social and cultural values of qualitative researchers affect how qualitative researchers gather and analyse data. Understanding the social and cultural norms of respondents in international environments is discussed. The chapter concludes by examining how the social and cultural values of researchers affect their interpretation of qualitative data and the ethical implications of not reflecting upon these values.

The qualitative researcher

Self-reflection of social and cultural values

In Chapter 2 when discussing the diagnosis of research problems on page 49 we stated:

> *A major problem for researchers is that their perception of problems may be reflected through their own social and cultural development. Before defining the problem, researchers should reflect upon their unconscious reference to cultural values ... The unconscious reference to cultural values can be seen to account for these differences.*

This implies that the marketing researcher needs to reflect upon their own values and attitudes, the factors that may bias the way they perceive and what they observe. This reflection is just as important in the analysis of qualitative data as it is in the diagnosis

of research problems. To illustrate why researchers need to reflect upon what may bias the way they perceive and what they observe, we start this chapter with an example from the world of literature and the treatment of narrative. The example is a précis of an English translation of a Japanese novel; the example could be derived from any novel.

example

South of the Border, West of the Sun[1]

This novel tells the story of an only child, Hajime, growing up in the suburbs of post-war Japan. His childhood sweetheart and sole companion in childhood was Shimamoto, also an only child. As children they spent long afternoons listening to her father's record collection. When Hajime's family moved away, the childhood sweethearts lost touch. The story moves to Hajime in his thirties. After a decade of drifting he has found happiness with his loving wife and two daughters, and success in running a jazz bar. Then Shimamoto reappears. She is beautiful, intense, enveloped in mystery. Hajime is catapulted into the past, putting at risk all he has at the present. ■

Imagine that you had been asked to read this novel, but before you read it you were expected to prepare by reading a description of conditions in post-war Japan. From that you may appreciate the significance of a record collection of 15 albums, and how privileged a family may be to own a record player and to have this collection. Imagine someone else being asked to prepare by reading a biography of the author. From that you may appreciate the social and economic conditions of his upbringing, the literature, music and education that he enjoyed. Preparing to read the novel in these two ways may mean that the reader sees very different things in the story. They may interpret passages differently, have a different emotional attachment with the conditions and behaviour of the characters, and appreciate the effect of quite subtle events upon the characters.

Put aside any prior reading and imagine a female reader enjoying the book. She may empathise with the main female character Shimamoto and understand her attitudes, values and behaviour in the way that male readers may not be able to comprehend. In the story, Shimamoto suffered from polio as a child, which made her drag her left leg. Imagine a reader who has had to cope with a disability and who may appreciate how as a child one copes with the teasing of young children. The two main characters were 'only children'; imagine the reader who was an only child and who can recall how they would view large families and appreciate the emotions of the only child. The list could go on of the different perspectives of the story that may be seen. The reader, with their inherent values and attitudes, may perceive many different things happening in the story. The reader does not normally reflect upon their unconscious values and attitudes; they just enjoy the story. In talking to others about the story, they may be surprised about how others see it. In watching the film version of the book, they may be shocked at how different an image the film director presents, an image that is very different from the one that resides in their head. Now consider whether there is one ultimate interpretation of the novel, one ultimate 'truth'. It is very difficult to conceive that there is one ultimate interpretation. One may question why anyone would want to achieve such a thing; surely the fun of literature is the ability to have multiple interpretations and 'truths' of a novel.

Narrative for the qualitative researcher

What is the link from the interpretation of a novel to qualitative data analysis in marketing research? Quite simply, the qualitative marketing researcher builds up a narrative and creates a story of the consumers whom decision-makers wish to understand. Imagine yourself as a qualitative marketing researcher, supporting

decision-makers who wish to develop advertisements for an expensive ride-on lawnmower. The key target market they wish to understand is 'wealthy men, over the age of 60 who own a home(s) with at least 1 hectare of garden'. The decisions they face may include the understanding of:

1 What gardening and cutting grass mean to target consumers.
2 How they feel about the process of using a lawnmower.
3 What relative values (tangible and intangible) are inherent in different brands of lawnmower.
4 What satisfaction they get from the completed job of mowing a large lawn.
5 The nature and qualities of celebrities they admire (who may be used to endorse and use the product in an advertisement).

These questions may be tackled through the use of focus groups. Imagine yourself running these groups. What could you bring to the groups if you have personally gone through the experience of buying an expensive ride-on lawnmower and have gardening and lawnmowing experiences? You may have an empathy with the respondents in the same manner as the 'only child' reading of the experiences and emotions of an only child in a story. From this empathy, you may be able to question, probe and interpret the respondents' answers really well, drawing an enormous amount from them. Without those experiences you may have to devise ways to 'step into the shoes' of the respondents. You may look to the attitudes, values and behaviour of your parents, grandparents or friends for a start, looking for reference points that you are comfortable with, that make sense to you. As you go through a pilot or experimental focus group, you may be surprised by certain respondents talking about their lawnmowers as 'friends', giving them pet names and devoting lavish care and attention upon them. Getting an insight into this may mean looking at cases from past research projects or literature from analogous situations such as descriptions of men forming a 'bond' with their cars.

The direction that the qualitative marketing researcher takes in building up their understanding and ultimately their narrative is shaped by two factors. The first factor is the *theoretical understanding* of the researcher as they collect and analyse the data. This theoretical understanding can be viewed from two perspectives. The first is the use of theory published in secondary data, intelligence and literature. The use of theory from these sources may help the researcher to understand what they should focus their attention upon, in their questioning, probing, observations and interpretations. The second is the use of theory from a grounded theory perspective. The researcher may see limitations in existing theory that do not match the observations they are making. These limitations help the researcher to form the focus of their questioning, probing, observations and interpretations.

The second factor that shapes the direction that the researcher takes is a *marketing understanding*. In the case of understanding the wealthy male lawnmower owner, the researcher needs to understand what marketing decision-makers are going to do with the story they create. The researcher needs to appreciate the decisions faced in creating an advertisement, building a communications campaign or perhaps changing features of the product. Reference to theoretical and marketing understanding in the researcher helps them to present the most valid interpretation of their story to decision-makers. Unlike writing a novel, where the author is happy for the reader to take their own 'truth', the marketing researcher is seeking an ultimate interpretation and validity in their story. Achieving a valid interpretation enables the researcher to convey to decision-makers a vision or picture of a target market that they can quickly 'step into'. A marketing decision-maker, for example, may wish to include a passage of music in an advertisement that the target market has an emotional attachment to, that they find positive and uplifting. With a rich picture or vision of this target market they may be able to choose the right piece of music. The decision-maker's cultural

Be prepared to get lost and to change direction as a qualitative researcher.

and social development may mean that the piece of music is meaningless to them, but you as a researcher have given them the confidence and enabled them to step into the world of the target market. The following example represents the views of an advertising practitioner praising the support gained from qualitative researchers through their understanding of the issues faced by decision-makers.

example

Cinderella's getting ready for the ball[2]

I think a lot of researchers have worked hard at understanding advertising and the advertising process and are now regarded as quite critical contributors. What has allowed them to become 'wise' advisors rather than providers of fuel for literal and obedient fools? I think the following:

1 *There has been more crossover between planners and qualitative researchers*. Qualitative researchers understand their role in the process of developing advertisements and building brands. They want to know what the creative brief is and what responses or feelings an advert is meant to elicit. For example, when developing a current and famous premium package lager, we purposely discussed what levels of initial bewilderment or mild alienation were acceptable. The campaign had to challenge consumers – hopefully the brightest ones would let their mates in on the secret jokes down the pub!
2 *Good researchers work to more 'holistic' views of how ads work and thus avoid mechanistic and simplistic diagnoses*. We may therefore use projective techniques to help consumers express feelings. Whatever it is, good researchers try and look at advertisements in totality, not as a disaggregated series of frames.
3 *Good qualitative researchers, planners and clients are much more conscious about stimuli in advertising research*. People put more effort into defining stimuli – e.g. using film clips to get across production values or special effects, mood boards to give texture alongside traditional animatics, narratives or key frames. We have showed *Terminator 2* to help consumers imagine products 'metamorphosing' from one thing to another, and music snippets to conjure up different feelings of sensuality and sexuality.
4 *Interpretation has improved*. Good qualitative researchers know that consumers in group discussions are likely to be evaluative/judgemental, cynical and literal. It is the researcher's job to get them to 'imagine' beyond that and to interpret responses using one's cumulative knowledge of advertising chemistry. ■

The researcher's learning as qualitative data

Qualitative marketing researchers have to reflect upon their own social and cultural development, their own attitudes and values to see how these have shaped the narrative and how they shape their interpretation of the narrative. The researcher should recognise their own limitations and the need to develop and learn; in the case above, this means learning about wealthy men and their relationship with lawnmowers. Ultimately they wish to present the most valid story that they see, to have examined the story from many perspectives, to have immersed themselves in the world of their target markets.

If you are reading a novel, you may not be inclined to make notes as your reading progresses. You may not make notes of other books to read that may help you to understand the condition of particular characters, or to understand the environment in which they behave. You may not wish to write down the way that you change and learn as you read through the story. A reflection of your unconscious social and cultural values as revealed through your interpretation of the novel may be the last thing you want to do.

As a qualitative researcher you need to do all the above as you build and interpret your story of target consumers. A notebook should be on hand to note new question areas or probes you wish to tackle, and to reflect upon how they have worked. As interviews unfold and you feel your own development and understanding progress, a note of these feelings should be made. As you seek out specific secondary data, intelligence or theory to develop your understanding, you should note why. If you see limitations in existing theories or ideas, you should note why. As an understanding of how decision-makers can use the observations that are being made, these should be recorded. Ultimately the story that emerges in your own notebook should be a revelation of your own social and cultural values. There should be an explicit desire to develop this self-awareness and understand how it has shaped the direction of an investigation and the ultimate story that emerges.

The creation and development of the researcher's notebook is a major part of the narrative that is vital to the successful interpretation of questions and observations of consumers. The key lesson that emerges from the creation and development of the researcher's notebook is that qualitative data analysis is an ongoing process through all stages of data collection, not just when the data have been collected.

> *Analysis is a pervasive activity throughout the life of a research project. Analysis is not simply one of the later stages of research, to be followed by an equally separate phase of 'writing up results'.*[3]

The evolution of questions, probes and even deciding who should be targeted for questions or observations means that analysis takes place as data are being gathered.

The process of qualitative data analysis

The process of analysing qualitative data can be encapsulated in the four stages outlined in Figure 9.1.

Data assembly

Data assembly
The gathering of data from a variety of disparate sources.

Data assembly means the gathering of data from a variety of sources. These would include:

1. Notes taken during or after interviewing or observations.
2. Reflections of researchers, moderators or observers involved in the data collection process.

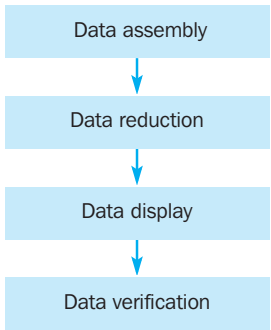

Figure 9.1
Stages of qualitative data analysis

3 Theoretical support – from secondary data, intelligence or literature sources.
4 Documents produced by or sourced from respondents.
5 Photographs, drawings, diagrams, i.e. still visual images.
6 Audiotape recordings and transcripts of those recordings.
7 Videotape recordings.
8 Records made by respondents such as mood boards or collages.

Field notes
A log or diary of observations, events and reflections made by a researcher as a study is planned, implemented and analysed.

As discussed in the previous section, the researcher should get into the habit of maintaining a notebook or **field notes**. As a qualitative investigation evolves in terms of the issues to explore and the respondents to target, the researcher goes through a learning process. This learning process means that the researcher may see things differently as interviews or observations progress. Keeping field notes aids the researcher's memory when it comes to the formal process of data analysis and helps enormously in categorising and interpreting collected data. It ultimately helps to generate a 'deeper and more general sense of what is happening'.

In order to make 'deeper and more general sense of what is happening', it is suggested[4] that researchers keep four separate sets of notes:

1 Short notes made at the time of observation or interview.
2 Expanded notes made as soon as possible after each session of interviews or observations.
3 A fieldwork journal to record problems and ideas that arise during each stage of fieldwork.
4 A provisional running record of analysis and interpretation.

These suggestions help to systematise field notes and thus improve their reliability. Data assembly also includes deciding lines of enquiry which should be developed and those that should be dropped. Given that qualitative research is primarily exploratory in nature, questions and probes are not fixed. As an interview or observation takes place, the researcher learns more about an issue and can develop a new question or probe and decide that a question, initially thought to be vital, is no longer relevant. There may be issues that can be compared over a series of interviews or observations, but the whole data collection and data assembly can evolve. Keeping notes is vital as memory alone is fallible, unreliable and potentially biased. Being able to recall, for example, the hesitation in replying to a question displayed by a focus group respondent, may upon reflection be seen as someone evading the issue. After all the group discussions have been completed and the same question has been posed to others, the interpretation may change to the individual being embarrassed about an issue, primarily through becoming aware of his or her own ignorance. The researcher's notes help them to recall how they were feeling at the point of setting the question, and recall the situation in other groups that gives meaning to *a pause that shows up as a quiet spot in an audio or video recording.*

Data reduction

Data reduction
The organising and structuring of qualitative data.

Transcripts
'Hard copies' of the questions and probes and the corresponding answers and responses in focus group or depth interviews.

Data reduction involves handling the data. This process involves organising and structuring the data. It means having to throw some data away! Imagine a series of 10 focus group discussions and the amount of data that can be collected. There are the memories and notes of the moderator and any other observers who took part, there are the **transcripts** of what was actually said in interviews, and there may be contributions from respondents in the form of mood boards. The transcripts are a vital data source in qualitative data analysis and much care should be taken in typing them up. Tape recordings are notoriously 'unclear'. Imagine a focus group in full swing: not every respondent takes their turn to speak without talking over other respondents, and then they may not speak clearly and loudly enough. As a result it can take a great deal of time to work out what respondents actually said and how the questions, responses and ideas connect together. In producing transcripts, it is much better for the researcher to work through the tape recordings and piece together the components using their notes and memory of events. This is very time-consuming, so many researchers use typists to transcribe their tape recordings of interviews, arguing that their time is better spent reading through and editing transcripts produced in this manner. The use of the Internet in depth interviews and focus groups means that this time-consuming task is eliminated as the transcript is built up as the interview progresses.

The researcher with their transcripts, notes and other supporting material has to decide what is relevant in all these data. Reducing the data involves a process of **coding data**, which means breaking down the data into discrete chunks and attaching a reference to those chunks of data. Coding is a vital part of coping with qualitative data analysis, especially in the context of developing theory with a grounded theory approach. Given this importance, the process is discussed in some detail.

Coding data
Breaking down qualitative data into discrete chunks and attaching a reference to those chunks of data.

Coding data. Researchers need to be able to organise, manage and retrieve the most meaningful bits of qualitative data that they collect.[5] This is normally done by assigning 'labels' or codes to the data, based upon what the researcher sees as a meaningful categorisation. What happens is that the researcher condenses the great mass of data from a qualitative study into analysable units by creating categories from the data. This process is termed the coding of data.

Table 9.1 presents the verbatim responses from an open-ended question in a self-completion survey targeted at 12–14-year-olds. The question asked respondents what facilities they would like in a planned new community centre. Though the technique

Table 9.1 Teenager requests for facilities at a planned community centre

Requested feature of new community centre	*Gender*
Skate park, death slide, basketball courts, swimming pool	Male
Computer room	Male
Stuff for all ages	Male
Swimming pool	Male
Computers, snooker room	Male
A space for computers, tuck shop	Male
Music, television, up-to-date magazines, pool tables	Female
Music, discos	Female
Swimming pool	Female
Music, pool/snooker, discos	Female
What people will enjoy	Female
All the things people enjoy	Female

used was quantitative, the survey generated qualitative data and in its much shortened format illustrates the process that qualitative researchers must go through.

In categorising the responses, the researcher could create codes of '**swimming pool**' or '**disco**' and count the times that these were literally expressed. Alternatively, the researcher could code on the basis of '**sports activities**' or '**recreational activities**' and group together activities such as 'swimming, basketball and snooker' for sports and 'computers, television, discos and tuck shop' for recreational activities. They could code '**indoor activities**' and '**outdoor activities**', or activities that would need supervision and those that would need no supervision. There are many ways that the researcher can categorise the data – it is their choice. Consider how the researcher may cope with the requests for a 'computer room' and 'computers'. Could these be combined under one heading of '**computing**' or would this lose the meaning of having a devoted space, away from other activities that could be noisy and distracting? Consider also how the researcher would cope with the requests for 'stuff for all ages', 'what people will enjoy' and 'all the things people enjoy'. It may seem obvious that a new leisure centre needs to develop facilities that people enjoy and that these may be discarded, but there may be a hint in the first statement of 'stuff for all ages' that may link to the word 'people' used in the two other statements. If the researcher interprets the statements in this way, a category of '**activities to draw in all ages**' could be created; these responses may be seen as tapping into a notion of a leisure centre that is welcoming and not exclusive.

Table 9.2 presents a small selection of the verbatim responses from the same open-ended question in a self-completion survey, this time targeted at adults.

Table 9.2 Adult requests for facilities at a planned community centre

Requested feature of new community centre	*Gender*
Regards for residents living nearby, special car parking area to avoid streets nearby being jammed	Male
New centre would soon bring the wrong sort of people; it could form a centre for thugs and crime	Male
Strict rules so as to inconvenience local people living close as little as possible, e.g. noise	Male
Run and organised well to run functions at affordable prices with dress rules for the lounge and bar	Male
Membership should be given on signature of applicants to a strict set of rules	Male
Emphasis on youth on the estate and run in a way to encourage rather than regiment them	Male
Supervised youth activities, daytime crèche, dance floor, serve coffee/soft drinks for youths	Female
Should be very welcoming and developed for all kinds of people	Female
Active participation by those using the facilities which should give opportunities for the young	Female
To make a safe place for all people of all ages to enjoy	Female
Exterior should be modern. Inside decorated tastefully with nice seats and tables, plenty of hall space	Female
Youth club with a youth leader. Luncheon club for older groups and gentle keep-fit for the older.	Female

The interesting feature in comparing the statements from the adults with those from the teenagers is how they express themselves in more detail and how they thought beyond specific facilities that make up the leisure centre. These statements were unprompted, so one can imagine how much richer the explanations and justifications would be with a face-to-face interview. Again, there are many ways that the researcher can categorise the data, perhaps even more than with the teenagers. Categorising these adult statements is not as straightforward as for the teenagers. The researcher could draw out the words '**youth**' or '**rules**' and set these as categories. They could pull out named '**facilities**' such as 'dance floor' and 'nice seats and tables' or '**activities**' such as 'youth club' and 'luncheon club'. What becomes apparent in reading through the statements (especially with the full set of responses) are implied

problems related to issues of parking, the types of people that are attracted or could be attracted, and how 'regimented' or not the centre should be. These are themes or patterns that may be apparent to a reader, though not explicitly expressed. There may be words expressed that make up the themes, but the words broken down and taken in isolation may lose their impact, if they are just counted.

Table 9.2 illustrates that categorisation into the component words may mean that the contextual material that gives these words meaning can be lost. From the above example, coding can be thought of as a means to:

1 *Retrieve data*, i.e. from the whole mass of data, particular words or statements can be searched for and retrieved to examine the 'fit' with other words or statements.
2 *Organise the data*, i.e. words or statements can be reordered, put alongside each other and similarities and differences evaluated.
3 *Interpret data*, i.e. as words or statements are retrieved and organised in different ways, different interpretations of the similarities and differences can be made.

Coding is a process that enables the researcher to identify what they see as meaningful and to set the stage to draw conclusions and interpret the meaning. Codes are essentially labels to assign meaning to the data compiled during a study. Codes usually are attached to 'chunks' of varying size – words, phrases, sentences or whole paragraphs, connected or unconnected to a specific setting.[6] Coding can be examined from two perspectives. First, it can be thought of as a means to simplify or reduce the mass of data. If the codes are kept to a general level and their number is relatively small, then the data can be 'stripped down' to a simple general form. This coding approach can be compared directly to simple forms of content analysis.[7] Second, it can be thought of as a means to expand, transform and reconceptualise data, opening up more diverse analytical possibilities. The general analytical approach is to open up the categories in order to interrogate them further, to try to identify and speculate about further features. Coding here is about going beyond the data, thinking creatively with the data, asking the data questions, and generating theories and frameworks.[8] This perspective of coding matches the process of grounded theory introduced in Chapter 6. We describe the coding process in grounded theory to illustrate how theory may develop from expanding, transforming and reconceptualising data.

Coding in grounded theory. This aims to organise data into a set of themes or codes in three phases. These phases should be understood as different ways of handling the data in which the researcher moves back and forth in iterations to develop each phase. They should not be seen either as distinguishable procedures nor as temporarily separated phases in the process:[9]

1 *Open coding* aims at expressing the data in the form of 'concepts'. For this purpose, data are first 'disentangled'. The individual words or short sequences of words that make up an expression are drawn out and the meanings that could be attached to them explored. An example of this is presented from an expression taken from Table 9.2: *Exterior/ should/ be modern/. Inside/ decorated/ tastefully/ with nice/ seats and tables/, plenty of/hall space/*. Examining each of these chunks in detail helps to develop a deeper understanding of the statement, e.g. consider the many interpretations of 'modern' when referred to a building. Examining the chunks also opens up possibilities in interpreting other parts of the text or other statements in different ways, e.g. linking 'modern' to 'seats and tables' could open up the possibilities of interpreting 'modern' as *modernist* 1930s style; a contemporary *reproduction* of that period; or a style that is truly contemporary, *21st century* modern or even

futuristic. Open coding may be applied in varying degrees. The data can be coded line by line, sentence by sentence or paragraph by paragraph. Which of these alternatives is chosen depends upon the research question, on the amount and complexity of the qualitative data, on the style of the researcher and on the stage that the analysis has reached. The result of open coding should be a list of codes that were attached to the data. These are complemented by the field notes made by the researcher as they collected the data and as they go through the coding process. The open coding process is summarised by Strauss and Corbin as:[10]

> *Concepts are the basic building blocks of theory. Open coding in grounded theory is the analytic process by which concepts are identified and developed in terms of their properties and dimensions. The basic analytic procedures by which this is accomplished are the asking of questions about the data, and the making of comparisons for similarities and differences between each incident, event and other instances of phenomena. Similar events and incidents are labelled and grouped to form categories.*

2 *Axial coding*. This step helps to refine and differentiate the categories that result from open coding. From the potential multitude of categories that can be originated, certain ones are selected that the researcher sees as being the most promising and worthy of further development. The significant element of this stage is to establish relationships between categories and sub-categories; these relationships are clarified or established. The axial coding process is summarised by Strauss and Corbin as:[11]

> *Axial coding is the process of relating sub-categories to a category. It is a complex process of inductive and deductive thinking* [see Chapter 6, page 141] *involving several steps. These are accomplished as with open coding, by making comparisons and asking questions. However, in axial coding the use of these procedures is more focused and geared towards discovering and relating categories.*

How would your hairdresser interpret your request for a 'modern' hairstyle?

3 *Selective coding*. This step continues axial coding at a higher level of abstraction. The aim of this step is to develop and elaborate a core category around which the other developed categories can be grouped and by which they are integrated.[12] The researcher must decide between equally important phenomena and evaluate them, so that one central category results. The core category is developed in its features and dimensions and linked to other categories. The analysis and the development of the theory built around this core category aim at discovering patterns in the data as well as the conditions under which these apply. Grouping the data in this way should enable the researcher to say '*under these conditions* [*list and describe*] *this happens; whereas under those conditions* [*list and describe*] *this is what occurs.* Theory is formulated in detail and checked against the data. The procedure of interpreting the data, like the integration of additional data, ends at a point known as theoretical saturation, i.e. a point where further coding, enrichment of categories and evaluation of connections no longer provides any new knowledge.

Throughout the process of coding in grounded theory, the researcher should regularly address the data, as it is built up and in its entirety, with the following list of questions. Attempting to answer these facilitates the questioning of how codes are defined, connected and subsumed into broader categories:[13]

- *What?* What is it about here? Which phenomenon is mentioned?
- *Who?* Which persons are involved? What roles do they play? How do they interact?
- *How?* Which aspects of the phenomenon are mentioned (or not mentioned)?
- *When? How long? Where?* Time, course, location?
- *How much? How strong?* Aspects of intensity.
- *Why?* Which reasons are given or can be reconstructed?
- *What for?* With what intention, to what purpose?
- *By which?* Means, tactics and strategies for reaching that goal.

Coding is a major process involved in data reduction. The process forces the researcher to focus upon what they believe to be the most valid meaning held in the data. In order to develop that meaning further, the researcher needs to communicate their vision to others, to evaluate their interpretations of the data and to reflect upon their own vision. The stage of data display is the means by which researchers communicate their vision of meaning in the data.

Data display

Data display
Involves summarising and presenting the structure that is seen in collected qualitative data.

Data display involves summarising and presenting the structure that is seen in the collected data. The display allows a 'public' view of how the researcher has made connections between the different 'data chunks'. Even if others may not have made the same connections and interpret the data in exactly the same manner, the logic of connections should be clear. The display may be in a graphical format, with boxes summarising issues that have emerged and connecting arrows showing the interconnection between issues. Verbatim quotes can be used to illustrate the issues or the interconnections. Pictures, drawings, music or advertisements can also be used to illustrate issues or interconnections. The overall structure allows the marketer to see the general meaning in the collected data. The illustration of issues or interconnections brings that meaning to life.

One of the simplest means to display data is through the use of a spreadsheet. This can be built up and displayed in a manual or electronic format. Table 9.3 presents an example of how a spreadsheet may be set out. This spreadsheet is a sample of all the interviews that may be conducted and the number of issues that may be tackled. The example relates to a bus and tram operator who wishes to understand the attitudes

Table 9.3 Spreadsheet data display of focus group discourse

Interviews? *Issues, e.g.?*	*Group 1 – 18–25 yr old male car drivers*	*Group 2 – 18–25 yr old female car drivers*	*Group 3 – 18–25 yr old male bus and tram users*	*Group 4 – 18–25 yr old female bus and tram users*	*Notes on the similarities and diffferences between groups on issues?*
Evening travel	Verbatim discourse taken from the interview that relates to this issue				
Commuting					
Freedom					
Friends					
Notes on the dynamics of individual groups?					

and behaviour of 18–25-year-olds related to using public transport. In the columns, details of each interview are presented, and in the final column, notes are made of observations between interviews with a focus on each issue. In the rows, the issues that were discussed in the interviews are presented. These issues may be generated from the topic guide used and/or from the notes of the researcher related to what they see as the emerging issues. The final row details notes of the dynamics of the group, explaining why particular exchanges may be interpreted in a particular way. The analyst cuts and pastes extracts from the transcripts into the relevant cells. With the spreadsheet built up of the reordered transcripts (each focus group may tackle the issues in a different order and with different emphases), comparisons can be made across the columns on particular issues, looking for similarities and differences. Connections between issues can be mapped out with the use of arrows to show the flow of dialogue. The responses from types of respondents such as 'city-dwellers' or 'suburb-dwellers' can be colour coded to examine differences. Different notes, images or any other supplementary material can be pasted on to the spreadsheet to help in the interpretation; all the assembled data can be displayed.

Such a spreadsheet can be built up manually using large sheets of paper from, e.g. flip charts, divided into a grid, and the evidence such as chunks of the transcript physically pasted in. The big advantage of this approach is being able to visualise the whole body of data and to move around the data to 'play' with ideas and connections. This works particularly well when there is more than one person working on the analysis and they are drawing ideas and questions out of each other as they relate to the data. The disadvantage is that editing, moving data around and re-categorising data can become very cumbersome and messy. This is where electronic means of displaying the data work well. With electronic means, images and notes can be scanned in and added to the transcripts. Changes can be made very easily and quickly in moving data around, re-categorising and incorporating new material. Different versions can be easily stored to allow an evaluation of how the thought processes of the researcher have developed. The disadvantage of the approach is that, when attempting to view the data in its entirety, the entire dataset is there but in effect is viewed

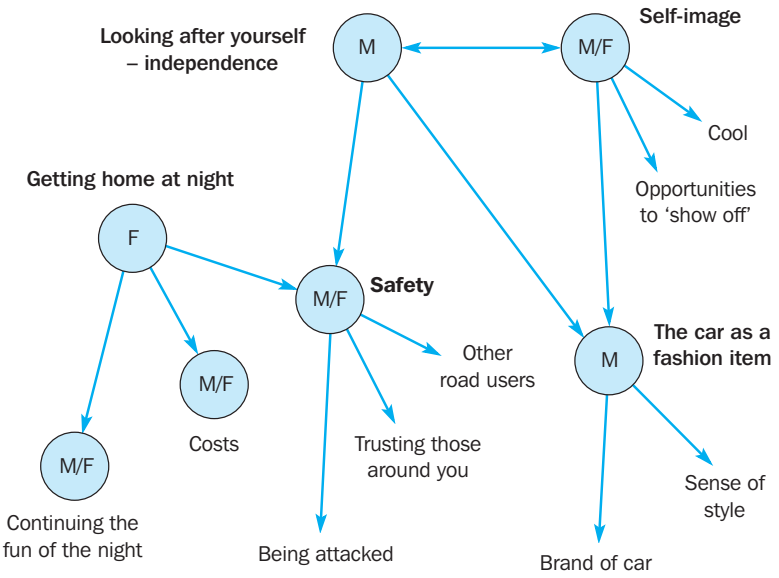

Figure 9.2
Flow chart depicting how 18–25-year-olds view public transport

through a 'window' with a limited field of vision. The 'window' can be readily moved about but the overall perspective is limited.

The other major means of displaying data is to use flow charts. Figure 9.2 displays a very basic structure of the issues or major categories and sub-categories related to how 18–25-year-olds view the use of public transport after an evening out.

Visualising the data in this matter can allow the researcher to dip back into the transcripts and their notes to seek alternative ways of connecting evidence and justifying connections. This means that this form of graphic can play a vital role in data reduction and coding, i.e. in making sense of the data, as well as in portraying a final interpretation of the data. Most proprietary qualitative analysis software packages allow data structures to be displayed as in Figure 9.2 but with far more sophisticated features to display structure, differences and supporting evidence. A simple illustration of this in Figure 9.2 is the 'M/F' label attached to categories, used to display behavioural tendencies of male or female respondents. With an analysis package, quite distinctive structures for respondent types may be mapped, with the ability to tap into supporting evidence in actual categories or in the links between categories.

Once the researcher has displayed what they see as the meaning in the data, they need to demonstrate the credibility of their vision. This involves data verification.

Data verification

Data verification
Involves seeking alternative explanations of the interpretations of qualitative data, through other data sources.

Data verification involves seeking alternative explanations through other data sources and theories. Researchers need to demonstrate that they have presented a valid meaning of the data that they have collected. They need to show that the structure or meaning they see is not just a reflection of their own views. This is where the concept of theoretical understanding as discussed at the start of this chapter can help. It is also where the use of the researcher's field notes proves to be invaluable. The use of theory from secondary data, intelligence and literature can help to guide what may be reasonably expected as a meaning. Other means to verify the data can be through seeking 'similar' research findings and explanations taken from different contexts, different time frames and different researchers.[14] Though the findings from these different scenarios will not be the same, there can be themes that give qualitative researchers the confidence that they are representing a valid view of their respondents.

If the researcher is using a grounded research approach and is seeking to develop new theory, then the approach they use to validate their theory is through theoretical sampling (introduced in Chapter 6). Applying theoretical sampling in this context means seeking out different situations and learning from the comparisons that can be made from these situations. The purpose is to go to places, people or events that will maximise opportunities to discover variations among concepts. The grounded theorist uses theory initially (even if it is in a highly critical and dismissive manner) to help guide which cases they should focus upon, the issues they should observe and the context of their investigation. As their research design evolves they seek to develop new theory and do not wish to be 'blinkered' or too focused on existing ideas. They will seek multiple explanations of the phenomena they observe and will create what they see as the most valid relationship of concepts and, ultimately, theory. The procedure of interpreting the data, like the integration of additional data, ends at a point known as theoretical saturation, i.e. a point where further coding, enrichment of categories and evaluation of connections no longer provide any new knowledge.

The concept of validity will be examined in more detail in Chapter 12.[15] At this stage it is worth noting that the qualitative researcher should not just present an interpretation and then seek validation or verification of that perspective. The search for verification is a quest that permeates the whole research process. At face value, data assembly, reduction, display and verification appear to be quite distinct and consecutive stages of data analysis. The reality is that they are iterative and totally interdependent upon each other. As the researcher assembles new data, they should be thinking of means to validate their views, asking questions in different ways of different individuals and recording these thoughts in their field notes. As data are being reduced and coded, the researcher seeks different possible explanations and evidence to support categorising, naming and connecting views in a particular manner. The researcher will question their interpretations of words and gestures and their own ways of seeing. This questioning process adds to the verification. The use of data display is a means to communicate to others the meaning and structure that a researcher 'sees' in qualitative data. The display allows others to understand that vision, to question and evaluate it. The exposure and critique of the vision by other researchers and decision-makers further verify the data. Ultimately, such critique can direct the researcher to further data assembly, reduction and display; the stages may unfold in 'waves' to produce an ultimate interpretation of great value to decision-makers.

Using computers in qualitative research and analysis

A major problem for the qualitative researcher is the sheer volume of data that they may collect. In an attempt to 'step into the shoes' of target consumers, a whole array of questions, probes, observations, answers and personal notes have to be analysed. As with quantitative data analyses, it is possible to complete analyses without the aid of a computer. Using the computer should provide speed, memory, ease of data access and the ability to transform and manipulate data in many ways. Overall it allows a much more efficient and ultimately effective process, as the researcher's effort may be focused upon generating the most effective support for decision-makers as quickly as possible rather than upon laborious administrative tasks. The following list summarises qualitative research activities that may be supported by the use of computers:

1 *Field notes.* Making notes before, during and after interviews and observations. Writing and editing these notes if needed as part of a data display to justify a particular interpretation.

2 *Transcripts.* Building up transcripts to represent the discourse in interviews.
3 *Coding.* Attaching key words to chunks of data or text.
4 *Storage, Search and Retrieval.* Keeping data in an organised manner, so that relevant segments of data or text can be located, pulled out and evaluated.
5 *Connection.* Linking relevant data segments with each other.
6 *Memoing.* Writing up reflective comments that can be 'pasted' on to relevant codes and connections.
7 *Data display.* Placing selected or reduced data in a condensed and organised format using a spreadsheet matrix or network. The display can be part of the development of the analysis or in the final vision produced by the researcher.
8 *Drawing conclusions and verification.* Aiding the researcher to interpret the data display and to test or confirm findings.
9 *Theory building.* Developing systematic and conceptually coherent explanations of findings that are meaningful to marketing decision-makers.
10 *Reporting.* Presenting interim and final reports of the findings in a written and oral manner.

Many of these tasks can be performed with readily available word-processing, spreadsheet and presentation packages. Many researchers may be very comfortable using such packages to gather and record data and to present findings. What may be new to many researchers is the use of proprietary software to help with the technical integration of data assembly, reduction, display and verification. Improvements in the functions and power of software that copes with this technical integration occur at a rapid pace. To see an array of different qualitative data analysis packages, download demo discs and evaluate how applicable they may be to a particular qualitative technique, visit **www.scolari.co.uk**. Three analysis packages presented on this site are briefly described below.

QSR Nvivo can cope with qualitative data that emerges from ethnographic approaches, focus groups, depth interviews, open-ended questions in surveys, and even from Web searches. It enables the researcher to combine the analysis of text or multimedia images. It allows for the detailed annotation of researcher notes, enabling links to memos that may have been built up in a researcher's field notebook. Coding can be visually presented with the ability to filter data or to ask questions that may reveal the existence of corroborating or contradictory evidence. It allows one to display data in matrices or in a rich text format and ultimately to present graphical models of the analysis and research findings. In essence the technical integration of data assembly, reduction, display and verification can be fully supported by this software.

BEST (Behavioural Evaluation Strategy and Taxonomy) is a software package that is more geared to ethnographic observational data. Using BEST, the researcher can record a series of live behavioural events that may occur in a mutually exclusive manner or overlap. The researcher can create categories of event that they feel should be focused upon. These categories can be observed and automatically recorded to allow quantitative assessment of frequency, duration and intervals. It can also allow qualitative assessment by being able to process and compare multiple data files that may be visual or in memos and text. It can graphically present the quantitative and qualitative interpretations and interface with other statistical and visual editing packages.

Atlas.ti: The Knowledge Workbench is similar to Nvivo in that it can cope with large bodies of textual, graphical and audio or video data generated from ethnographic approaches, focus groups and depth interviews. The overall feel of the package tries to recreate the best features of manual analysis, such as a feel for the whole dataset and a 'paper and pencil' feel of being able to make notes in margin areas

as the analysis unfolds. It enables the researcher to build networks of connected passages of text, audio and visual files with their notes or memos. The ability to maintain an overview of the whole dataset with the ability to quickly search, retrieve and browse chunks of data facilitates a clear coding process.

These descriptions do little justice to the power and array of features that these software packages possess. A full description of these would require a great deal of space and would struggle to compete with the illustrative power of the demo disk that we recommend you download and explore.

Qualitative data analysis packages do not automate the analysis process, nor is that their purpose. The process of coding, as described in the data verification section, depends upon the interpretations made by the researcher. The overall description, model or theory that emerges from the analysis also depends upon interpretations made by the researcher. No analysis package can perform such interpretations.

Qualitative data analysis is not formulaic; it requires an approach that gives quick feedback to the researcher on the results of emergent questions. This involves an iterative cycle of reflection and innovation, which means total interaction between the researcher and the computer. So, rather than seeing analysis as an automated process, the purpose of software is to aid the researcher to analyse data in a systematic and thorough manner. The researcher seeks patterns, meanings and interconnections in their qualitative data. This can be conducted manually, but by using software they can manipulate the data far more efficiently to help them see patterns, meaning and interconnections and ultimately to develop theory. In summary, software packages offer the qualitative researcher the following advantages.

Advantages of computer-assisted qualitative data analysis

1. *Speed.* The speed at which programs can carry out sorting procedures on large volumes of data is remarkable, and continues to get faster. It gives the data analyst more time to think about the meaning of data, enabling rapid feedback of the results of particular analytic ideas so that new ones can be formulated. Analysis becomes more devoted to creative and intellectual tasks, less immersed in routine.
2. *Rigour.* Rigour adds to the trust placed in research findings. In this context it means counting the number of times things occur as well as demonstrating that negative incidences have been located rather than selecting anecdotes that support a particular interpretation.
3. *Team.* In collaborative research projects where researchers need to agree on the meaning of codes, a check can easily be made of whether team members are interpreting segments in the same way. This is particularly useful as coding moves from the more descriptive and mundane codes to ones that reflect broader theoretical concerns. Researchers can pass coded interviews between them, and compare the results.
4. *Sampling.* It is easy to keep track of who *has* been interviewed, compared with the intentions of who *should* be interviewed. Beyond the sampling of individuals is the concept of theoretical sampling, i.e. the inclusion of events that corroborate or contradict developing theory. As the researcher has more time to spend on creative and intellectual tasks, they can develop stronger descriptions and theories and strengthen the validity of their views by ensuring they have sampled sufficient incidences. [16]

It must be reinforced, however, that software packages cannot interpret and find meaning in qualitative data. The programs do facilitate, and in some cases automate, the identification and coding of text. But there is sometimes a false assumption that identification and coding are simple and unproblematic, and critical evaluation and scrutiny of coded segments and code counts are not needed. By facilitating quick

analyses, which focus on quantitative category relationships, the software may discourage more time-consuming, in-depth interpretations. Thus while the programs are intended as a means of allowing the researcher to stay close to the data, their misuse can have the unintended result of distancing the researcher from the data. As discussed earlier, many decision-makers who use qualitative marketing research do not question how analysis is completed, or indeed why it should be completed. The following arguments illustrate the nature of their concerns. [17]

Disadvantages of computer-assisted qualitative data analysis

1 *Mechanistic data analysis.* The computer cannot replace the creative process expected of the qualitative researcher. The researcher can evaluate the interrelated play on particular words, the tone of voice or the gestures of a particular respondent. The sensitivity towards these relationships and connections can be lost in a mechanistic search for statements.
2 *Loss of the overview.* The researcher may be seduced into concentrating on the detail of individual chunks of data and assigning codes to the data. This focus may detract from the overall context that is so vital to identify and name chunks of data. Making sense of codes can be greatly facilitated by an ability to visualise the data in its entirety.
3 *Obsession with volume.* Given the ability to manipulate large amounts of data, there may be a push to increase the number of interviews. This may be counter-productive in that the emphasis should be on the interrelated *qualities* of:

   - individual respondents
   - the interview process.

4 *Exclusion of non-text data.* As noted earlier, qualitative 'text' can include notes, observations, pictures and music that make up the total 'picture' or representation of individuals. Many programs can only cope with the narrative of questions and answers recorded in transcripts.

Many software developers recognise these limitations and have gone to great pains to overcome them. One of the trade-offs faced by software developers in overcoming these limitations is the user-friendliness of their programs compared with the sophistication of being able to manipulate and represent the structure that may lie in multifarious data. As qualitative researchers use and learn how to generate the most from the software, user-friendliness may take a lesser though not ignored role. Experienced qualitative researchers can demand more sophistication to match the realities of coping with qualitative data. For the novice qualitative researcher the packages may seem daunting, but this problem is analogous to an initial exposure to sophisticated survey design packages such as SNAP or statistical packages such as SPSS. In all cases the researcher needs to appreciate how the software may serve them and work through the examples and cases, to experiment and to build up their knowledge and confidence.

➤➤➤ *See Professional Perspective 20.*

Go to the Companion Website and read Professional Perspective 20 'Apply yourself' by Tim Macer. Tim evaluates the effectiveness of qualitative analysis software applications with summaries of the most popular analysis software.

International marketing research

If one were to take the very naive view of qualitative data analysis being to feed data into an analysis package, and to wait for processed data to emerge, then international analysis would focus purely upon issues of language and translation. Such a perspective of qualitative analysis would ignore the context and process of collecting data and the role that context and process play in interpreting the meaning that emerges from interviews and observations. As discussed at the start of this chapter, qualitative marketing researchers need an acute self-awareness of how they 'see' – which affects the way they pose questions and interpret answers.

Consumers in any country use their social and cultural frames of reference to interpret questions posed to them by qualitative researchers and to present a response. Likewise, qualitative researchers use their social and cultural frames to present questions and interpret answers. If the researcher and the respondent share the same or similar social and cultural frames of reference, the analysis and interpretation of the data can be relatively straightforward. If the qualitative researcher goes into an international market, there is the potential for big differences in social and cultural frames between the researcher and researched. The qualitative researcher needs to develop an understanding of the social and cultural frames of the types of respondent in an international market. At the same time, they must have a strong awareness of their own social and cultural frames. Only when they have examined both perspectives can they start to interpret consumer responses.

The process is summarised by leading qualitative researchers Virginia Valentine and Malcolm Evans as:[18]

> *Consumers give a 'coded' version of the social and cultural relationship with products and brands that drive their 'feelings'. Because language (and language systems) are the medium of culture, the rules of language become the rules of the code. Qualitative research then becomes a matter of working with the code through understanding the rules of language.*

Thus, simple literal translations of transcripts of interviews from international markets entered into a qualitative data analysis package are doomed to failure. Understanding the rules of language and understanding oneself are vital for the qualitative researcher to interpret interviews and observations. As the rules of language, with the social and cultural forces that shape those rules, become more alien to the researcher in international markets, the task of analysis and meaningful interpretation becomes more difficult.

Ethics in marketing research

It is interesting to note that within the ESOMAR code of conduct, little reference is made to what is deemed as the ethical practice of data analysis, be that quantitative or qualitative. This is understandable, as the chief concern for the marketing research industry is how respondents are handled, i.e. the process of eliciting data from them. Care must be taken to ensure that the precious resource of respondents is not misled or manipulated.

With quantitative data, as will be seen in Chapters 18 to 24, there are many established and consistent procedures of analysis. With qualitative data, even though there exists a broad framework to manage analysis procedures, there does not exist a body of consistent and established procedures of analysis. The difficulty in establishing consistent procedures lies primarily in the great diversity of data that can be included in the analysis procedure. Go back to the 'Data assembly' subsection to see the list of types of qualitative data and it is easy to see why this is so. Combining researcher's notes, transcripts of interviews, pictures, audio and video recordings and mood boards does not lead to a structured process. It is a messy process that owes much to individual patience, creativity and vision.

In searching for support of ethical practice to cope with such a 'messy process', there is one area of support that comes from the Code of Conduct of the Market Research Society in Britain. In their section Mutual Rights and Responsibilities of Researchers and Clients, Rule B26 states:

> *When reporting on the results of a marketing research project the Researcher must make a clear distinction between the findings as such, the Researcher's interpretation of these and any recommendations based on them.*

The key element of this rule is that the researcher should be explicit about their interpretation of the data they have collected. This takes us back to the start when we discussed the self-reflection of the social and cultural values of the researcher. If the qualitative researcher fails or cannot be bothered to reflect upon their own values and cultural norms, their interpretation of qualitative data may be extremely biased. It therefore follows that, for the most valid as well as the most ethical interpretation of qualitative data, the researcher must continually reflect and test the extent and effect of their social and cultural values.

Summary

Qualitative marketing researchers should reflect upon how their social and cultural values affect the way they perceive and observe target respondents. These reflections should be built up as field notes as the whole process of data gathering develops and evolves. These notes form a key source of qualitative data to complement the broad array of qualitative data generated from interviews and observations. To successfully draw together a valid interpretation, qualitative data analysis must be set in the context of a theoretical understanding of the issue being researched, and an understanding of the marketing decision-makers' use of the findings.

The first stage of the process of analysing qualitative data involves assembling data in its rich and varying formats. The second stage involves reducing the data, i.e. selecting, classifying and connecting data that is believed to be of the greatest significance. A key element of this stage is the concept of coding. The third stage involves displaying data, i.e. using graphical means to display the meaning and structure that a researcher sees in the data they have collected. The final stage involves verifying the data. The marketing researcher aims to generate the most valid interpretation of the data they collect, which may be supported by existing theories or through the concept of theoretical sampling. The stages of analysis seem quite distinct but in reality they are totally interdependent upon each other.

To be able to cope with the great amount of data generated from qualitative techniques, a great variety of software packages are available. Used correctly, they can

facilitate a speedy and rigorous exploration of qualitative data, allowing teams of researchers to perform creative and incisive analyses and interpretation. The main concern with the use of qualitative data analysis packages lies in the potential for them to be mechanistic and to encourage yet more interviews to be completed, sacrificing the quality of data capture. The qualitative researcher needs to develop an understanding of the social and cultural frames of target respondents in international markets. At the same time, they must have a strong awareness of their own social and cultural frames. Only when they have examined both perspectives can they effectively interpret consumer responses. There are ethical implications of the extent to which researchers seek the valid interpretation they can make of the qualitative data they have gathered.

Questions

1. How may the social and cultural background of a researcher affect they way they:
   - gather qualitative data?
   - interpret the whole array of qualitative data they have gathered?
2. What is the significance of a qualitative researcher having a theoretical and marketing understanding of the subject they are researching?
3. Why should a qualitative researcher maintain a field notebook?
4. What should be recorded in a field notebook?
5. What may be classified as 'data' when assembling data as part of the data analysis process?
6. What does the word 'coding' mean in the context of qualitative data analysis? What problems do you see associated with the process of coding?
7. What are the advantages and disadvantages of handing over audiotapes of qualitative interviews to a typist who has taken no part in the interviews?
8. Evaluate the purpose of displaying qualitative data.
9. What advantages and disadvantages do you see in displaying qualitative data in a spreadsheet format?
10. Evaluate 'when' the stage of data verification should occur.
11. How may theoretical sampling aid the process of verification?
12. How may computers help in the whole process of qualitative data gathering and analysis?
13. Evaluate the main concerns that exist with the use of computers in qualitative data analysis.
14. Why is the researcher's understanding of their social and cultural values particularly important in international marketing research?
15. Why does the interpretation of qualitative findings have ethical implications?

Notes

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