

Referring back as follow-up questions

More depth can be obtained by asking respondents to describe events backwards in time, or by asking them to go over points already covered later on in the interview or during a second interview, explaining the need for clarification of some points. Detail can always be directly solicited, but it is important to establish a pattern for requiring detail early on in the interview, and the respondent will soon learn to respond to this and provide it automatically. Types of neutral follow-up questions which can obtain more depth include: 'What do you mean by [repeat the respondent's statement]?' 'Are the problems you mentioned getting any better or worse?' 'Could I ask you a few more questions about ...?' 'How are you dealing with ...?' (Rubin and Rubin 1995).

Analysis and presentation of in-depth interview data

In order to analyse and present qualitative data the investigator must be thoroughly familiar with the fieldnotes, the tape recordings and their transcriptions and any other data collected. The investigator may have a wealth of unstructured fieldnotes, notes and tape recordings from qualitative interviews, notes from observations and so on. Making sense of these data in order to analyse and present them is challenging, time consuming and expensive. At the transcription stage it is worth adopting certain transcription symbols. Silverman (1993) gives examples of these. For example, left brackets indicate the point at which a current speaker's talk is overlapped by another's talk; numbers in parenthesis indicate elapsed time in silence in tenths of a second; underscoring text indicates some form of stress (via pitch or amplitude); empty parentheses indicate the inability of the transcriber to hear what was said; double parentheses contain the author's descriptions rather than the actual transcriptions.

Once transcribed, data can be organised by topic, and themes coded into categories (and some may fit more than one) as the research is in progress, in order to make the final task more manageable. Ongoing analysis while collecting data can also inform and improve the research process (see Glaser and Strauss 1967). The analysis of qualitative research data requires considerable interpretation by the investigators. It is this feature which is both a strength and a weakness of the method. The two most common approaches are to analyse and present the data in either a categorised or a narrative format.

Categorising qualitative data: content analysis

Coding

Glaser and Strauss (1967) argued that coding is essential for the invariable analysis of qualitative data. Coding means relating sections of the data to the

Bowling, A. *Research Methods in Health: Investigating Health and Health Services*. Buckingham/Philadelphia: 1997.

categories which the researcher has either previously developed or is developing on an ongoing basis as the data are being collected. To facilitate this process, it is important for the investigator to note constantly the categories, or potential categories, in the margins of the raw material. Ultimately, a 'storage and retrieval' system will need to be developed that permits the storage of the data under the relevant categories, relabelling as required, and the easy retrieval of these for analysis.

Content analysis

When presenting qualitative data in a categorised manner, the investigator carries out a content analysis. The procedure is basically as follows: data are collected, coded by theme or category; finally, the coded data are analysed and presented. One method of analysing the data is to search the whole data set for the categories created and make comparisons between each, as appropriate.

In order to satisfy criteria of reliability, the field data (e.g. audio- and video-tape recordings, written fieldnotes and/or text) should be listened to, viewed and/or read by a team of investigators to agree the categories used. The categorisation exercise should be carried out by the investigator and also by an independent investigator. Their categorisations should be compared and any discrepancies discussed and final categorisation agreed.

The time-consuming nature of this method of research should not be underestimated. Audio-taped interviews, for example, have to be transcribed from the recording before they can be analysed. For one hour of tape recording one should allow between two and four hours transcribing, depending on the skill and speed of the transcriber and the clarity and complexity of the interview material.

Traditionally, qualitative data have been hand sorted and categorised by theme, which has had the advantage of the researcher maintaining a close relationship and awareness of the original data. Analyses of qualitative data involved a massive 'cut and paste' process, whereby relevant themes were highlighted in transcripts and then cut out and pasted on to index cards, and the index cards were organised into theme order. The index cards also permitted space for cross-referencing, with that unit's themes coded on to different cards, as well as cross-references to the original source to enable the investigator to trace it back to its original context. Matrices or spreadsheets could also be constructed, with concepts and themes displayed along the top row, and the variables of interest listed in the left-hand margin so that they could be cross-referenced with the concepts.

An example of manual categorisation is Scambler and Hopkins's (1988) research on epilepsy, which included interviews with 94 people with epilepsy. The authors stated:

Excepting some demographic and other precoded material, data from the taped interviews were transcribed on to sets of 'topic cards'. These corresponded to a series of topics generated during the pilot investigations and explored during the interviews; a set of fifty or more was

produced for each person, the precise number depending on his or her age and marital status at onset. The problem of overlap of data relevant to more than one topic, and hence to more than one topic card, was resolved by a system of cross-referencing. The cards brought together and afforded easy access to all statements made during the interviews pertinent to any selected topic. The data on the cards were then of course available for both qualitative and quantitative analysis.

Manual categorisation is still widely practised for small studies, but is time consuming for large databases. Computer packages are now commonly used for categorisation of data, and have advantages over manual categorisation (see page 348).

Another example of content analysis, which was used in quantitative as well as qualitative analyses, can be found in Calnan and Williams (1996). They present data from an earlier study by one of the authors on women's perceptions of medicine, based on in-depth, tape recorded, interview techniques. Each respondent was asked to assess her general practitioner in relation to whether she considered him or her to be 'good' or 'bad', and asked about why she made her assessments. The data were analysed and the women's reasons were listed and coded into categories such as: good doctor, sympathetic, knows her personally, immediately refers to specialist, examines thoroughly, gives a lot of time, treats children well, listens; bad doctor, routinely gives prescriptions, treats everything as a waste of time, will not make house calls at night, does not listen, abrupt/rude manner, uncaring. Using these codes they could analyse the data by, for example, social class, and they demonstrated that women in higher social class groupings used different criteria to make their assessments from women in lower groupings.

Scambler and Hopkins (1988) carried out a content analysis of the information they collected in relation to the social effects of epilepsy (see page 345). This showed that the principal cause of the distress experienced by four out of five of their respondents at the onset of their condition (e.g. first seizure) was the reaction of other people (often their families) to them. The authors' data yielded three typical features of family responses, and used the verbatim descriptions of respondents to illustrate the content analysis (see Box 16.3).

Box 16.3 The use of verbatim descriptions in illustration of content analyses

It was possible, however, to discern three typical features of family responses (to first onset of epilepsy): concern, bewilderment and helplessness. All are reflected in the following account of onset by a troubled and shaken spouse:

I just didn't know what the hell was happening: it was as simple as that! I had never seen anybody have a – whatever it was! I didn't know what to do quite frankly. And it was, if I remember rightly, about 2.30 a.m., or something like that, and it was – it was just frightening, that's all I can say. I didn't know

what to do. I think that's what frightened me more than anything: I just didn't know what to do, how to cope. I didn't know what I should be doing – whether I should be trying to stop it, or do something; I just didn't know.
(Scambler and Hopkins 1988)

Rules for coding

With *quantitative* analysis, the coding rule is generally that codes should be mutually exclusive so that a single unit of data can only be coded in one category. Quantitative coding does permit the use of multiple codes for replies to single questions in questionnaires to fit instances where respondents have mentioned several things in one reply. For example, in reply to a question about what the good qualities of their general practitioners are, people might say that their doctor is good at examining them, a sympathetic listener, good at explaining things and so on; each thing mentioned would need to be coded (the question is multicoded). In contrast, in *qualitative* coding, a single item is permitted to be coded in more than one category in order to permit cross-referencing and the generation of several hypotheses.

The first stage is to develop the categories (themes) into which the data will be coded. Fielding (1993a) stated that if the research stems from a theory then the codes should be chosen to represent the theory and the data coded to fit the categories (which she terms 'coding down'). If the aim is to describe the data in order to generate theory, then the opposite rule applies and the categories can be developed from the data ('coding up'). In practice, it is preferable to code up in all cases, but to ensure that additional theoretical codes are included and to apply them to all relevant instances.

Pfaffenberger (1988) and Fielding (1993a) have made suggestions for the coding of qualitative data, including those shown in Box 16.4.

Box 16.4 Steps in the coding process

- Take the first batch of 20 or so sets of data (e.g. questionnaires or the fieldnotes or transcripts).
- Mark off and note down the responses (or significant features or quotes) on filing cards, using a new card for each new response or concept.
- With questionnaires code the same question for the batch before moving on to coding new questions to enhance consistency.
- For interviews or transcripts code short segments (e.g. paragraphs) at a time. Some researchers have collected the data in time periods (e.g. 15-minute intervals) or other meaningful units (sentences in conversation, line breaks in accounts) to facilitate coding and analysis, but this is not

always possible. The decision about where to make line breaks is determined by the investigator and transcriber.

- Develop codes that can interlink different units of data.
- Change and refine the categories as understanding increases and improves.
- Sort the file cards into related categories.
- Repeat the process on another 20 questionnaires or other data sets and then again until no new categories are generated.
- Develop the instructions for coding.
- Develop a framework that links the codes together typologically.

(Pfaffenberger 1988; Fielding 1993a)

Criticisms and potential weaknesses of this approach are that the very process of categorising and coding the data disembodies it from the person who produced it and from the interactive nature of the interview. The value of qualitative data is in the richness of its insights and the analysis of narratives and individuals' stories. Care is required in order not to lose the qualitative nature, and richness, of the data.

Computer programs for analysing qualitative data

It was mentioned on page 345 that until the development of computer packages to analyse qualitative data in the 1980s, 'cut and paste' techniques (e.g. cutting sections of data and pasting them on to index cards that could be filed under the appropriate category) were the most widely used techniques for organising (categorising), storing and retrieving qualitative data. While this is still commonly used, as many investigators feel that they are closer to their data by using manual procedures, it is increasingly common to use a computer package to store and categorise the data by theme. The themes are not allocated numerical values by the computer program; instead they are categorised and stored by their contextual theme, using labels of up to ten characters. The themes also maintain their contextual position in the raw transcripts which have been entered into an associated word processing program.

There are now computer programs, such as Ethnograph (Seidel and Clark 1984) and NUD.IST (Richards and Richards 1990), that make the categorisation of qualitative data easier by enabling the investigator to enter verbatim transcripts and to mark text by theme for the computer to sort and analyse as instructed. The packages permit the researcher to create key names and phrases (themes) and highlight related areas of text from qualitative interview data to be categorised (in effect, coded) by computer under the created headings. They enable the investigator to build and modify subsets of categories which ultimately aim to describe the full range of the data.

Some computer packages are particularly valuable for theory building, having the facility to code the text into several different categories and to

link between codes, as well as between memos and text, memos and codes, and different segments of text (Prein and Kelle 1995). The programs will retrieve segments of marked text by single codes or combinations of codes, and these can be easily compared. There can be multiple linkages between segments of text. This is essential for grounded theory approaches as they concentrate on extracting the meanings that emerge from the data and the type of coding used. NUD.IST is a popularly used package for this approach (Richards and Richards 1990). The use of computers with grounded theory has been explored by Lonkila (1995).

While programmed coding of words and phrases, with 'look up' tables and dictionaries stored in the machine, can be carried out by qualitative analysis packages, concept-matching inevitably remains a problem and there is no match for the trained human brain. However, hypotheses can be tested and theories can be built by employing the networks of categories generated on the computer. The investigators' field 'memos' can also be stored and retrieved if required. Less well developed is the storage, linkage and retrieval of diagrams and maps drawn of the field setting or phenomenon of interest.

Computerised categorisation and analysis are becoming increasingly popular, and arguably make the process of categorisation and analysis more systematic and hence rigorous. While some investigators object to the distance computers impose between them and their data, it is the only practical method of organising and analysing larger qualitative studies. For example, Dingwall *et al.*'s (1983) research on child abuse resulted in more than 7000 pages of observational and interview data and the authors described how the use of a computer retrieval system was the only realistic method of organising them.

It is important to emphasise that simply counting the number of times an item or concept has been mentioned during unstructured interviews is not necessarily meaningful. Frequency does not necessarily equate with social significance of the topic. This type of content analysis may be useful in document analyses, depending on the aim of the document and the aim of the research, but should be used with caution in other types of research. The theoretical and methodological issues involved in the use of computers in qualitative research have been explored by several authors in an edited volume by Kelle (1995).

Narrative format

By contrast, the narrative approach stresses the importance of the story the respondent has to tell, focusing on presentations of the actual transcripts. All qualitative reports, even those which include a content analysis, will also include sections of the transcripts alongside the investigator's interpretations of them. Data need to be presented so that their richness is not lost.

The emphasis in narrative format is placed on analysing the content or structure of the narrative in its original and intact form. This is also known as discourse analysis. Data are sometimes, but not always, also coded by

theme or category, and these coded data are used to develop an analysis of the situation. Gerhardt (1996) has used narratives to present and analyse her data collected from interviews with patients with end-stage renal failure in relation to their experiences with dialysis and transplantation. She obtained 234 tape recorded in-depth interviews with patients in South East England, and these comprised over 600 hours of tape recorded material. She presented the transcripts of the interview in short 'blocks' she called 'meaning units'.

Box 16.5 Example from Gerhardt's (1996) analyses

113 P: well my mother
114 she was willing
115 to give me a kidney
116 but I didn't want it
117 because
118 well
119 if she gives me a kidney
120 that's to say
121 if the kidney
122 doesn't work on me
123 then I will still be disabled
124 and probably
125 my mother starts feeling bad ...

The narratives were then analysed in relation to their content and the investigator's analysis can refer to the line numbers as evidence of the validity of the approach, for example:

The second step in his action story is his decision not to accept his mother's offer of a live-donor organ (15–133). He again tells an argumentative narrative rather than a full-fledged story, stating the fact(s) and then giving reason(s). The facts were: 'My mother was willing to give me a kidney but I didn't want it' (113–16). The reason is: If this live donor transplant would fail, the situation would be worse than now, that is, he would be still 'disabled' (123), and she could 'start feeling bad' (125). From this it follows that he rejected the offer ...

Others report the full interaction between interviewer and patient in their narratives and use them to illustrate their interpretations. The extract from Radley (1996) in Box 16.6 demonstrates not only how the researcher uses the dialogue for analysis, but also how the interview can be a spontaneous and dynamic interaction, with the spontaneity of the interviewer rewarded with further meaningful information from the respondent.

Semiotics is described elsewhere in relation to the analysis of observational studies and document research. It should also be briefly referred to here, as some investigators analyse interview narratives in relation to

Box 16.6 Example of the interview as interaction

Interviewer: What have you been told about the operation by the hospital?

Patient: That I'm not very pleased with. I went Tuesday and they told me and my wife it could be touch and go if I even come through it because I've got heart disease.

Interviewer: You knew that before?

Patient: I didn't know, no. It puts you off a bit.

Interviewer: Has that made you think twice about whether you want it doing?

Patient: No, I still want it doing, but I wish they hadn't told me. My doctor he played hell about it. He said they [the doctors at the hospital] shouldn't have told you at all.

The man's wife was also confused and angry. She said: 'Our doctor, he don't know nothing about it . . . He says as far as he's concerned all he knows he's got to have that bypass. We know that. What is this bloody diseased heart?'

These comments show the uncertainty engendered in the patient (and family) by a diagnosis that was not accepted, perhaps because it was at variance with what they had previously understood.

(Radley 1996)

semiotics. With semiotics, the textual context is considered as a whole, as the elements of speech derive their meanings from their relationship with other elements. Barrett (1966) gives examples of the importance and social relevance of this method of analysis in relation to understanding elderly people's use of the term 'managing' in the context of assessments of their need for social care. He showed how for 'non-economically fragile' older people 'managing' seems to mean acting within a longer-term view, with a positive outlook in relation to the future (e.g. 'Oh yes, I do manage on my money'; 'I couldn't manage if there wasn't a bit in the bank'; 'You've got to manage'). In relation to the 'economically fragile', 'managing' seems to mean a shorter-term view and 'getting by' (e.g. 'We manage week by week but there's nothing to spare'; 'We're managing at the moment'; 'We get by, we manage'). He explored this use of language in terms of how it affected a person's life and its symbolism of other features of their lives.