2

General Approaches to Designing and Analysing Data

Prior issues which you as researcher need to consider as part of your research design are discussed and the four broad traditions of inquiry used in qualitative research are identified. Two generic and widely used approaches to the analysis of qualitative data as they are collected will be illustrated in depth through preliminary data analysis and thematic analysis.

Key points

- In undertaking qualitative research, apart from deciding on your research question and identifying your preferred epistemology, three further aspects need to be dealt with early in the process:
  - frames and framing
  - the positions of the researcher, the participants and the reader
  - research design approaches.
- There are four broad traditions of inquiry in qualitative research:
  - iterative
  - subjective
  - investigative
  - enumerative.

  Each of these has links to one or several epistemological traditions and has a particular focus.
- Preliminary data analysis is a technique which can be undertaken on most data as each segment is collected. It serves to summarise issues emerging and to identify further questions which need to be asked in order to gain holistic data.
- Thematic analysis is commonly used in qualitative research and occurs when all the data are in. It is a process of segmentation, categorisation and relinking of aspects of the database prior to the final interpretation.

Clarification of terminology

The epistemological orientations indicated in Chapter 1 are not concretised into particular time spans; elements of all can be identified throughout the twentieth century, although postmodernism and poststructuralism were largely limited to the latter part of that century. In addition, the traditions of inquiry used to gain data are also very flexible. For example, quasi-statistical approaches from the enumerative tradition can be combined with pure observational ethnographic approaches from the iterative tradition, and may be used in the same study but for different purposes, e.g. the former could be used to identify priorities in policy documents and the latter could enable the understanding of cultural rituals. Thus you can vary your approach to research design depending on your research question and the purposes of data collection.

There are many research designs/approaches in qualitative research, e.g. ethnography, grounded theory, phenomenology. Some have specific sets of guidelines (rather than mandatory steps) including the principles and procedures of inquiry used to collect and analyse information, while others allow you considerable choice in how data will be gathered and managed in order to explore the research question posed. Terminology is somewhat loose here: *methodology* usually involves specific guidelines based on particular principles, while *method* is the technique used for collecting and/or analysing data. In this text *approaches* will be used to cover the former, while the latter will be specified under particular forms of data collection and analysis.

Prior issues for consideration in research design

Once you have decided on your research question and have refined it to a manageable project, clarified your epistemological location and undertaken your review of the literature (although the timing of this is contentious in grounded theory), it is necessary for you to identify and address the following issues, all of which will impact on your chosen design:

- frames and framing
- the position and power of the researcher
- the position of the reader
- research design approaches.

Frames and framing

Every researcher is subject to the influences of their own life experiences and these will frame both your choice of design and more importantly your individual

interpretation of the data. The notions of frames and framing came originally from Erving Goffman's frame analysis in which frames 'are the principles of organization which govern social events and the actors' subjective involvement in them' (1974: 10). In other words – how have we come to see the world the way we do and how has this influenced our participation in and understandings of this world? Framing is not just an unconscious process of viewing situations through the frames we have gathered in our lives to date; it is also an active process of the selection of aspects of reality and the application of specific frames to them for clearer comprehension or better communication purposes. For example, an untidy man muttering incoherently and staggering into an emergency ward of a hospital may evoke the initial frame 'drunk' until further examination might lead to a reframing such as 'experiencing a neurological disorder'. Or, you may select and highlight aspects of data in order to apply a frame pertinent to your discipline in the process of presenting results to a particular audience, e.g. the frame 'locus of control' will have particular meaning to psychologists.

So what constitutes a frame? The specialist disciplines we are attached to provide their own set of frames in terms of the theories, concepts and models which have gained explanatory dominance. The particular research approaches we choose have their own framing devices: so if we are undertaking grounded theory (Strauss's version) we would treat the data differently than if we were undertaking a postmodern ethnography, with the former undergoing data fragmentation and the latter maintaining the data largely intact and contextualised. Gender is also a frame where particular world views such as masculinism or feminism may dominate, and membership of a particular ethnic group may also provide its own set of frames based on the religious and moral principles underpinning that group. Adoption of particular frames often blinds you to other possibilities. Class and age differences between you and those you are researching, with their accompanying language and attitude differences, may present similar problems – as may your own particular leanings such as heterosexuality, homosexuality, political viewpoint or preferred theoretical orientation.

Gale McLachlan and Ian Reid (1994) have identified four areas of framing which you need to be aware of:

- *extratextual frames* – the accumulated knowledge which you have obtained and through which you view the world
- *intratextual* frames – your internal framing devices of age, sex, class etc.
- *intertextual frames* – the interpretive frames which you are partial to or dominated by from your discipline/s
- *circumtextual frames* – involving contextual construction and your interpretation of the immediate situation or event.

Recognition, acknowledgement and exposure of the frames that are dominating both your view of reality and your interpretation of texts are clearly necessary, as is an awareness that the act of framing part of the text will disturb and distort existing frames as well as decontextualise the segment. Decontextualisation is

further complicated by the likelihood that the social context may well have been significantly constructed through interaction between you and those who you are researching; so you have to be mindful not only of your existing frames and the framing process but also of the level of contribution of the frames of those being researched to your interpretation of the actual data collected.

The position and power of the researcher

Your position as researcher will depend on the approach chosen or adapted together with your frames and the anticipated audience to be addressed. For example, a phenomenological approach would require you to get as close as possible to the essence of the experience being studied while displaying the comments of those being researched in their own voices; an autoethnography (researching the self) would require you to take a position of intensely reflexive subjectivity in order to document your own emotions and experiences; and a postmodern position (except where a highly subjective orientation was being pursued) would decentre your voice in favour of a polyphonic display of the voices of the researched, where your voice will only be one of many.

Depending on the design approach chosen and your frames, decisions will have to be made regarding what is to be done with the data for purposes of analysis. Will the data be rigorously segmented in order to track all possible elements, themes and codes? Or will they be viewed as a complex construction requiring considerable deconstruction or discourse analyses to identify the shifts in power reflected in the ways of writing, speaking and acting which have been tracked historically? Or will you respect the data collected and leave them largely intact to be reconstructed and re-presented in some form of verse, as a dramatic performance or as a pastiche (quilt) of voices to bring the reader closer to the views and events under study? Again the design approach chosen provides guidelines, but these are flexible and can be changed (with justification) by you to suit the needs of the investigation at hand.

The position of the reader

What role will your readers be encouraged to take? Will your strong authoritative voice encourage these people to take a passive position along the lines of: 'As the expert researcher I went out into the field, this is what I found, this is my analysis and interpretation of the situation: take it or challenge it if you dare'? Or will your readers be encouraged to interact in a more dynamic way with the text by virtue of the gaps you provide (for the reader to seek hidden meanings or to fill from their own experience) or through your considerable exposure to the voices of the participants whose stories, artfully woven, bring your readers close to their experiences, their pain, their longings and their understandings, allowing your readers to come to their own interpretations?

Research design approaches

The particular approach which you have chosen may have its own set of guidelines which will indicate not only the type of data to be gathered but also the forms of analysis which may be most useful. The flexibility of qualitative approaches means that these guidelines can be treated either as stage by stage steps not to be deviated from or as indicators of direction enabling you to incorporate other approaches. For example, Anselm Strauss's grounded theory approach, if followed meticulously, would involve you in the precision of a three-stage coding technique with memos and data integration of a graphical as well as a written nature. However, if you wanted to undertake modified data collection or coding approaches you could change this to a 'quasi' grounded theory approach where you could modify these processes or include other approaches, e.g. a phenomenological data set. Justification of these changes by you in relation to your research question will be very important here.

Some approaches encourage creativity by their very general guidelines: for example, using a *basic hermeneutic approach* (interpretive inquiry seeking to understand the meanings of parts within a whole) could give you almost total freedom to decide how to undertake the study, what design aspects to incorporate, which techniques of data collection and analytical tools to employ and what perspectives to call on to provide an interpretation. The older term *field research* also provides the same flexibility, indicating only that you are going out into the research field (however defined) in order to explore it using what you perceive as the best tools available for the job.

Traditions of inquiry and design approaches

There are four major traditions of inquiry: iterative, subjective, investigative and enumerative (Table 2.1). Within each of these fall general design types which can be used flexibly; some design types occur in more than one tradition, while combinations of design approaches and traditions of inquiry can occur in the same study.

The following is a summary of the four broad types of qualitative inquiry. Most of the design approaches listed in the table will be described in greater detail in later chapters.

Iterative (hermeneutic) inquiry

Iterative approaches involve seeking meaning and developing interpretive explanations through processes of feedback. An iterative design is defined as one involving a series of actions of data collection which are repeated until the accumulated findings indicate that nothing new is likely to emerge and that the research question has

TABLE 2.1 *Traditions of inquiry and design approaches*

Iterative (hermeneutic)	Subjective	Investigative (semiotic)	Enumerative
Grounded theory	Autoethnographic	Structural	Quasi-statistical
Phenomenology	Heuristic phenomenology	Poststructural	Transcendental realism
Ethnography	Postmodern versions of iterative approaches	Discourse analysis	Matrix analysis
Oral history		Content analysis	
Action evaluation		Conversation analysis	
Feminist research and memory work		Narratives – socio-linguistic	
Narratives – socio-cultural			

been answered. In more detail, this involves you going out into the field, collecting data, and subjecting these data to a critically reflective process of preliminary data analysis to determine 'what is going on' in order to build up a picture of the data emerging and to guide you in the next set of data collection. This cycle is then repeated until the research question is answered and no new data are apparent. There is recognition within this process that both you and those whom you are researching inevitably construct meaning and that you will attempt to minimise both your impact on the setting and your possible over-interpretation of the situation in favour of highlighting the views of those researched. Post data collection, thematic analysis often occurs. This is also a process where data are segregated, grouped, regrouped and relinked in order to consolidate meaning and explanation prior to display. Iterative approaches include the *basic hermeneutic approach* as well as more defined approaches such as *grounded theory*, *phenomenology*, *ethnography*, *oral history*, *action*, *evaluation*, *socio-cultural narratives*, *feminist versions* of all of the above and *memory work*.

Example

Consider the research question *What is the experience of mature aged women returning to university/college?* An iterative approach within the basic hermeneutic tradition of inquiry would just go backwards and forwards to and from the field (in this case involving interviews with mature aged women, sampled for diversity of age, situation and years in study) using preliminary data analysis as a guide (see later in this chapter), resampling to include unforseen groups/situations, rethinking aspects of the question, and collecting and cross-questioning all the data until no

new data emerge. A phenomenological approach would examine the experiences of six women over time, and in-depth information would be gained through going back several times to ask the same question: 'What is the experience of returning to university/college like for you now?' A Straussian grounded theory approach would use the three-stage coding process to identify and to open up all the sub-questions relating to the major research question, to cross-question and critique information in order to track the experiences of 15–30 women. An ethnographic approach would meticulously observe and record over time how experiences changed as individuals changed and became more confident within their new contexts. An oral history or narrative might explore in depth only one or a few life stories, while an evaluation might carry out a broad survey of many women plus individual case studies selected for diversity. Feminist/action researchers or critical ethnographers might seek to emancipate those women whose experiences indicated that oppression had been an issue.

As you can see, in all of these designs the common element involves the *recursive spiral*: define the question, go out into the field, examine the data collected, adjust the various tools of questioning, sampling approach, design aspect and data collection in light of emerging issues, and go back into the field to find out more. You repeat this process until no new data emerge and all possible aspects of the question appear to have been answered.

Subjective inquiry

Subjective approaches are defined as those where there is a focus on you the researcher and on what takes place within your own mind, recognising that this is limited by your own biases and judgements. Data collection approaches will be different when the focus of the research includes your experiences. Here you will need to maintain a critically reflective diary record and be prepared to subject yourself to regular periods of debriefing with a colleague or supervisor. The process involves a rigorous assessment of both your emotions and experiences and your impact on the research process. When your experiences are the sole or partial target of the research you will occupy a dual role – that of researcher and researched. Preliminary data analysis is again a key analytic technique, with thematic analysis being a further option depending on how much decontextualising and segmenting you regard as appropriate or desirable. Subjective approaches include *autoethnography*, *heuristic phenomenology* and *some postmodern versions of ethnography*, *grounded theory*, *feminist*, *evaluation* and *action research* where the researcher has chosen to include a significant segment of subjective data.

Example

Carolyn Ellis has been instrumental in developing subjective approaches. Her personal and emotive story of her relationship with her husband Gene (Ellis, 1995)

demonstrates the tracing of the impact of change on herself as she moves from a situation of being part of a couple, very much in love, to becoming a caretaker for a husband dying from emphysema. The documentation of this process led her to accumulate considerable data including: detailed field notes of the relationship and the illness processes from eight months prior to his death; interviews with family and friends; medical case notes; personal diaries and travel logs. Carolyn was the object, subject and researcher and also wrote the final version in the first person as she attempted to move from realist ethnography to literary narrative in her search for the right 'voice' to clarify her personal experiences and understandings as well as the sociological significance of these events (the process is documented in more detail in Tierney and Lincoln, 1997: 127–31). Ellis focused on emotions and feelings (narrative truth rather than historical facts), moving from past to future, incorporating alternative versions and her own multiple voices in an open text which emphasises ambivalence and contradiction as outcomes.

You can see from this example that although subjective inquiry provides the opportunity for a focus on the self it is also possible to use the general iterative inquiry approach in order to achieve this.

Investigative (semiotic) inquiry

Investigative semiotic approaches involve the uncovering of previously hidden information relating to languages within their cultural contexts. The understanding of signs and symbols is central to this approach, in particular their mythical strength and the embedded power of particular discourses, which you will need to disentangle to reveal the original elements as well as to identify arguments which have been marginalised. There is considerable variety amongst the continuum of possibilities relating to analysis of documentation, visuals and body language, varying from the looser ethnographic content analysis approach which attempts to contextualise the document and to identify and describe the values and attitudes evident, to the precision of some forms of discourse and semiotic analysis. But again the flexibility and the ever changing nature of qualitative approaches allow you considerable variation, especially when you provide adequate justification. Investigative approaches include *structural, poststructural, content analysis and feminist research*, as well as *discourse analysis*, *conversation analysis* and *narratives of the socio-linguistic* type.

Example

Julie Hepworth (1999) undertook an investigative, feminist, discourse analytic approach to explore medical documentation on anorexia nervosa from the late nineteenth century over a period of 100 years in order to identify the major discourses present. She also interviewed current health professionals. From these two sources of information she was able to expose five discourses in the medicalisation of anorexia nervosa: *femininity* (women as emotional and deviant psychological,

mental and reproductive entities); *medical* (the search for scientific organic causes); *clinical* (prescriptive treatment and the (moral) quality of relationships); *discovery* (link between medicine and psychiatry); and *hysteria* (link between femininity and the psycho-medical framework through the notion of hysteria). The power of medicine in the maintenance of the enduring discourse of *femininity* (irrational female behaviour) was exposed.

Enumerative inquiry

This involves the listing or classifying of items by percentages, frequencies, ranked order or whatever is useful to the research question. These approaches involve you in the production of 'objective' accounts of the content of verbal, written or visual texts, the development of codes and categories often prior to analysis, and the definition and measurement of units of analysis. Tools include flow charts, logical reasoning processes, the seeking of links between causes and antecedents, and the frequency of occurrences through identification of word frequency, ordered (ranked) word frequency, key words in context and incidence counting. Replication of outcomes, particularly when specific documents are used, is also sought in the enhancement of validity.

The development of previously decided codes can also be seen in the imposition of 'matrices' (conceptual frames of interlinking variables from which propositions with causal implications have been derived) where you apply this to one case and then further apply it to other cases to develop cross-case analysis (Miles and Huberman, 1994). There is an underlying assumption in this process that fully predesigned instrumentation will enhance validity and generalisability. Enumerative approaches are often questioned because of their tendency to atomise and decontextualise the data and the fact that connection does not necessarily equal causation. Approaches include *quasi-statistical*, *transcendental realism* and *matrix analysis*.

Example

Clive Seale (2002) undertook a content analysis of reports of people with cancer from a range of worldwide English speaking newspapers to compare portrayals of males and females. From the original sample of 2419 he chose a subsample of 358 where there was significant coverage of the life or death of a person with cancer. The computer management program for qualitative data NVivo was used to help extract and code segments and identify linguistic themes relating to people with cancer. The program Concordance (used for proximity of certain words, counting word frequency and key words, and available at no cost at http://www.concordancesoftware.co.uk, accessed 16 April 2006) was also used for further examination of these themes for word concordance (location and similarities). Seale discovered that women's emotions of fear and anxiety were reported much more often than men's and that 10 metaphors relating to 'the journey' of cancer were used for women but only three for men. 'Courage' and 'inspiring to others' formed

the dominant portrayal of women while 'hardworking' and 'altruistic' dominated for men.

During data collection: preliminary data analysis

For many of the above design approaches, the initial stage of analysis involves preliminary data analysis. This applies in particular to the iterative approach – apart from Strauss's version of grounded theory (which has its own more developed version of this, open coding) – and to subjective approaches, as well as to some of the investigative approaches. Preliminary data analysis is an ongoing process which is undertaken every time data are collected. It involves a simple process of checking and tracking the data to see what is coming out of them, identifying areas which require follow-up and actively questioning where the information collected is leading or should lead the researcher. It is a process of engagement with the text, not so much as to critique it – although this is one possibility, especially where existing documentation is concerned – but more to gain a deeper understanding of the values and meanings which lie therein.

Regardless of whether the data collected come from written observations, transcriptions of interviews or the perusal of existing documents, you should undertake this process in order to highlight emerging issues, to allow all relevant data to be identified and to provide directions for the seeking of further data.

The process with regard to interview data is demonstrated below.

Process

The following is a segment of an interview conducted in 1990 by Robert Couteau with the author Ray Bradbury**.** The segment has been treated as if it were a research interview and the process of preliminary data analysis is displayed.

Following the completion of this process, you then undertake collation and summary of the major points gained from the interview, observation or document. I find a face sheet containing the following information to be effective.

Firstly, identifiers for the data set:

- Who is this interview/observation with/of (pseudonym/code is usual to maintain anonymity)?
- When and where was it conducted and for how long?
- What special circumstances or contextual issues might have impacted on the data?

Secondly, examination of what is going on in this text:

- What are the major issues emerging?
- What issues need to be followed up (with this person/setting or the next interviewee/setting/document)?

'The Romance of Places': an interview with Ray Bradbury

Interview segment		*Preliminary data analysis*
Couteau:	My first question concerns the actual process of writing. Do you have any sort of daily ritual that serves as a preparation to writing, or do you just sit down every day at a certain time and begin?	
Bradbury:	Well, the ritual is waking up, number one, and then lying in bed and listening to my voices. Then, over a period of years ... I call it my morning theater; inside my head. And my characters talk to one another, and when it reaches a certain pitch of excitement I jump out of bed and run and trap them before they are gone. So I never have to worry about routine; they're always in there talking.	*'Morning theater': how long does this process take? What does he do if he forgets what they have said or is distracted before he can complete writing down what they have said?*
Couteau:	How long do you write for?	
Bradbury:	Oh, a couple of hours. You can do three or four thousand words and that's more than enough for one day.	*Do all authors write this fast: 3000 to 4000 words in a couple of hours?*
Couteau:	How has the use of the computer affected your writing?	
Bradbury:	Not at all, because I don't use it.	
Couteau:	You never use a computer?	
Bradbury:	I can write faster on a typewriter than you can on a computer. I do 120 words a minute and you can't do that on a computer. So I don't need anything … That's plenty fast.	*Efficient typing appears to be the key to high productivity here.*
Couteau:	So you're saying that the technology still hasn't caught up with you.	

(Continued)

Interview segment		*Preliminary data analysis*
Bradbury:	Well, if it won't be any more efficient than my IBM Selectric, why should I buy it? It's for corrections, you know? Then I give it to my daughter and she has a computer and she puts [it] in, and she then corrects it in the computer. And we have a record so we have [the best of] both worlds at the same time.	*Is this process similar to that undertaken by other authors who started writing in a pre-computer age?*
Couteau:	How about the imaginative process itself, the building of a story? How do characters and plots first arise? (You've maybe covered this a little just now.) Do they appear spontaneously or do they first originate in a carefully planned, conscious construct?	
Bradbury:	Any carefully planned thing destroys the creativity. You can't think your way through a story; you have to live it. So you don't build a story; you allow it to explode.	*The 'exploding' story is creative but unplanned. Does it always work like this?*
Couteau:	Do you, for instance, use people and places out of the past, out of your own life?	
Bradbury:	Very rarely. More recently [yes,] in my two murder mysteries, *Death Is a Lonely Business* and the sequel, which just came out, *A Graveyard for Lunatics*. Events in my past life are in there; some people that I knew. But most of my stories are ideas in action. In other words, I get a concept, and I let it run away. I find a character to act out the idea. And then the story takes care of itself.	*Does increasing age lead authors into their memories of people and events – what happens to other writers?* *Process involves getting a concept then finding a character to act this out.*

(Continued)

(Continued)

Interview segment		Preliminary data analysis
Couteau:	Certain modern writers such as William Burroughs have used characters and settings first observed in dream states as the basis for fictional experiments. Others such as Henry Miller have often spoken of being dictated to by the unconscious …	
Bradbury:	That sounds more like my cup of tea …	*Is the unconscious the only place his characters come from?*
Couteau:	Have you had similar experiences with what might be termed non-ego influences on the creative imagination? I mean there are others: drugs or meditation or whatever. Or dreams.	
Bradbury:	No, dreams don't work. And I don't know of anyone that ever wrote anything based on dreams constantly. You may get inspiration once every ten years. But dreams are supposed to function to cure you of some problem that you have, so you leave those alone. That's a different process. But the morning process when you're waking up, and you're half-asleep and half-awake: that's the perfect time. Because then you're relaxed and the brain is floating between your ears. It's not attached. Or getting in the shower first thing in the morning, when your body is totally relaxed and mind is totally relaxed. You're not thinking; you're *intuiting*. And then the little explosions, the little revelations come. Or taking a nap in the afternoon. It's the same state. But you can't force things. People try to force things. It's disastrous. Just leave your mind alone; your intuition knows what it wants to write, so get out of the way.	*Not from dreams. Drugs?* *'Intuiting' in a relaxed state may have links to phenomenology and the intuiting of the essences of an emotion or a situation. Would he agree?* *This process sounds almost automatic; did it always happen like this? Does he ever experience writer's block?*

Source: the complete text of this interview – this segment reprinted with permission – is located at http://www.tygersofwrath.com/bradbury.htm, accessed 26 April 2006, copyright © Rob Couteau, 1990

The face sheet from the above interview segment would then look as shown.

Face sheet: interview with Ray Bradbury

Data identifiers

- *Location*: public domain interview with the author Ray Bradbury conducted by Robert Couteau in Paris in the lobby of the Hotel Normandy during the summer of 1990.
- *Date and time*: unrecorded.
- *Length of interview*: approximately one hour.
- *Special circumstances*: none recorded.

Major issues emerging

- For Ray Bradbury his style of text creation, which he views as intuitive, lies in early morning and shower or nap time 'explosions' of the 'voices' of his characters which come via the unconscious when the body is in a relaxed state.
- His style of writing is by typewriter – intense writing of 3000–4000 words over a couple of hours which is then fed into a computer program for correction (by his daughter).

Issues to be followed up

- Has this process always happened like this for Ray Bradbury? What other processes have occurred?
- Would he see this process of intuiting stories via the relaxed consciousness as phenomenological in style?
- How do other writers create text and write?

There is some diversity within the literature as to how this process of preliminary data analysis might occur, but given that it is idiosyncratic, each researcher must decide what works for them. Examples of what other researchers do can be found in the text by Ian Dey (1993: 83–8) who identified the techniques for early interactive reading of data segments as: free association, that is writing freely regarding words, phrases and topics in order to avoid and release fixed researcher assumptions; comparing interviews with own experiences; identifying aspects of the research map, namely the self, the situated activities, the emergent meanings, understandings and definitions, the aspects impacting on the contextual setting as well as the interactions, history, events, strategies, processes and consequences; shifting the focus among the levels of data to highlight other areas; reading the data in different sequences; critiquing the data by asking 'Who?', 'What?', 'Why?', 'When?', 'So what?'; and transposing the data by asking 'What if?' in order to seek new perspectives.

Michele Bellavita (1997: 181, quoted in Ely et al. (p. xxx) has a similar but looser approach. She allows herself to go over the data segment initially, noting ideas and then trying to create names for chunks of data; listing topics, grouping them, noting exceptions and brainstorming; playing with metaphors, analysing specific words and employing the 'flip flop' technique (looking at aspects from different perspectives, asking 'Why?' and 'What if?'); and perhaps attempting to re-present some of the data in the form of a poem or vignette which may form part of a later display of the overall database.

Summaries of issues emerging

You will find it helpful during data collection to start accumulating emerging issues into potential themes. You do this by summarising supportive data for a particular aspect every three to five sessions of interviewing or observation. The advantage of this is that by the end of data collection the twin processes of preliminary data analysis and judicial summaries mean that you have remained close to the data and have plugged any obvious gaps in information. The following is a summary of issues which were starting to become obvious as data were collected in a study on the impact of a government policy to integrate young people with severe to profound disabilities who had previously attended 'special' schools into 'normal' school settings.

'Perceptions of integration': researcher's observations, parents' and teachers' views (from six interviews)

One of the central issues emerging so far is how different people view the integration of special school students into regular schools (maximum of one half to 2 days per week). Parents (of X, Y and Z) all favour this, seeing it as a glimmer of hope, an indication of 'improvement' and a move across the great divide from 'special' to 'regular' schools with accompanying connotations of normality. All are very anxious their son/daughter should remain in the integration program despite 'fitting' (epileptic fits) experienced on regular school days by X, isolation and perceived loneliness of Y when his mate was withdrawn from the program (teacher's perception). X seems to be settling down over time – he likes the pop music in practical classes and although he can't speak he can sing along to the radio/cassette player and the girls think he is 'cute' and encourage him to sing. Y is ignored (nonverbal and almost blind) and Z has full aide support and a home room to retreat to (for all the special students being integrated in this setting) one where regular students are encouraged to come in and play cards (with students with disabilities – very popular on wet days as it beats standing around in the windswept

(Continued)

covered ways which is the only other option). Z seems calm and settled but the presence of an aide may be preventing interaction with regular students in the classroom setting. The environment and forms/lack of support appear to impact on the students' experiences. Teachers in special settings fear integration seeing it as leading to a loss of students with the potential of job loss for them – they feel that if the students are starting to move to regular settings they should go too, as they could provide expertise to support regular teachers. The latter view integration as ideologically sound but pointless in practice unless there is full aide support so they don't have to worry about the presence of X, Y and Z or adjust their curricula (and none have so far). X and Y's regular teachers express concerns about what X and Y are gaining from the experience, viewing it as negative and stressful for them (and also for themselves?). It seems clear that schools that are more academically oriented (like the ones X and Y attend) are more resistant to any disturbance caused by integrating students whereas less academically oriented schools, such as the one where Z is located, express less hostility and are more oriented to 'giving it a go'.

Source: data summary for Grbich and Sykes (1989)

The usefulness of preliminary data analysis in filling the gaps and completing the holistic view of the research area becomes obvious here. By the end of data collection you should be 'on top' of the data as opposed to being buried under them. If this process has not been undertaken, you are likely to end up with a room full of data with which you have largely lost contact, and further analysis then exposes the holes and unpursued signposts which may require further sampling and additional data collection to complete.

Following preliminary data analysis, you have a choice either to move directly to interpretation and display or to undertake more formal processes of thematic analysis and coding. Smaller databases can usually be managed with preliminary data analysis alone but larger ones benefit from thematic analysis.

Post data collection: thematic analysis

This is a process of data reduction and is one of the major data analytic options. By the time preliminary data analysis has been completed and all the data are in, it is likely that you will have a fairly clear idea what the database contains in terms of issues that are becoming evident and you will have had the opportunity to explore aspects which initially may not have been considered central to the research question/s.

Thematic analysis is particularly idiosyncratic and can involve a focus on repeated words or phrases, case studies or evidence of answers to the research question/s which have been devised. Metaphors can also be sought on the assumption that all language comprises metaphors but that the choice of particular metaphors by participants can often clarify emotive meanings. Themes may come from previous relevant research which you have reviewed, from myths/evidence within the area being studied, or from your gut feelings, as well as from the views of those being observed or interviewed. This approach to qualitative research insists that the data should speak for themselves initially before any predesigned themes are imposed.

Process

The process of reducing the data into meaningful groupings which are easier to manage can be carried out by a *block and file* approach, by *conceptual mapping,* or by a combination of the two.

The *advantage* of a block and file approach is that you can keep fairly large chunks of data intact; the *disadvantage* is that you end up with huge columns of data which can become unwieldy. The *advantage* of the conceptual mapping approach is that you have a neat and brief summary of the issues which are emerging; the *disadvantage* is that these brief words and phrases tend to oversimplify and decontextualise issues and you need to keep going back to the database to get the fuller story.

To demonstrate this for you, the following example shows how two responses to a question addressed to parents of children with severe intellectual disability were managed. The question was: 'What was the process of gaining an initial diagnosis for your child?' (Grbich and Sykes, 1989).

Block and file approach

Here data can be either underlined to keep them within the context of the overall interview data, or *italicised* to maintain cases as separate entities.

Responses to: 'What was the process of gaining an initial diagnosis for your child?'

Response 1

He was 14 months old and my husband virtually had to threaten the doctor at X hospital to tell us what was wrong. We knew there was no sign of him [child] trying to sit up at the time. Very quiet, didn't move a lot, hardly cried – more a sort of a whine. The doctor was very evasive and my husband said 'We're not leaving until you tell us and you're not leaving until you tell us.' Then he called another doctor behind a screen and they had a whispered conversation. Then he came

(Continued)

back. He felt 'there was a certain degree of retardation but no specific reason why' He told me to continue on with what I was doing and he told me that once a month for four and a half years.

Response 2

It took me 12 months to convince anyone that there was something wrong. She didn't move, she didn't cry, she slept. The hospital paediatrician said 'No problem'. At three years we took her to another paediatrician because she wasn't walking, wasn't showing any reaction to anyone, she verged on the autistic, used to sit as though terrified. All we wanted at the time was a label. The doctor spent a long time analysing which parent she looked like, we got a bit sick of this. We asked about autism, she went right off. 'There's nothing autistic about your child, you wouldn't want one of those, if she was I wouldn't have her in the place.' We were sent back later to a psychiatrist, she gets this book out – an English book with a picture of a shoe. She said to [child], 'Point to the plimsoll'. Of course [child] sits there and I said, 'Do us a favour, ask her which is the runner. So she did and [child]. pointed, but she still got zero because she didn't know what a plimsoll was. When she was about 8 we found a book on Dyspraxia at the local library which seemed to fit her, we rushed to our local doctor and he sent us back to the hospital. The paediatricians were not impressed. 'I've heard you make **your own diagnosis'** [emphasis in interview] they said looking unamused. But our diagnosis was correct.

The underlined segments are then grouped and placed in a table with headings added to clarify and categorise the contents of each column (Table 2.2). As you can see, some aspects occur in several columns. In this example the data have been repeated in order to avoid decontextualisation.

Conceptual mapping

You can see the detail available through the block and file approach. Conceptual mapping (Figure 2.1) provides a simpler, more flexible (although potentiall more decontextualising) picture of issues emerging from the same two responses. However, a combination of the two approaches can help to minimise the disadvantages.

Both these approaches face the issue that columns and maps can become very heavy with accumulated data. The advantages of both styles are that the data are now in a form from which early writing up can be contemplated. You could take the outcomes of each approach and attempt to summarise or to re-present the data in poetic, narrative or case study format in order to excite your reader.

TABLE 2.2 *Thematic analysis, block and file approach: creating columns*

Length of time to gain diagnosis	**Child's symptoms**	**Responses of health professionals to parents**	**Parents' responses to health professionals**
Response 1 He [child] was 14 months old. He [doctor] told me to continue on with what I was doing and he told me that once a month for four and a half years.	there was no sign of him [child] trying to sit up at the time. Very quiet, didn't move a lot, hardly cried – more a sort of a whine.	The doctor was very evasive. He felt 'there was a certain degree of retardation but no specific reason why'. He told me to continue on with what I was doing and he told me that once a month for four and a half years.	my husband virtually had to threaten the doctor at X hospital to tell us what was wrong. my husband said 'We're not leaving until you tell us and you're not leaving until you tell us.'
Response 2 It took me 12 months to convince anyone that there was something wrong.	She didn't move, she didn't cry, she slept. The hospital paediatrician said No problem'.	The doctor spent a long time analysing which parent she looked like, we got a bit sick of this. We asked about autism, she went right off. 'There's nothing autistic about your child, you wouldn't want one of those, if she was I wouldn't have her in the place.'	The doctor spent a long time analysing which parent she looked like, we got a bit sick of this. We asked about autism …
When she was about 8 we found a book on Dyspraxia at the local library which seemed to fit her, we rushed to our local doctor and he sent us back to the hospital. The paediatricians were not impressed. 'I've heard you make **your own diagnosis**' they said looking unamused. But our diagnosis was correct.	At three years we took her to another paediatrician because she wasn't, walking, wasn't showing any reaction to anyone, she verged on the autistic, used to sit as though terrified.	We were sent back later to a psychiatrist, she gets this book out – an English book with a picture of a shoe. She said to [child], 'Point to the plimsoll.' Of course [child] sits there and I said, 'Do us a favour, ask her which is the runner.' So she did and [child] pointed, but she still got zero because she didn't know what a plimsoll was. When she was about 8 we found a book on Dyspraxia at the local library which seemed to fit her, we rushed to our local doctor and he sent us back to the hospital. The paediatricians were not impressed.'I've heard you make **your own diagnosis'** they said looking unamused. But our diagnosis was correct.	We were sent back later to a psychiatrist, she gets this book out – an English book with a picture of a shoe. She said to [child], 'Point to the plimsol.' Of couse [child] sits there and I said, 'Do us a favour,' ask her which is the runner.' So she did and [child] pointed, but she still got zero because she didn't know what a plimsoll was.

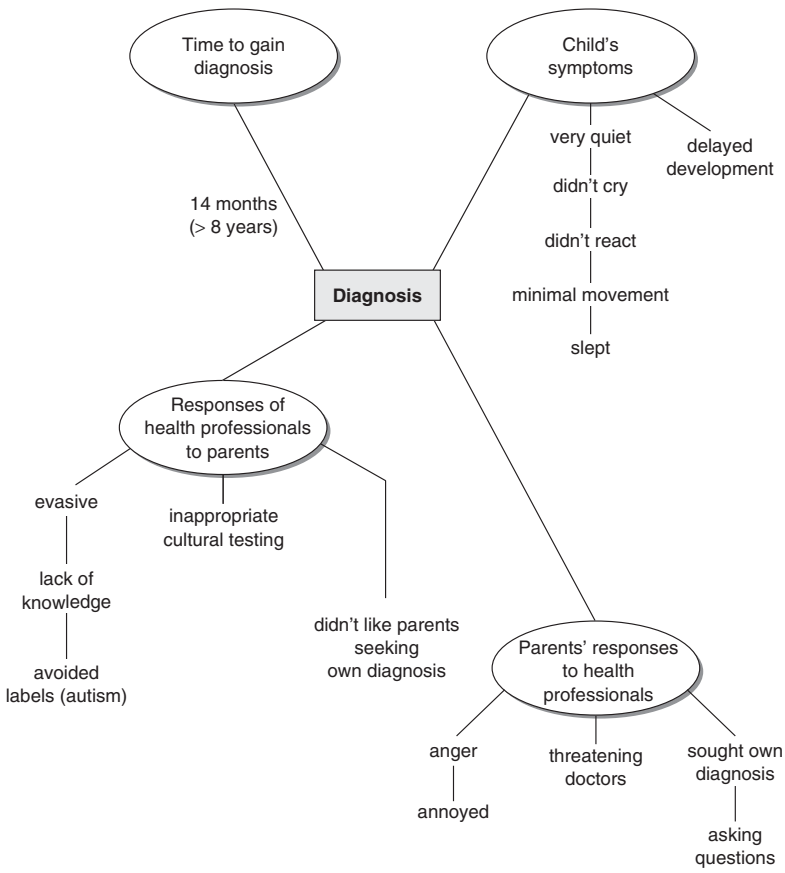

FIGURE 2.1 The matic analysis, conceptual mapping approach

Summary

In deciding on your design you need to consider who you are and where you are coming from in terms of ideas and life experiences, in terms of your position in the study and in terms of the positions in which you plan to place both your participants and your future readers, as all of these decisions will impact on your design and the collection and analysis of qualitative data. The four broad design types of iterative, subjective, investigative and enumerative link to epistemological traditions: iterative and subjective tend to fall within the constructivist/interpretivist or postmodern traditions, while investigative and enumerative can fit either in the same places or into positivism and postpositivism. To confuse things further, most design approaches have a postmodern version and a critical emancipatory version and some designs will pick up a mixture of versions depending on the

question to be researched. The two most useful and most widely used analytic tools are preliminary data analysis and thematic analysis, so it is worth coming to grips with these early.

FURTHER READING

Cresswell, D. (2002) *Research Design*. Thousand Oaks, CA: Sage.
This book provides a focus on theoretical traditions and is accessible to students through the use of exercises and examples.

Kumar, R. (2005) Research Methodology: *A Step by Step Guide for Beginners,* 2nd edn. London: Sage. This book is designed for beginners; it covers the major research traditions as well as general data collection, analysis and interpretation.

Miles, M. and Huberman, A. (1994) *Qualitative Data Analysis*: An Expanded Sourcebook, 2nd edn. Thousand Oaks, CA: Sage. This update of the 1984 edition is a how-to regarding cross-case and matrix analysis.

Minichiello, V., Aroni, R., Timewell, E. and Alexander, L. (1995) *In-Depth Interviewing: Principles, Techniques, Analysis,* 2nd edn. Australia: Longman. This is one of the few books which provide useful detail on the iterative processes of data analysis (preliminary and thematic) as well as the general processes of undertaking a research project.