Qualitative approaches

An overview of three different approaches to the interpretation of qualitative data. Part 1: theoretical issues

In this paper, the first of two, Helena Priest, Paula Roberts and Leslie Woods discuss the essential features and methods inherent within three approaches to the interpretation of qualitative data. An overview of three methodologies commonly used in nursing and healthcare research is presented: grounded theory, qualitative content analysis and narrative analysis. The paper considers the philosophical bases of the three methods and the principles inherent within each analytical approach. Key stages and steps are presented and described.

Keywords: methodological choice, qualitative methods, grounded theory, qualitative content analysis, narrative analysis

Introduction and aims
One of the most challenging aspects of conducting qualitative research lies in the analysis of the data. Unfortunately, for the novice researcher there remains, within the literature, a lack of detailed guidance concerning how qualitative data should be handled and analysed (with one or two exceptions, for example, Miles & Huberman 1994, Strauss and Corbin 1998). The aim of this article is to provide an overview of three different approaches that can be used to analyse and interpret data. These are: grounded theory analysis, content analysis and narrative analysis. In this paper, we provide a brief outline of the philosophical basis to each approach, along with key analytical principles. Then, in Part 2 (Woods et al 2002, published in this issue...
of Nurse Researcher), using a generic interview extract, we aim to demonstrate how the different approaches might be applied to a common data set.

It is acknowledged that many approaches to the generation and analysis of qualitative data are available and popular in healthcare research. Notable approaches include descriptive phenomenology, drawing, for example, upon the work of Colaizzi (1978), Giorgi (1985) and van Kamm (1969), and interpretive phenomenological approaches, drawing, for example, upon the work of Heidegger (1962). However, this paper aims to introduce and describe alternative approaches that, because they are less frequently used, may not initially be considered by the novice researcher, but which have much to offer in enabling exploration and understanding of qualitative data.

**Grounded theory**

**Background philosophy**

Of the three approaches discussed in this paper, grounded theory (Glaser and Strauss 1967), which has its conceptual orientation in symbolic interactionism (Blumer 1969), is probably the most familiar to nurse researchers. Nusbaum and Chenitz (1990) explain that 'symbolic interactionism holds that human beings are acting rather than just responding beings and that human action is purposeful and based on the meanings that the individual has for them'. Consequently, data must be collected in the natural context using a variety of methods such as interview and observation. Grounded theory aims to generate theory through inductive examination of data in subject areas that may be difficult to access with traditional quantitative research methods (Rennie et al 1988).

In terms of analysing and collecting data, Glaser and Strauss (1967) describe a set of systematic procedures that they term the constant comparative method. In essence, this is an iterative process involving concurrently collecting and analysing data with the ultimate aim of generating a theory (during the actual research) that is ‘grounded’ in the natural context in which the inquiry takes place (Strauss and Corbin 1994). Unfortunately, this is not as straightforward or as simple as it
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may sound. For inexperienced and experienced researchers alike, the notion of collecting data, coding and categorising it, writing memos about emerging ideas and concepts, determining a core category, and constantly recycling through the stages to eventually generate a cogent theory is, to say the least, challenging. Consequently, it is not surprising to find, when examining published nursing research claiming to use this approach, that often what studies describe as ‘grounded theory’ is limited primarily to the utilisation of the now well-known analytical procedures and not to the development of any substantive theory per se.

One explanation for this phenomenon may be to do with McLeod’s (1995) assertion that grounded theory ‘provides a set of analytic techniques that can be seen as representing procedures that are consistent with, or have been assimilated into, most other approaches to qualitative research’. This may go some way towards explaining why some novice researchers are attracted to grounded theory as an approach to qualitative enquiry. Whereas some other traditions tend to describe analytical strategies from first principles, grounded theory follows a very structured and systematic approach to the creative process. This systematisation to qualitative data analysis has its advocates and its opponents. On the one hand, those in favour point to the necessity for qualitative researchers, from whatever tradition, to clearly demonstrate systematic methods to data analysis that are both reliable and replicable (Miles and Huberman 1994). This has much to do with the historical status of qualitative research in the scientific community and about gaining ‘legitimacy’. However, Silverman (1993) warns that used unintelligently, such procedures and techniques can degenerate into a collection of ‘empty’ categories that have limited value in theory generation. Moreover, others point out the methodological dangers associated with the systematisation of data analysis through set procedures or the use of computer software packages (Coffey et al 1996). Whatever the view held, however, there can be little doubt that grounded theory techniques are increasingly being used as an analytic framework by qualitative researchers.
**Grounded theory – fundamental analytic principles**

This section can give only the briefest of overviews of the analytic principles adopted within grounded theory. It will draw primarily on the work of Strauss and Corbin (1998) as a template, and readers are strongly urged to refer to the original text for a fuller exposition if they wish to pursue this approach.

Grounded theory uses three sets of coding procedures that help the analyst break down the original data, conceptualise it and re-arrange it in new ways. The three coding stages are termed open coding, axial coding and selective coding (Strauss and Corbin 1998). The ultimate aim of utilising these procedures is to allow a systematic, dense, explanatory theory to be developed. It is important to point out that coding in the three stages does not necessarily follow in sequence. Indeed, Strauss and Corbin (1998) point out that in any one coding session it is possible to move between different forms of coding. Given the purpose of this paper this section will focus primarily on open and axial coding.

**Open coding**

This is the first part of the analytic process and primarily involves ‘fracturing’: taking the data apart and examining the discrete parts for differences and similarities. By the data we mean a sentence or paragraph of speech from an interview or an observation. While this process is underway the analyst will ask questions of the data; for example, when reading a transcript about the core concepts of nursing, an analyst might ask: ‘What is the basis for this point of view? Do other participants hold similar beliefs? Is there a specific theme or concept to which this issue relates?’ It is questioning of this nature that leads to new discoveries being made in the data. This process is characteristic of the ‘constant comparative method’ described by Glaser and Strauss (1967). The aim of this stage of analysis is to identify discrete concepts, which are the basic units of analysis in grounded theory (Strauss and Corbin 1998). By looking for similarities and asking questions, concepts that are in essence very similar can eventually be labelled with the same name. Each concept can then be defined in terms of a set of discrete properties and dimensions to add clarity and understanding. In due time, the list of concepts
generated has to be sorted into groups of similar or related phenomena, which in turn become categories. According to Strauss and Corbin (1998), categories have conceptual power because they can pull together other groups of concepts or sub-categories. It is this feature that moves open coding on to axial coding.

**Axial coding**

Whereas open coding is used to break down the data and to identify first level concepts and categories, axial coding is the term used to denote the way in which connections are made in new ways between categories and sub-categories. Strauss and Corbin (1998) describe the key difference of this stage as being the identification of specific features, such as the conditions that give rise to the phenomenon and the context in which the concept is embedded, which in turn help to give precision to a category or sub-category. They note that open and axial coding can occur in tandem even though they are distinct analytical procedures. To help to clarify the point of axial coding Strauss and Corbin (1998) describe an organisational scheme they call a ‘paradigm’, in which a phenomenon is analysed in terms of its context, conditions and consequences. That is to say, as an analyst you are guided to think about what caused the phenomenon to occur: the context in which the phenomenon occurred; what intervening conditions were present; and what actions and consequences arose as a result.

While use of a paradigm may seem somewhat complicated, it does serve the very useful purpose of promoting a systematic approach to adding precision and density to your analysis (Strauss and Corbin 1998). As axial coding proceeds, patterns in the data become apparent (N.B. they do not just appear), and it is possible to generate tentative hypotheses or statements of relationships between phenomena. The next stage is to verify if these statements hold true against the rest of the data you have collected, or if they can be used as a focus for future data collection. However, as Strauss and Corbin (1998) importantly point out, this phase is not simply about seeking confirmation of relationships, but also involves looking for instances where there are variations and
contradictions in the data. Whereas in some quantitative research designs the discovery of competing perspectives might bring the results of analysis into dispute, in grounded theory such findings do not necessarily negate hypotheses (although they might if the evidence is sufficient), but add variation and depth to understanding of the phenomenon (Strauss and Corbin 1998).

**Selective coding**
The final phase of coding in the grounded-theory approach is called selective coding. This stage involves identifying one or two core categories to which all other sub-categories relate and building a conceptual framework from which to develop a grounded theory. It is this final integration of codes and categories into a coherent theory that is probably the greatest challenge and, ironically, probably one reason why many studies compromise this stage of analysis. That is to say that many analysts will often choose to present their findings thematically, based around the categories that have been developed following grounded theory techniques, instead of developing a true ‘grounded theory’. It is beyond the scope of this article to discuss the reasons for this phenomenon or to enter into wider methodological debate about the implications for the grounded theory method, but readers should be aware that some studies described as ‘grounded theory’ often fail to develop any substantive theory. Those wishing to explore the grounded theory approach further will find numerous examples of its application, along with methodological critique, in the nursing literature.

The following section gives an overview of an alternative approach to data analysis, namely qualitative content analysis.

**Qualitative content analysis**

**Background philosophy**
Content analysis originated in the 1950s as a quantitative approach to analysing the content of media text to enable similar results to be established across a group of text coders (Berelson 1952). However, this quantitative method, whereby text is broken down into quantifiable units,
was challenged by a further development. Kracauer (1953) argued that text loses its meaning through radical reduction which reduces it to distinct words, and advocated a qualitative approach to content analysis whereby meanings and insights are elicited from the text more holistically. A new form of content analysis, qualitative content analysis, also known as ethnographic content analysis, developed (Altheide 1996). Qualitative content analysis facilitates contextual meaning in text through the development of emergent themes (Bryman 2001) derived from textual data. Repetition of coding produces the significance of particular themes (Burton 2000). Qualitative content analysis may be derived through manifest content, whereby respondents’ actual words form concepts, or through latent content, whereby concepts are derived from the interpretation and judgement of participants’ responses (Wood 2001). Content analysis is a widely used method of eliciting meaning from text, and is increasingly undertaken through computerised software packages (see Woods and Roberts 2000).

Content analysis – fundamental analytic principles
Content analysis facilitates the production of core constructs from textual data through a systematic method of reduction and analysis (see Miles and Huberman 1994). Exploratory studies particularly lend themselves to content analysis in that it ‘gets the answers to the question to which it is applied’ (Carney 1973). In exploratory studies such categories may be formulated from question areas in interview schedules or questionnaires (see Weber 1990, Cavanagh 1997). Text is coded into established categories to support the generation of ideas. The number of times a similar piece of text or idea unit is attributed to a particular category can then be counted. The method lends itself particularly to qualitative computerised analysis where large sections of text can be rapidly coded (for a more in-depth discussion on the use of computerised software in qualitative research see Roberts and Woods 2000).

Using qualitative computerised software packages, analytic categories, or master codes, can be created prior to coding (Mishler 1990). From
these sub-codes or analytic variables emerge. In addition, a further analytic category or ‘free node’ is usually established to enable the analysis of data that do not readily fit into existing analytic categories. Thereafter, a process of first-level coding can begin through line-by-line analysis whereby highlighted chunks of varying size, for example, phrases, sentences, or whole sections (Miles and Huberman 1994), are pasted to particular analytic categories. Thus several paragraphs of text can be reduced through content coding.

Through content analysis, this process progresses to second-level coding whereby a more detailed indexing is undertaken. Concepts are then further explored and indexed according to content in a process known as ‘nesting’ (QSR NUD*IST guide, 1997). In some computer programs, for example, QSR NUD*IST, this process facilitates the development of visual index trees, an indexing system that contains the master codes or core nodes and their subsequent concept formation comprising sub-categories or branch nodes for a whole project.

Following data reduction, constructs are formulated through a process of interpretation based on the contextual settings from which data were derived (Parahoo 1997). The process of data analysis becomes one of continual checking and questioning of emerging themes (Marshall and Rossman 1989). In order to substantiate derived themes, a reverse process ensues to delve into distinct data sets in order to derive sources of supportive evidence and ascertain direct quotations from transcripts (the process of generating theory and evidence with the assistance of QSR NUD*IST4 is described more fully in Woods and Roberts 2000).

Content analysis is a particularly reliable means of analysing qualitative data in that reliability of coding decisions can be confirmed by revisiting previously coded data periodically to check the stability over time (see Roberts 1999). Additionally, computerised data analysis packages enhance coding rules in that ‘the computer provides perfect coder reliability in applying the rules built into the program’ (Robson 1994). Furthermore, line-by-line numbering, inbuilt in such programs, assists inter-coder reliability. However, it is important to be aware that an ‘over-emphasis on standardization’ may detract from contextual meaning (Burton 2000).
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The final section in this paper gives an overview of a third approach to the analysis of qualitative data, namely narrative analysis.

Narrative analysis

Background philosophy

Communication through telling stories is a natural human impulse (White 1981). Through telling their stories, people can express their identity, relationships and emotions. Furthermore, they can order and orientate life events, in some cases gaining a sense of perspective upon these events, and can often solve problems (McLeod 1997). Bruner (1986) claimed that narrative knowledge (that is, knowledge derived from stories) was as essential as paradigmatic knowledge (knowledge gained from science) in enabling people to make sense of the world. Despite this, the use of narrative had, until the 1970s, been little regarded by researchers, including those in nursing and health care (McLeod 2001). Since that time, an increase in popularity in using narratives as sources of research data has led to the conclusion that ‘narrative has rapidly become an extraordinarily rich site of interdisciplinary study’ (DeVault 1994). Hence, the growing use of narrative analysis in counselling, psychotherapy, and healthcare research can readily be understood.

Narrative analysis does not have a single heritage or methodology, and has been described as being unclear about its epistemological influences (Redwood 1999). It draws, among other sources, upon philosophy, anthropology, sociology, psychology, sociolinguistics (McLeod and Balamoutsou 2000), ethnomethodology and literary criticism (Torode 1998). Such diversity has led to the development of a wide range of approaches to, and uses of, narrative as a form of qualitative research. Whichever approach is used, however, the function of narrative analysis is to consider ‘the potential of stories to give meaning to people’s lives, and the treatment of data as stories’ (Emden 1998a).

The terms ‘narrative’ and ‘story’ are sometimes considered equivalent terms and used interchangeably (Polkinghorne 1988, Wiltshire 1995), although a narrative can be taken to be greater than, and more structured than, a story. McCance et al (2001) note that the interview, and in
particular the unstructured interview, is the data-generation method most often selected by researchers using narratives. A narrative may, thus, be ‘any extended segment of talk in which an interviewee is telling a story’ (Lucas 1997). However, narrative analysis can be applied to any form of textual data, such as that provided by diaries, journals, or written accounts of critical incidents, in addition to data generated from interviews.

**Narrative analysis – fundamental analytic principles**

Sandelowski (1991) has noted that although ‘nurses conducting qualitative studies typically create conditions in which stories are told’ they have not, until recently, adequately considered methods for analysing and understanding such stories. Within any set of textual data stories may be found. How then may narrative analysis be used to make interpretations of meaning within such data? There is a view that formal ‘how to do it’ manuals are unhelpful, because individual researchers must create their own method (McLeod and Balamoutsou 2000). While this may be desirable, the aspiring narrative analyst may prefer, initially, to follow a set procedure.

As a general principle, within any story, a beginning, middle and end can be identified (Riessman 1993). Furthermore, a plot or core story, in other words, the main point or meaning that the teller wishes to convey, can be determined. Emden (1998b) describes a procedure that may be applied to transcribed interview data in order to arrive at this core story. First, the text is read several times. Interviewer questions and comments are deleted, as are words that detract from the key idea of each sentence or group of sentences. The remaining text is read for sense, and any further detracting words or phrases deleted. This procedure is repeated as often as necessary until fragments of themes (sub-plots) remain. These sub-plots are moved together to create a coherent core story. Emden (1998b) recommends that, at this point, the core story is returned to the interview participant for correcting or developing as necessary.

Alternatively, McLeod and Balamoutsou (2000) describe a step-by-step procedure in which the whole transcript is analysed for the presence of stories before segments of text are selected for more detailed micro-analysis. These text segments are transformed from their prose form into
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stanzas (Gee 1986, 1991) such that the text reads as a poem. The structure of the selected story can then be analysed according to its elements. Labov and Waletzky (1967), for example, suggest that the key elements of a story are: abstract, orientation, complicating action, resolution, evaluation and coda. However, such a method, with its micro-focus on language and grammar, may be less useful to a nurse researcher than an approach that explores the function and importance of the narrative for the teller, such as that outlined by Emden (1998b).

Finally, as with many other qualitative analysis methods, computer software is becoming available to assist with the management of data and the identification of narratives within text. Torode (1998), for example, used the Code-A-Text computer software (Cartwright 1997) to bring a new precision to narrative analysis, through the identification of ‘stories within stories’.

Conclusion
This paper has given an overview of the background, philosophy, and fundamental analytical principles inherent within three qualitative research approaches. Paper 2 (Woods et al 2002, published in this issue of Nurse Researcher) goes on to illustrate, with reference to a section of text, how the three approaches can be applied to the practical analysis of interview data.

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