

INTRODUCTION TO RESEARCH

methods

4th edition

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 LONGMAN

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As well as participant observation, unstructured and semi-structured interviews are other major tools in the qualitative researcher's pack. Accounts derived from interviews are studied for themes. This data is reported as narrative containing direct quotations from interview statements, fieldnotes, etc. This illustrative data provides a sense of reality, describing exactly what the informant feels, perceives, and how they behave.

Participant observation, as presented in chapter 23, depends on participation in, and observation of, behaviour in its context, and this approach puts one in a better position to understand the everyday life of the group, as the participant observer actually experiences life as the group does. Open-ended interviewing, on the other hand, is advantageous for obtaining secondhand accounts.

An interview is a verbal interchange, often face to face, though the telephone may be used, in which an interviewer tries to elicit information, beliefs or opinions from another person. A crude categorisation of the forms interviews can take is listed below.

Unstructured (open-ended)

Oral or life history
interviews
In-depth interviews
Clinical interviews
Group interviews

Semi-structured

Survey interviews
Group interviews
In-depth interviews

Structured

Standardised
interviews
Survey interviews
Clinical history
taking

Structured or standardised interviews are used predominantly in surveys and opinion polls with consequent quantitative analysis, and are considered in this text in more depth in chapter 30. In such standardised interview procedures:

- every interviewee receives the same questions in the same specified order so that comparisons between defined groups can be made with statistical comparability being the main objective;
- specific questions receive specific answers, so that a conversational approach cannot be maintained;
- all or nearly all the questions will be close-ended, in that the respondent is forced to select their answer from a limited set of responses previously established by the designer of the questionnaire;
- there is no flexibility or latitude allowed to either interviewer or respondent. The data coding of responses is done relatively easily.

The disadvantages of closed-ended structured surveys are obvious:

- Firstly, the researcher has no scope to find out the beliefs, feelings or perceptions of the respondent that do not fit into the pre-ordained response categories.
- Secondly, there is the assumption that the trained interviewer can be so standardised themselves, becoming a neutral medium in their manner of presentation of the questions, that no bias or subjectivity is introduced.
- Thirdly, this detachment and impersonal approach can prevent trust and rapport building up between interviewer and respondent.

As a result, qualitative researchers use unstructured or semi-structured interviewing techniques.

Semi-structured interviewing

This has been used either as part of a structured interview or an unstructured interview, as investigators from both persuasions feel that this may help their study. Rather than having a specific interview schedule or none at all, an interview guide may be developed for some parts of the study in which, without fixed wording or fixed ordering of questions, a direction is given to the interview so that the content focuses on the crucial issues of the study. This permits greater flexibility than the close-ended type and permits a more valid response from the informant's perception of reality. However, the comparability of the information between informants is difficult to assess and response coding difficulties will arise.

It is the making public of private interpretations of reality.

According to Taylor and Bogdan, open-ended or in-depth interviews are:

... repeated face-to-face encounters between the researcher and informants directed towards understanding informants' perspectives on their lives, experiences or situations as expressed in their own words (1984, p. 77).

The advantages are that:

- with the contacts being repeated, there is a greater length of time spent with the informant, which increases rapport;
- the informant's perspective is provided rather than the perspective of the researcher being imposed;
- the informant uses language natural to them rather than trying to understand and fit into the concepts of the study;
- the informant has equal status to the researcher in the dialogue rather than being a guinea pig.

The rationale behind open-ended interviewing is that the only person who understands the social reality in which they live is the person themselves. No structure imposed by the interviewer will encapsulate all the subtleties and personal interpretations. At the end of the academic year a student reports sick to the university's health service complaining of headaches, fatigue, stomach upset. The doctor imposes an often-used structure on this and informs the student that they have a virus infection which will clear up in a few days' time. If the doctor had used a more open-ended approach and encouraged the student to talk, the dialogue would provide revelation of worry over exam failure, loss of esteem feelings, difficulties of facing parents and friends with the results, deciding whether or not to drop out, etc. The apparent lack of structure to the dialogue will provide a window into the routinely constructed interpretations and habitual responses of each individual. Open-ended interviewing depends on verbal accounts.

Open-ended interviewing (or in-depth interviewing)

This form of interviewing takes the form of a conversation between informant and researcher. It focuses, in an unstructured way, on the informant's perception of themselves, of their environment and of their experiences. There is no standardised list of questions. It is a free-flowing conversation, relying heavily on the quality of the social interaction between the investigator and informant, that can be subtly redirected by the interviewer if it should stray too far off the track of the research study. Thus, while it is made to be as natural as possible, the direction of the conversation is always controlled somewhat minimally to ensure the focus stays relevant to the problem.

When should open-ended interviewing be employed?

- It should be used to obtain an individual's subjective experiences when a life or oral history is being elicited. The individual's subjective life experiences are reported in the individual's own language in a case study approach. This evidence is often combined with the study of documents, photographs, letters and other personal effects.
- It facilitates access to events and activities that cannot be directly observed by the researcher because perhaps they occurred in the past; for example, a school leaver's reactions and feelings to not gaining entry to the university and/or course of their choice.

- In a variant of the first point, it can be used in a clinical interview to obtain a case history for counselling or medical purposes.
- It enables more subjects to be studied in detail than does participant observation; for example, in studying the integration of migrant children into state schools it is more economical to give open-ended interviews than to attend and immerse oneself in a number of school classes across a variety of schools as a participant observer.
- It can also be used in a group interview context where the form would be an open-ended group discussion. Group dynamics can be studied in this way too. There is the danger that members will not fully reveal their beliefs and feelings when other persons are present.

Advantages and disadvantages of open-ended interviewing

A major disadvantage is that the researcher is open to the vagaries of the informant's interpretation and presentation of reality. This is a problem of validity, but, of course, if the informant genuinely perceives events in the way stated, then their behaviour follows as a corollary. The researcher is deprived of an ethnographic context in which the informant's reported perceptions occur, as they are never able to directly observe the informant in their everyday context.

Prior to conducting the interviews, the researcher does not know how many sessions are going to be needed or what their length will be. These matters will depend on the verbosity of the informant, their willingness to talk, and the value of what they are saying.



STQ134

Explain when you would use open-ended interviewing rather than structured interviewing.

Questioning techniques

The techniques which counsellors—particularly non-directive counsellors—use in their counselling sessions are equally valuable to open-ended non-directive interviewers.

In non-directive counselling the counsellor makes considerable use of parroting (mirroring) and minimal encouragers to keep the informant conversing. These must be used effectively too by the open-ended interviewer. 'Parroting' or 'mirroring' is repeating back to the informant the last few words they said, or the gist of what they said, e.g. 'You were late'. When the mirroring involves feeling, it is often termed 'reflecting', e.g. 'You feel unhappy with the support you get from your principal'. Accurate mirroring shows the informant that you are listening and understanding, encouraging them to continue.

Minimal encouragers are single words or short phrases that encourage or reinforce the informant, e.g. 'I see', 'Go on', 'Can you tell me more?', 'Yes', 'Hmm', 'What happened next?'. Parroting and minimal encouragers combined with such non-verbal communication techniques as eye contact and head nods will ensure that the informant continues to speak in what they perceive as a warm, accepting interpersonal context.

When questions are asked they are usually descriptive, requesting informants to describe experiences, places, people and events. These are useful at the start of an interview as general non-threatening questions. They allow the respondent to control the flow of information. Other types of questions are contrast questions and structural questions. The former ask for comparisons of experiences/events, e.g. 'How did your first day as a teacher compare to today?'. Then, of course, using the funnelling technique, the comparisons can become more specific about feelings of competency, pupil behaviour, etc. The structural question is used to discover how a person organises their information/experiences, e.g. 'What sort of activities does a classroom teacher involve themselves in during a typical day?'. The above type of questions are focused on knowledge. Feeling questions are focused on emotional responses, e.g. 'How do you feel about the way the parents of your pupils respond to you?'.

STQ135

Devise some minimal encouragers you could use as part of your interviewing technique.



Listening skills

These are better thought of as attending skills and involve the same qualities and skills as those required by good counsellors. Only by displaying empathy and acceptance, conveying respect and creating an ethos of trust will the interviewee be able to enter into a valid relationship with you, in which they are willing to convey their real feelings, thoughts and emotions. In attending to an interviewee you must be an active listener, look interested, be sensitive to verbal and non-verbal cues, using as it were a third ear. Remember, the interviewee is noting your verbal and non-verbal signals and building up a picture of how open, genuine, interested and encouraging you are.

Words are not the whole message. Listening is not simply hearing, for we can hear without listening. You must attend to the content of the words and the feeling behind them. You can ask for clarification, you can summarise and check out inconsistencies so you are sure you are picking up the message accurately. Never jump to conclusions, and avoid personal prejudices and blocks that hinder understanding of what the other person is really saying. Take time to listen and give time for the other person to finish.

Non-verbal communication

We communicate with our whole bodies, not just with our tongues. Actions, gestures, facial expressions, body movements and body positions—all speak louder than words. Interviewees often don't realise they are communicating non-verbally, confirming, emphasising, or even contradicting the verbal message. Learn about some of the more significant non-verbal cues and how these vary from culture to culture. Non-verbal signals are an important part of the interview data.

A pilot study

A pilot study can test many aspects of your proposed study. It does so under circumstances that do not count, so that when they do count you have more faith in what you are doing.

Pilot observations and interviews need to be as close in context to the realities of the actual study as possible. The idea is not to gain data but to learn. Clarify these piloting intentions with your respondents so that after the interview you can talk about the questions themselves. Are they clear? Appropriate? What else should I be asking? Were there too many questions? Was my introduction appropriate? Did I establish rapport?

A cover story

A cover story is the initial verbal or written presentation of yourself to the gatekeeper and others who will be involved in your research. It does more than simply say who you are and what your study is about; it also prepares others to take part more effectively. It must cover what you will do with the results, their confidentiality, how you will record the data, how long a session will last, how many sessions, reassurance that there are no right answers, and that your role is not judgemental or evaluative, but understanding.

Initial interviewing activities

Before the interview starts, whether it is structured or unstructured, there are a few pragmatic issues to cover. For example, it may be prudent to discuss whether any payment will be made, where the interview will take place, at what time, the method used to record the information, the general nature of the research, and issues of confidentiality and anonymity. In addition, these initial discussions should help to develop rapport.

The form of questioning best suited to open-ended interviewing is the recursive model. This is the conversational approach, in that a natural flow between two persons occurs with a connection between the previous, current and next remark. The criticism of this recursive approach is that as it is directed by the conversation it is quite possible for the interchange to go completely off the topic. If this occurs, the interviewer must guide the attention of the informant back to the topic, e.g. by recalling something they said.

While the open-ended interview or non-directed interview does not have a structured set of questions, the interviewer will create a guide of the general issues they wish to cover. It is an *aide-mémoire* which can be revised as respondents provide new insights and further topics for exploration. This guide does not determine the order of topics discussed. Burgess (1984) found in interviewing primary school pupils that the latter would talk first about what each in their own way saw as being at the top of their agenda.

How do you start to get the informant to talk about at least one of the topics or themes that interest you? One technique is the storytelling technique, whereby the respondent can tell a story about themselves or an event, e.g. in response to a question like, 'I hear that students at this school often play jokes on teachers. Have you ever done this?', there is likely to be an extended response in the form of a story. Another example would be asking students to talk about their first day at secondary school. The story approach is encouraged if the interviewer shows considerable interest in the events and appears to enjoy the account.

Funnelling

In this approach the interviewer gradually guides the direction of the interview by commencing with broad general questions and focusing progressively onto the topic with more specific questions. For example, the interviewer interested in the drinking behaviour of adolescents might start by questioning their views on advertising alcohol at sports grounds, and sponsorship of sport by brewing companies. Gradually the focus narrows to alcohol and health, then to their drinking habits and effects on their health, finally targeting the issues to do with personal reasons for drinking. Only as rapport develops are respondents posed questions which could be personally threatening.

Solicited narrative

Here the researcher obtains a written account of the story and uses this as a source of discussion points in follow-up sessions. This technique is often used in life history and diary interview methods.

Recording the interview

Tape-recording is the best method, as the raw data remain for later study. Not having to take notes enables the researcher to take part in the conversation in a natural way. However, interview notes are a useful supplement to record non-verbal activity, and transcribing the data from a tape recording is a laborious and time-consuming task.

Closing an open-ended interview

Try not to give any verbal or non-verbal cues that you are glad the interview is coming to an end. That would destroy your relationship with the informant. Several strategies exist which facilitate the closing of the session, yet leave the door open for further sessions. Summarising the interview is one way. You could say, 'I think we have covered all the topic(s) we planned for today. Have you anything else you can add? Now that we have covered w, x and y, could we talk about z next time?'. Another ploy is to signal that the planned time is up: 'Hasn't our hour together gone quickly today? I am looking forward to our next hour together tomorrow.' However you close, always thank the informant, e.g. 'Thank you for your involvement; your contribution is really helping this project'.

Disengaging from the research field

Rather than this being a single event it is more of a process. The informant's involvements in the research will have had a lasting effect on them, as often it can involve them in revealing incidents and experiences known only to themselves, and there are obvious ethical, psychological, social and political issues at stake too for both parties. For example, both interviewer and respondent may have become very close; through the passage of time and changes in the direction of the research the original bargains and moral obligations struck with the gatekeeper and informants may be difficult to keep. Unfortunately there is no one routine way of disengaging.

Withdrawing gradually has its merits, as this enables the interviewer to return to informants during the writing up and analyse stages to recheck and clarify points. A quick, clean break can create a minimum of possible future complications.

Fieldnotes

Many ethnographic and open-ended interview research projects can generate over 1000 pages of fieldnotes which need to be analysed. Fieldnotes usually cannot be coded into numerical data and usually are transcribed, category-coded and filed. The purpose of the coding and filing is to enable the investigator to sort and organise the obtained information into patterns and themes.

Fieldnote data will not only include records of conversations, but also details of setting and investigator’s impressions/observations. The fieldnotes will additionally include the investigator’s reflections on the conversation and setting. Many interviewers like to keep the descriptive content and reflexive parts separate, as they derive from different persons.

Fieldnotes should be written up as soon as possible, and note-taking must be considered compulsory. Like all other types of research, it involves hard work, time and discipline.

During the first days of a research project the investigator will take down everything; as the project becomes refined and focused, the notes will be more selective. Notes should concentrate on answering *who/what/where/when/how/why* questions.

The fieldnotes really separate into three files. The *transcript file* contains the records of the interviews (see Figure 24.1). The transcript file should have a large margin on the right in which comments can be placed, and on the left, numbers alongside, to locate the conversation on the tape.

The *personal file* holds the reflections of the interviewer and a description of the setting. All your thoughts and impressions should be included in a frank way. It should read as you think—forget the grammar. The personal file should also contain full details of how you gained permission, how you maintained relations, and how you left the field and the success of these strategies. Comments on methodological problems are relevant in the personal file.

The third file is the *analytic file* which identifies and discusses the conceptual issues and emergent themes. It is usually organised around topic areas and is the basis for the analysis of the data.

Analysing the data

The purpose of analysing the data is to find meaning in the data, and this is done by systematically arranging and presenting the information. It has to be organised so that comparisons, contrasts and insights can be made and demonstrated. But the data are categorised not just to count occurrences. Instead, they are categorised to permit analysis and comparison of meanings within a category. For example, from interviews with adolescent drug users on their experiences in trying to break the habit, various perceptions and fears of the ‘straight’ world may emerge that are unique, and paint a picture of personal experience of considerable use to drug

FIGURE 24.1 Example of transcript file

Informant:	John Smith	2nd interview
Interviewer:	RBB	
Date:	1. 9. 99	
Subject:	How school principals perceive their role	
Place and time:	Principal's Office, Western H.S. 2 p.m.	
Other Relevant Information	Principal for ten years. Committee member State Teachers' Association. Tape recorder used with permission.	
0000	RBB Last session we talked about your experiences as a principal. I really enjoyed the stories you told me. I would like you now to tell me how you see your role. JS What do you mean by role? Do you mean my day-to-day activities and responsibilities or the things, er, I should ideally do? RBB I am interested in both, but let's start by you telling me about a typical day. JS I find I do a lot of simple yet important things at the beginning of each day. For example, er, well, I try to be first at school and check with the caretaker that everything is alright—no break-ins, rooms all cleaned and so on. RBB How would you describe this role? JS I believe the principal is responsible for ensuring the school is in working order every day before students and staff arrive. I suppose it is part of the overall role of the principal to see that the school functions but what to call this sub-role . . .	Possible way of categorising
0010	RBB We can come back to naming roles later. What else do you do? (Interview continues for another 40 minutes)	Pause confusion?
Example of personal file for above		
1.9.99	JS appeared agitated when I arrived as he had just faced some critical parents who had demanded explanation for their child's poor school report. As in the first interview he seemed a person under pressure; he looked tired and spoke hesitantly. Although he had volunteered to take part in the project, I felt that he viewed the situation as an examination of his performance as a principal: was he doing the 'right' things? He was again dressed in a suit—was this for me?—impression: management. He sat behind his desk. Does a hierarchical, authoritarian structure and role set dominate his thinking? Only time will tell. JS asked the secretary to bring us a cup of tea each so we relaxed a little before the interview began. I chatted about the weekend rugby league match, knowing he was an ardent supporter, hoping this would put him more at ease than in the first interview. However, he still seemed on edge and throughout the interview he focused on the minutiae of his job, itemising activities almost on a diary basis and seemed unable to perceive patterns to his work or categorise the activities into roles from his point of view . . . In later interviews I shall try to get JS to look for major role categories.	

rehabilitation therapists trying to assist the user. The richness of unique qualities is preserved in qualitative analysis.

The qualitative researcher will begin by categorising. As notes are read and re-read it is possible to start grouping items together. For example, if you asked students to discuss in unstructured interviews their reactions to their college courses, statements might fall into the following groupings: relevancy, quality of teaching, timetable, textbooks, link to career, amount of work, assessment, etc.

Other categories might come from the participants themselves. They might divide themselves in perception and actual friendship groups into 'the workers', 'the smokers' and 'the thick-heads'. These categories might prove vital in looking at different perceptions of school, levels of academic commitment and future career plans.

Some researchers may cross categories to produce types. For example, a teacher who is a disciplinarian might also be distant and cold in their relationship with the students. This combination of qualities might be given the type name 'autocrat'. Types are useful in that if a subject does not fit any type this may lead to fresh insights and another way of classifying. An example of a category system or taxonomy is seen in Table 24.1 (p. 433).

Coding

So the first stage in analysing the interview data is coding, i.e. classifying material into themes, issues, topics, concepts, propositions. Coding cannot be done overnight. Many interviewers re-read their notes many times before they can begin to grasp the major themes. Some of this coding may begin while the data is still being collected, as particular issues are raised consistently across interviews. This early coding assists the interviewer to focus on essential features of the project as they develop.

This is part and parcel of the analytic induction method where the general statement about the topic is constantly refined, expanded and modified as further data are obtained. For example, you may be studying why some tertiary students apply to live in university halls/colleges. After interviewing the first six students you develop some tentative propositions about why they make this choice. In subsequent interviews you will tend to refine your questions along the line of these propositions. Further propositions will emerge as more interviews are conducted. Later interviews will test the validity of the propositions.

Woods (1976) used open-ended interviews to explore pupils' experiences of school and found that 'having a laugh' was a recurrent theme. Woods then set about classifying types of laughter in the classroom and their functions.

Content analysis

Content analysis is used to identify themes, concepts and meaning. It is a form of classifying content. These elements can be counted in numerical terms as well as examined for meaning. But when looking at the latter there is the problem of hidden meaning, of reading between the lines, and we will never know whether our reading between the lines is what the informant was meaning. Each interview is analysed for themes/topics. As the research focus becomes

narrower, the file should include discussion about why certain focuses were chosen rather than others, and should reveal emerging ideas which are strengthened or weakened by successive interviews. This discussion will involve from time to time the relating of present findings to previous research and theory. Is there support for, extension or rejection of previous findings/theory? Include speculative ideas that come to you as you write the analytic file which you can test in later interviews. Theory emerges from the data in qualitative research. This has been termed *grounded theory* by Glaser and Strauss (1967). Thus observers enter the research situation with no prior theoretical preconceptions and create, revise and refine theory in the light of the data collected.

TABLE 24.1 Example derived from open-ended interviews

Taxonomy of things students do in school

Pick on	fight
other	push
students	threaten
	call names
	tease about looks
	trip up
	steal books, pens, etc.
	make fun of them
Behave in class	take tests
	sit in classes
	don't talk in class
	don't shout out
	stay in seat
	do work requested
	try to become teacher's pet
	extra work
	volunteer
	carry equipment
	clean boards
Fool around	fight in class
	drop things on floor
	shout out
	don't do work
	smoke in toilets
	set off fire alarm
	skip class
	sit in another's seat
	give silly answers
	throw things across room
	ignore teacher
	eat in class
	walk around in class
	read comics in class
	push another off chair
	whistle in class
	tell jokes
	get others into trouble

Grounded hypotheses should be truer to life than those generated through deduction within, say, behaviourism or Piagetian theory. The final qualitative research paper can then give an account of early hypotheses and the extent to which these are modified or discarded by further inquiry and data analysis. The report becomes a diary of insights and project development.

Content analysis needs a coding system that relates to the theoretical framework or research question. If our research question is who influences a student's decision to apply for university campus accommodation, then our coding categories would involve significant others such as parents, friends, counsellor, etc. The coding of a qualitative research is important, as it operates as a labelling, retrieval and organising device. If a coding system appears not to be working, in that it is difficult to code some elements, then a new coding system may emerge that brings material together in completely new way and adds insight into the topic. The coding scheme is, in fact, the conceptual model. The coding categories should start developing as soon as the first interview is being conducted, as coding facilitates the understanding of the information which may direct the focus of the next interview. As Miles and Huberman (1984, p. 63) state, 'Coding is not something one does to get data ready for analysis, but something that drives ongoing data collection. It is, in short, a form of continuing analysis'.

Content analysis is more an art than a science. The process of category generation involves noting regularities and recurring ideas/themes in the setting, or people, chosen for study. The categories may be those that are generated by the people in the setting as they perceive their environment, or may be constructed by the observer/interviewer. The greatest strength of content analysis is that it can be conducted later, so that the setting is not disturbed in any way, and that the researcher determines the coding after the event, not setting out to prove or disprove a hypothesis by gathering facts to support their position, though guiding hypotheses may serve as flexible boundaries to provide a focus for the coding and selection of relevant elements of content. This must not lead to premature coding, forcing data into some theoretical framework, closing off alternative conceptualisations, or precluding the discovery of formerly hidden unrecognised data, connections and processes.

As categories and patterns become evident in the data, the researcher can then commence to evaluate the plausibility of emerging hypotheses and test them against further data. This entails attempts to challenge the hypotheses by seeking further positive instances and disconfirming instances. An apparent pattern must be challenged. Other plausible explanations always exist, and the researcher must demonstrate how and why their explanation is the most plausible of all.

In order to control for bias in the analysis and interpretation, the researcher should engage another researcher who can play devil's advocate and critically question the researcher's coding and analysis. Additionally, there should always be a search for negative instances.

Some of the sort of code categories that generally are useful include:

event codes, i.e. specific activities

definitions of the situation codes, i.e. how informants define setting

process codes, i.e. stages, steps, phases

social structure codes, i.e. patterns of behaviours and relationships

strategies codes, i.e. how people do things

subject perspective codes, i.e. how informants think about their situation

Stages in coding

- 1 The first stage in coding is to develop a list of coding categories. Then a short name is assigned to each and a number to each subcategory. For example, classroom activities (CA in short) may be a category, while teaching (CA1), marking (CA2) and administration (CA3) are sub-categories.
- 2 In the margin of the transcript file, the data can now be coded by the appropriate code, e.g. CA2, as the file is read. The code may refer to a phrase, a sentence or a paragraph. On occasions, there may be a double reference in the verbal unit and in this case it is double-coded.
- 3 After codes have been allocated to the text in the transcript file, data coded to each category needs to be collected together. Here you can use either index cards on which you paste cut-up sections of the text, or place the cuttings into manila folders. The former method is the best. You must photocopy your transcript file or ensure it is held on a PC so you do not lose your only copy when you cut and paste.

Computer-aided methods in qualitative research

It was not until the early 1980s that qualitative researchers discovered that the computer could assist them in working with their data. Even then there was a reluctance to employ information technology—a reluctance exemplifying the antipathy held by qualitative researchers towards those who pursued experimental research for whom the computer was becoming an indispensable aid. Qualitative researchers did and still do believe that ambiguity and context relatedness have to be regarded as central characteristics of everyday language and behaviour.

Therefore, they argue it is impossible to make sense out of written or spoken messages in everyday contexts without some tacit knowledge that cannot easily be formalised. The attempt to apply the logical, unambiguous precise rules and context-free conditions that computer analysis requires to human understanding was perceived as a futile and erroneous approach. An additional argument claimed that quantitative content analysis is too atomistic and over-simplistic to capture the richness of human communicative and social interaction.

It is therefore only recently that the idea of electronic data processing being an indispensable tool for the storage, retrieval and manipulation of text has become acceptable. The event that really changed the situation was the advent of small personal user-friendly desk computers, instead of impersonal mainframes. This led to a change in the dominant paradigm of computer use from 'computers as number crunchers' to computers as devices for the intelligent management of data, incorporating storage and retrieval facilities. This led to the PC becoming regarded as being of assistance to qualitative research.

The central task in qualitative research—understanding the meaning of communication and behaviour—cannot be computerised as a mechanical task, but there are many mechanical tasks involved in interpretive analysis. Huge amounts of

unstructured data such as interview transcripts, fieldnotes, personal documents, etc., need to be managed and organised, in addition to the numerous codings, notes, memos, and marginal comments made as the researcher wades through the material. Another important aspect of qualitative research is pulling together interview data, textual material, etc., that have 'something' in common. Qualitative researchers used to cut up file notes and transcripts, and code them into separate manila folders. Unfortunately this mechanical method dislocated the removed section of text from its original context.

The advantage of the computer is that it does not decontextualise the text which can be copied into files as a form of an electronic concordance, making it possible to electronically restore the original context of the segment, allowing for the coding system to be changed if necessary, and permitting networks and hierarchies of codes, as well as quantitative attributes such as frequency counts within codes. All this makes qualitative theory building an easier task, with a network of codes acting as the representation of an emerging theory or hypothesis. Most recent computer programs in this area allow such networks to be graphically displayed.

Some useful software for qualitative analysis

The following are just a few of the existing softwares available. Researchers should keep their eyes open for updates and new ones coming on the market.

ATLAS/ti Version 1.1E

Thomas Muhr, Trautenastr. 12, 10717 Berlin, Germany

ATLAS/ti is extremely useful for text interpretation, text management and theory building. It could be the preferred program if a researcher wishes to construct linkages between any elements of the qualitative database—for example, text segments and memos. This is a very flexible tool for constructing any kind of network.

The design of the user interface is such that most of the analysis is conducted on-screen. Consequently, a wide variety of functions to support this style of working is offered. The program is especially useful for research groups whose members want to do coding, memoing and theory building independently, but want to share their results.

HyperRESEARCH Version 1.5x

Sharlene Hesse-Biber, T Scott Kinder, Paul R. Dupuis ResearchWare, Inc., PO Box 1258, Randolph, MA 02368-1258, USA

As well as permitting ordinary coding and retrieval, this program is particularly designed for the approach towards qualitative hypothesis testing. The researcher formulates hypothesis in terms of 'if-then' statements about the co-occurrence of certain codes within a document.

TextSmart by SPSS Inc.

This software uses cluster analysis and multi-dimensional scaling to analyse key words and group texts, such as open-ended survey responses, into categories.

TEXT PAC PC

This package is useful for content analysis of open-ended questions from surveys. It can also deal with many aspects of text analysis and content analysis. There are options for validity and reliability studies.

MAX Version 3.5

Udo Kuckartz, Andreas Maurer, Bilro far Softwareentwicklung und Sozialforschung, Schiltzallee 52, 14169 Berlin, Germany

This program was originally developed to support the analysis of open-ended questions in survey questionnaires, where the method of case-oriented quantification is employed. Since then, additional features have been added, for example, for the retrieval of co-occurring text segments. All files used and created by the program that contain code or case information are stored in standard dBase format. This offers the competent user extensive possibilities for using other software tools in order to modify these files, or to subject them to a different type of analysis from that offered by the program.

All files (texts, codes, numerical and other case-oriented data) are saved in dBase format and can therefore easily be exported to statistical programs such as SPSS and SAS and re-imported to MAX after modification. SPSS files can also be directly created for exporting numerical data. Documents can be divided into *paragraphs*, permitting a structuring of texts such as open-ended questions. Code and word frequencies can be calculated.

Code-a-Text

Dr A. Cartwright, Centre for the Study of Psychotherapy, University of Kent, Canterbury, UK

Originally designed to aid analysis of therapeutic conversations, it has now been applied to other texts such as fieldnotes, and responses to open-ended questions.

QSR NUD*IST

Lyn Richards and Tom Richards. Qualitative Solutions & Research Pty. Ltd., Box 171, La Trobe University Post Office, Victoria 3083, Australia
Distributed by Sage Publications Ltd., 6 Bonhill Street, London EC2A 4PU, UK

NUD*IST is a program for facilitating theory building by searching for words and phrases and coding data. From the coding it will search for links among the codes and build a hierarchical network of code patterns, categories and relationships in the original data. It will code data in more than one way to provide multiple perspectives and enable changes in codes to be effected as a deeper understanding of the data emerges. This makes it a very useful tool in strategies of hypothesis development and grounded theory.

The user is invited (but not forced) to develop a hierarchical code structure that can be represented graphically and can be used for multiple types of retrievals. Among the most powerful retrieval functions are COLLECT, which allows for retrieving all segments or memos attached to a code and all of its subcodes, and INHERIT, which

permits the retrieval of all memos or segments attached to a code and its 'ancestors' (that is, the codes in a direct line above the code in question). Memos can be linked to codes, case-variables, and whole documents.

A great variety of retrievals can be conducted to identify the co-occurrence of codes, which is defined as the overlapping, nesting, proximity and sequential order of text segment to which the codes under investigation are attached. All Boolean operators can be employed. The program attaches a new code to the retrieved text segments, which may then be incorporated into an existing hierarchical code structure.

Code and word frequencies can be calculated. Additional functions are available for the building of matrices, and for automatic coding according to user-defined keywords. NUD*IST files can be imported into SPSS.

QUALPRO Version 4.0

Bernard Blackman. Impulse Development Company, 349, Thomasville Road, Suite 202, Tallahassee, FL 32308, USA

QUALPRO was originally a collection of routines for ordinary coding and retrieval that could be executed via DOS and by using a simple command shell. This collection has now been extended by the addition of functions for co-occurring code searches and matrix displays. Algorithms for the calculation of intercoder reliability and for computing matrices displaying agreement and disagreement between coders, are unique features of this program. This information can be used to improve the code definitions and procedures, and hence the precision of coding. The program is particularly useful for research groups concerned with the robustness of the coding scheme.

Text can be entered into the program directly or imported as an ASCII file. The smallest coding unit is the text line. Up to 1000 codes can be attached to one document. Selective retrievals of text segments are supported and memos can be recorded. Memos can be linked to whole documents and text segments.

In every ordinary retrieval, the program can retrieve, together with the text, the line numbers of overlapping presented segments coded with another code. All Boolean operators can be applied in a search for text segments so that nested and overlapping text segments can be retrieved, and also text segments to which a certain combination of codes does or does not apply. Code frequencies can be calculated. The intercoder reliability can be determined too.

The ETHNOGRAPH v.4.0

John Seidel, Susanne Friese, D. Christopher Leonard
Qualis Research Associates, PO Box 2070, Amherst, MA 01004, USA

This was one of the earliest and most widely distributed programs in the field. The strength of the program is its functions to assist researchers working in the tradition of ethnography and interpretive sociology who are more concerned with the interpretive analysis of texts than with theory building and hypothesis examination.

The software facilitates the management and analysis of text-based data, such as transcripts of interviews, focus groups, fieldnotes, diaries, meetings and other documents.

Searches for co-occurring codes are also available. Linkages can be established between one text segment and up to twenty-six memos. Several codes can be subsumed under one 'parent code' for structuring the coding scheme.

The 'Multiple Code Search' function helps to find co-occurring codes, whereby co-occurrence can be defined as the overlapping, nesting, sequential ordering or proximity of text segments. Code frequencies can be calculated and additional functions are available for identifying different speakers in transcripts and for entering contextual comments within the texts.

The above descriptions are sparse and cannot be exhaustive. Although we have tried to ensure that all the information is accurate, we cannot guarantee this, as newer versions are always being prepared. By accessing the following site you can download demonstration versions of many pieces of software that undertake qualitative analysis: www.gwdg.de/~mromppe/contsoft.htm/

Case summaries

Many researchers use case summaries as a means of analysing their data. For example, it is useful to employ case studies of students to illustrate and support arguments in investigating student behaviour or school processes. However, the basis on which case studies are chosen is often obscure and may simply reflect a bias towards, or desire to support, a particular theoretical rationale. Again, the use of index cards is advised. Each card can contain information on the informant, including their categorisation on a number of concept codes, a summary of the interview and analytic comments taken from the analytic file. These case summaries not only clarify and sort information from within a case but permit comparison across cases too.

The diary as a preliminary to interviewing

Most of us keep diaries for the very practical purpose of knowing when we have a meeting to attend, or when it is our turn to pick up the children from school. Since most people keep diaries, they provide a simple and cheap way of finding out information, particularly about how people spend their time. The diaries used for research purposes include not usually those containing personal thoughts or shopping lists, but logs of professional activities which give clear information about work patterns.

Diaries are often used as a preliminary to interviewing. The record provides a basis for further questions that explore job-related activities in more depth. In some research it may not be clear initially exactly what questions to ask. Therefore the diary content will generate ideas. The diary, in conjunction with a diary interview, has been used as an approximation to participant observation. You are now aware of the difficulties of participant observation, such as the time involved and the possible change in behaviour. A combination of diary and interview is valuable for those situations where observation might be too intrusive, such as being present at a parent-principal interview, or when extended observation would be too resource intensive. In this approach the diarist is requested to write on the what/when/where/who and how matters. For example

in-service teacher education students might be asked to maintain a diary of the events that caused them problems each day, how they sought to solve the problems, who they sought support from and how successfully they resolved the issue. Participant observation may well have prevented some of the problems—particularly pupil misbehaviour—from occurring, or may have led to advice being sought from the observer.

As in all research, the diary method requires subjects who are willing to undertake the tasks conscientiously. If subjects are persuaded against their better judgement, or have little sympathy with the research, then the diary they eventually hand over may well be incomplete or contain matters not requested. Subjects must be given clear instructions about what they are being asked to do, what type of words are needed and why. While completing a diary at regular intervals during a day can be time-consuming for those who already maintain a diary, the task is of little consequence or additional effort.

A major problem, as with observation or interviews, is that the subject may modify their behaviour so that the diary record reveals a different range of activities than normal to create a favourable impression. A diary showing hours spent and activities related to preparing schoolwork at home each evening may well be inflated to give the impression of a dedicated teacher.

A major way of investigating the work people do, without inconveniencing them with the constant presence of an observer, is to ask them to describe the critical incidents that have occurred over a specified time period. Heads of departments, principals or education administrators could be asked how they distinguish between trivial aspects of their job and key ones; how they prioritise their time; what events/issues they regard as critical and why. A critical task might be defined as one which makes a difference between success and failure in carrying out the duties associated with a job. The idea is to collect reports as to what issues occur, how they are defined, how they can be dealt with effectively, and how they contributed to good performance. The diary becomes a log focusing on specific happenings, almost like an accident or incidents file maintained at a police station. If they had time (which is unlikely) you could ask postgraduate students undertaking thesis research to keep a log of the issues or problems that they faced in conducting the various aspects of their research. They would describe each problem as it arose, why it arose, and how they tackled it.

Diaries generally cover an agreed timespan. It may be a week, a month or even longer. Content usually deals with facts and activities rather than emotions, although some researchers may be interested in some additional commentary to accompany the record. Diary requests often take the form of:

Every day at 11.00 a.m., 2.00 p.m. and 5.00 p.m. write down all the things you did in the previous hour;

or

Keep a record of all interviews with parents, their length, reason, content, conclusion/result, etc.

In research we are usually only interested in job-related activities; therefore instructions must be explicit and indicate that you do not require details such as that you washed your hands or made a coffee. It is also useful to have the diarist indicate how usual the week or the day was and whether there were any unusual events, crises, etc.

Completed diaries can provide a wealth of information if they have been completed conscientiously and thought has been given in advance to what information is to be sought.

summary

Unstructured and semi-structured interviewing are the major tools of qualitative research. Their advantage is that the informant's perspectives are provided using language natural to them. This limits the effect of the researcher's preconceptions and biases and beliefs in directing the line of interviewing. The interviewer requires listening skills and non-directive questioning techniques. Interview data requires coding so that a content analysis can be used to identify themes, concepts and categories.

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