GSB WORKING PAPER NO. 24

Rigour in Qualitative Research

Professor Alma Whiteley

ISSN 1323-7853
ISBN 1 74067 153 8
July, 2002

Rigour in Qualitative Research

by

Professor Alma Whiteley

Graduate School of Business
Curtin University of Technology

Working Paper Series 02.01 (Curtin University of Technology Graduate School of Business)

Rigour in Qualitative Research

> *There are no rigid rules that can be provided for making data-collection and methods decisions in evaluation. There is no recipe or formula to follow. Lee J Cronbach has observed that designing an evaluation is as much an art as a science (Patton, 1980:15.).*

The aim of this paper is to give an overview of some of the major rigour considerations in qualitative research. Each research is unique. This means that there is no one recipe, no 'one size fits all'. For each piece of research carried out, an appropriate set of rigour criteria needs to be worked out. This activity takes place at the same time as the research design, the objective of which is to choose the research activities that will connect each part of the research elements together.

The goal of qualitative research is to produce high quality, meaningful and relevant data, such that it is possible to emerge valuable insights within a social context. What makes rigour so difficult in qualitative research is that the researcher is an instrument of data collection. As a person, the researcher is not a physical or material conduit. S/he is a human being with a personal 'life world' of experiences, predispositions and mental models, or schemata (Gell-Mann, 1994). This poses a problem. The unique strengths of humans as instruments of data collection (for example, the ability to empathise) are also unique weaknesses. Researchers can, and in many cases should, use their creative and empathetic faculties within the research setting (Charmaz, 2000). The valued 'giving voice' to respondents can be done in many ways (Griffin, Shaw, & Stacey, 1998). However, the inextricable nature of two personalities coming together, that is researcher and respondent, means that there is not the distance and objectivity possible to enable the researcher to say that the point of view expressed was uncontaminated by researcher subjectivity.

That is not to say that there are not similar weaknesses of potential bias and subjectivity in what is often called 'scientific' or quantitative research (Checkland, 1999). Knorr-Cetina's (1980) work on science as an epistemic culture is an excellent and provocative argument on the issue of scientists infusing, at some stage in the research their own personal values and judgements. There is a major recognized difference between qualitative and quantitative research, the latter claiming the existence of some underlying truth. This is challenged by Lynch (1993) as he talks about the sociology of scientific knowledge (SSK).

As Mays and Pope (1995:109) say, "…in quantitative data analysis it is possible to generate statistical representations of phenomena which may or may not be fully justified since, just as in qualitative work, they will depend on the skill and judgement of the researcher and the appropriateness of the question answered to the data collected. All research is selective – there is no way that the researcher can in any sense capture the literal truth of events"

A conscious and transparent effort to achieve rigour is necessary. This is not so much to achieve parity with quantitative claims (and for some counterclaims see Britten and Fisher (1993), but to render the research as trustworthy as good design and researcher practices can make it.

Patton (1980) proposes that credibility for qualitative enquiry depends on three issues;

- Rigorous techniques for gathering high quality data that is carefully analysed with attention to issues of validity, reliability and triangulation*.

- The credibility of the researcher which is dependent on training, experience track record, status and presentation of self** and

- Belief in the phenomenological paradigm, which is a fundamental appreciation of naturalistic inquiry, qualitative methods, inductive analysis and holistic thinking.

*In quantitative research, validity and reliability are often tied to the various aspects of instrument design necessary to satisfy ensuing statistical theories. This is especially so where one of the research aims is generalisability. In qualitative research the problem of validity (in the sense of examining what one sets out to do) can be improved because the respondent is there to clarify, explain and expand on issues. If the questions (or stories, narratives, scenarios) being raised by the researcher are not considered by the respondent to be valid in terms of the issue being presented, the parameters of qualitative research (such as the iterative analytic frame) allow redirection within the research. The issue of replicability is one to which the qualitative researcher needs to pay great attention. Each process and procedure in the research needs to be documented so that it is able be replicated, as far as other research contexts allow. Sometimes we refer to the documentation as a audit trail. Qualitative research is no less systematic than quantitative research, even though the data collection methods follow different assumptions.

** For those researchers who do not have the requisite training and expertise there will be an expectation that it will be gained by doing some preliminary field work. The length and depth of this would depend on the needs of the researcher and the research.

Self, Context and Assumptions

The first and perhaps most important thing to consider is the research 'self' going in to the study. The self is an instrument of data collection and is also a judge of the philosophical and ontological decisions from which epistemology and methodology flow.

What this means in terms of rigour, is that researcher assumptions need to be addressed. We talk about the research self and about the activity of bracketing (Moran, 2000). This is a notion from phenomenological research and it expresses recognition of the need to bracket researcher 'theories' (including theories of self) from the research context. It is the assumptions embedded in the self that need to be bracketed, that is unless there is some research reason not to do so. One of the most important 'self' qualities is that of being prepared for surprises. In the most negative case, the researcher will (whether consciously or not) encourage the data to fit the formative idea or tentative model developed during the early stages of the research. In the most positive case, the researcher will look for contrary evidence. This means being on the alert for the negative case of emerging categories. The research activity of constant comparison (Glaser & Strauss, 1967) is rendered much less effective if there is not a genuine attempt to challenge emerging categories.

Assumptions of constructivist research

Constructivist research takes a relativist stance. It assumes emergence, iteration and reciprocity between the researcher and respondent (Harrison et al, 2001). In answer to the ontological question about the nature of the reality posed by a qualitative research question, there are multiple personally and socially constructed versions of reality. These are uncertain, and not reliant on any a priori knowledge or theory (personal or otherwise) that we, the researchers bring to the situation. Meanings gleaned from respondents may be partial and incomplete in some ways but it is not the researcher's task to close any gaps on behalf of the respondent.

Assumptions of sociological perspectives

Examples of this are in the stated assumptions of the theorists who write on the particular sociological perspective being utilized for the study. The researcher needs to ask which research perspective best fits the study. A question could be "what are the assumptions of a symbolic

interaction focus (Woods, 1992) as opposed to (or complementary to) an ethnographic one, (Tedlock, 2000) or a phenomenological one (Moran, 2000)"?

Assumptions in symbolic interactionist studies for example have been provided by Blumer (in Woods, 1992:330). These are that: humans act towards events on the basis of the meanings these hold for them; the attribution of meaning is a continuous process; meaning attribution is a product of social interaction.

Assumptions about an ethnographic study are that: deep and penetrating investigation will be undertaken; the research will be carried out in the respondents' natural setting; there will be complex social processes at work of a tacit nature; the study will call for some sort of researcher immersion in the naturalistic setting.

Assumptions about the social context

Assumptions about the social context under study need to be made and held up for scrutiny. For example, researchers reported by Morse (1994) were studying childbirth involving Fiji-Indian mothers. It was a high modesty culture and intimate feminine issues were not discussed, including the mechanics of childbirth. Nurses knew of course but they could not, for values of modesty, share their information with the patients. Because of something unusual in the data, the researcher could go back to the nurses, who did, in turn, confirm their patients' lack of knowledge. Sometimes, even at the risk of contaminating 'pure emergence', preliminary fieldwork needs to be done so that appropriate assumptions about the social context can be made.

Assumptions about theory

Unless the objective of the research is to begin the process of emerging substantive theory, there will often be a theoretical framework that lends its support to the ideas and issues being investigated. Qualitative research should not, however, allow theory to act as a straightjacket, a possible danger of which lies in the research being overly designed to match a readymade set of theoretical assumptions. This is sometimes a delicate issue in qualitative research because it is very comforting to work within a framework bounded by theoretical assumptions. Adherence to them satisfies the researcher's need for structure and framework. However, as we found in the waterfront study, the researcher is not always free to follow theoretical assumptions.

We were not free to seek the sort of emergence assumed by Glaser (1992) as being the benchmark for grounded theory. This was because not only did we know some of the bounded areas in which we were working (such as the enterprise-based framework) but we imposed such

things as ‘milestones’ into interview schedules. The important point here is that if a theoretical framework seems to naturally fit and enable the research quest, then it can be used as long as this is accompanied by a resolve to abandon it if, due to respondents’ theories, it loses its relevance. In such a situation, either a modified version of the theoretical framework needs to be produced or the theoretical framework needs to be abandoned.

Weick, in his book Making Sense in Organizations (Weick, 2001) refers to March and Olsen (1976)’s ideas on the reality assumption (what appears to happen does happen); the intention assumption (what happens is what is intended to happen) and the necessity assumption (what happens has to happen). These assumptions might resonate with the sorts of issues (intent, need and actuality) that are of interest to a particular study.

A study interested in systemic change might adopt some of the assumptions of complexity theory - a non-linear focus, an allegiance to adaptability and a focus on the unpredictable and emergent (Mathews et al, 1999). Such assumptions would be reflected in activities such as an iterative research design, theoretical sampling and data collection methods that were not overly structured in nature.

One of the most important differences between quantitative and qualitative research is the issue of emergent literature. This issue can not be overstressed. In quantitative research, the literature forms a strong basis for making predictive propositions (hypotheses) that will result in the building of predictive models. In qualitative research the literature informs the formative idea(s) going into the research. The opportunity must be there for the respondents to direct the researcher to some theory and literature that was not evident as being relevant or important at the beginning of the research. This impacts on the discussion of findings. In quantitative research, the findings will foster a discussion on the literature review which preceded the development of hypotheses and design of a predictive model. In qualitative research, the same discussion will happen but it will be accompanied by a second literature discussion, this time sparked by the findings.

Research Design

The following research design issues (see figures 1, 3, 4) were based on the Waterfront reform: Enterprise Based Bargaining and Effective Strategies For Change study (Whiteley 2000, Whiteley & McCabe 2001).

The first rigour requirement in any research is that it is carried out in a systematic way. This shows itself in the approach taken to the research design. To remind you, the purpose of the research

design is to provide the logical sequence that connects the field data to a study's initial research questions and ultimately to its conclusions. This means that the rationale for the research must follow a plausible pattern and the sequencing must do the same. The key word here is 'connects'. Each part of the study connects the other parts to the research question, issue or problem (figure 1).

We can look at this in three stages. The first is the thinking and theorizing that underpins the research. Figure 1 shows how rigour, both in planning and justification of research decisions, can be expressed as a starting point or a mental set of headings. Taking the right hand column as an example, each of the items can be used as a heading under which a more expansive explanation is provided.

Take for example the philosophical issue. Realist philosophy would be described as a 'being' philosophy. The true nature of things is that they exist and are real (Compte, 1853). They can be apprehended and measured and studied in an objective way. A critical examination of the 'being' philosophy is provided by Chia (1997:685) who explains that to a realist "Scientific knowledge [and the ontology of being] is essentially defined only by the extent to which it can be verified by an appeal to hard facts acquired through careful observation and are considered to have value only in so far as they are derived". Not so with the 'becoming'. The idea here is that life is self-referential, 'things' are what the mind makes of them (Tsoukas, 1998). They need to be understood as dynamic, fluid and most of all, a matter of understanding and interpretation (Dilthey 1976, Schwandt 2000). In the study presented here, we were interested in subjective accounts of experience and about feelings as well as facts. A well-earned criticism of qualitative research is its claim to follow a becoming philosophy whist in practice; data are collected in the same 'apprehend the moment' way as quantitative research. How does a researcher answer such charges? Not without reading and understanding the bigger arguments underpinning qualitative research.

Figure 1: Theorising and Sequencing

DESIGN ISSUE	PERSPECTIVE/ ACTIVITY	REASONING
Philosophy	Becoming	We wanted self-referring accounts of the 'EBA' story as it was spun by the respondents.
Sociology	Phenomenology Symbolic Interactionism	The EBA 'life world' was being studied and we sought 'the lived experience' . We were interested in what the EBA symbolized.
Theory	Change, management development and communication*	From the findings, theories of trust and communication proved to be central.
Ontology	Constructivism	The study was context-specific. It was a complex social setting. There was no one, accepted version of the EBA.
Epistemology	Interpretive	We resolved to give voice to respondents. This was an 'inside-out' study with an emergent focus.
Methodology	Qualitative Modified Grounded Research	To collect accounts of multiple social realities but also: to identify socially stable constructs; to work within some readymade categories.
Analytic frame	Flexible and Iterative	To allow analysis to inform the next round of data collection and to allow for continuous modification.

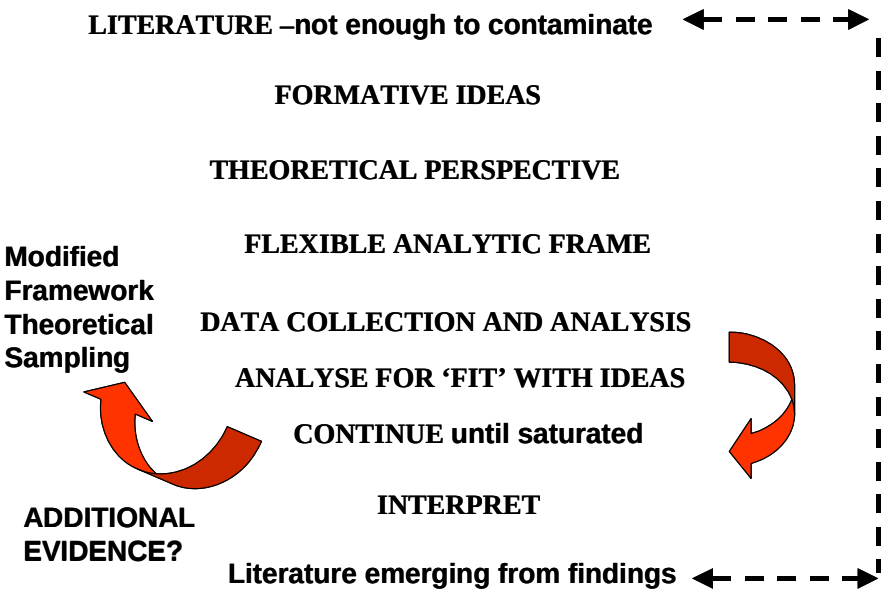
As we said earlier, there is a contrast worth noting between positivist studies and constructivist ones. In positivist work, and especially the kind where predictive hypothetical models are built, theory plays a crucial role in the developmental stages of the research. The outcome of the literature review (and this should be exhaustive) is to inform the design of the predictive model. Because the idea is to prove or disprove many of the arguments and assumptions coming from the literature, the post-findings literature review will play a less dominant role than the pre-findings review. In the case of qualitative research, theory plays just as important role but it features in a different way. Theory is used at the beginning of the study to help shape and form the research questions and objectives.

There is a tension between being aware of the important literature, in and around the field of study and becoming attached to theory in a way that contaminates emergence. However, without sufficient knowledge of literature, it will not be possible to apply theoretical sensitivity when developing concepts from emerging categories (Glaser, 1992). My own preference is to make sure that important literature has been reviewed and this includes writing that is not only central but connected to the issue being studied. Only then will the researcher be aware of the theories and controversies being presented. A suggestion is, very early in the research, to apply the same bracketing to literature and theory as is used in guarding the self from bias and contamination.

An important thing to look for in research design is any discrepancy between the assumptions underpinning philosophy, ontology and epistemology. This is not always straightforward. For example, when using ethnomethodology and conversation analysis, the ontology is constructivist and yet, because the researcher is not present at the data collection, the epistemology is empirical. The researcher has to produce an argument that justifies this apparent contradiction. In this case, the work of ethnomethodologists (Button, 1991) would yield appropriate arguments. Problems of paradox and contradiction will become more apparent as researchers produce sophisticated arguments such as 'paradigm interplay' (Schultz & Hatch, 1996) and use such ontologies as complexity which, by their nature, embrace both positivist and constructivist ontologies in a synergistic way (Kauffman, 2000).

A diagram such as figure one helps to draw a picture of the research design so that a reflective look at reasoning can be undertaken. This should be revisited as the research progresses because the one thing to remember in qualitative work is that 'discovery' may involve re-thinking and re-theorizing. The golden rule here (in contrast to positivist studies) is not to get too attached to initial design decisions. The analytic frame contributed by Ragin (1994) is a great help in reminding the researcher of the iterative nature of qualitative (especially discovery-oriented) research (figure 2).

Figure 2: Flexible analytic frame



Unless there is something to challenge, such as in the example of the social constructionist empirical epistemology mentioned above, it is usual that the philosophy, sociological perspective, ontology, epistemology and methodology will be in alignment. They should harmonise and enable each other.

The next set of design issues are what we might call 'activity-based '. These are relating to sampling and data collection methods (figure 3).

Figure 3: Research Activities

DESIGN ISSUE	PERSPECTIVE/ ACTIVITY	REASONING
Data Collection Sampling	Theoretical sampling	The developing theory of the respondents leads to identification of other relevant respondent (groups). First we looked at a mix of old timers, senior managers, union people and other opportunistic respondents. The data from these sent us to three groups: wharfies; local union representatives and managers.
Methods	Familiarization visits Exploratory chats	To absorb tacit knowledge, conventions, ways of communicating, rituals, stories, lore.
	Documentary data	EBA was part of the reform agenda. Literature helped construct a context.
	Qualitative interviews Narrative and semi structured	To allow stories to be told and questions on strategies for change to be answered.
	Questionnaire/ pay packet survey for descriptive statistics	As socially stable constructs emerged.

Data Collection: Sampling

> *This [theoretical sampling] process is controlled by the emerging theory whether it is substantive or formal…the initial decisions are not based on a preconceived theoretical framework…the basic question in theoretical sampling is what groups or subgroups does one turn to next in the data collection? (Glaser & Strauss, 1967:45-47)*

Glaser and Strauss go on to describe how, in their study on patients' awareness of dying related to staff-patient interaction, they were 'sent' by the data (in other words the respondents' theories) to look at additional situations where patient awareness was discounted. In the waterfront example, the research task was to understand the deep social processes that were part of the Enterprise Based Agreement experience. It was a help to our thinking to consider what the research objective was not about. For example, the study was not about classifying different 'types' of behaviour in order to distinguish the typical from the atypical. Had it been so, then well-known devices such as statistical sampling (and this is often associated with random sampling and representative sampling) would have been used. Statistic-based activities are most appropriate where external validity needs to be demonstrated and where a target population can be identified in such a way as to fit some existing or proposed criteria or typologies.

This brings us to one of the most important differences between qualitative and quantitative research – that of generalising versus contextualising. When checking for rigour, it is important that the assumptions surrounding the existence of tacit and complex social processes are taken into account. One of the most potent words in grounded theory (Glaser & Strauss 1967, Whiteley 2000) is 'emergence'. In qualitative work, emergence is a core part of sampling. At the beginning of the data collection exercise, it is usually possible to identify a purposive sample – that is one or more respondent groups that have an intuitive connection to the issues being studied. The data produced by the first sample soon fulfils another purpose. It provides the information upon which to guide further the sampling process. As the first and succeeding data outputs are analysed, (the analysis going through a systematic process of coding, categorising, constant comparison, not forgetting the negative case) it is possible to produce very preliminary theoretical understanding. From this comes a new set of decisions about who or what to examine next. As more iterations occur, refinement (or further discovery) is often possible. The relationship between sampling and theory emergence is iterative and reciprocal (Figure 2).

Data Collection Methods

The first thing to remember in data collection is that you, as researcher, are eavesdropping on someone's life. Whether you are using interactive methods, involved methods such as participant observation or non-obtrusive/non-reactive methods, still you are dropping in on someone's reality.

This gives the researcher a great responsibility. Given that we, as researchers, can not access a person's thoughts directly, we become an instrument for representing some aspects of the person's 'life world' (Giorgi, 1970). An important rigour issue is often seen to be exclusive to qualitative work (although clearly this should not be the case, see Hassard, (1991, Gioia & Pitre, (1990). It is the issue of accountability.

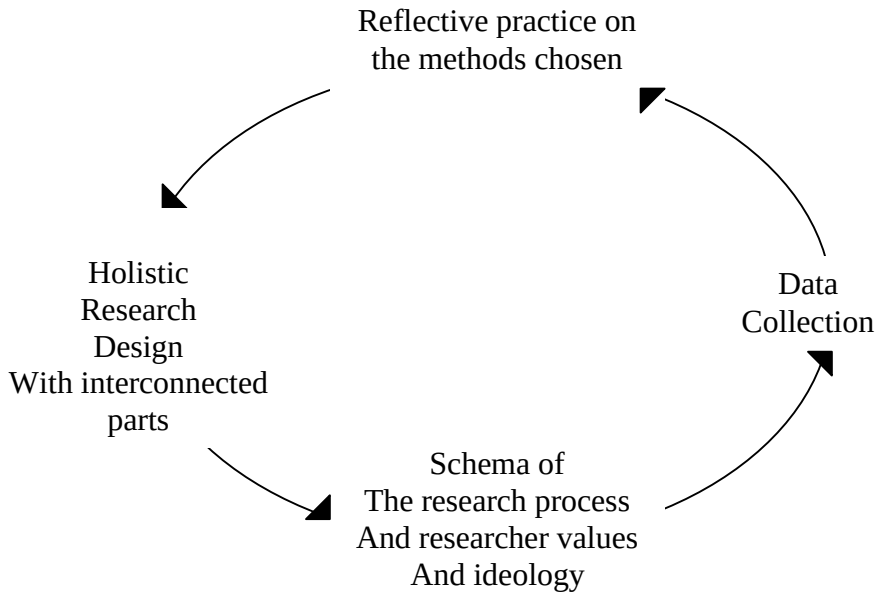
> *This [accountability] is in stark contrast to positivist work, where the legitimacy and relevance of the fundamental method adopted is rarely questioned. On the other hand, much time is spent in this paradigm in debating the validity of the research design, which courts the danger (particularly with statistical methods) of being obsessed with the intricacies of the measuring instrument and becoming alienated from the actual behaviour of interest (Cassell & Symon, 1994:8).*

There would be little argument from scholars that the researcher needs to be accountable to the ontological and epistemological positions chosen for the research. Most positions, including those that contain paradox and challenge can be defended. The accountability argument is becoming more sophisticated as post-structural writers argue against the incommensurability (or mutual exclusion) of research paradigms. Schultz and Hatch (1996) are a case in point. They argue for

paradigm interplay in a way similar to the hermeneutic activity of dialectical tacking (in this case tacking between paradigms). This brings up another interesting issue. In order to understand arguments such as those of Schultz and Hatch, it is necessary to understand at least positivist and constructivist ontologies and ideally some of the associated ones such as those of post-positivist and critical theories (Lincoln & Guba, 2000).

So, for example, social constructionism with its empirical epistemology and constructivist ontology has been developed and argued for by scholars in the field (Potter, 1996).To leave a tape (or video recorder) in a room with the researcher absent does not fit everyone's image of qualitative research. The data collection method depends on social constructionist theory which says that talk-in-interaction is a production. As such, examples of discourse are best collected without researcher intervention. In other words, data collection methods do not exist in isolation. Having a penchant for, or a skill in, conducting interviews or focus groups is not sufficient to qualify the data collection method. It is useful to think of choosing and justifying data collection methods in a hermeneutic way (Gadamer, 1970, figure 4).

Figure 4: Hermaneutic Research Cycle



Although this paper is directed at qualitative research, the comment made earlier by Cassell and Symon (1994) holds true. The authors draws attention to the lack of justification for ontological, epistemological and methodological choices that overarch quantitative data collection decisions (often resulting in the selection of the ubiquitous questionnaire). Some researchers regularly do 'linked studies'. This is where either the outcomes of qualitative research are utilised within

quantitative designs, or the outcomes of quantitative research call for qualitative investigation. Each methodology must answer to its epistemic and ontological requirements. Each needs to be argued for and justified. Readers who prefer quantitative research would be interested in Knor-Cetina's (1999) work on epistemic cultures and Lynch's (1993) on the sociology of scientific knowledge (SSK). An important note is about counting in qualitative research. It does not go to say that when counting is adopted, the study is automatically positivist. Descriptive statistics are useful in ascertaining how widespread some emergent category or concept seems to be. Similarly, it does not say that in every instance when qualitative responses are sought within a positivist study, this makes it constructivist. Take the case where an open-ended question or invitation to comment is ended onto a questionnaire. Where there is less intent to discover and foster emergence than to capture thoughts within or associated with the questions asked, then the open-ended questions could be asked within the positivist framework.

Returning to the issue of the relationship between the methodological approach and its impact on how the researcher and respondent become defined, we can argue that a fairly substantive knowledge of methodological precepts provide a repository upon which the researcher can draw. An aim for the researcher who pursues rigour in data collection is to become conversant with the major techniques and philosophies that serve to allow discrimination between choices.

An example of the latter would be interpretivism (Schwandt 2000, Maggs – Rapport 2001). The researcher would need to know that, "what distinguishes human (social) action from the movement of physical objects is that the former is inherently meaningful" (Schwandt, 2000: 191). Assumptions hold that human meaning has an intentional content. This can only be understood in terms of the system of meanings in social action. It is necessary to interpret in a particular way what the actors are doing. Interpretive work is interested in understanding or Verstehen. To understand this concept it is useful to have read the work of Dilthey (1976) and perhaps even Kant (see Tarnas, 1991). For contemporary discussions on the precepts, contradictions and challenges linked to the interpretive approach see in Lincoln & Guba, (2000), Denzin, (1999) and Lincoln, (1995).

How would knowledge of interpretivist philosophy impact on say, the design of an interview schedule? Designs range from structured to semi structured to unstructured. What might be the implications of a structured interview schedule? How much opportunity would there be for the respondent to conject, muse, make sense of things? The more structured the interview schedule the less the responses are grounded in the theory of the respondents. Does this matter?

This is where knowledge of research theories comes into play. Following the interpretive tradition, a structured question would only be seen as a beginning. Should the respondent offer some issue

that is foremost in the mind, then the researcher will judge whether or not to go along with the respondent. The judgement will relate partly to the integrity of the actual research design but also the methodological and theoretical assumptions adopted. Below (figure 5) are some well-used data collection methods together with rigour issues that might arise. Tables 1.2 and 1.2 are examples of scholarly writers sharing their knowledge and experience gained in the field. These, like the example below, are there to be questioned and challenged.

Figure 5: Techniques and rigour

Method	Technique Issues	Rigour Issues
Participant Observation	Recording and bracketing	Ethics and transparency Sifting meaningful data Comfort of respondents
Interviewing	Structure of Interview Schedule Listening Skills Decisions on how much interaction Semantic checks Acceptability of Question checks	(If phenomenological) bracketing Giving voice (respondent's own words) that is the issue of representation. True to the assumption that the perspectives of respondents are meaningful and explicable Knowing characteristics, strengths and weaknesses of types of interview.
	Technique Issues	Rigour Issues
Focus Group Interviewing	Size of group homogeneity Familiarity of group members Permissive environment. Focused questions facilitate discussion and dissenting voices	Sensitivity to self – disclosure Interview control Distributive justice (everyone gets a turn)

Table 1.1; 1.2: Methods, strengths and weaknesses

NOTE: x = strength exists; D = depends on use; PO = Participant Observation; I = Interview; EGI = Ethnographic Interviewing; ELI = Elite Interviewing; FGI = Focus Group Interviewing; DR = Document Review; N = Narratives; LH = Life History; HA = Historical Analysis; F = Film; Q = Questionnaire; P = Proxemics; K = Kinesics; PT = Psychological Techniques; UM = Unobtrusive Measures.

Table 1.1 Strengths of Data Collection Methods															
Strengths	**PO**	**I**	**EGI**	**ELI**	**FGI**	**DR**	**N**	**LH**	**HA**	**F**	**Q**	**P**	**K**	**PT**	**UM**
Data easy to manipulate and categorize for data analysis	.	.	.	.	.	X	.	.	.	.	X	X	X	.	D
Fact-to-face encounter with informants	X	X	X	X	X	.	X	X	.	.	.	.	.	D	.
Obtains large amounts of expansive and contextual data quickly	X	X	.	X	X	.	X	.	X	X	.	.	.	X	.
Facilitates cooperation from research subject	X	X	X	X	X	.	D	X.	.	.	.	.	.	.	.
Facilitates access for immediate follow-up data collection for clarification and omissions	X	X	X	.	X	X	X	X	X	X	.	D	D	.	X
Allows wide rage of types of data and informants, thus avoiding sampling of “pocket of the universe”	X	.	.	.	D	.	.	.	.	.	.	D	D	.	X
Easy and efficient to administer and manage	.	.	.	.	.	X	.	.	X	.	X	X	X	.	X
Easily quantifiable and amenable to statistical analysis	.	.	.	.	.	X	.	.	.	.	X	X	X	X	X
Useful for discovering complex interconnections in social relationships	X	X	X	X	X	.	X	X	.	X	.	X	X	D	.
Easy to establish generalisability	.	.	.	.	.	X	.	.	X	.	X	X	X	X	.
Data are collected in natural setting	X	X	X	X	D	.	X	.	.	X	.	X	X	.	X
Good for documenting major events, crises, social conflicts	.	.	.	X	X	X	X	X	X	X	.	.	.	.	.
Good for obtaining data on nonverbal behaviour and communication	X	X	D	.	X	.	D	.	.	X	.	X	X	D	X
Collects data on unconscious thoughts and behaviour	X	.	.	.	.	.	D	.	.	X	.	.	X	X	X
Previous researchers have developed usable measuring devices	.	.	.	.	.	X	.	.	.	.	X	X	X	X	X
Facilitates analysis, validity checks, and Triangulation	X	X	X	X	X	X	.	.	.	X	X	X	X	X	X
Facilitates discovery of nuances in culture	X	X	X	X	D	X	X	X	X	X	.	X	X	.	X
Provides for flexibility in the formulation of hypotheses	X	X	X	X	X	D	X	X	X	X	.	.	X	.	X
Provides background	X	X	.	X	X	.	X	.	X	.	.	.	.	.	.

context for more focus on activities, behaviours, and events															
Great utility for uncovering the subjective side, the "native's perspective" of organisational processes	X	X	X	X	D	.	X	X	X	X	.	X	X	.	.

Table 1.2 Weaknesses of Data Collection Methods

Weaknesses	PO	I	EGI	ELI	FGI	DR	N	LH	HA	F	Q	P	K	PT	UM
Can lead the researcher to "miss the forest while observing the trees"	X	.	X	.	D	X	X	X	.	X	X	X	X	X	X
Data are open to misinterpretation due to cultural differences	X	X	.	X	X	X	X	X	.	X	X	.	.	X	X
Requires specialized technical training for data collection	.	.	X	.	X	.	.	.	.	X	X	X	X	X	.
Dependent upon the cooperation of a small group of key informants	X	X	X	X	.	.	X	X	.	.	.	.	.	.	.
Fraught with ethical dilemmas	X	.	.	X	.	.	X	X	.	X	X	.	.	X	X
Difficult to replicate; procedures are not always explicit or are dependent upon researcher's opportunity or characteristics	X	X	X	X	X	.	X	X	.	X	.	.	.	.	.
Data often subject to observer effects; obtrusive and reactive	X	X	X	X	X	.	X	X	.	X	.	.	.	.	.
Expensive material and equipment	.	.	X	.	.	.	.	.	.	X	X	.	.	X	X
Can cause danger or discomfort for researcher	X	X	.	X	X	.	.	.	.	.	.	.	.	.	.
Especially dependent upon the honesty of those providing the data	.	X	X	X	D	.	X	X	X	.	X	.	.	X	.
An overly artistic or literary style of presentation can obscure the research	.	.	.	.	.	.	X	X	X	X	.	.	.	.	.
Highly dependent on the "goodness" of the initial research question	.	.	.	.	.	X	.	.	D	X	X	X	X	X	X
Highly dependent upon the ability of the researchers to be resourceful, systematic, and honest, to control bias	X	X	X	X	X	.	X	X	X	X	.	.	.	.	X

Source: Marshall, C., & Rossman, G. (1994:101). Designing qualitative research. Thousand Oaks:Sage Publications.

To the researcher, data collection methods do not exist in isolation. They are subject to some important controls. Questions to ask are like those below.

Are the methods chosen in keeping with the assumptions embedded in the theoretical perspectives adopted?

If the study is qualitative, is there a particular epistemological stance that governs some of the conditions within which data can be gathered?

Has consideration been given to alternative data collection?
(see tables 1.1 and 1.2)

Have the weaknesses been expressed openly, together with some plan for addressing them?

Have the overall rigour issues been taken into account?

One transcendent rigour requirement in qualitative research is that of authenticity.

Authenticity

Authenticity is closely linked to credibility in reliability and involves the portrayal of research that reflects the meanings and experiences that are lived and perceived by the participants (Sandelowski in Whittemore (2001:530).

Rigour in data collection methods begins with the basic premise of ‘giving voice’ to respondents (Charmaz 2000, Griffin et al. 1998). A central research issue is that of authenticity. In fact many research writers equate quality of research with two key areas, authenticity and the more inclusive label of ‘trustworthiness’ which basically means demonstration of a research design and procedure that is credible in terms of the research issue and social context.

What does authenticity mean? For a broader-ranging look at authenticity see Lincoln (1995). Being authentic within data collection means being as true as possible to the respondent’s voice. The researcher has a big responsibility of faithfully ‘re-representing’ the respondent’s meaning (Tsoukas, 1998) whilst recognising the difficulties of conducting a study within what is essentially a subjectivist epistemology. One way of consciously doing this is to remember at all times who owns the research dialogue with the respondent. The respondent owns it. If questions are asked about a topic and answers are given to something other, then the respondent’s version will be the one adopted as authentic. If answers are given to questions not asked, which sometimes happens, the researcher can use the hermaneutic process (of tacking between the part and whole), probing for

more emergent themes and taking the conversation (if allowed by the respondent) to different levels of organisation.

The data collection event, if it is face to face as is often the case, is interactive in nature. There is a connectivity between the researcher and the respondent, often to the extent of the creation of a collaborative and co-creative relationship. Manning (1997:96) captures this well when she says "complex knowledge and meanings are explored in a constructivist inquiry through a researcher-respondent relationship categorized by trust, collaboration, shared knowledge and mutuality of purpose". The problem for the researcher is to be part of an unfolding story and yet try to tell it from the respondent's perspective.

Some authenticity checks would be:

Were any respondents voices silenced? Triangulation of sources is helpful here. For example, in order to 'hear' the voice of the waterfront worker, the wharfie, we deemed it necessary to listen to their managers, old hands and union officials. Within the sets of voices, unions were a discordant voice. Even though union members did not want to talk to us, we made sure that union concerns were incorporated into the interview schedule.

Was informed consent genuinely gained? This is an important issue. The research activity itself involves manipulating data through the process of coding and categorising. However, it is possible to adopt strategies such as using the respondents' wording, and explaining at the data collection activity what will be done with the data. En situ clarifying, checking, summarising and repeating are ways to ensure authenticity.

After data collection, 'member checks' helps authenticity. Letting the respondent see field notes, memos, analysis, drafts or summaries is a good way to demonstrate faithfulness to the data. Where the research allows (such as in ethnographic studies) lengthy contact with respondents can help to let the researcher 'eavesdrop' into the respondents' reality, as can opportunities for observation should they arise (and be agreed upon).

A most important authenticity issue was raised earlier when looking at assumptions about the 'self' as researcher. Thinking about the nature of culture and of values, it may be possible that the researcher needs help in surfacing values, predispositions, beliefs and biases. A good idea here is for someone else to 'do' research on the researcher. Perhaps some scenarios or some critical incidents could be presented to, say, a peer group. 'Findings' might reveal latent values around some aspect of the research task held by the researcher but not recognised..

Authenticity checks can be carried out through internal means such as harnessing the help of independent judges who can comment on accuracy of transcription as well as plausibility of interpretation. As well as the more formal checks (and these will often be initiated by the supervisor) informal ones such as peer debriefing can be used (Whiteley & Garcia, 1996).

These are some of the authenticity checks necessary to claim rigour in qualitative research and a careful perusal of the literature will add to the ideas presented here.

Triangulation

We talked earlier about triangulation. This is a very important way of cross-checking emergent insights using different data sources, methods or researchers (Wilson & Hutchinson, 1991). Triangulation also plays an important role in providing the researcher with a depth of vision not necessarily provided by one specific respondent or group. A very obvious example is where company documentation such as a policy document gives what we might call 'intentional' data. Respondents as recipients of the policy might give an impression of a very different policy intent. Comparing sources allows the researcher to emerge latent organisational issues within the research context. Triangulation of sources also has a hermaneutic flavour. By looking at micro-processes, (interview responses) ideas about the bigger intent can be emerged and by looking at the big picture, (corporate documentation) implications for what to expect at the micro level can be emerged.

In the waterfront study (see figures 1 and 3) several data collection methods were necessary so that the researchers could reflect the meanings of the respondents in a faithful way. The familiarisation visits and exploratory chats were, in part, conducted so that we could 'hear' the subtle differences in the various voices (and even, for that matter to become aware that there were differences). Fortunately, we were far enough removed in our daily lives from waterfront life to be in as much danger as we would have been had we been studying academics. However, we still had to be careful to be true to the emic (that is insider) perspective. The impossible had to be attempted here. How to portray the emic view whilst extracting (or bracketing) our researcher 'life worlds' was a constant challenge.

The documentary data we collected enhanced rigour because it added both an external and an internal, but different, perspective to the study. The historical research into the process of reform was important in giving the researchers a perspective. No less important was the historical research into the history of the waterfront and the role of the union in waterfront organisation.

Without these, we might not have been able to hear some of the things being said. In particular, had we not known about the construct ‘good old days’, we might not have been able to discern what wharfies were telling us about deep and generative changes in their ambitions and lifestyles.

Note that the in-depth interviews were not conducted until we felt that we could carry on dialogue in such a way that the wharfie would feel comfortable. There is no hard and fast rule about when this is achieved in qualitative research but to be as true as possible to the respondent, it is important that some shared social background is attempted. The integrity of the research can be greatly enhanced or endangered through the choice and design of data collection instruments. At a very obvious level, using a set of closed questions in a research that set out to emerge some essence or richness of a social situation would not preserve the research integrity.

It is in the less obvious cases that care needs to be taken. Dilemmas abound. The respondent ‘rambles on’ you think and you only have fifteen minutes left. There are some unresolved ambiguities but the respondent does not wish to pursue that line. The researcher becomes so involved in the conversation that s/he forgets to be both reflexive and self-critical. These are all issues to challenge the researcher, the more so because they are not open to scrutiny at the time. What about where the research should be finished and something new emerges that appears to mean something important to the respondents? This happened to us and we had to go on to produce not one but two additional research instruments.

Interesting and fairly recent additions to research tools for ensuring authenticity are electronic group support systems (GSS) technologies (Whiteley, 2000). The respondents can overcome some of the issues and problems of translation and interpretation by typing in their own responses. As Pervan and Atkinson (1992) point out, as yet such technologies have not been as supported for qualitative work as for empirical and experimental studies but there is no inherent reason for this. For a description of GSS as used in research see Whiteley and Atkinson (1995).

Data Management, analysis and audit trail

In qualitative research the data are collected in many forms. One of the most prominent is the relatively unstructured data from methods such as story telling, in depth interview and narrative, (figure 6).

Figure 6: Data Analysis and Management

Data Management	Tape Recording/ transcript Memo-ing Technology	Records the interview or conversation to allow attention to be paid to the respondent. Devices for recording gestures needed. Adds a making sense of interview material. Ranges from assumptions to reminders. Electronic data management software allows rapid rearrangement of codes and categories and connectivity between data.
Data Analysis	Utterances to codes codes to categories categories to concepts Constant comparison Constant questioning	Analysis of a tentative nature allows patterns and concepts to emerge and any relationships between them to present themselves. Moving, expanding and collapsing of categories signify content analysis.
Audit trail	various mix of computer records, memos, field notes and correspondence	The reason for the audit trail is two-fold. First it allows others to verify the systematic and rigour claims being made. Secondly, it allows, as far as practicable, replicability of research activities.

Two rigour activities are essential. One is a meticulous and transparent audit trail (which basically includes all activities, including procedural ones). Transcriptions where available, field notes, memos, as well as rationale for every aspect of the research design need to be kept. In particular, the assumptions upon which data analysis takes place are important aspects of the audit trail. The second rigour issue is that of the data analysis strategy (Figure 6.).

It is in the activities of data analysis and interpretation that qualitative research is most vulnerable. It helps if the data analysis strategy is preceded by many of the rigour decisions presented in the paper so far. Assumptions, theoretical perspectives, ontology, epistemology and methodology decisions provide a framework within which to make data analysis decisions. Additionally, data collection methods such as narrative and story telling have their own conventions and rigour challenges (Harrison et al, 2001). In figure 3, we show grounded research conventions and these are consistent with an emergent paradigm. If the research is only partly emergent in the sense that specific business problems and issues have been categorised going into the study, then this needs to be accounted for both in the explanation of data collection and in the claims made for authenticity.

In most cases a coding frame is used. This includes ‘rules’ for categorising and concept emergence as well as bases for including theories (and excluding others) during theoretical sensitivity. Remembering the definition of research design as something that connects the data collection, analysis and interpretation to the research question or issue, the data analysis strategy

needs to be able to withstand research design scrutiny. Once again, rigour comes through challenging the researcher's values, preconceived ideas and looking for negative cases where something else might have been expected.

Data management and audit trail.

Qualitative data can be managed in many ways but there is one incontrovertible 'law'. The data should be managed by the researcher as far as is humanly possible. Data analysis is a personal commitment to the research and it is linked to other decisions and design issues. The researcher may be coding and categorising in isolation from the respondent but the respondent (or other research material) will be never be far from the mind of the researcher.

Concept maps (sometimes called cognitive or mind-maps) are useful for showing connectivities between categories. Thematic charts are also useful and this is especially the case for constant comparison. Technology plays an important role in data management and graphical representation Since NUD. IST technology (Richards & Richards, 1994; Richards, 1987) there have been many software developments such as Atlas ti (Muhr, 1997) They all have some features in common.

They aim to alleviate the problem of 'drowning in data' by allowing data to be allocated to categories with no regard for running out of space. They all provide retrieval on multiple criteria. They all organise data in some sort of structure whether this is hierarchical or a function of other relationships. For data that does not fit neatly into a category, there is always a device such as the 'free node'(Richards & Richards, 1994). Many software packages allow filtering. For example, all negative, positive, associative, causal relationships can be filtered as a result of the initial configuration. Remember here that the researcher can not arbitrarily decide on these. Assumptions and decisions made earlier influence how much, if any, filtering can be done.

Most importantly, technology allows the researcher to undertake activities like constant comparison, collapsing of categories, combining of categories and connections of categories to concepts and so to theory in a dynamic way. In this way (say software developers like Richards) theory generation can be enhanced. Care needs to be taken when using technology that the research does not leave the hands and mind of the researcher. When the literature talks of co creation it does not mean researcher and technology. It means researcher and respondent.

The audit trail is an important research activity and it begins at the beginning of the research process. The importance of keeping a documentation of each step of the research process can not be overstated. To live up to the claims of being systematic, there has to be evidence of the

systems and processes being used in the research. Most researchers who are presenting a thesis will append an example of the documentation of the research procedures and activities. A complete audit trail can be requested by an examiner.

Ethics

Ethical behaviour is at the heart of all research. One of the biggest challenges is the fact that a large part of ethics is undetectable. The researcher's own integrity is the arbitrator of ethical behaviour, especially as field work is transitory and elusive. Ethics begins with information. In the case of research in educational institutions, the first set of information is the research proposal and this is usually scrutinised by diverse groups of people. These range from thesis committee members to peers to special study groups (including those on work in progress) and then to the more formal groups such as academic committees. This sort of scrutiny is at the 'intentions' stage. Then comes the research process. The next piece of key information is the contact with respondents (including those from whom documentary evidence is sought). Please read Lincoln (1998) for a comprehensive and challenging argument on the shortfall of ethical guidance in the teaching of research.

A main aim of ethical behaviour in research is not to put the respondents or other stakeholders at risk. This includes both personal risk and professional risk. The researcher often has a more sophisticated knowledge of what might constitute risk to respondents than respondents themselves.

Some examples of unethical research are:

- where the respondent is assured that identity will be preserved. Some demographic information is included somewhere in the research report that narrows the field of possibilities so that colleagues can easily guess (or think they can) someone's identity;

- where data is combined or compressed in such a way that the respondent's meaning is distorted;

- where trust is betrayed and the respondent reads information that was to be kept 'off the record'.

- where the researcher ‘tells’ the respondent what the relationship will be without the opportunity for negotiation;

- where respondents’ voices are recognisably familiar as those of the researcher;

- where data are inserted or omitted to favour a respondent group or a particular framing of the research;

- where the researcher does not engage in reflexive practices;

- where sufficient care is not taken to avoid alignment with power groups (such as research clients).

These are ones that immediately come to mind and more will no doubt come as the research goes through ages and stages.

From the field

There are many authors to contribute to the most difficult task of attaining and maintaining rigour in qualitative research. Here are some examples:
Strauss and Corbin (1990:257) pose the question –

> *"Under what conditions [does] the theory ...fit with 'reality,'*
> *give understanding, and be useful [practically and in theoretical terms?]"*

They suggest criteria such as those below

Criterion 1: How was the original sample selected? What grounds?

Criterion 2: What major categories emerged?

Criterion 3: What were some of the events, incidents, actions, and so on (as indicators) that pointed to some of these major categories?

Criterion 4: On the basis of what categories did theoretical sampling proceed?

Criterion 5: Was it representative of the categories? (did the researcher go back to look?)

Criterion 6: Was the literature used to lend credibility?

Questions to ask of a qualitative study (Mays & Pope 1995)

- Overall, did the researcher make explicit in the account the theoretical framework and methods used at every stage of the research?

- Was the context clearly described?

- Was the sampling strategy clearly described and justified?

- Was the sampling strategy theoretically comprehensive to ensure the generalisability of the conceptual analyses (diverse range of individuals and settings, for example)?

- How was the fieldwork undertaken? Was it described in detail?

- Could the evidence (fieldwork notes, interview transcripts, recordings, documentary analysis etc) be inspected independently by others; if relevant, could the process of transcription be independently inspected?

- Were the procedures for data analysis clearly described and theoretically justified? Did they relate to the original research questions? How were themes and concepts identified from the data?

- Was the analysis repeated by more than one researcher to ensure reliability?

- Did the investigator make use of quantitative evidence to test qualitative conclusions where appropriate?

- Did the investigator give evidence of seeking out observations that might have contradicted or modified the analysis?

- Was sufficient of the original evidence presented systematically in the written account to satisfy the sceptical reader of the relation between the interpretation and the evidence (for example, were quotations numbered and sources given)?

Whittemore, Chase & Mandle (2001:534) give an assessment of primary and secondary sources, (figure 7).

Figure 7: Primary and Secondary Sources

Author	Validity criteria
Altheide and Johnson (1994)	Plausibility, relevance, credibility, importance of topic
Eisenhart and Howe (1992)	Completeness, appropriateness, comprehensiveness, credibility, significance
Leininger (1994)	Credibility, confirmability, meaning in context, recurrent patterning, saturation, transferability
Lincoln (1995)	Positionality, community as arbiter, voice, critical subjectivity, recip0rocity, sacredness, sharing perquisites of privilege
Lincoln and Guba (1985)	Truth value, applicability, consistency, neutrality
Guba and Lincoln (1989)	Goodness, canons of evidence
Marshall (1990)	Descriptive validity, interpretive validity, theoretical validity, evaluative validity, generalisability
Maxwell (1992, 1996)	Credibility, fittingness, auditability, confirmability, creativity, artfulness
Sandelowski (1986, 1993)	Moral and ethical component
Smith (1990)* Thorne (1997)	Methodological integrity, representative credibility, analytic logic, interpretive authority

Whittemore, Chase & Mandle (2001:533) present Techniques for Demonstrating Validity, (figure 8).

Figure 8: Techniques for Demonstrating Validity

Type of Technique	Technique
Design consideration	Developing a self-conscious research design Sampling decisions (i.e., sampling adequacy) Employing triangulation Giving voice Sharing perquisites of privilege Expressing issues of oppressed group
Data generating	Articulating data collection decisions Demonstrating prolonged engagement Demonstrating persistent observation Providing verbatim transcription Demonstrating saturation
Analytic	Articulating data analysis decisions Member checking Expert checking Performing quasi-statistics Testing hypotheses in data analysis

	Using computer programs Drawing data reduction tables Exploring rival explanations Performing a literature review Analysing negative case analysis Memo-ing Reflexive journaling Writing an interim report Bracketing
Presentation	Providing an audit trail Providing evidence that support interpretations Acknowledging the researcher perspective Providing thick descriptions

Interpretation and Findings

> *… the qualitative report must be a convincing argument systematically presenting data to support the researcher's case and to refute alternative explanations (Morse, 1994:231)*

The rigour issues discussed earlier all apply, in fact they come together in the interpretation and writing up stages. Whose story is being written? The respondents' story is the one being told.

In practice, in qualitative research the writing stages include reflexivity and in particular this relates to the issues discussed and provided in the ingoing literature. The findings (even though it must always be remembered that they will always be partial and incomplete in nature), allow reflection on the work of writers in the field. Then the findings speak for themselves. What are the concepts that have emerged? Now that we have technology, it is relatively easy to separate items of data and items of descriptive narrative provided by the researcher. On what basis was the technology configured? What led the researcher to look for associative links or negative links for the configuration?

These are some of the issues for reflective practice.

The thesis: some questions to build on

Are operational definitions set out at the beginning of the thesis?

Does Chapter one provide a map of the thesis (is it followed?)

Does the report have a conceptual structure (i.e., themes or issues)? Are definitions and theories used in a consistent way?

Does the style suit the paradigm?

For quantitative studies, the literature yields hypotheses upon which to build a model that can be tested using statistics or other methods. It will have a linear structure and the interpretation will be an inferential argument

For qualitative studies, the literature will inform but not overly contaminate. There will be an iterative analytic frame (figure 2, Ragin, 1994). The interpretation will be in keeping with the needs of respondents' 'voices'.

Both quantitative and qualitative methodologies require a basis of data. Were sufficient data presented?

Are issues developed in a critical and scholarly way? Were sound assertions made, neither over-under interpreting?

Does the thesis fit together, each sentence contributing to the whole? Are headings, figures, artefacts, appendices, and indices used effectively?

Is it edited well, then again with a last-minute polish? Have quotations been used effectively? (not 'standing for' points).

Is the role and point of view of the researcher made clear? Are personal intentions examined?
Is the nature of the intended audience apparent? Is there a sense of story to the thesis?
Is empathy shown for all sides?
Does it appear that individuals were put at risk?
Are limitations and delimits stated? Has an audit trail been kept?

Are the references perfect? Only those actually read to go in. There should be a one to one correspondence between text citations and those on the reference pages. (Citations that have been used for consultation can always be added as 'bibliography').

Conclusion

In today's research world, more emphasis is placed on discussion and debate than was the case when scientific method was so taken for granted that its own ontological and epistemological claims were not held up to scrutiny. Since the re-revolution in science and this can be dated in its most vigorous forms since the 1960's (Gleick, 1996) both scientific methods (Knorr-Cetina, 1999) and constructivist methods (Schwandt, 2000) have come under scrutiny. There are publications

that discredit the work of researchers (see Maggs-Rapport, 2001) when it is not sufficiently rigorous and this is not an uncommon occurrence at international conferences. It is no accident that editorial review board members are asked, as a major part of the editorial task, about the appropriateness of the research design and methodology. Research involves a combination of decisions and judgements. It involves being transparent about the rationale for these decisions and judgements. Research is not (and indeed in qualitative research, can not), be judged on perfection. There are always alternative things that can be done. What it is judged on is plausibility. Providing an audit trail, a clear set of reasons for making decisions, well supported design considerations, data collection activities and analytic procedures that allow respondents' voices to be heard, will set those reading a research report well on the way to having confidence and faith in the research.

References

Britten, N. & Fisher, B. (1993). Qualitative research and general practice. British Journal of General Practice, 43, 270-271.

Button, G. (Ed.). (1991). Ethnomethodology and the Human Sciences. Cambridge: Cambridge University Press.

Cassell, C. & Symon, G. 1994, 'Qualitative Research in Work Contexts', in Qualitative Methods in Organizational Research: A Practical Guide, eds. C. Cassell, & G. Symon, Sage, London, p. 8.

Charmaz, K. (2000). Grounded Theory: Objectivist and Constructivist Methods. In N.K. Denzin & Y.S. Lincoln (Eds.), Handbook of Qualitative Research (2nd ed.). Thousand Oaks: Sage.

Checkland, P. (1999). Systems Thinking: Systems Practice. New York: Wiley.

Chia, R. (1997). Essai:Thirty Years On: From organisational structures to the organisation of thought. Organisation Studies, 18(4), 685-707.

Compte, A. (1853). The Positivist Philosophy. London: Chapman.

Cronbach, L. J. (1980). Toward Reform of Program Evaluation. San Francisco: Jossey Bass.

Denzin, N. K. (1999). Interpretive Ethnography for the Next Century. Journal of Contemporary Ethnography, 28(5), 510-519.

Dilthey, W. (Ed.). (1976). Selected Writings. Ed. H.P. Rickman.
London: Cambridge University Press.

Gadamer, H. G., (translators G.B. Hess., & R.E. Palmer). (1970). On the Scope and Function of Hermaneutic Reflection. Continuum, 8, 77-95.

Gell-Mann, M. (1994). The Quark and the Jaguar: Adventures in the simple and the complex. London: Abacus.

Glaser, B. G. & Strauss, A. L. (1967). The Discovery of Grounded Theory: Strategies for Qualitative Research. Chicago, Illinois: Aldine.

Glaser, B. G. (1992). Basics of Grounded Theory Analysis. Mill Valley, C.A.: Sociology Press.

Gioia, D. A. & Pitre, E. (1990). 'Multiparadigm Perspectives on Theory Building', Academy of Management Review, 15, (4), 584-602.

Giorgi, A. (1970). Psychology as a Human Science: A Phenomenologically-based Approach, New York: Harper & Row.

Gleick, J. (1996). Chaos: The amazing science of the unpredictable (2nd ed.). London: Minerva.

Griffin, D. Shaw, P. & Stacey, R. (1998). Speaking of Complexity in Management and Practice. Journal of Organization, 5(3), 315-339.

Harrison, J. MacGibbon, L. & Morton, M. (2001). Regimes of trustworthiness in qualitative research: the rigors of reciprocity. Qualitative Inquiry, 7(3), 323-345.

Hassard, J. 1991, 'Mulitple Paradigms and Organizational Analysis: A Case Study', Organization Studies,12, (2), 275-299.

Kauffman, S. (2000). Investigations. Oxford: Oxford University Press.

Knorr-Cetina, K. (1980). The Scientist as an Analogical Reasoner: A Critique of the Metaphor-Theory of Innovation. Communication and Cognition, 13(2/3), 183-208.

Lincoln, Y. S. (1995). Emerging criteria for quality in qualitative and interpretive research. Qualitative Inquiry, 1, 275-289.

Lincoln, Y. S. (1998). The Ethics of teaching in qualitative research. Qualitative Inquiry, 4(3), 315-328.

Lincoln, Y. S., & Guba, E. G. (2000). Pragmatic controversies, contradictions and emerging confluences. In N. K. Denzin & Y.S. Lincoln (Eds.), Handbook of Qualititave Research (2nd ed.). Thousand Oaks: Sage.

Lynch, M. (1993). Scientific Practice and Ordinary Action: Ethnomethodology and Social Studies of Science. Cambridge: Cambridge University Press.

Maggs - Rapport, F. (2001). 'Best research practice' : in pursuit of methodological rigour. Journal of Advanced Nursing, 35(3), 373 - 383.

Manning, K. (1997). Authenticity in constructivist inquiry: methodological considerations without prescription. Qualitative Inquiry, 3(1), 93-116.

Marshall, C. & Rossman, G. (1994). Designing qualitative research.Thousand Oaks: Sage.

Mathews, K. M., White, M. C., & Long, R. G. (1999). Why study the Complexity Sciences in the Social Sciences.? Human Relations, 52(4), 439-462.

Mays, N. & Pope, C. (1995). Rigour and Qualitative Research. British Medical Journal, 311(6997), 109.

Moran, D. (2000). An Introduction to Phenomenology. London: Routledge.

Morse, J. M. (1994). Designing Funded Qualitative Research. In N.K .Denzin. & Y. S. Lincoln (Eds.), Handbook of Qualitative Research. Thousand Oaks, Ca.: Sage.

Muhr, T. (1997). ATLAS.ti for WIndows. Berlin: Scientific Software Development.

Patton, M. Q. (1980). Qualitative Evaluation and Research Methods. Newbury Park: Sage.

Pervan, G. P. & Atkinson, D. J. (1992) Trends in GDSS research: A case for plurality of methodologies. Paper presented at the 2nd International Organisational Behaviour Teaching Conference. Perth, Western Australia: Curtin University of Technology.

Potter, J. (1996). Representing reality: discourse, rhetoric and social constructivism. London: Sage.

Ragin, C. C. (1994). Constructing Social Research. Thousand Oaks: Sage.

Richards, T. (1987). User Manual for NUDIST: A Text Analysis Program for the Social Sciences (Version 2.1). Melbourne: Replee P/L.

Richards, T., & Richards, L. (1994). QSR NUD * IST version 3.0. London: Sage.

Schultz, M. & Hatch, M. J. 1996, ' Living with multiple paradigms: The case of paradigm interplay in organizational culture studies', The Academy of Management Review. 21(2),529-557.

Schwandt, T. A. (2000). Three Epistemological Stances for Qualitative Inquiry: Interpretivism, Hermaneutics and Social Constructivism. In N. K. Denzin & Y.S. Lincoln (Eds.), Handbook of Qualitative Research (2nd ed.). Thousand Oaks: Sage.

Strauss, A. L. & Corbin, J. (1990). Basics of Qualitative Research: Grounded Theory Procedures and Techniques. London: Sage.

Tarnas, R. (1991). The Passion of the Western Mind: Understanding the ideas that have shaped our world view. New York: Ballantine Books.

Tedlock, B. (2000). Enthnography and Ethnographic Representation. In N. K. Denzin & Y.S. Lincoln (Eds.), Handbook of Qualitative Research. Thousand Oaks: Sage.

Weick, K. E. (2001). Making Sense in Organizations. Oxford: Blackwell Business.

Whiteley, A. (2000). Grounded Research: A modified Grounded Theory for The Business Setting. Perth, Western Australia: Curtin University, Graduate School of Business Working Paper 00:02.

Whiteley, A. (2002). Rigour in Qualitative Research: An occasional paper. Perth, Western Australia: Curtin University of Technology.

Whiteley, A. M., & Atkinson, D. (1995). The Use of Group Support Systems for Strategic Planning and Culture Building in Engineering Management. Paper presented at the Informs Conference, Singapore.

Whiteley, A. M., & McCabe M. (2001). Sustainable Change: A Case on the Waterfront. Perth, Australia: Vineyard Publishing.

Whiteley, A. & Garcia, J. (1996). The facilitator and the chauffeur in GSS: Explorations in the forging of a relationship. Group Decision and Negotiation, 5, 31-50.

Whiteley, W. J. (2000). Group Support Systems (GSS) as an Enabler of Ethnomethodology and Conversation Analysis. Paper presented at the INFORMS Group Decision Negotiation Meeting (GDN 2000), Glasgow, Graduate Business School, University of Strathclyde.

Whittemore, R. Chase, S. K. & Mandle, C. L. (2001). Validity in Qualitative

Research. Qualitative Health Research, 11(4), 522-537.

Wilson, H. S. & Hutchinson, S. A. (1991). Triangulation of Qualitative Methods: Heideggerian Hermeneutics and Grounded Theory. Qualitative Health Research 1(2), 263-276.

Woods, P. (1992). Symbolic Interactionism: Theory and Method. In M.D. LeCompte & W.L. Millroy & J. Preissle (Eds.), The Handbook of Qualitative Research. San Diego: Academic Press.

Other Titles in the Graduate School of Business

Working Paper Series

94.01 Nowak, M and Whiteley, A, New Strategies to Develop 'Real' Engagement by Students with the Learning of the Knowledge and Skills Required for International Competitiveness.

95.01 Travaglione, T, Pinto, D and Cacioppe, R, Employee Share Plans: Recent Industrial Relations and Taxation Developments.

95.02 Whiteley, A, Levantard, M and Anderson, P, Critical Thinking/Questioning Skills a Meta-Model for Cognitive Development in Management Education.

95.03 Cacioppe, R and Bedford, R, Evaluation of a Participative Change Program Over Two Years.

95.04 Travaglione, T and Williams, P, The Move to Individualism by The Western Australian Education Department.

95.05 Firns, I, Travaglione, A, and Fink, S, Employee Commitment in Westrail.

95.06 Clifford, P and Evans, R, Corporate Governance: A Question of Independence

95.07 Silcox, S, Cacioppe, R and Soutar, G, Quality Sub-Cultures and Their Influence on Change Interventions

96.01 Whiteley, A, McCabe, M, and Savery, L. Preliminary Findings on Waterside Workers' Responses to the role of Unions following the 1991 Enterprise Based Agreement.

96.02 Whiteley, A, McCabe, M, and Savery, L. Human Resources on the Waterfront: Managing History

96.03 Whiteley, A. Report on a preliminary investigation into the need and support for a (tentatively named) director's development centre

97.01 Whiteley, A, McCabe, M, and Savery, L. Trust and Communication Development Needs: An Australian Waterfront Study

97.03 Cacioppe, R. An Integrated Model and Approach for the Design of Effective Leadership Development Programs

97.04 McCabe, M. & Nowak, M. The Impact of Baby Boomers' Longevity: Are There Implications for Boards of Directors

98.01 Whiteley, A., McCabe, M., Buoy, L., Howie, F., Klass, D., Latham, J., Bickley, M. & Luckeenarain, L. Planning the Qualitative Research Interview.

98.02 Nowak, M. J. The Role of Information in Internal Labour Markets.

99.01 Stockwell, C. & Nowak, M. An Application of National Competition Policy: Parking Services, City of Perth.

00.01 Dumont, E. & Cacioppe, R. Leadership Directions for Non-Profit Boards of Management

00.02 Whiteley, A. Grounded Research: A Modified Grounded Theory for the Business Setting

00.03 Whiteley, A. & Wood, E. Decision Making and Decision Taking: GSS and Complex Adaptive Systems Theory

01.01 Niki Lukviarman. Key Characteristics of Corporate Governance: The Case of Indonesia.

01.02 Nowak, M.J. & McCabe, M. Information Costs and the Role of the Independent Corporate Director

01.03 Galvin, P. Product modularity and the contextual factors that determine its use as a strategic tool

For further information on this discussion paper series please contact:

Ms Judy Gaebler, Secretary to the Director
Graduate School of Business, Curtin Business School
Curtin University of Technology
GPO Box U1987, Perth, Western Australia 6001

Fax: 61 8 9266 3368 Telephone: 61 8 9266 3366