Qualitative Research Methods in Complementary and Alternative Treatment
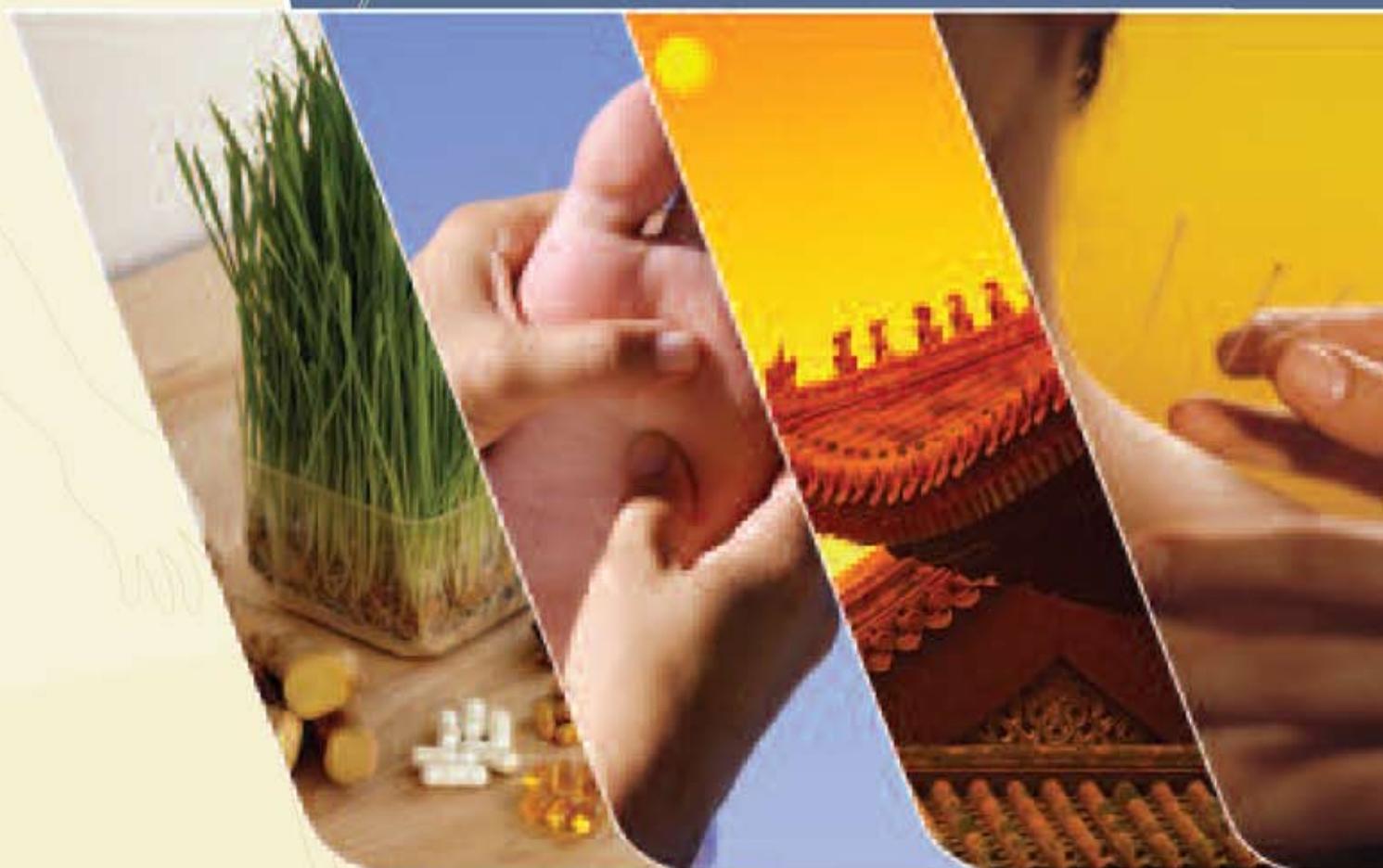
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Preface

The field of complementary and alternative medicine (CAM) is still mostly an unfamiliar and uncharted territory for conventional health care personnel and the research community. Health care personnel are in many ways puzzled both by the interest and intensity patients show for this area of treatment activities.

Researchers are, however, finally trying to follow in the footsteps of the many patients who already are avid explorers. As a first step there is a profound need of generating knowledge enabling us to understand both the field of CAM itself and the activity of patients and treatment providers. At the National Research Center in Complementary and Alternative Medicine (NAFKAM) we realize that understanding and clinical testing of CAM requires a varied spectrum of research methodology.

The qualitative research methods are highly appropriate when trying to establish understanding. This article gives a thorough and broad insight into the qualitative research approach, and guides the reader in understanding in what situations this approach is appropriate.

Vinjar Fønnebø
January 2007, Tromsø

Contents

1   Introduction

This report gives an introduction to qualitative research methods appropriate for researching Complementary and Alternative Treatment (CAT). If the reader is inspired by this touch to go further into more profound knowledge on qualitative research methods, some relevant literature is outlined. The choice of qualitative methods is not just a technical choice, but reflects epistemological and pragmatic issues. Qualitative and quantitative methods tend to provide very different forms of knowledge for different use. We therefore open the report by addressing the issue of evidence-based knowledge and describing the epistemological background for choosing qualitative methods. We go on to address the following questions and themes: Which aspects of CAT are most suitable for qualitative research? The prominent research design for conducting qualitative research; the research process and selected research methods: the qualitative research interview, focus group interview, and participant observation. We close the report by giving a short description of different kinds of combinations of qualitative and quantitative methods.

2   The Dispute on Qualitative and Quantitative Evidence-Based Knowledge

Within the social sciences there have been decades of dispute, even quarrel, between believers in either of the two sets of methods. There have been discussions of the relative advantages and disadvantages of surveys and participation observation. A solution to many of the discussions has been the sound advice that the research problem should determine which set of methods to be used. If the solution was that simple it is hard to explain why the quarrel has been so harsh from time to time, and why in the first decade of 2000 there has been a revival of the dispute around the concept of "evidence-based practice, politics, medicine" etc. The discussion is connected to the production of systematic reviews based on a selection of pieces of research, which is assessed to have high validity (the systematic reviews are made by international network organisations like for example the Cochrane Collaboration within medicine, and the Campbell Collaboration within social work, education and criminology). The reviews might synthesize the results of about 45 articles on the effect of homeopathic remedies on migraine. The discussion concerns the criteria on which the 45 articles are selected out of maybe 250 articles. Some researchers insist on only selecting studies based on RCT design, others also allow "qualitative" studies based on other designs.

The Cochrane Collaboration is without doubt the most productive organization in the field of systematic reviews in the world. The Cochrane Database of Systematic Reviews contains more than 4000 published reviews and protocols. The Cochrane Collaboration has prepared a comprehensive handbook on review methodology called the 'Cochrane Handbook for Systematic Reviews of Interventions'. The handbook subscribes to the evidence hierarchy a widespread methodological norm in the medical field (see e.g. Øvretveit, 1998: 266). Knowledge which is produced via classical experiments in the form of randomised controlled trials (RCT's, also called 'the gold standard') is considered the most reliable and as having the strongest evidence (see e.g. Peile, 2004: 107). In the evidence hierarchy the RCT is generally placed at the top of the hierarchy. Two examples of such hierarchies are presented in figure 2.1.

Figure 2.1
Two examples of "the hierarchy of evidence"

Level	Hierarchy of evidence in meta-analysis (Pawson 2006, p49)	Hierarchy of evidence (Clarke 2006, p562f, based on Stevens & Abrams 2001)
1	Randomized controlled trials (with concealed allocation)	Multiple RCTs preferable large ones, suitable meta-analysed
2	Quasi-experimental studies (using matching)	At least one properly designed RCT of appropriate size
3	Before-and-after comparison	Well-controlled trials without randomisation
4	Cross-sectional, random sample studies	Well-designed cohort or case control studies
5	Process evaluation, formative studies and action research	Multiple time series or dramatic results from uncontrolled experiments
6	Qualitative case studies and ethnographic research	Opinions of respected authorities based on clinical evidence, descriptive studies or expert committee
7	Descriptive guides and examples of good practice	Small uncontrolled case series and samples
8	Professional and expert opinion	
9	User opinion	

There is general agreement about the need for other designs than RCT when the research questions concern process and implementation of an intervention. There is also general agreement on the need for assessing each research design in its own right: RCTs might be conducted weakly or strongly (in fact adherents of RCT have a well known list of threats to internal validity, see Farrington 2003), and so might surveys, case study designs and other designs. The dispute concerns the rationale behind setting up a rank order of designs with RCT at the top (the so-called hierarchy of evidence) when the question is about the effects of an intervention.

The main argument for RCT as the gold standard is well known and can be summarized as follows: by dividing the population into two groups (the experiment and control group) by randomization, all other causal factors than the intervention are "neutralized" (held constant). Both groups' score on the effect variable should be measured before and after the intervention. This logic is not behind any other research design, therefore other designs for measuring effects are considered to be weaker ones.

Commonly raised objections to the use of experimental design refer to the complex nature of social interventions, the technical issues, practical problems and ethical dilemmas associated with random assignment procedures, and the methodological appropriateness of experimental designs (Clarke 2006, in The Sage Handbook of Evaluation, pp566ff), see figure 2.2.

Figure 2.2
Outline of critique of RCT (partly based on Clarke 2006, pp566ff)

Main issues	Specific points of critique
The complex nature of social interventions	Difficult to isolate the intervention from wider social circumstances, that may influence outcome.
	Difficult to conceptualize and measure effectiveness.
	Most interventions have no straightforward or linear relationships but multiple, multilayered and indirect.
	Clients are not passive users of an intervention, but react actively upon the intervention.
The technical issues	The potential effect of the intervention is hard to predict (compared to pharmacological treatments).
	Randomization is practical difficult in many social settings.
	Double-blinding is seldom possible.
Ethical dilemmas	Persons assigned to a control group are being denied access to a service that would otherwise be of benefit to them.
Methodological appropriateness	Problems with transferability of RCT-based findings to other settings.
	Professionals don't consider findings from RCT relevant.
	RCT findings are given as average effects from aggregated populations, but are not applicable at the level of the individual client (the aggregate net-effect problem).
	The nature of causality and change is not uncovered by RCTs.
	An intervention consists of complex interactions between people, but RCT presumes a singular treatment or "dose".

A typology of evidence has been proposed as an alternative to the hierarchy of evidence to indicate schematically the relative contributions that different kinds of methods can make to different kinds of research questions. An example of such typology is shown in figure 2.3 (adopted from Petticrew and Roberts (2003).

Figure 2.3
An example of a typology of evidence

Research question	Qualitative research	Survey	Case control studies	Cohort studies	RCTs	Quasi-experimental studies	None experimental evaluations
Effectiveness Does this work? Does doing this work better than doing that?				+	++	+	
Process of service delivery How does it work?	++	+					+
Salience Does it matter?	++	++					
Safety Will it do more good than harm?	+		+	+	++	+	+
Acceptability Will children/parents be willing to or want to take up the service offered?	++	+			+	+	+
Cost effectiveness Is it worth buying this service?					++		
Appropriateness Is this the right service for these children?	++	++					
Satisfaction with the service Are users, providers, and other stakeholders satisfied with the service?	++	++	+	+			

The reason for the continuing harsh discussion between the proponents of the hierarchy of evidence and their critiques seems to be that it is not just a discussion about methods as technique, but of methodologies referring to an epistemological position or a scientific paradigm in the sense of Kuhn (Kuhn 1962; Bryman 1984).

The two paradigmatic positions are typically presented as in table 2.1 (Patton 1997: 299):

Table 2.1
Dimensions of Competing Methodological Paradigms

Qualitative/Naturalistic Paradigm	Quantitative/Experimental Paradigm
Qualitative data (narratives, descriptions)	Quantitative data (numbers, statistics)
Naturalistic inquiry	Experimental designs
Case studies	Treatment and control groups
Inductive analysis	Deductive hypothesis testing
Subjective perspective	Objective perspective
Close to the programme	Aloof from the programme
Holistic contextual portrayal	Independent and dependent variables
Systems perspective focused on interdependencies	Linear, sequential modelling
Dynamic, ongoing view of change	Pre-post focus on change
Purposeful sampling of relevant cases	Probabilistic, random sampling
Focus on uniqueness and diversity	Standardized, uniform procedures
Emergent, flexible designs	Fixed, controlled designs
Thematic content analysis	Statistical analysis
Extrapolations	Generalizations

In social science today the positions of regarding qualitative and quantitative methods as two opposing sets of methods are more or less abandoned within the social sciences and replaced by a position that considers the two sets of methods as complementary. The two sets of methods can be combined in two ways. One way is for example analysing unstructured interviews (qualitative method) by counting words or phrases and using statistics (quantitative method). The other combines the qualitative and quantitative methods in such a way that they supplement each other, e.g. when a survey showing unexpected statistical associations is supplemented with participant observation to uncover the social processes going on in the field. We see a similar tendency within subfields of medical science.

However, the deep-seated differences between the two sets of methods in terms of difference in scientific paradigms are still vital as the debate on evidence shows. Historically, during the last century there has been a gap between the "explanatory" sciences and the "understanding" sciences, the explanatory sciences being the natural sciences and part of the social sciences, and the understanding sciences being the humanistic sciences and part of the social sciences with sociology as the main "battlefield".

This difference seems to spill over into another difference of a more practical kind in that the two sets of methods tend to provide different forms of knowledge for different types of use. With the risk of oversimplification, the qualitative methods tend to produce knowledge that is closer to clinical practice and that is easier to understand for people outside the community of researchers. This kind of 'close to practice' or 'context sensitive' knowledge might be used to guide and enlighten e.g. professionals in their practical work. The quantitative methods tend to produce more 'distant from practice' or 'context free' knowledge that might be highly valuable for higher levels of control and management, e.g. to guide decisions on allocation of resources. The qualitative methods also tend to provide 'process' knowledge that can be used in a formative way to guide e.g. development of competence among professsionals, whereas the quantitative methods tend to produce knowledge of a more summarizing kind, to be used

in stop/go decisions. However, both kinds of knowledge are useful in the society, but for various purposes, and qualitative methods are useful in situations where a deeper and more context-rich knowledge is needed.

3 CAT and Qualitative Research

3.1 Why choose qualitative research in CAT research?

The turning point in a reflection on which aspects of CAT are most suitable for qualitative research, is the scientific knowledge you as a researcher and the stakeholders involved in the research project want to generate by the research. This sounds very simple, but the challenge is that we as researchers very often are socialized into very specific ways of thinking in relation to scientific knowledge on treatment. The knowledge we regard as "natural" for research on treatment often reflects a model of thinking illustrated in figure 3.1:

Figure 3.1
A stimulus-response model

This model of thinking is based on a stimulus-response model where we give priority to the instrumental intervention and its measurable effects (predefined endpoints). The researcher is not questioning what is taking place in the black box constituted by the patient and the contexts related to the intervention and effects. The knowledge production is characterized by figures reflecting the statistical correlation between intervention and the assumed effect dealing with one or two control groups and an intervention group.

This model is very useful if you are researching treatment based on the following principles of treatment: (1) a standardisation standard[1], (2) an objectification principle[2], (3) the treatment can be reduced to a technically measurable intervention and (4) the therapy has a rapid, instantly calculable effect. An assumption behind this model of thinking is that the intervention is considered directly determinant. It is the intervention in itself and nothing else which is supposed to produce the effect (the randomized clinical trial is used as a tool to test the effect). This understanding of causality is built on a conception of a direct measurable conjunction between cause and effect, where causality is based on an external relationship between the expert's intervention and a priori defined effects. This way of understanding causality can be traced back to the classical Humean notion of causality characterized by A causes B, if B always follows A.[3]

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1 *The standardisation principle*: refers to the idea that disease may be described, defined and treated in one and the same way regardless of the patient and his/her living context. It is the notion of global knowledge, of knowledge valid in any place and at any time.

2 The objectification principle refers to the idea that the human body may be regarded and analysed as an object, that intervention is best carried out technically, mechanically or chemically, in short, by bypassing people as subjects along with their desires, feelings, intentions, actions and living context.

3 Results of RCTs normally point to the fact that we are not dealing with this form of causality when testing medicine (conventional or CAT). The effect caused by the intervention is always found lower than 100%, which means that the effect (B) not always follows A and a "successionist" concept of causality is not fulfilled. A cause might be hidden in the black box or outside the black box (the diagnosis is wrong, the

Another understanding of causality can be traced back to Aristotle, in which causes are sought in the characteristics *internal* to objects; in the power and liabilities the objects possess, even though we cannot have direct knowledge of them (Scocozza 2000:234). Related to CAT, therapists are talking about generative mechanisms referred to as self-healing mechanisms. Pawson (2002: 341) is talking about configurational approaches to causality in which outcomes are considered to follow from the alignment of a fruitful combination of attributes.

Turning our focus to CAT often dealing with patients having chronic and complex illnesses, the principles of treatment formulated by qualified therapists in this field incorporate the patients' subjectivity, everyday life and general environment (Launsø and Gannik 2000). The principles of treatment are characterized by: (1) an individualization principle, (2) a subject-based motivation principle, (3) a perception of treatment as a complex, relational process that adheres to the life-situation of the individual, and (4) a perception of "effective" treatment as having the effect of mobilising generative processes in the patient and in the interaction between patient and his lived context. The important point here is that it is the patient in interaction with his/her lived context that is considered determinant for the outcomes and not the intervention per se (Grøn 2004). The focus of scientific knowledge production is related to the following model of thinking (figure 3.2), where the black box in figure 3.1 is "opened":

Figure 3.2
The interaction between intervention, mechanisms, contexts and outcomes
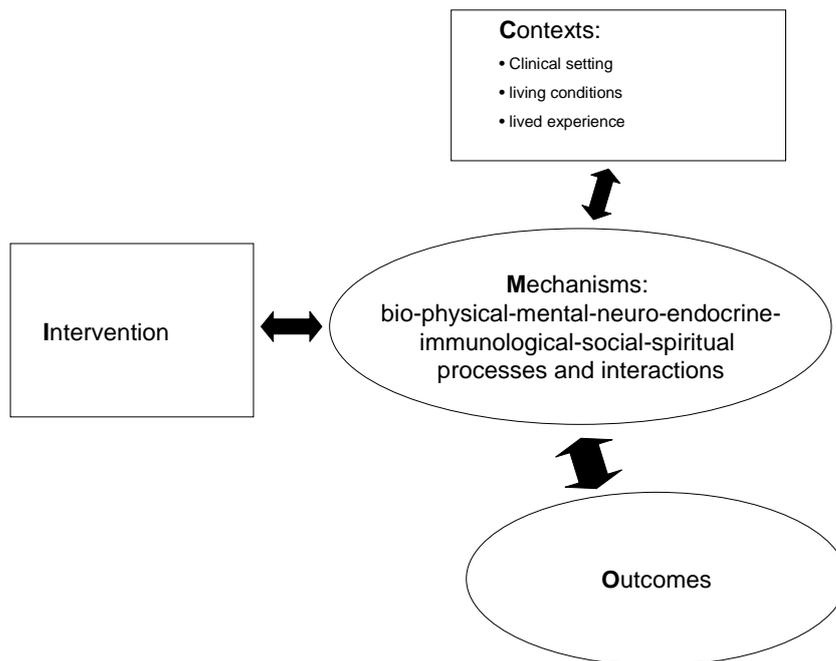
Researching the outcomes of CAT we suppose that we have to rethink our empirically grounded conception of cause and effect in an attempt to expose the internal and "hidden" causal mechanisms of the objects we explore. This means that in researching the outcomes of CAT, we have to develop an understanding of the generative or self-healing mechanisms in

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effect mechanisms of the intervention are not known, etc.) A different (complementary) way of thinking of causality could therefore be addressed.

connection with the relevant contexts (illustrated in figure 3.2). The concept "generative mechanisms" refers to bio-physical-mental-neuro-endocrine-immunological-spiritual-social processes that are in continuous interaction with the intervention and the contexts in producing the outcomes. Outcomes can be independent of the patient's awareness such as blood tests and scanning and dependent of the patient's awareness where the researchers have to use the patient as the data source. In choosing qualitative research methods we are especially focusing on or limited to the informants as data sources for access to the informants' experienced outcomes. Informants might be patients, therapists, relatives and stakeholders in a broader sense.

To move from figure 3.1 to 3.2 can be perceived as a change from a focus on testing intervention techniques to a focus on exploring why and under what conditions patients acquire the best/worst/no treatment outcomes. The different research approaches undertaken due to the two models illustrated in figure 3.1 and 3.2 can be combined. We are not dealing with an "either/or" but a "both/and".

In CAT the scope for qualitative research can include:
- The researcher's observations of the **contexts** in which interventions take place (e.g. the clinical setting and the everyday life).
- Informant perceptions of the **intervention and the context** in which the intervention is produced and delivered, including the informants' understandings, opinions, thinking, emotions, motivations, intentions, experience, and reflections on the intervention and the relevant contexts. The informants may be patients, therapists or relatives.
- Informant perceptions of the **mechanisms and contexts** generating the **outcomes**, including the informants' understandings, opinions, thinking, emotions, motivations, intentions, experience, and reflections on the outcomes related to mechanisms and contexts. The informants might be patients, therapists, or relatives.

3.2 What characterizes the objects and the core research questions relevant for choosing qualitative methods?

Qualitative methods are relevant when we are dealing with the following phenomena:
1. *The boundaries between the phenomenon and the environment, the researcher wants to research, are difficult to draw.*
   An example could be: research on treatment of illness understood as a complex, relational and interacting process connected to specific social contexts and unique patients (see Figure 3.2 above)
2. *The researcher is dealing with construction of meanings referring to specific contexts.*
   These contexts might be cultural, social, economic, ecological conditions. We are dealing with conditions in which the patients are embedded (are a product of) and produce. The essential point is that the patients' opinions, experience, reflections, etc. are culturally defined.
3. *The researcher searches for knowledge about processes.*
   This may be developmental and learning processes at an individual as well as a collective level.
4. *The researcher wants to give voice to informants (researchees).*
   The research is used in a democratic perspective. The researcher may want to give voice to weak groups' narratives previously "not told", "not heard" and "not known".
5. *The researcher wants to grasp how human beings describe, perceive, construct meaning, and explain their understandings of themselves and their experience in life contexts.*

An essential question to be raised is: what characterizes the core research question relevant for using qualitative methods? At a more general level the core research question could be formulated like this:

> *What kind of opinion and understanding ascribes x (the informant – patient, therapist) to a specific phenomenon (y) and what is the context (z) within which the informant acts and the context the phenomenon is embedded in?*

This core question contains three important aspects:
1. an informant's perspective,
2. the phenomenon and
3. the context within which the informant acts, and the context the phenomenon is embedded in.

A researcher raising the core research question (formulated above) will normally choose a case study design.

Examples from research projects show the formulation of core questions like these:

> *What do physicians practicing CAT attach importance to if they break up with conventional treatment and totally or partly stop their practice within the conventional health care system? (Launsø 2001).*

> *Why do authorized nurses choose to offer alternative treatment?* (Johannessen 2006).

4   A Selected Research Design: Case Study Design

"There are no perfect research designs. There are always trade-offs. Limited resources, limited time, and limits on the human ability to grasp the complex nature of social reality necessitate trade-offs." (Patton 2002: 223).

4.1 Strengths and weaknesses of case study design

A case study design can incorporate qualitative as well as quantitative data. Qualitative methods are also used in action research and formative evaluation, often combined with quantitative methods, and using several research designs. Action research and formative evaluation focus on ways of improving the effectiveness of a programme, e.g. a treatment programme/intervention. These research designs can be characterized as problem-solving research (Patton 2002; Vedung 1997). The designs are very appropriate to generate developmental and learning oriented treatment activities within organizations such as the health care system.

In the following, we limit the focus to case study design and the quality criteria belonging to this research design.

Choosing case studies the core research question should deal with themes of complex and contextual nature. Thus a case study can be defined as a strategy to investigate complex phenomenon based on an in-depth understanding of the phenomenon that requires an extensive description, analysis and interpretation incorporating the wholeness of the phenomenon and the context in which the phenomenon is embedded. There will be no

obvious, clear borderline between the phenomenon and the context (GAO 1990: 14; Yin 1989:23).

"Complex" phenomena mean that input and outcomes cannot be easily related. A treatment of chronic illnesses may be a complex phenomenon, because the process from intervention to outcomes is complex and generative (creative) and therefore unpredictable.

"In-depth" description means that the researcher aims at optimizing an adequate and comprehensive understanding of the given phenomenon.

"Extensive description, analysis and interpretation" means in-depth descriptions based on several data sources, including first-hand impressions obtained from observations. Data obtained by several methods are compared, and alternative understandings/explanations are investigated.

In order to understand the phenomenon in its context, the conditions in the surroundings that are supposed to have impact on the phenomenon, will have to be included in the case study.

A phenomenon might be an individual, a treatment, a treatment course, an organization, a clinic, a profession, a team of therapists, a decision-making process, a programme, a count, a project, etc.

The case study approach represents a *process* of analysis. The analysis process results in a *product*: a case study (Patton 2002). Thus the term case study can refer to either the process of analysis, or the product of analysis, or as described previously, to *a research design*.

As opposed to the classical experiment where we are dealing with the researcher constructing the setting for the experiment to take place, the researcher in a case study is "delivered" to the study field.

Case studies may be layered, or nested (Yin 1989; Patton 2002). A layered case study approach within the field of CAT can incorporate the following case levels: a patient as a case, a CAT clinic as a case, and several CAT clinics as cases related to different geographical regions or nations. It is possible to conduct case studies based both on a single case and on multiple cases. Some levels might be embedded in others.

The strength of conducting case study designs is their suitability to capture social processes, e.g. individual and organizational developmental processes. The research design complies with complexities in social systems, and these systems' dependence on their surroundings. The design allows for being on the outlook for new information not considered at the outset of the research project. The simultaneous use of several data collection methods, and the closeness to real life give data from case studies a high degree of authenticity and allow various aspects of the case to be illuminated.

The weakness of case study designs is the concentration on one or a few phenomena, which means that you lose in breadth what you gain in depth. Case studies are resource-demanding as several data sources are utilized. The low degree of standardization of case studies requires experienced researchers to conduct case studies.

Very different qualities are often ascribed to case studies. Figure 4.1 illustrates different statements in disfavour of and in favour of case studies. The content of the figure is based on Flyvbjerg (1991).

Figure 4.1
Statements in disfavour and in favour of case studies

Issues	In disfavour	In favour
Theoretical based knowledge	General theoretical (context independent) based knowledge is more valuable than concrete practical (context dependent) knowledge.	Predictive theories and universal laws do not exist in the study of human beings and societies. Concrete and context dependent knowledge is therefore more valuable than searching for predictive theories and universal laws to no avail.
Generalization	It is not possible to generalize on the basis of a single case. Therefore the case study cannot contribute to scientific development.	Very often it is possible to generalize on behalf of a single case, and case studies can contribute to scientific development via generalization as a supplement or alternative to other research designs. Formal generalization is overvalued as the source to scientific development, whereas "the power of the best example" is undervalued.
Generating hypothesis	The case study is the most useful research design to generate hypotheses in the first phases of a whole research process. Other research designs are more suitable for testing hypotheses and developing theories.	The case study is suitable for generating and testing hypotheses, but not limited to these activities.
Bias	The case study contains a tendency (a "bias") to verification, understood as a tendency to confirm the researcher's prejudice.	Nothing points to the fact that the case study, more than other designs, contains a tendency (a "bias") to verification of the researcher's prejudice. Quite the contrary, experiences point to the fact that the case study more often contains a falsification of prejudice than a tendency to verification.
Representation of research results	It is often difficult to summarise specific case studies in general statements and theories.	It is correct that making a summary of case studies is often difficult, especially concerning processes. It is less correct concerning results. The challenges related to summarizing are, however, a quality/ property of reality rather than a property of the case study as a research design.

The content of Figure 4.1 illustrates very clearly that "con and pro" statements are embedded in different scientific paradigms.

4.2 Data quality criteria

In assessing research results of a case study design, the quality criteria have to take into account the focus of the case study design: the perspective of the informants (researchees) and the context related to the phenomenon which has to be captured. The data produced by qualitative research are different from the ones produced by quantitative research. It is not the spread (distribution) or extent of the phenomenon in the study that are in focus, but rather the phenomenon's content and meaning. Therefore, other criteria are used when assessing the quality of qualitative research. Profound discussions take place concerning data quality criteria connected to different scientific paradigms, and many different concepts have been developed throughout the last decades (Habermas 1984; Patton 2002). There is, however, consensus on the following quality criteria relevant for assessing qualitative research based on case study design:

- *Validity*, as understood in survey or experiments, has a broader meaning in relation to assessing case studies as it has to include the researchee's assessment of the descriptive interpretation. The validity criteria encompasses both a so-called mirror-criterion which means that the researchee is able to recognize his opinions in the researcher's descriptive interpretation[4], and a criterion of "wholeness" which means that the researcher's reflexive interpretation contains the social and institutional contexts in which the researchee's opinions are embedded. The assessment of the criterion of "wholeness" cannot be left to the researchees, because this interpretation can encompass insight transcending the single researchee's understanding. A reflexive interpretation can be met by resistance or be denied, because it fails to comply with dominant prejudice or specific group interests. Distance in time can give the "answer", as it might be easier to recognize the right interpretation later on. Catalytic validity refers to the degree to which the research makes a change in the persons being studied. Pragmatic validity refers to the assessment of the impact of the research results on defined goals in practice.

- *Transferability*. This criterion implies that an assessment of results obtained in one context can be transferred to similar contexts. The decisive factor is to what degree the contexts are comparable. The criterion of transferability replaces statistical generalisation used in relation to surveys and experiments.

5 The Research Process in Qualitative Research

We will briefly present the different phases of conducting research. The different phases of the research process dealing with qualitative research do not per se differ from conducting quantitative research. However, we will focus on some specific issues in the qualitative research process. Concerning research methods, we have limited the description to applied research methods in qualitative research: the qualitative interview, the focus group interview and participatory observation. The description of each method will include an introduction to the method, the strengths and weaknesses of the method, preparation, data collection and data analysis, as well as the use of research results and strategies for selecting participants for research. More detailed literature on methods is recommended at the end of this report.

## 5.1 Phases in the research process

The different main phases outlined in Figure 5.1 emerge in sequential order since the purpose and the core questions have to be determined before a sensible choice of research design can

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4   Also called communicative validity, which means that the validity of interpretations and observations is tested in dialogues with the subjects or other stakeholders.

be made. Data have to be available before the results can be disseminated. At the same time it is important to emphasize that the practical work can be characterized as a "running back and forth" non-linear process, where new decisions will have an impact on previous decisions in different phases of the research process. If, for instance, the researcher realizes during the data collection that interesting data give answers to core questions not previously formulated, the researcher has to revise or formulate new core questions.

Figure 5.1
Main phases of the research process

Choice of research theme and limitation	Literature search	Meta-science as reflection
Formulation og the problem related to the theme		
Pre-understanding		
Purpose and target groups		
Definition of concepts used		
The theoretical frame of reference		Systematic reflection of onthological, epistemological and methodological choice
Core research questions		
Research modality (ties)		
Research design		
Sample strategies		
Data collection methods		
Analysis- and interpretation methods		
Results		
Discussion		
Conclusion, consequences, dissemination and use.		

Especially in qualitative research this "running back and forth" process is very predominant, like constant loop-making. The researcher's pre-understanding (pre-justice) is used actively in a falsification-verification process during the data collection. An essential precondition for conducting qualitative research is the researcher's awareness of his pre-understanding (pre-justice). An unawareness of this pre-understanding and pre-justice may limit or close the researcher's scope of openness and responsiveness.

5.2 Theory strategies
The theoretical work is very important throughout the whole research process. Theories are "at work" through the glasses chosen by the researcher, and are influenced by the researcher's observations and interpretations. The glasses also have the risk of acting as goggles.

Different theory strategies can be applied (Roness 1997):
1. Protective strategies – the researcher works with one theory.
2. Completion theories – the researcher works with theories representing complementary explanations.
3. Competition theories – the researcher assesses, on the basis of several theories, which ones that will give the best explanation.
4. Synthesising theories – the researcher works with several theories trying to combine them.

Especially theory strategies 2, 3 and 4 characterize qualitative research.

The sample strategies used in case studies often differ from the ones used in surveys and RCTs. Compared to surveys and RCTs the sample strategies used in case studies are primarily based on an information-oriented sampling, or purpose-oriented sampling, and not on random samplings.

Sampling strategies

An overview of different sampling strategies related to different purposes is outlined in Figure 5.2.

Figure 5.2
Different sampling strategies

Information-oriented sampling	Purposes To maximize utility of information from cases. Cases are selected due to their expected capacity of knowledge.
1. extreme /deviant cases	To obtain information about unusual cases, which can be especially problem-rich, encompassing, or especially successful in regard to defined criteria.
2. maximum variation cases	To obtain information about the meaning of different circumstances concerning the appearance of the cases regarding the size, organization form, localization, budget et al.
3. critical cases	To obtain information allowing for logical conclusions of this type: "If this come into force (or not into force) for this case it can be applied for all (or no) cases"
4. paradigmatic cases	To function as a metaphor for or create a norm (school) for the field the case concerns.

Flyvbjerg 1991 (with addition).

In qualitative research, researchers are more and more aware of promoting the use of the research results in practice by involving the researchees or stakeholders in the research process in the phases of formulating the purposes and core research question in a project. We see researchers having dialogues with the informants (researchees) on the interpretation and use of data.

The concept "research modality" refers to different types of research: the descriptive-, the explanatory-, the understanding- (in the meaning of verstehen) and the action-oriented research modality. Each modality can be described by the different components related to the research process: core research question, research design, and data quality criteria, and by different components related to the social contexts in which the research is conducted, encompassing the dominant perspective of the research, typical presentations of results, the relationship between the researcher and the researchees, target groups, and the use of the research results (Launsø & Rieper 2005).

6   Qualitative Research Interviews
6.1   What is a qualitative research interview?

The qualitative research interview is a professional conversation based on daily life. The interview is characterized by the presence of two persons: the interviewer and the informant[5]

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5   We use the concept 'informant' to underpin that the person selected for qualitative interview is selected due to his/her knowledge concerning a specific subject. The person is not perceived as a respondent expected only to answer the researcher's predefined questions.

being interviewed. The interview is guided/managed by the researcher who is the instrument of securing an in-depth conversation with a low degree of structure – a so-called semi-structured life world interview. The prerequisite of conducting a qualitative research interview is the researcher's profound preparation of a theme guide giving the informant possibilities to answer "with his own voice", and on the basis of his own premises. It is defined as *an interview whose purpose is to obtain the informant's opinion and understanding of a phenomenon encompassing the social context of the subject and the phenomenon*. The interview goes beyond the spontaneous exchange of statements as in everyday conversation and is a form of inquiry. The researcher (interviewer) has the responsibility to critically follow up the informant's answers to the questions and to explore single concepts used by the informant and explore the contexts of the informant's answers – going as deep as possible into the meaning of the informant's statements like a traveller wandering softly into a new landscape,[6] taking into account ethical and moral issues by listening to and respecting the informant's boundaries for given information. The concept "informant" replaces the concept "responder" used in surveys and classical experiments. An informant is defined as an expert in specific knowledge and the knowledge is owned by the informant.

The core research questions are decisive for the choice of a qualitative research interview, as well as for any other choice of data collection methods such as questionnaires, focus groups, observation, etc.

6.2   Strengths and demands
The strength of the qualitative research interview is the possibility of going deeply into a theme/issue. The theme is anchored to a context attached to the subject's reality/daily life, and the interview can be used to empower the subject.

However, the method is demanding on the researcher who should be capable of creating a safe atmosphere, confidence, and openness, have the ability to listen in an assertive way, and be able to step back. The method is expensive and time consuming. The benefit of the method is dependent on the researcher's empathy, theoretical knowledge, and practical insight into the researched phenomenon. The researcher's personality, attitude, intuition, respect, attention, awareness of own prejudices, and concentration in conducting the interview are of great importance in order to produce data containing a lot of knowledge.

6.3   Preparation for a qualitative research interview
An interview guide has to be worked out listing the themes, key words, or questions. A so-called operationalization has to be conducted as illustrated in Figure 6.1.

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6   The Latin meaning of conversation is "wandering together with" (Kvale1996).

Figure 6.1
From the main problem of research to concrete themes

| The main problem formulated | Theoretical work and definition of concepts | Core research questions | Interview/ themes, keywords, questions |

X → X1, X2, X3, X4

X1 → X1,1 ; X1,2 ; X1,3 ; X1,…n

An "opened" process of operationalization securing internal validity
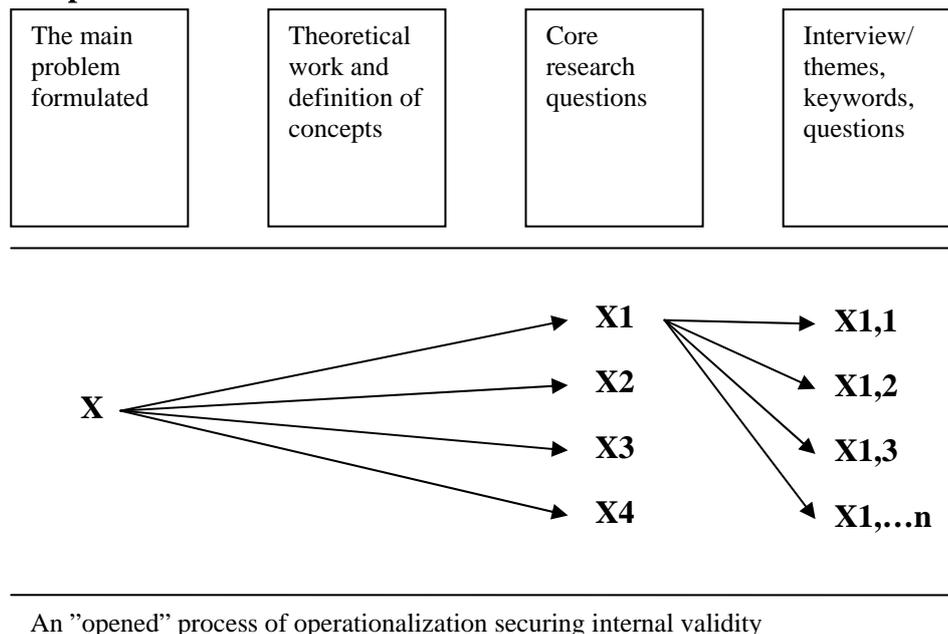
When formulating the themes, keywords, and/or questions, it is important to relate them to the informants going to be interviewed by the researcher. Think about what kind and degree of knowledge the informants have about the themes and how motivated they are for being interviewed. One tool is to use a mind-map containing the themes. This map could be used in the interviewing by both the researcher and the informant. The map can give an overview over the landscape that those two persons are expected to wander into.

It is very important for the researcher to decide what the adequate level/levels of interviewing will be (see Figure 6.2 below) and prepare the interview guide for those levels.

The interview guide has to be tested for its validity by conducting a pre-interview with informants fulfilling the sample criteria for the main study.

6.4 Information to the informants selected for the interviews
The selected informants receive a letter containing a short introduction to the objective of the study, the background of the study, a description of the institution by which the study is conducted, the researchers' background, the focus of the interview, why the informant is selected for the interview, where the interview will take place, the time and duration of the interview, information about the request for informed consent to participate in the study, the possibility for the informant to withdraw from the study at any time, confidence, and the possible consequences of the study for the informant. Give information about when you (the researcher/administrator) will call by telephone to make the final appointment for the interview.

6.5   The interview as a tool of constructing meaning at different levels
Meaning can be constructed at several levels, from the descriptive to the reflective level (illustrated in Figure 6.2):

Figure 6.2
Levels of interviewing

From the more descriptive level …

1. The informant tells spontaneously about his activities, knowledge, thoughts, feelings, intentions, etc. in relation to the theme/issue raised by the researcher.
2. The informant's understanding is asked for, explanation of the experience, events, etc. that the informant has told about.
3. The researcher recalls his understanding of the story told by the informant and dissiminates this understanding to the informant.
4. The researcher enters an active discussion with the informant about the informant's understandings and explanations. This is conducted either at a common sense level or at a theoretical level.

… to a more reflective level

Conducting re-interviewing increases the possibilities to move towards a more reflective level of interviewing. To conduct an interview at a more reflective level is facilitated if the transcribed interview has been sent out to the informant and read by the informant before conducting a re-interview.

6.6   The conducting of the qualitative interview

The interview is characterized by three phases: the introduction phase, the main phase, and the final phase.

During the introduction phase contact and confidence are created. The researcher repeats very briefly who he is, the purpose and the agenda of the interviewing, and why the informant is selected. The informant has to be ensured of his anonymity, and the conditions for publication of data from the interview have to be decided upon.

A handout of mind-map or just the interview guide – in headlines – is given to the informant. A test of the tape recorder or sound-files is conducted.

During the main phase the interview guide is used for obtaining knowledge from the interview between the researcher and the informant by using different types of questions: introductory questions like "Can you tell me about your meeting with the health care provider?". Follow-up questions where the researcher e.g. asks the informant to extend his description of the meeting with the health care provider; exploring questions like "Could you say more about that? What do you mean by 'good experience'?"; questions aiming at the informant's reactions on events told like "How did you feel about the event"; questions aiming at reflections on events like "What did you learn from this event?"; direct questions like "How did you act in the situation you described?", "How do you assess the event?", "Where do you have the information from?"; indirect questions asking what the informant thinks other persons would think about a given phenomenon, especially effective when you are dealing with tabooed themes; narrative questions aiming at the informant telling stories; validating questions (has the interviewer understood the informant correctly), and summarizing and interpretive questions (Kvale 1996; Launsø and Rieper 2005).

The interviewer has the responsibility for the course of the interview by structuring the agenda, offering time for the informant to think and consider, giving time for silence, and functioning as an active listener.

In the final phase the researcher has the responsibility for closing the interview in an ethically acceptable way. It is always a serious responsibility to have the power to close a very personal conversation. Follow-up in the form of re-interviewing has to be decided upon. Information about the next step concerning the interview has to be given, as well as what kind of feedback the informant can expect from the researcher.

6.7 Processing data

In order to make the information collected through the interview ready for analyses/interpretation, the researcher has to process the information. This processing includes a number of working steps.

1. The tape recording of the interview is to be listened to again in order to assess the technical quality of the tape and to decide whether the whole tape should be transcribed or only part of it. If you are working with sound files on a computer, it is fairly easy to edit the sound file directly. The researcher should also, when listening to the tape/sound files, stay open for new research questions to be explored.
2. Having selected the part (if not the whole) of the tape recording to be transcribed, the transcription has to be made, and afterwards carefully checked by a second person with access to the original tape recording to assure reliability of the transcription. How much of the tape recording that has to be transcribed depends on the level of interpretation in the analysis, (see below about level of interpretation).
3. The researcher chooses the concepts to be applied for coding the transcriptions. Here, in fact, the analysis begins. The choice of concepts can be made based on the concepts from the informant, but can also be made based on concepts from theories and theoretical models. An example of coding based on informants' concepts is "patients' experience with treatment outcomes". These experiences can be categorized into e.g. symptom relief or disappearance of symptoms; changes in body awareness; changes in understanding and knowledge of the disease/illness, changes in competences, actions and social activities in everyday life; reduction in intake of drugs; reduction in sickness absence; changes in preventive activities. The various types of experiences are thus coded as segments of the text and are presented as citations.

   An example of coding based on theoretical concepts is "the patients' experiences as an expression of an assimilative or a transcending learning process". Each coding is of course compared with other codes, and patterns of meanings and subgroups are found.
4. Coding is often done by using PC software made for that specific purpose. The coding should also be checked by a second person (at least on a sample of the transcriptions) in order to secure high reliability of coding.

Level of analysis

A distinction can be made of three levels of interpretation:

Level	Characteristics
Low (descriptive at an individual level)	The informants' own concepts are used. The researcher synthesises and makes explicit the understanding of the individual informants without adding anything new.
Medium (descriptive at a collective level)	The informants' own concepts are still used, but the researcher makes explicit patterns of meanings across the individual interviews. Thus, new patterns can be observed, which the individual informants were unaware of.
High (theoretical concepts are used)	Based on theoretically inspired concepts, the researcher uncovers latent meanings and structures in the interviews, which go beyond the self-understanding of the informants.

An example of a high level of analysis would be when an interpretation of therapists' reactions towards therapists using therapies that are very different from their own, show that the therapists are not reacting to the differences in therapies as such, but rather unconsciously to the differences in paradigms and understandings of health and sickness supporting the therapies.

In the analysis and interpretation, the theories to be used have to be selected based on the actual interview material. Maybe the theories chosen as basis for developing the core research questions have to be complemented or replaced by addressing new theories.

The theories can vary tremendously – from theories of health professions, to communication theories, disease theories, discourse theories, learning theories, organisational theories and many more. The researcher has to have a thorough knowledge of the theories he uses. The application of theory is not just a mechanical exercise. It is a process of going deeply into theoretical concepts, and being sensitive to the informants' knowledge.

For further insight and ideas to analysing qualitative data we will recommend the following literature: Bryman (2001); Miles & Huberman (1994); Denzin & Lincoln (eds.) (1994); Kvale (1996); Patton (2002); Järvinen & Mik-Meyer (2005).

7   Focus Group Interviews
7.1 The rationale of focus group interview
The focus group interview was developed as a method in social science with the aim of tailoring an interview method to the knowledge from small group and group dynamics. The realization was that individuals are holding and changing their points of view, their values, and their attitudes as a consequence of their group belonging. They are socialized in groups and they tend to change attitudes as their "significant others" change attitudes. Therefore, the points of views are best captured (measured) in a group setting.

The technique of focus group interview was first used to evaluate radio programmes by listeners in USA in the 1940s. During the following decades it was used especially in marketing, and later on the technique was applied more broadly in the social sciences as well as in health research.

7.2 What is a focus group interview?
A focus group interview is a gently steered interview with typically 8-12 participants focussing on a specific issue. It normally lasts for 2-3 hours, and it is chaired by a so-called moderator or facilitator underlining that the chairman does not act as an ordinary interviewer. The role of the facilitator is to encourage interaction in the group of relevance to the research issue.

The interview is taped or video recorded. The group as such is the instrument of the research, not the interviewer.

7.3 Strengths and weaknesses
The main strength of the focus group interview is that it provides more detailed information and also more "broad-spectrum" information from the participants than a single person interview. The reason is that the interaction among the participants in the group evokes opinions and understandings that might not otherwise surface.

A second strength of the method is that interviewing and observation can be combined. Observation of the participants' body language and facial expressions might supplement the verbal answers and could sometimes be more "true" than the verbal answers.

A third strength is that the focus group interview might be cheaper and faster to undertake than conducting single person interviews with the same number of people.

In addition, the focus group interview is often fun for the participants and provides a learning potential.

In order to harvest the strengths mentioned above, the facilitator has to be a very competent person in three ways. He has to have a deep knowledge of the research project for which the focus group interview is undertaken. He must have an intimate knowledge of the kind of people who participate, and he has to have competence in chairing small groups and knowledge of group dynamics. Such a person might be difficult to recruit and rather expensive.

A weakness of the method is that the number of main questions or subjects that can be raised during a focus group interview is rather limited compared to a single person interview.

A further weakness is that some issues of high sensitivity or tabooed issues hardly can be raised in a group setting.

7.4 Preparation

The preparation of a focus group interview involves a number of steps:

Recruitment of participants
The kind of participants to be recruited depends of course on the research questions. The participants might belong to the same profession or the same organization or the same geographical locality, but they may also be random people. The general guideline for selection is that the participants have the background and competence to be able to engage in interaction of the research questions. In order to facilitate the interaction in the group it is important to obtain the right balance between heterogeneity and homogeneity of the group of participants. If the group is too heterogeneous interaction might be blocked or hindered because of too much disagreement. If the group is too homogenous the discussion in the group might be too trivial and not uncover underlying issues.

Choice of venue for the interview and practical arrangements
The place of the focus group interview is often determined by the most practical setting (easy for the participants to reach). But it should not favour specific participants, e.g. if patients, doctors and nurses are among the participants, the conference room at a hospital might not be the right place because of the medical authority such a room may represent. Also beverages and snacks should be served to comfort the participants. The choice of some kind of fee or reward for participation should be considered. The kind of fee depends very much on who the participants are.

Information to the participants
Information should be given in written form before the interview session takes place, and should be repeated as an introduction when the session starts. The information might contain:

- The aim of the research project.
- The specific aim of the focus group interview.
- The way the results are made public afterwards.
- How the anonymity of the participants is protected if the results are made public.
- The statement that participation is absolutely voluntary.

Selection of a facilitator
The importance of choosing the right facilitator is mentioned above. The facilitator might be a member of the research team if he has the relevant competence of guiding a group. Often special training is needed. The facilitator might be found outside the research team, e.g. in a professional consultancy company. Some consultants have special rooms for focus group interviews.

Composing an interview guide
Even if the group as such is the instrument in a focus group interview, the preparation in the form of an interview guide is a must. There should only be a few main questions (4-8 questions), but probing questions should be added. Normally it is most suitable to start with the most important questions and also with the most open-ended questions in order not to hinder the open interaction in the group. The facilitator should know the interview guide by heart and not read from it during the session.

7.5 Undertaking a focus group interview

1. The facilitator has to make sure that the chairs and tables in the room are well placed, horseshoe or circular format is often the most suitable. Video camera or tape recorder should be in place and checked.
2. The session should start with an introduction by the facilitator where he repeats the information already given, and asks if anyone has questions. Next, the idea of the focus group interview should be mentioned, including that there are no right or wrong answers. Then a presentation of the participants and the facilitator should normally take place.
3. The interview starts by the facilitator introducing the first main issue. If nobody wants to begin, the facilitator might suggest "to go around" the table. In order to focus and stimulate the interaction, a number of tools may be applied depending on the issue, e.g. a short questionnaire, data from a questionnaire study, a physical model, a video sequence, etc. Dominating participants might be moderated by eye contact with other participants, or with probing questions on other topics.

The set of probing questions might generally contain the following kinds of questions:
- "go on" questions where the facilitator expresses that the participant is on the right track by e.g. nodding and 'yes'ing,
- detail oriented questions where the participant is asked to elaborate more,
- asking for examples in order to get a statement illustrated more precisely,
- clarifying questions,
- contrasting questions, in order to provoke more elaborate answers.

The *sine qua non* in chairing the focus group interview is that the facilitator has the general aim in mind: to obtain sincere and honest points of view from the participants through an open atmosphere and interaction in the group. The whole attitude and behaviour of the facilitator should reflect that aim.

7.6 Debriefing

After the formal session is over (and the time schedule should be held!), there might be a need to debrief, often informally. The facilitator should talk especially to those participants that might have experienced a heated discussion or perceive themselves as loser in some of the interactions. Also the facilitator may want to have an opportunity to share his experience and to reflect upon the session with a colleague or a member of the research team. Such time for reflection might also be profitable for learning within the research team.

Analysis and interpretation

The analysis of a focus group interview is very similar to the ways and levels of analysing the qualitative research interview. The interpretation of the focus group interview is, however, sometimes left to the commissioner of the interview. In that case the video from the interview is played for the commissioner and he or they are making their own interpretations and are drawing their own conclusions based on the video.

In other situations, the analysis is following approaches similar to the ones mentioned in the section above on qualitative interviews, and the results are reported in similar ways.

8 Participant Observation

8.1 Tendencies of methods of observation

In this section the focus will be on participant observation, a more unstructured type of observation method (Kristiansen and Krogstrup 1999). In participant observation the researcher is part of the natural social setting he is observing. The researcher enters the daily life or the natural situations of the informants he is studying, watches their behaviour, their interactions, and events and situations around them. In ethnography the participant observation is associated with field research. The researcher enters a foreign world with the aim of making that world understandable. In the ethnographic tradition the foreign world is literally foreign and remote cultures, and the researcher has to learn the language and habits in order to make sense of his observations (Boas 1897; Malinowsky 1922). But in sociology and anthropology participant observation also has a long history of observing in the researcher's own culture. Examples of participant observation studies are William Whyte's study of a youth gang in Boston in the 1940s (Whyte 1943) and Park (1952).

After the Second World War, the participant observation was developed as critique against the more structured and quantitative methods in social science. Inspired by symbolic interactionism it was stressed that the researcher should use sensitizing concepts that could be developed and refined during the observation, and not defined in advance (Blumer 1969). Another development from symbolic interactionism was the grounded theory (Glaser & Strauss 1967) as a procedure for theory construction founded in the empirical material itself. Still another line of participant observation was the ethnomethodology. Here the behaviour in the routines of everyday life is the focus of study, and the aim is to uncover the implicit and tacit norms that govern everyday behaviour. These norms are evoked especially when a breach or violation of tacit norms is taking place. The observer often acts so as to evoke such violation and then observe (and sense) what is going to happen (Garfinkel 1967).

More recent trends within participant observation include postmodernism, social constructivism and feminism. Constructivists state that scientific knowledge has no privileged status different from other kinds of knowledge. All knowledge is socially constructed. Valid

knowledge (truth) in general is rejected. The truth is not out there to be caught by our methods, but we (including the researchers) create the knowledge. An example of a researcher using participant observation in this perspective is Cetina (1999). She conducted observation studies of researchers in labs studying biochemistry and high-energy physics.

Thus, observation has a long history within the social sciences, not only in ethnography and foreign cultures, but also in studies of cultures (subcultures) in the immediate environment, like youth gangs in urban areas, scientists in laboratories, or alternative therapists in their clinics.

Within medical sociology and anthropology, a famous example of participant observation is Erving Goffman's study in a psychiatric hospital. Goffman took the role as a vice manager of a department. He was together with the patients during the day and slept with them in the night. The patients were not aware of his role as an observer and researcher, but the managers of the hospital were informed. Goffman among other things showed how the patients' reactions were a way to maintain autonomy and control in a system of almost total medical surveillance.

8.2 Forms of participant observation

When a researcher is doing participant observation, he is performing two actions simultaneously. He is involved in the actions of others, and at the same time he is observing what is going on. At the one extreme the researcher is observing while being disguised (e.g. behind a one way mirror) – and then it is hardly participant observation. At the other extreme he becomes so involved that he reframes from observing, he is "going native", and is no longer an observer, nor a researcher.

In between these to positions the researcher might take a variety of roles as an observer (Figure 8.1).

As a *participant observer* you have a natural role in the social processes you observe. When observing activities you "participate", when observing social interactions you are an interlocutor. As an *observing participant* you watch the social processes from outside as a listener (of interactions) or as a spectator (of activities). In both sets of roles the researcher's function as an observer might be known to the other participants, or it may not be known. An example of the former is the observation of the behaviour of persons who are participating in an RCT. Here the research could be: do the persons conform to the protocol? A famous example of the latter is the covered participation by a German journalist in low status jobs among immigrants in industry from where he gave highly critical reports of dangerous working environment and slavery in modern industry.

Figure 8.1
Roles as an observer

```
      ┌─────────────────┐                          ┌─────────────────┐
      │  Participating   │                          │    Observing    │
      │    observer      │                          │   participant   │
      └─────────────────┘                          └─────────────────┘
         ↙          ↘                                  ↙          ↘
┌──────────────┐  ┌──────────────┐          ┌──────────────┐  ┌──────────────┐
│ In activities│  │   In talk    │          │   In talk    │  │ Of activities│
└──────────────┘  └──────────────┘          └──────────────┘  └──────────────┘
       ↑                 ↑                          ↑                 ↑
┌──────────────┐  ┌──────────────┐          ┌──────────────┐  ┌──────────────┐
│ Participant  │  │ Interlocutor │          │   Listener   │  │  Spectator   │
└──────────────┘  └──────────────┘          └──────────────┘  └──────────────┘
```
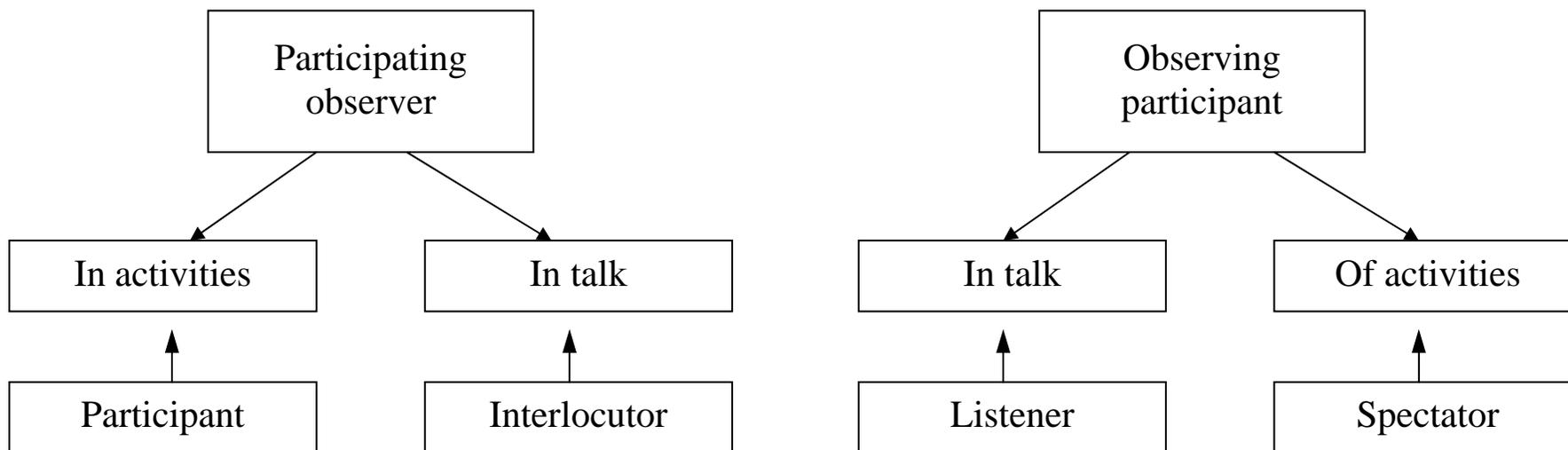
Wadel (1991).

8.3 The strengths of participant observation

In participant observation the researcher himself has primary access to the field of study. He is able to use his own impressions and feelings as part of the data material. The richness of data obtained by observing over a longer period of time makes him able to compose a more whole picture of the field of study. The researcher is not obliged to rely only on statements from the actors under study (as e.g. in interviews) and he might obtain information about sensitive issues or tabooed situations that the actors are not willing to talk about, or issues they are not aware of.

Thus the observation method makes it possible to go beyond the actors' own selective perspectives.

8.4 How to conduct participant observation in practice

Preparation for observing

Choosing the method of observation involves the same steps of the research process as any other method of data collection. That is, the observation should be a suitable mean for collecting the kind of information that makes you answer your research questions in a valid way.

The observation method might, however, require more preparation than other methods because you enter a naturalistic social setting. To enter a "foreign" social setting normally requires permission from at least some of the actors in the setting, e.g. the gate keepers of the setting (being the managers in the example of Goffman's observation in a hospital, Goffman 1961). Also, the observer should be well prepared for the specificity of the field setting, e.g. by having enough knowledge of their subculture and discourse habits in order to be accepted and be able to understand what's going on. The observer's presentation of his project (the reason why he is observing) should be carefully planned in order to gain admission.

The use of field notes

To write field notes is to transform a passing, momentary event into description on paper (or electronically on computer or on dictaphone), which can be looked at and processed again and again.

The researcher does not observe from a "tabula rasa", his observations (as all data) are theory loaded (Hansson 1958). It is impossible to describe every detail of behaviour and talk that takes place in a setting, and the observer has to be selective. The question is: how selective? It is easy to say that it depends on the research questions. In practice, the researcher (observer), because he has developed his research questions to some degree, enters the field knowing what he is heading for. That is, issues and themes are defined beforehand. However, it is a general experience that unexpected situations outside the research themes happen which might be of importance for the research study. Therefore, the observer should not be too rigid in selecting the focus for his observations.

The notes might be taken continuously, visibly to the actors in the setting, or the observer might write his field notes separately, shielded from the actors in a separate room, or privately before going to bed, or early in the morning. The choice depends on the practical circumstances and to what extent it prevents obtaining relevant observation data. The time span for recalling the observations is crucial. The observer should develop a routine of writing notes regularly.

The notes should contain detailed descriptive notes of what is observed. Other kind of notes might be of value, too. Some observers categorize their notes while writing the notes, others do it afterwards.

A general relevant categorization is:
- Observation notes: descriptive without much interpretation.
- Theoretical notes: the observer draws interpretations, hypotheses or preliminary conclusions and reflections from his observations.
- Methodological notes: the observer reports his own feelings and reactions, gives self-criticism, and ponders about the next step.

8.5 How to analyse or interpret observation data

The analysis or better, the interpretation, is in fact already taking place during the observation. In a separate stage of the research, the interpretation is made after the observation or in periods where the researcher is not engaged in collecting data in the field. In participant observations where the observer has some kind of verbal interaction with the actors, one can distinguish between three levels of interpretation of observational data.

The first level of interpretation takes place when the researcher presents what he has seen and heard. He summarizes and categorizes by using categories and concepts from the actors themselves. His interpretation is close to the actors' own understanding. He is taking the "emic" perspective, that is, the perspective of the actors he is studying. The researcher is of course always making some kind of interpretation just by observing, but when making his interpretation afterwards, he is describing the actors' behaviour and interactions in a way that they can easily recognize themselves. That is the strength of the first level interpretation. The weakness, however, is that the results might become trivial. The first level interpretation gives knowledge of first order.

The second level of interpretation is obtained by using concepts that go beyond the common sense experience of the actors and introducing theoretical concepts or perspectives that are foreign to the actors under study. This approach can be taken by using perspectives from cultural studies to uncover hidden structures and latent meanings behind the actors' frame of reference. The latent meaning might be symbolic knowledge, e.g. metaphors and narratives. A simple example is when a man offers a woman a rose, and the details of the act are described. It might be interpreted as a symbol of love in our culture, but not necessarily in other cultures. Another example: When patients are waiting 60-90 minutes in a doctor's waiting room, it might be interpreted as a way of reducing the uncertainty of the time period for the treatment of each patient, but it might also be interpreted as a way of exercising power over the patients.

The third level of interpretation can be achieved when the researcher includes the reflection on his own frame of reference in his second level interpretation. It implies that the researcher should be conscious about the limits of his own background including scientific theories, and the discourse in which he is involved.

In practice, interpretation at 2nd and 3rd level might be made on the basis of concepts (theories) that are selected before the field observation is conducted, or by concepts (theories) that are developed during or after the field observation period. The integrative way of developing interpretations might take a long time, and has been called dancing amidst theory, methods, and data.

In Figure 8.2 we outline an example of interpretation at the three levels (Launsø and Haahr 2006).

Figure 8.2
Example of interpretations at the three levels: developing a team of therapists in MS treatments[1]

	1st level of interpretation	2nd level of interpretation	3rd level of interpretation
Behaviour of therapists in therapist-researcher seminars.	Defensive as well as open-minded behaviour are shown. This behaviour is understandable due to their ways of thinking.		
Concepts (theories) used only by the researcher.		Discourse theory: Different therapists are using the concept of 'cure' differently because they are integrated in different professional dis-courses. Theory of organisation-al learning: Disputes and conflicts in a team are necessa-ry elements in a pro-cess of double loop learning.	
The researcher includes a reflection on his own frame of reference.			The researcher is learning on a meta-level by the exposure from a multiple group of professionals.

1   The example is from an ongoing research project on developing a team of conventional and alternative therapists in treatment of people with multiple sclerosis (financed by The Danish Multiple Sclerosis Society, Copenhagen).

9   Combination of Qualitative and Quantitative Methods

In many larger research projects the research questions are often pointing at the relevance of using both sets of methods because both 1) questions of distribution and of indicators of effects in larger populations, and 2) questions of processes and generative mechanism are often raised in the same project.

In principle the combination of the two sets of methods can be of the following kind:
a.   *Combination in sequence*: first a qualitative method is used as an explorative means to explore how the variables should be conceptualised for the quantitative method to be applied. Or, first a quantitative method is used which points at strategic problems to be investigated by using qualitative methods.
b.   *Combination in parallel*: the two sets of methods are used simultaneously to supplement each other. E.g. a large-scale survey is conducted on the perception of health risks in a number of industrial companies. Parallel to this a number of companies are selected for case studies. Each case study involves a visit by a specialist who is undertaking

participant observation and interviews at the workplaces. The two sets of data are compared in the analyses with two aims in mind. One aim is to validate the answers from the survey; the other aim is to get information about the interrelation between the working environment and the preventive activities at the workplaces.

c. *Integration of the two sets of methods at the micro level of methods*: Example 1: in order to get a draft for a survey questionnaire developed or validated, a focus group interview might be held among a sample of potential respondents. Example 2: the raw data from a survey might be interpreted by a focus group composed by key persons who will have different theories and perspectives on the data. Example 3: a qualitative analysis of documents such as minutes from meetings, decision notes, etc., is being made in order for the interviewer to be prepared for an in-depth single person interview with a key manager in a clinic.

Referring back to the opening section of the report on the qualitative and quantitative based knowledge, we can conclude that even if the gap between the two sets of methods still exists on the level of scientific paradigms, the methods as techniques might very well be combined and supplement each other. A very thorough and nuanced book on combinations of methods is Brewer and Hunter (2006).

A combination of quantitative and qualitative methods can provide a broader and deeper evidence based knowledge of Complementary and Alternative Treatment, hopefully of benefit to the patients. Realization of this potential presupposes, however, a research community inside and outside medicine and health care that has the wisdom and courage to cross boundaries of scientific paradigms.

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