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## **UNEXPLORED THEORY OF SOCIAL RESEARCH GROUNDED THEORY AND CODING ISSUES IN GROUNDED THEORY**

**V.V.KULKARNI**

Asso. Professor Social Science Centre,  
Bharati Vidyapeeth, Pune

### **Abstract:**

*Grounded theory methodology is a suitable qualitative research approach for phenomenological practices to social scientists, leading to theory development in social development. Given the variations in, and subjectivity attached to, the manner in which qualitative research is carried out, it is important for researchers to explain the process of how a theory about a social development phenomenon was generated. Similarly, when grounded theory research reports are reviewed for use, developmental professionals to look for the explanations of their inquiry process. The focus of this article is to discuss the practical application of grounded theory procedures as they relate to rigour especially the various issues involved in coding and interpretation of the sociological phenomenon. Reflecting on examples from a grounded theory research study, it suggests methods of research practice for ensuring, credibility, auditability and fittingness, which are all components of rigour. The eight methods of research practice used to enhance rigour in the course of conducting a grounded theory research study were: (1) let participants guide the inquiry process; (2) check the theoretical construction generated against participants' meanings of the phenomenon; (3) use participants' actual words in the theory; (4) articulate the researcher's personal views and insights about the phenomenon explored; (5) specify the criteria built into the researcher's thinking; (6) specify how and why participants in the study were selected; (7) delineate the scope of the research; and (8) describe how the literature relates to each category which emerged in the theory. The eight methods of research practice should be of use to those in developmental research, management, practice and education in enhancing rigour during the research process.*

### **KEY WORDS:**

Qualitative Research, Grounded Theory, Reliability, Validity, Nursing Research, Methodology, Theory Development

### **INTRODUCTION**

Interpretation of the sociological phenomena is an ongoing debate in social sciences. These debates have their roots in particular school of thoughts i.e. positivist approach or interpretivist approach. These two approaches are the common approaches observed in explaining sociological phenomena for establishing its cause and effect relationship. The positivist approach is comparatively uniform approach practiced within specific contextual framework whereas interpretivist approach is more diverse approach used in broader framework of reference. In both approaches numerous methodologies are involved for constructing knowledge showing its roots in particular approach. When we think about the practice of social work one can rest on sociology with the edges of economics and psychology. The unfolding of sociological

phenomena is always tracing its edges in economics and psychology. However, the social work practice uses its own method of analysis and interpretation of the various phenomena in a particular context.

The methods used in social work are also used in other social sciences such as anthropology, demography, phenomenology, etc also. In social work it becomes more sharpen its applications in various fields of social work. One cannot deny that most of the prevalent theories being used in social work practice to explain social phenomena are borrowed from other social sciences such as psychology, sociology etc. naturally the interpretations of particular incidence or situation has always deep roots in other social and life sciences. The social work practice has its way to use particular discipline with reference to particular context to explain the cause and effect relationship. There are several theories which are practiced in social work but changing modalities of practice has emerged to construct new paradigm to explain the phenomena which are based on learning from the social work practice.

Construction the set of preposition from the practices become possible when one can consider the divergent views on various theories of social sciences rather than convergent views. In divergent views conflict theory, system theory, exchange theory, Darwinism phenomenology ethnomethodology, semiotics, etc., theories has crucial roles to play in interpretation of the phenomenon. Among the abovementioned theories grounded theory is one which has the close relation with action and reaction ultimately the base of Parsonian theory in sociology and Darwinism in life sciences. The standard models describing the qualitative traits following Willim, G. Hill(2004), and Fisher (1918) the phenotype value  $p$  is described as :-

$$P = G + E$$

Where,  $G$  = Genotypic value and  
 $E$  = Denotes environmental deviation

This model (Sukhatme and Kulkarni 1987) may be explained to include the fixed or random environmental classes which are closely associated with client's behavior (some of the genetic effects). On this background this paper throws light on explaining the process of the interactions where the social worker tries to make the attempt to solve the problem of the client in a prevalent environment (Kulkarni, 2012). The grounded theory is an emerging theory which is becoming more popular in its application in research and development (Kulkarni, 2012).

Grounded Theory is most accurately described as a research method in which the theory is developed from the data, rather than the other way around. That makes this is an inductive approach, meaning that it moves from the specific to the more general. The method of study is essentially based on three elements: concepts, categories and propositions, or what was originally called "hypotheses". However, concepts are the key elements of analysis since the theory is developed from the conceptualization of data, rather than the actual data.

**Strauss & Corbin, authors of "Basics of Qualitative research: Grounded Theory Procedures and Techniques"** are two of the model's greatest advocates, and define it as follows: "The grounded theory approach is a qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon". The primary objective of grounded theory, then, is to expand upon an explanation of a phenomenon by identifying the key elements of that phenomenon, and then categorizing the relationships of those elements to the context and process of the experiment. In other words, the goal is to go from the general to the specific without losing sight of what makes the subject of a study unique.

Grounded theory is often perceived as a method which separates theory and data but others insist that the method actually combines the two. Data collection, analysis and theory formulation are undeniably connected in a reciprocal sense, and the grounded theory approach incorporates explicit procedures to guide this. This is especially evident in that according to grounded theory, the processes of asking questions and making comparisons are specifically detailed to inform and guide analysis and to facilitate theorizing process. For example, it is specifically stated that the research questions must be open and general rather than formed as specific hypotheses, and that the emergent theory should account for a phenomenon that is relevant to participants.

There are three distinct yet overlapping processes of analysis involved in grounded theory from which sampling procedures are typically derived. These are: open coding, axial coding and selective coding. Open coding is based on the concept of data being "cracked open" as a means of identifying relevant categories. Axial coding is most often used when categories are in an advanced stage of development; and selective coding is used when the "core category", or central category that correlates all

other categories in the theory, is identified and related to other categories.

Data collection is directed by theoretical sampling, which means that the sampling is based on theoretically relevant constructs. Many experiments, in their early stages, use the open sampling methods of identifying individuals, objects or documents. This is so that the data's relevance to the research question can be assessed early on, before too much time and money has been invested. In later phases, a systematic relational or variational sampling is frequently employed with the objective of locating data that either confirms the relationships between categories, or limits their applicability. The final phase generally involves discriminate sampling, which consists of the deliberate and directed selection of individuals, objects or documents to verify the core category and the theory as a whole, as well as to compensate for other, less developed categories. Also included as necessary parts of the analysis are other procedures such as memo writing and the use of diagrams, as well as procedures for identifying and incorporating interaction and process.

Grounded theory contains many unique characteristics that are designed to maintain the "groundedness" of the approach. Data collection and data analysis are consciously combined, and initial data analysis is used to shape continuing data collection. This is supposed to provide the researcher with opportunities to increase the "density" and "saturation" of recurring categories, as well as to assist in providing follow-up procedures in regards to unanticipated results. Interlacing data collection and analysis in this manner is also designed to increase insights and clarify the parameters of the emerging theory. At the same time, the method supports the actions of initial data collection and preliminary analyses before attempting to incorporate previous research literature. This is supposed to guarantee that the analysis is based in the data and that pre-existing constructs do not influence the analysis and/or the subsequent formation of the theory. If existing theoretical constructs are utilized, they must be justified in the data.

Grounded theory provides detailed and systematic procedures for data collection, analysis and theorizing, but it is also concerned with the quality of emergent theory. Strauss & Corbin state that there are four primary requirements for judging a good grounded theory:

- 1) It should fit the phenomenon, provided it has been carefully derived from diverse data and is adherent to the common reality of the area;
- 2) It should provide understanding, and be understandable;
- 3) Because the data is comprehensive, it should provide generality, in that the theory includes extensive variation and is abstract enough to be applicable to a wide variety of contexts; and
- 4) It should provide control, in the sense of stating the conditions under which the theory applies and describing a reasonable basis for action.

Grounded theory offers many advantages, however because it is such a painstakingly precise method of study, it requires high levels of both experience and acumen on the part of the researcher. For this reason, novice researchers should avoid this method of study until they have achieved the proper qualities needed to effectively implement the approach. Grounded theory refers to theory developed inductively from data. It takes a case and results in a theory which fits one dataset. It explains the collected data through a middle-range theoretical framework (Charmaz, 2000). The grounded theory approach consists of a set of steps and processes which are the building blocks of a quality grounded theory. Grounded theory uses categories drawn from respondents and focuses on making implicit belief systems explicit.

Grounded theory is a general research method for behavioral science as shown in Fig.1 developed by the sociologists Barney Glaser (b. 1930) (trained in quantitative sociology by Paul Lazarfeld) and Anselm Strauss (1916-1996) (trained in Symbolic Interactionism by Herbert Blumer).

**Fig.1: General research method for behavioral science**

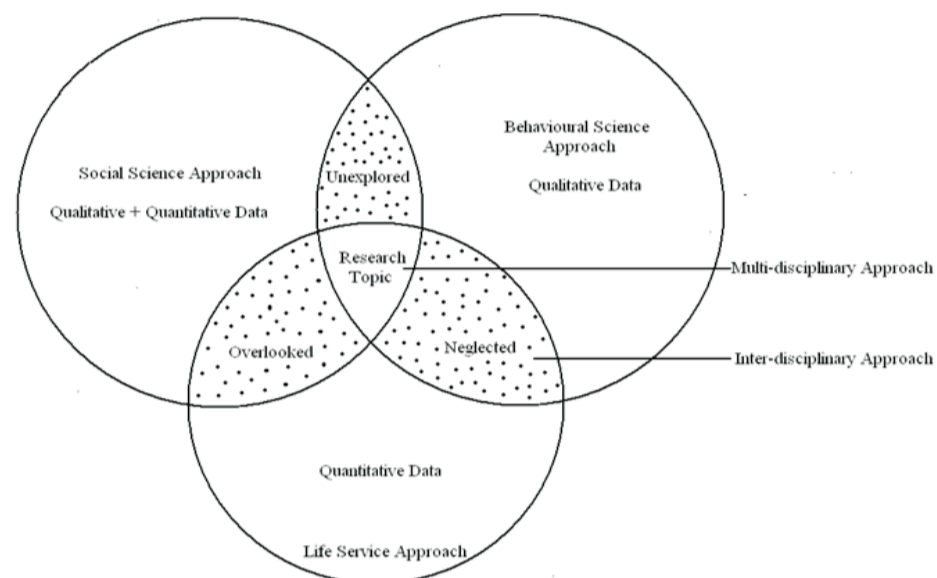


Fig. 1Intercep of approach in grounded Theory

The successful collaboration of Glaser and Strauss in research on dying in hospitals evolved into the "constant comparative method", or Grounded theory (GT). The name underscores the generation of theory from data. GT is the most quoted method by researchers doing qualitative data analysis in the world according to database searches (Google Medline). Most chapters in the first GT methodology "The Discovery of Grounded Theory" (Glaser & Strauss, 1967) were written by Glaser, trained in methodology generation. Glaser alone wrote the second methodology "Theoretical Sensitivity" (Glaser, 1978) and has since written four more books on the method and edited five readers with a collection of GT articles and dissertations (see Literature at end). Strauss and Juliet Corbin (Strauss & Corbin 1990) took GT in a different direction from what Glaser had outlined in Theoretical Sensitivity and the 1967 book. There was a clash of ideas between the discoverers and Glaser in 1992 wrote a book arguing against the Strauss & Corbin book chapter by chapter. Hence GT was divided into Strauss & Corbin's method, (see Grounded theory Strauss and Glaser's GT with the original ideas from 1967 and 1978 still in operation. The following article deals with GT according to Glaser.

#### GOALS OF GROUNDED THEORY

The goal of a GT is to formulate hypotheses based on conceptual ideas that others may try to verify. The hypotheses are generated by constantly comparing conceptualized data on different levels of abstraction, and these comparisons contain deductive steps. GT does not aim for the "truth" but to conceptualize "what's going on" using empirical data. GT is thus a systematic generation of theory from data that contains both inductive and deductive thinking. In a way GT resembles what many researchers do when retrospectively formulating new hypotheses to fit data. However, in GT the researcher does not pretend to have formulated the hypotheses in advance since preformed hypotheses are prohibited (Glaser & Strauss 1967).

In most research endeavors persons or patients are units of analysis, whereas in GT the unit of analysis is the incident (Glaser & Strauss 1967). The number often amounts to several hundred in a GT study since every participant normally reports many incidents. When comparing many incidents in a certain area, the emerging concepts and their relationships are in reality probability statements. Consequently, GT is not a qualitative method but a general method that can use any kind of data (Glaser, 2001). However, although working with probabilities, most GT studies are considered as qualitative since statistical methods are not used, and figures not presented. The results of GT is hence not reporting of facts but probability statements about the relationship between concepts, or an integrated set of conceptual hypotheses developed from empirical data (Glaser 1998). Validity in its traditional sense is consequently

not an issue in GT, which instead should be judged by fit, relevance, workability, and modifiability (Glaser & Strauss 1967, Glaser 1978, Glaser 1998).

Fit has to do with how closely concepts fit with the incidents they are representing, and this is related to how thoroughly the constant comparison of incidents to concepts was done.

Relevance. A relevant study deals with the real concern of participants, evokes "grab" (captures the attention) and is not only of academic interest.

Workability. The theory works when it explains how the problem is being solved with much variation.

Modifiability. A modifiable theory can be altered when new relevant data is compared to existing data. A GT is never right or wrong, it just has more or less fit, relevance, workability and modifiability, and readers of Paper V are asked to judge its quality according to these principles.

The goal of a GT is to discover the participants' main concern and how they continually try to resolve it. The questions you keep on asking in GT are "What's going on?" and "What is the main problem of the participants and how are they trying to solve it?" These questions will be answered by the core variable and its subcores and properties in due course. If your research goal is accurate description then another method should be chosen since GT is not a descriptive method. Instead it has the goal of generating concepts that explain people's actions regardless of time and place. The descriptive parts of a GT are there mainly to illustrate the concepts

### GROUNDED THEORY

According to Strauss and Corbin (1990) a theory is a set of relationships that proposes a reasonable explanation of the phenomenon under study. Morse (1994) extends this explanation suggesting that a theory offers "the best comprehensive, coherent and simplest model for linking diverse and unrelated facts in a useful and pragmatic way" (p.25). It is a way of enlightening the clear, the implicit, the unrecognised and the unknown. Theorising is the process of creating alternative explanations until a 'best fit' which explains the data most simply is obtained. This involves asking questions of the data which will create links to established theory (Goulding, 1999). Indeed, a theory is "a set of well-developed categories (eg, themes, concepts) that are systematically interrelated through statements of relationship to form a theoretical framework that explains some relevant social, psychological, educational, nursing or other phenomenon" (Strauss & Corbin, 1998, p.22).

Grounded theory was introduced by Glaser and Strauss in their 1967 book, *The Discovery of Grounded Theory*. The book was based on a justification for using qualitative research to build up theoretical analysis. As Goulding (1999) mentions, it was written in part as an objection against what the authors viewed as a rather passive acceptance that all the 'great' theories had been discovered and that the role of research lay in testing these theories through quantitative 'scientific' procedures.

What Glaser and Strauss suggested as grounded theory is actually a "systematic, qualitative process used to generate a theory that explains, at a broad conceptual level, a process, an action, or interaction about a substantive topic" (Creswell, 2002, p.439). It is a qualitative methodology which obtains its name from the practice of generating theory from research which is 'grounded' in data (Babchuk, 1997). It can be defined as a method for analysing data which is most commonly used on naturalistic field data but has also been used to analyse historical and documentary data (Star, 1998). The grounded theory approach uses a "systematic set of procedures to develop an inductively derived grounded theory about a phenomenon" (Strauss & Corbin, 1990, p.24). This methodology is a general method of comparative analysis to realise theory with four central criteria - work, relevance, fit, and modifiability (Creswell, 2002). It will answer the question of "What was going on in an area?" by generating either a substantive or formal theory - theory related to a case and developed inductively from empirical data to reach an abstract level (Star, 1998). The strongest cases for the use of grounded theory are in studies of comparatively unexplored areas (Samik-Ibrahim, 2000). Grounded theory is used to generate a theory rather than use one 'off the shelf' to enlighten a procedure, action, or interaction, a step-by-step, systematic process to stay close to the data (Creswell, 2002).

Although Glaser's and Strauss's collaborative work led to the introduction of grounded theory, their later works show epistemological differences between them (Glaser, 1978, 1992; Strauss, 1987; Strauss & Corbin, 1990). Glaser has a rigorous positive perspective towards qualitative analysis, while Strauss has a pragmatic epistemology into empirical inquiry through grounded theory. Whereas Glaser's standpoint tends to be more traditional positivism with emphasis on supposition of an objective and external reality as well as being a neutral observer, Strauss's work is based on the assumption of having an unbiased position in collecting data and applying a certain technical procedures by letting the participants have their own voice (Glaser, 1992; Strauss & Corbin, 1990). This viewpoint, as Charmaz explains, "moves

into postpositivism" because it represents participants "as accurately as possible, discovering and acknowledging how respondents' view of reality conflict with their own" (2000, p.510). No matter what their philosophical perspectives are, they have an almost similar standpoint with respect to the main processes, including categorising and constant comparison to produce the theory grounded in data.

#### **RATIONALE OF GROUNDED THEORY**

According to Goede and Villiers (2003), grounded theory was developed to assist qualitative researchers to carry out 'good science'. Strauss and Corbin (1990) state that "well performed grounded theory meets all the requirements of 'good Science': significance, theory-observation, compatibility, generalisability, reproducibility, precision, rigor, and verification" (p.27).

The rationale of grounded theory studies is to investigate and recognise how complicated phenomena occur. Strauss and Corbin (1998) suggest the following goals for grounded theory.

1. Build rather than test theory.
2. Provide researchers with analytic tools for handling masses of raw data.
3. Help the analysts to consider alternative meanings of phenomena.
4. Be systematic and creative simultaneously.
5. Identify, develop, and relate the concepts that are the building blocks of theory (p.13).

Grounded theory, contrary to theory acquired by logico-deductive methods, is theory grounded in data which have been systematically obtained through 'social' research and, as Goulding (1999) believes, the development of grounded theory was an effort to keep away from extremely abstract sociology and was a part of a significant development in qualitative analysis in the 1960s and 1970s.

Strauss and Corbin (1998) suggest the following assumptions on which grounded theory methodology is predicated.

1. The need to go to the field to discover what is really going on.
2. The relevance of theory to the development of a discipline.
3. The complexity and variability of phenomena and of human action.
4. The belief that persons are actors responding to problematic situations.
5. The assumption that persons act on the basis of meaning.
6. The understanding that meaning is defined and redefined through interaction.
7. A sensitivity to the evolving and unfolding nature of events (process).
8. An awareness of the interrelationships among conditions (structure), action (process), and consequences (pp.9-10).

Besides the aforementioned assumptions that Strauss and Corbin explain, Star (1998) believes that grounded theory is based on an empirical approach to data collection and analysis; a constant comparative approach to theory development; theoretical sampling rather than site or population driven; and developing a theory that works from substantive through to formal levels using constant comparison technique (p.221).

In order to start applying grounded theory methodology as a research design, grounded theorists need to examine whether or not it suits the area being studied and how it can help the research problem to be clarified. Therefore, identifying an overlooked area is the first thing to do.

#### **IDENTIFYING AN OVERLOOKED SPHERE**

The process of generating a grounded theory begins with discovering an unnoticed area to investigate. Usually investigators apply grounded theory when the topic of interest has been relatively overlooked, or has been given merely superficial attention. Therefore, the researcher's mission is to build his or her own theory from the ground. However, most researchers will have their own disciplinary background which will provide a perspective from which to investigate the problem (Goulding, 1999).

Allan (2003) mentions that some people think of the grounded theory method as meaning fieldwork before a literature search. This is a misunderstanding of the original principle put forward by Glaser and Strauss (1967) who persuaded researchers to "use any material bearing in the area" (p.169). This remark can be found in the writings of other authors. Strauss and Corbin (1998) saw the literature as a foundation of professional knowledge and referred to it as literature sensitivity. A review of the pertinent literature reveals current thinking in the area. It should be mentioned though that this literature review



should not bring about any hypotheses. The details about the process view is explained in Fig. 2

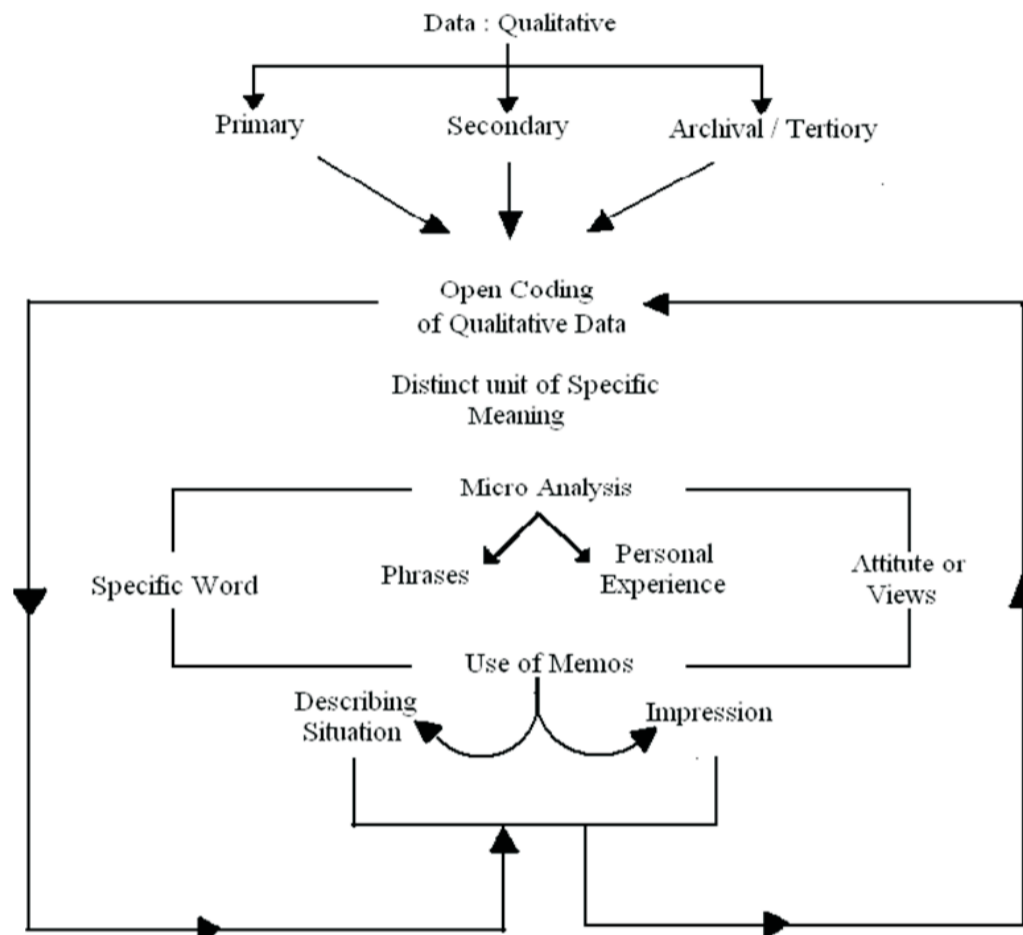


Fig. 2 : Schematic Digrame Open Coding System

Applying grounded theory to the areas where an extensive, reliable and empirically based literature exists may cause some difficulties. Literature which already exists might prejudice or affect the perceptions of the researcher (Goulding, 1999). Also, there is a risk of entering the field with prior attitudes, whether aware of it or not, of testing such existing work rather than developing original insights about the area of study. To avoid this, it is suggested that the researcher go into the field at a very early stage and collect data. Unlike the case study which gains benefit from the existing development of theoretical propositions to guide data collection and analysis, grounded theory should have no pre-conceived ideas or hypothesis (Glaser & Strauss, 1967). In other words, there are conflicts in terms of collecting data and other procedures of grounded theory. Throughout the course of the research it is common to gather an extensive amount of data in various forms such as interview transcripts, field notes on observations, memos, diagrams and conceptual maps.

**INTERPRETING THE DATA THROUGH CODING**

When the data are collected, they should be analysed concurrently by looking for all possible interpretations. This involves employing particular coding procedures. At the heart of grounded theory analysis is the coding process (Babchuk, 1997). Coding consists of naming and categorising data. The nature of coding in grounded theory requires going back to the data for diverse pieces of information at different times (Brown, Stevenson, Troiano & Schneider, 2002). Coding is defined as the analytic process through which "data are fractured, conceptualised, and integrated to form theory" (Strauss & Corbin, 1998, p.3). Its aim is to recognise, develop and relate the concepts that are the building blocks of theory.

Grounded theory coding is a kind of content analysis to find and conceptualise the core issues from within the huge pile of the data. Throughout the analysis of an interview, for example, the researcher will become conscious that the interviewee is using words and phrases that highlight an issue of importance or interest to the research. This is noted and described in a short phrase. This issue may be mentioned again in the same or similar words and is again noted. Allan (2003) describes this process as 'coding' and the short descriptor phrase is a code. According to him, coding should be performed with an open mind, without predetermined ideas. Predetermined ideas should not be forced on the data by looking for confirmation of previously established ideas.

In the course of coding, more than one code may come out from the same text. The data should be reviewed many times, looking and re-looking for emerging codes. Strauss and Corbin (1998) suggested coding by "microanalysis which consists of analysing data word-by-word" and "coding the meaning found in words or groups of words" (pp.65-68). However, the analysis technique of coding by microanalysis of the data, word by word and line by line, has two disadvantages. Firstly, it is very time consuming. If the data comes from interviews, the transcription of each interview contains a mass of data that has to be studied to locate the information relevant to the research topic. Secondly, it may lead to confusion at times. Dividing the data into individual words sometimes causes the analysis to become lost within the details of data. Therefore, it is useful to identify key points (rather than individual words) and let concepts emerge. The selection of points, in order to address research questions, is in line with qualitative coding analysis and is a protection against data overload (Allan, 2003).

#### **IDENTIFYING AND NAMING CONCEPTS**

As Piantanida, Tananis and Crubs (2002) stress, concepts are the 'building blocks' of theory. In order to identify the concepts, the grounded theorist needs to "open up the text and expose the thoughts, ideas, and meanings contained therein" (Strauss & Corbin, 1998, p.102). As Goede and Villiers (2003) explain, a concept should be viewed as an abstract illustration of an event, object, action or interaction that a researcher identifies as being considerable in the data. There are some debates on which procedures the grounded theorist should take in order to find the concepts. Glaser (2002a) believes that Strauss and Corbin force descriptions on the theory, irrespective of emergence, to locate its conditions, to contextualise it and to make it appear accurately pinned down, thereby losing its true abstraction and, hence, generalisability. According to Strauss and Corbin (1998) concepts are bound within the limits of time, place, people and so forth. According to them, grounded theory procedures force us to ask, for example, "What power is in this situation and under specified conditions? How is it manifested, by whom, when, where, how, with what consequences (and for whom or what)?" They believe that ignoring such a range of questions is to hinder the discovery of important features of power and to prevent developing further conceptualisation. They see knowledge linked loosely with time and place. On the other hand, Glaser (2002a) believes that "without the abstraction from time, place, and people, there can be no multivariate, integrated theory based on conceptual, hypothetical relationships" (p.8) and concepts are timeless in their applicability.

Personal thoughts may affect the process of coding and consequently the categories formed. Strauss and Corbin (1989) also believe that the interpretation of events by the researcher influences the naming of categories whereas Glaser (2002a) suggests that personal distance for accuracy is supposed to be an 'attitude' of the qualitative data analysis researcher. The grounded theory researcher, in contrast, does not need this attitude to get a description accurate, which is not his or her goal. The grounded theory method automatically puts him or her on a conceptual level, which goes beyond the descriptive data.

While naming concepts, grounded theory does not attempt to understand the world of the research participants as they construct it (Glaser, 1998). Grounded theory is not an enquiry that makes sense of and is true to the understanding of ordinary actors in the everyday world. According to Glaser (2002a) grounded theory discovers patterns that the participants do not understand or are not aware of. Grounded theory creates conceptual hypotheses that apply to any relevant time, place, and people with emergent fit and then is modified by constant comparison with new data as it explains what behaviour obtains in a substantive area. When concepts emerge they must be categorised in order to make relationship among them form theory. This process begins with open coding.

#### **OPEN CODING**

Open coding is the process of breaking down the data into separate units of meaning (Goulding, 1999). It takes place at the beginning of a study. The main purposes of open coding are to conceptualise and label data. Open coding starts the process of categorising many individual phenomena. Separately categorised concepts are clustered around a related theme to structure more abstract categories (Brown,

Stevenson, Troiano & Schneider, 2002).

At the stage of analysing the data and looking for codes, the coding is 'unfocused' and 'open'. During this process the data are analysed and the grounded theory researcher may recognise hundreds of codes which might have potential meaning and relevance (Goulding, 1999). In the course of open coding the grounded theorist engages in breaking down, analysing, comparing, labelling and categorising data. In open coding, incidents or events are labelled and assembled together through constant comparison to form categories and properties (Babchuk, 1997).

Coding might start with a full transcription of an interview, after which the text is analysed in an effort to recognise key words or phrases which connect the participant's description to the experience under study. This procedure, as Spiggle (1994) describes it, is associated with primary concept development which consists of "identifying a chunk or unit of data (a passage of text of any length) as belonging to, representing, or being an example of some more general phenomenon" (p.493). Besides open coding, it is vital to incorporate the use of memos. Memos are notes the researcher writes during the research process or immediately after data collection to elaborate on ideas about the data and the coded categories (Creswell, 2002) as a way of recording the impressions of the researcher and describing the situation. These are fundamental since they provide a bank of ideas which can be reviewed in order to draw the emerging theory. Memos facilitate reorienting the researcher at a later date (Goulding, 1999).

Coding allows for direction before becoming selective. It breaks down the data into analytical portions which can afterward be raised to a conceptual point. Questions that need to be continually addressed include the following.

- What is happening in this data?
- What is the basic socio-psychological problem?
- What accounts for it?
- What patterns are occurring here? (Goulding, 1999).

Once categories are built in open coding, they are expanded in terms of their given properties and dimensions. Goede and Villiers (2003) define properties as characteristics that are common to all the concepts in the category. They are "characteristics of a category, the delineation of which defines and gives it meaning" (Strauss & Corbin, 1998, p.101). On the other hand, dimensions show the position of a property along a continuum or range (Goede & Villiers, 2003). Properties and dimensions provide the richness to the abstract category.

In order to create new categories for possible inclusion in developing theory, Gerson (1991) suggests 'supplementation' as a complementary way. It can be situated between coding and theoretical sampling. Supplementation starts with an extant category, and systematically elaborates contrasting categories in order to provide the raw material for theoretical sampling, cross-cutting and making the theories richer. Supplementation is equivalent neither to testing hypotheses on the one hand, nor to constructing new categories via coding on the other. Indeed, it can be done without reference to particular data at all, focusing instead on the conceptual organisation and relationships of the developing theory. Keeping the theory in a state of permanent confrontation with data is the work of theoretical sampling, not of supplementation. While theoretical sampling tells us what to worry about, supplementation tells us the terms in which we should worry about it (Gerson, 1991).

#### **SAMPLING AND CONSTANT COMPARISON**

Since the theory should be kept in a state of permanent confrontation with data and given that grounded theory explores complex phenomena where often little understanding exists, the selection of participants is particularly critical. Intensity and maximum variation sampling are often used to select a broad range of information-rich participants (Brown, Stevenson, Troiano & Schneider, 2002). Sampling could not be planned in detail before the start of the field study. It is not determined to begin with, but is directed by the emerging theory (Goulding, 1999). It is not persons or organisations that are sampled but rather incidents and events. Although sampling during the beginning of the project is rather unfocused, it will become more focused as the project progresses (Goede & Villiers, 2003). Initially, the researcher considers the most obvious incidents and events. However, as concepts are identified and the theory starts to develop, further data may need to be incorporated in order to strengthen the findings. This is known as 'theoretical sampling' (Goulding, 1999). Sampling will only end when all the categories are saturated. Schematic model of the sampling model is discussed in Fig. 3

In grounded theory research, the inquirer engages in a process of gathering data, sorting it into categories, collecting additional information, and comparing the new information with merging categories.

This process of slowly developing categories is called the 'constant comparative procedure' (Creswell, 2002). By comparing each concept in turn with all other concepts, further commonalities are found which form the even broader categories. Glaser and Strauss (1967) described this method of continually comparing concepts with each other as their constant comparative method (pp.115).

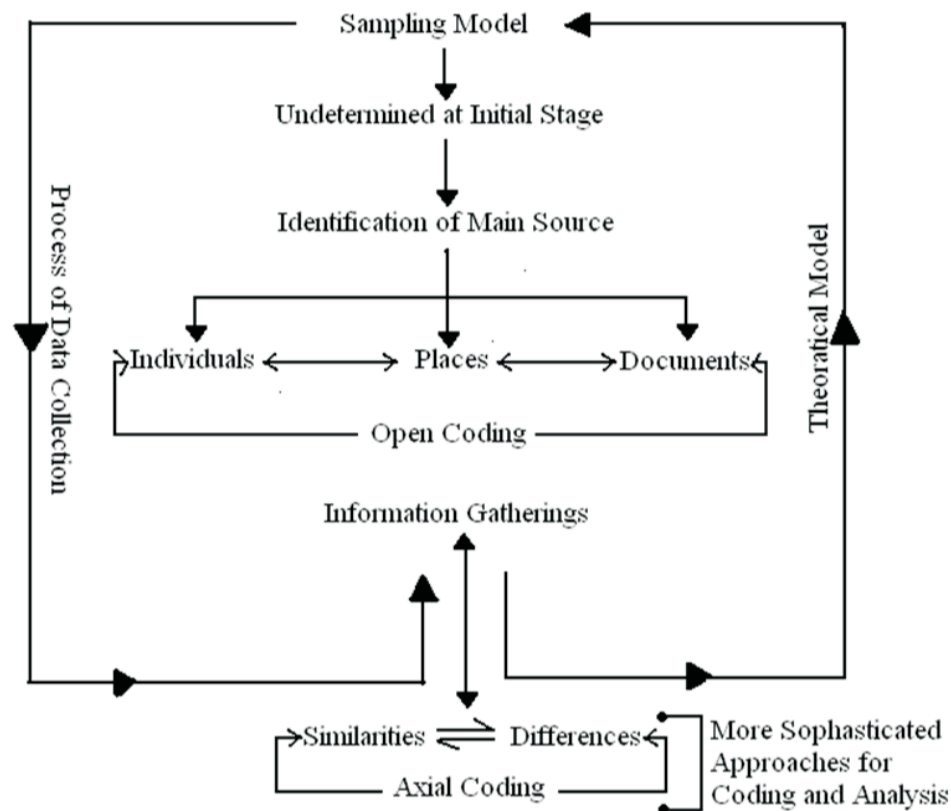


Fig. 3 : Schematic Digrame - Sampling Model

Constant comparative method is a fundamental feature of grounded theory. As the name implies, this involves comparing like with like to look for emerging patterns and themes. As Spiggle (1994) describes it, "[c]omparison explores differences and similarities across incidents within the data currently collected and provides guidelines for collecting additional data. Analysis explicitly compares each incident in the data with other incidents appearing to belong to the same category, exploring their similarities and differences" (p.493). To a degree, constant comparative process reveals the researcher's personal predilection, which may bias the data (Glaser, 2002b). Goulding (1999) also believes that as a result of constant comparison of subsequent data, codes are reduced and grouped into meaningful categories.

During this level of coding, theoretical saturation should be reached. This means that no new properties, dimensions, or relationships will emerge during analysis. Saturation is "the state in which the researcher makes the subjective determination that new data will not provide any new information or insights for the developing categories" (Creswell, 2002, p.450). Theoretical saturation is realized when

- no new data comes out concerning a category;
- the category is intense enough to cover variations and process; and
- relationships between categories are delineated adequately (Brown, Stevenson, Troiano & Schneider, 2002).

According to Goulding (1999) a theory is only considered valid if the researcher has reached the point of saturation. This involves staying in the field until no new evidence emerges from subsequent data. It is also based on the assumption that a full interrogation of the data has been conducted, and negative

cases, where found, have been identified and accounted for.

What has been discussed so far is the first stage of grounded theory. Concepts are a progression from simply describing what is occurring in the data, which is an attribute of open coding, to explaining the relationship between and across incidents (Glaser & Strauss, 1967). This needs a different, more complicated, coding technique which is referred to as 'axial coding' and involves the process of abstraction onto a theoretical level.

### AXIAL CODING

It is possible to think of the coding process as a form of pyramid at the base of which is open coding. Through systematic analysis and constant comparison of data the next stage is to reduce the number of codes and to collect them together in a way that shows a relationship among them. This stage relates to axial coding and the creation of concepts. At the peak of the hierarchy are categories which as Goulding (1999) describes unite the concepts and reveal a 'gestaltian' theoretical explanation of the phenomenon under study.

Once a concept has been identified, its attributes may be explored in depth, and its characteristics dimensionalised in terms of their strength or weakness. Finally the data are subsumed into a core category which the researcher has to justify as the basis for the emergent theory. The core category is "the central phenomenon around which all the other categories are related" (Strauss & Corbin, 1990, p.116). A core category unites all the strands in order to provide an explanation of the behaviour under study (Goulding, 1999). It represents the description of hypothetical relationships between categories and subcategories (Babchuk, 1997). Axial coding is the appreciation of concepts in terms of their dynamic interrelationships. These should form the foundation for the creation of the theory. The focus of axial coding is to construct a model that details the specific conditions that give rise to a phenomenon's occurrence. Strauss and Corbin (1998) believe that the purpose of axial coding is to reassemble data that were fractured during open coding. In axial coding, four analytical processes are occurring:

- (a) Continually relating subcategories to a category,
- (b) Comparing categories with the collected data,
- (c) Expanding the density of the categories by detailing their properties and dimensions,
- (d) Exploring variations in the phenomena (Brown, Stevenson, & Schneider, 2002).

### CHOOSING AND SITUATING A CORE CATEGORY

Choosing a core category is of a critical importance. Strauss and Corbin (1998) give the following criteria for choosing a central category.

- It must be central; that is, all other major categories can be related to it.
- It must appear frequently in the data. This means that within all or almost all cases, there are indicators pointing to that concept.
- The explanation that evolves by relating the categories is logical and consistent. There is no forcing of data.
- The name or phrase used to describe the central category should be sufficiently abstract that it can be used to do research in other substantive areas, leading to the development of a more general theory.
- As the concept is refined analytically through the integration with other concepts, the theory grows in depth and explanatory power.
- The concept is able to explain variation as well as the main point made by the data; that is, when conditions vary, the explanations still hold, although the way in which a phenomenon is expressed might look somewhat different. One also should be able to explain contradictory or alternative cases in terms of that central idea (p.147).

After choosing one core category and positioning it at the centre of the process being explored, a grounded theorist relates other categories to it. These other categories are the "causal conditions, strategies, contextual conditions, and consequences" (Creswell, 2002, p.441). These categories are identified to illustrate the context (structure) and the process of a phenomenon (Goede & Villiers, 2003). Causal conditions refer to the factors that lead to the occurrence of the phenomenon, the subject under study, or the central idea. Strategies are the specific actions or interactions that result from the core phenomenon (Creswell, 2002). Contextual conditions are the "specific set of conditions (patterns of conditions) that intersect dimensionally at this time and place to create a set of circumstances or problems to which persons respond through actions/interactions" (Strauss & Corbin, 1998, p.132). Consequences refer to the outcome

of the phenomena as they are engaged through action and interaction (Brown, Stevenson, Troiano & Schneider, 2002). The causal conditions affect the core category, the core category and the contextual conditions affect the strategies, and the strategies affect the consequences.

### SELECTIVE CODING

The final stage of data analysis is selective coding. Selective coding can be described as the process by which categories are related to the core category ultimately becoming the basis for the grounded theory (Babchuk, 1997). Strauss and Corbin (1990) define selective coding as "the process of selecting the central or core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development" (p.116). Through selective coding the categories are integrated and developed into the theory. Creating relationships among the categories is an important step to developing theory. Selective coding is one means through which this is accomplished (Stamp, 1999). In this phase, in order to complete the grounded theory it is necessary to create a conditional and consequential matrix, an "analytic device to stimulate analysts thinking about the relationships between macro and micro conditions/consequences both to each other and to the process" (Strauss & Corbin, 1998, p.181). This matrix helps to frame a 'story' which is a key aspect in formulating the grounded theory. The story must be told at a conceptual level, relating subsidiary categories to the core category. After putting categories into sequence, a researcher can begin to cover the wide array of consequences of various conditions, giving the story specificity. This mapping forms the basis of the theory (Brown, Stevenson, Troiano & Schneider, 2002).

With regard to the process of developing grounded theory, it may be argued that there are three basic stages that need to be addressed. The first deals with the collection and interpretation of the data and is mainly concerned with demonstrating how, why and from where early concepts and categories were derived. In accordance with the principles common to the method, any theory should be traceable back to the data (Goulding, 1999). Consequently, evidence needs to be provided as does the relationship between concepts, categories and this evidence.

The second stage is to 'abstract' the concepts and try to find theoretical meaning. At this stage the concepts should be adequately developed as to warrant an extensive re-evaluation of compatible literature in order to demonstrate the 'fit', relationship and, where applicable, the extension of that literature through the research findings.

The final stage should present the theory, bringing together the concepts and integrating them into categories which have explanatory power within the context of the research.

### DEBATES ON VALIDATING

Unlike quantitative methods where, for example, a copy of the questionnaire and statistical analysis can be inserted in the appendix for justification and evidence of findings, with qualitative research it is not possible to provide the full evidence in a manner that is as immediately accessible to the reader. Therefore, what is included in the work has to be selective, but still presented in such a way as to create a meaningful picture. It is important, therefore, to chart the process as it evolves, to use diagrams to illustrate the emergence of the theory, and to point to critical junctures and breakthroughs in terms of theoretical insights (Goulding, 1999).

It is not necessary to ask the participants to see if the theory covers their situation, as is usual in narrative research designs. According to Glaser (2002a), inviting participants to review the theory for whether or not it is their voice is wrong as a 'check' or 'test' on validity. They may or may not understand the theory, or even like the theory if they do understand it. Grounded theory is generated from much data, of which many participants may be empirically unaware. Indeed, grounded theory is not their voice; it is a generated abstraction from their doings and their meanings that are taken as data for the conceptual generation.

### GROUNDED THEORY QUALITY QUESTIONS

In order to see if the generated grounded theory meets the methodological criteria, Strauss and Corbin (1998) suggest eight conceptual questions to assess a grounded theory.

1. Are concepts generated?
2. Are the concepts systematically related?
3. Are there many conceptual linkages, and are the categories well developed? Do categories have

conceptual density (richness of the description of a concept)?  
 4. Is variation within the phenomena built into the theory (how differences are explored, described, and incorporated into the theory)?  
 5. Are the conditions under which variation can be found built into the study and explained?  
 6. Has process been taken into account?  
 7. Do the theoretical findings seem significant, and to what extent?  
 8. Does the theory stand the test of time and become part of the discussions and ideas exchanged among relevant social and professional groups? (pp.270-272)

Creswell (2002) proposes the following questions to consider while evaluating a grounded theory.

- Is there an obvious connection between the categories and the raw data?
- Is the theory useful as a conceptual explanation for the process being studied?
- Does the theory provide a relevant explanation of actual problems and a basic process?
- Can the theory be modified as conditions change or further data are gathered?
- Is a theoretical model developed or generated that conceptualises a process, action, or interaction?
- Is there a central phenomenon (or core category) specified at the heart of the model?
- Does the model emerge through phases of coding? (e.g. initial codes to more theoretically oriented codes or open coding to axial coding to selective coding)
- Does the researcher attempt to interrelate categories?
- Does the researcher gather extensive data so as to develop a detailed conceptual theory as well saturated in the data?
- Does the study show how the researcher validated the evolving theory by comparing it to the data, examining how the theory supports or refutes existing theories in the literature, or checking theory with participants? (pp.458-459)

## CONCLUSION

Finally, grounded theory has characteristics of its own which make it unique, although Strauss and Corbin (1990) consider that paying attention to processes is vital to quality grounded theory. As mentioned before, grounded theory is mostly based on the researchers' interpretations, even though grounded theory is generated from data which come from participants. The theory which is driven in this way answers process oriented questions, connecting the conditions that give rise to a certain complex, dynamic phenomenon. Traditional research designs usually rely on a literature review leading to the formation of a hypothesis. This hypothesis is then put to the test by experimentation in the real world. On the other hand, grounded theory investigates the actualities in the real world and analyses the data with no preconceived hypothesis (Glaser & Strauss, 1967), through the lenses of the researcher.

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