Glaserian and Straussian Grounded Theory: Similar or Completely Different?

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ABSTRACT
Grounded Theory is growing in popularity as a research method in ICT research areas such as Information Systems and Software Engineering. Although there are two distinct methods, namely the Glaserian and the Straussian versions, a substantial number of research articles tend to ignore the difference and just claim that they are using grounded theory. To a researcher new to the grounded theory method, the two methods look very similar. Because the Straussian method is more prescriptive, most opt to follow this method, without investigating the Glaserian version. The few who try to use a hybrid of the two methods (not appreciating that the two methods are substantially different), only realize after a significant investment in time that the methods are not reconcilable and that either the one or the other should be followed. To contribute towards eliminating the confusion, this paper investigates the differences between the two methods. This will, hopefully, enable ICT researchers to make a more informed decision on which method to follow.

Categories and Subject Descriptors
H.1.1 [**Systems and Information Theory**]

General Terms
Theory

Keywords
Glaserian Grounded Theory, Straussian Grounded Theory, Research methodology

1. INTRODUCTION
As the human aspects of computing gain importance in research, so the need for qualitative research methods increases [1]. One of the methods showing substantial growth in the ICT research literature, such as Information Systems and Software Engineering, is grounded theory [1, 2, 20, 25]. In a nutshell, grounded theory is the "systematic generation of theory from systematic research" [11 p6]. The theory emerges from the data after rigorous application of the grounded theory method. This theory works by providing the researcher "with relevant predictions, explanations, interpretations and applications" [7 p1].

Unfortunately, to date, the application of grounded theory in ICT has not been without its problems. In an article published in 2008 by Adolph *et al.*[1], the authors admit that they had, like many other researchers, claimed to follow grounded theory, whereas they had only borrowed a few grounded theory practices and had not followed the method in full. This is also found in nursing (grounded theory was developed in the medical field and is often used in nursing research) where 77% of 146 nursing papers that claimed to use grounded theory, did not actually qualify as grounded theory research (research referred to by [1]). Stern mentions how she has "seen endless numbers of manuscripts in which everything is all mixed up and they call it grounded theory" [32 p53]. Simmons [31] writes about the questionable ways grounded theory is used in qualitative field research and as a 'cover' for poor and mediocre research. Adolph *et al.* [1] stress the danger of this practice as "(a)t best, this means the legitimacy of good research can be easily challenged, and at worst we are giving theory status to hearsay and anecdotal stories". They contend that, while there are numerous grounded theory texts, their own experience and the experience of others suggest that many are claiming to have used grounded theory, but do not have a good understanding of it.

One of the complicating factors is the existence of two methods, both of which are called 'grounded theory'. Strauss and Corbin [34] pose that their grounded theory method (referred to as Straussian grounded theory) is the same as the original method developed by Glaser and Strauss [7] (referred to as Glaserian grounded theory), only more prescriptive. Researchers, who try in vain to apply a hybrid of the two methods, learn – after a substantial amount of wasted time and frustration – that the differences between the two methods are subtle, but profound. In the article by Adolph *et al*. [1], the authors describe their journey through this misunderstanding. We had a similar experience. Only after reading Glaser's antipode [11] to Strauss and Corbin's book [34], and deciding to follow only the traditional Glaserian method, could we make progress in our own research. Glaser pleaded with Strauss to change the name of his (Strauss's) method to something else, but to this day both methods are still known as 'grounded theory'.

Adolph *et al.* [1] name several research studies where the authors cited numerous grounded theory sources, but do not specify which

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method they follow. In our own research we have also come across the confusion that reigns in the literature, namely, mixing the two methods as if they are the same [3]; referring to grounded theory but only describing or using the Straussian method [19, 24, 26, 29, 30]; claiming to use the Glaserian approach, or being mainly influenced by Glaser, but using axial coding which is unique to the Straussian method [4, 21, 27, 28]; stating that the research was conducted in line with the Glaserian approach as far as possible, but further stating that much of the analysis was carried out with the help of suggestions made by Strauss [5]; and defining grounded theory in terms of the Straussian method and calling the Glaserian method an alternative approach [25].

Matavire and Brown [25], in their paper presented at the SAICSIT 2008 Conference, investigated the use of the different grounded theory approaches in IS research, but only briefly touched on the differences between the Straussian and Glaserian methods. The purpose of this paper is to extend the discussion on the differences between the Glaserian and Straussian approaches in an environment where grounded theory is increasingly being misinterpreted. This will show that the two approaches are completely different right from the start and will, hopefully, allow new grounded theory researchers to make an informed decision on which method to pursue.

2. WHY TWO GROUNDED THEORY METHODS

The way the two grounded theory methods developed is illuminating with regard to understanding the reason for the complexity of the traditional method; in that subsections of the traditional method cannot be used and still be called grounded theory; and regarding the way in which the second method was developed.

Sociologists Barney Glaser and Anselm Strauss joined forces at the University of California in the early 1960's to research the management of dying in American hospitals. In their first book *Awareness of Dying* [6] published in 1965 they approached the problem of dying in a hospital from a sociological rather than a medical perspective. They presented their research results, which were based on extensive fieldwork in six hospitals, in a "more abstract – and so more powerful – explanatory theoretical scheme" [6 p ix].

Their method of generating theory, which emerged from the field data, was presented by them in their book *The Discovery of Grounded Theory* in 1967 [7]. They attempted to close the "embarrassing gap between theory and empirical research" [7 p vii] which they claimed still existed in 1967. Their book was "directed toward improving social scientists' capacity for generating theory that *will* be relevant to their research", in the hope of helping them to theorize rather than be "frozen by the undue emphasis on verification" [7 p viii]. From this discussion it can be seen that the development of the original grounded theory method was to develop theory, not to use it for content analysis as is often done in the literature [25]. As Adolph *et al.* [1] rightly contend "content analysis has a different goal than grounded theory and different criteria for reliability and validity" [1 p10].

The grounded theory method proposed by Glaser and Strauss (currently referred to as traditional or Glaserian grounded theory) proved to be difficult to apply by other researchers. Glaser and Strauss presented seminars and dissertation consultations to colleagues on research projects, but could not reach the wider audience who read their books, but "floundered on how to set down theoretically in the end product what they had discovered" [10 p1]. The method goes against all traditional approaches used by researchers. For example, it starts with a concern of participants in some social area and not with a research question in the form of a hypotheses that needs to be verified. It also recommends that reading of the literature in the research area is avoided until later to prevent preconception. The theory is emerges from the data through constant comparative analysis [7, 10, 11, 14, 15, 16, 17]. This makes it difficult to apply the traditional grounded theory method in post-graduate research where students are expected to fit in with faculty requirements [25]. This aspect is still a problem world-wide and was discussed at a Grounded Theory Seminar run by Barney Glaser in New York in October 2006, which one of the authors of this paper was privileged to attend.

With the experiences from their seminars and realizing that researchers were having difficulty in applying the grounded theory method, Glaser wrote a second book, *Theoretical Sensitivity,* published in 1978 [10]. According to Glaser, Strauss and he hoped to "give a sense of what theory is, how it may be constructed when generating it, and its amazing variability and multivariateness" [10 p1]. The purpose of the book was to disseminate advances made to the method, to develop the necessary theoretical sensitivity and to give a "fund of ideas and ways to systematically relate categories into theory" [10 p1].

Researchers still experienced difficulties in applying the grounded theory method. As stated by Adolph *et al.* [1 p10], "(s)ome of the early grounded theory writings do not help illuminate what grounded theory really is often describing grounded theory in near mystical terms", and "(t)his makes it difficult for the novice to fully understand what it really is all about".

In an attempt to address the difficulties grounded theory researchers were experiencing, Strauss published his book *Qualitative Analysis* in 1987 [33] and Strauss and Corbin their book *Basics of Qualitative Research* in 1990 [34]. They attempted to lay down more rules. The argument that ensued between Glaser and Strauss is addressed in Glaser's antipode to Strauss's books [11]. Glaser requested Strauss to "pull the book", stating that *Basics of Qualitative Research* "distorts and misconceives grounded theory, while engaging in gross neglect of 90% of its important ideas" [11 p2]. Instead of refining the method, they, according to Glaser, added methods and lost the abstract logic that is required to generate the grounded theory [11]. Glaser contended that Strauss's method is "preconceived, forced, conceptual description" [11 p4].

To a researcher new to grounded theory, the arguments Glaser posed seem to be an overreaction on Glaser's side. Glaser himself contends that the wrong ideas are "too subtle for the average reader to follow and compare and critique" [11, p3]. Only after grappling with the two versions of grounded theory does the extent of the differences become clear. This was experienced by Adoph *et al.* [1], and by us, after trying to apply both methods at the same time, wrongly thinking that they described the same process.

The fact that Strauss and Corbin described a method so different to the traditional Glaserian grounded theory is disconcerting, especially as Strauss was co-author of the original book, *The*

Discovery of Grounded Theory; a co-author with Glaser of the three books [6, 8, 9] in which the method was applied to the status passage of hospital patients; and a co-instructor in teaching students and researchers the grounded theory method. Glaser censured Strauss, commenting "(i)t indicates to me that you truly have never grasped what we did, nor studied it to try to carefully extend it" and that the book left out quantitative researchers, merely collocating "tons of fractured rules instead of cutting directly through to basic and fundamental relevance" [11 p2]. Interestingly, Stern [32 p53] contends that, although Glaser and Strauss thought that they were using the same method, their students "in the 1960's and 1970's knew that the two had quite different modus operandi". That one of the originators misunderstood the traditional grounded theory method shows the difficulty of the method.

Strauss apparently challenged Glaser to write a grounded theory method book for beginners which Glaser tried to do with his book *Basics of Grounded Theory Analysis* in 1992 [11]. Glaser has since ceaselessly invested time to clarify the traditional (Glaserian) grounded theory approach by writing numerous books on different aspects of the method [14, 15, 16, 17, 18]; publishing grounded theory research [12, 13, 22]; managing the Grounded Theory Institute; and presenting seminars world-wide to help students with their grounded theory research.

The most difficult aspects of grounded theory is conceptualization. During our own experiences with applying the Glaserian grounded theory method to the area of distributed collaborative learning assignments, one of the authors of this paper has often wondered why the Glaserian method is not more prescriptive, like the Straussian method. Unfortunately, this would restrict the method considerably. The strength of the Glaserian grounded theory method lies not only in its rigour of following systematic rules to derive at the theory, but also in its flexibility and creativity when the researcher needs to conceptualize. But this is also the weakness of the method, because very few people have received training in conceptualization [15]. This is especially true for researchers, outside the sphere of sociology, who have only been trained in their own respective fields. It is a serious problem, as Stern [32] and Simmons [31] point out. They contend that there is generational erosion where students are lead by supervisors who have not had proper training in grounded theory. Mentors well versed in grounded theory are not readily available. Glaser highlights this problem and refers to these students and researchers as "minus mentorees" [15].

Deciding whether to use the Glaserian or Strausssian method is difficult without an in-depth analysis of both methods. Most researchers want to get on with researching their area of interest and do not have the luxury of time to undertake an in-depth investigation of both methods in order to understand all the subtle differences. Some researchers like Adolph *et al* [1] and us, have wasted considerable time by trying to apply both the Glaserian and Straussian methods before realizing that they are not reconcilable. Glaser was not prepared to critique Strauss and Corbin's book [34] as he contended that such an action would be too cumbersome, because "due to the underlying logic of the misconceptions in Basics of Qualitative Research there would be corrections on each page" [11 p3]. On the other hand, he felt that a simple critique would be too "destructive and nonproductive". His solution is that researchers should just follow the traditional Glaserian method as it is the only method generating real grounded theory. This sentiment might be valid for Glaser, but other researchers are confronted with two methods which are both labeled as grounded theory and are both accepted as valid methods by the research community. In reality more researchers are using the Straussian method than the Glaserian method [25], regardless of Glaser's criticism of his rival's system.

It is our contention that a comparison of the two methods that does not over-specify the differences, but supplies enough information to enable the researcher new to grounded theory, to make an informed decision, is long overdue. The next section of this paper attempts to fill this gap. The intention is not to critique either of the two methods, nor to point out all the underlying logical differences, but to focus on the main variations. The discussion is based on the description of the two methods as presented by Glaser, and Strauss and Corbin in their numerous books [7, 10, 11, 12, 13, 14, 15, 16, 17, 33, 34] and on our own experiences. After deciding which method to follow, the researcher can embark on a more intensive study of the chosen method using the original books.

3. SIMILARITY BETWEEN THE GLASERIAN AND STRAUSSIAN APPROACHES

Glaser, as well as Strauss and Corbin, define the grounded theory approach as a qualitative analysis research method that uses a systematic set of procedures to develop an inductive theory about some substantive area. The theory emerges from the data, therefore, is 'grounded' in the data. The yield is hypotheses. It is not discipline bound, although researchers from different disciplines will view the research area from the perspective of their own areas of expertise. Creativity is required to break out of older concepts that are not applicable and create new concepts and their properties from the data.

4. DIFFERENCES BETWEEN THE GLASERIAN AND STRAUSSIAN APPROACHES

The crux of the differences is defined by Stern [32] as:

Glaserian grounded theory (GGT): Keeps the attention on the data and asks: "What do we have here?"

Straussian grounded theory (SGT): Stops at each word in the data and asks: "What if?"

4.1 Initial Considerations

4.1.1 Purpose

GGT: The purpose is to generate concepts and relationships that explain, account for and interpret the variation in behaviour in an area of study. The behaviour is mostly related to some problem/concern experienced by the subjects in the area.

SGT: The focus is to describe the full range of behaviour occurring in the area (the reason why Glaser calls it conceptual description, rather than grounded theory).

4.1.2 Qualitative Versus Quantitative Research

GGT: Glaser distinguishes between qualitative analysis and qualitative research. He defines qualitative analysis as "any kind of analysis that produces findings or concepts and hypotheses, as in grounded theory, that are not arrived at by statistical methods"

[11 p11]. This can be done with qualitative and/or quantitative data, therefore, it is not defined as qualitative research.

SGT: Qualitative research defined by the authors (Strauss and Corbin) as "any kind of research that produces findings not arrived at by means of statistical procedures or other means of quantification" [34 p17].

4.1.3 Research Question

GGT: The researcher does not start with a research question, but investigates an area where the subjects have a main concern. The problem is not preconceived, but emerges as the researcher probes the area, and collects and analyses the data. The drawback with this approach is that this does not comply with the way traditional research is done and causes problems in justifying the research and generating funds. The advantage is that the researcher often uncovers new problems that have not been considered in any previous research of the area. This allows for the generation of new theory.

SGT: The researcher starts with a research question which is a statement about the phenomenon to be studied. The purpose of the question is to guide the research. The trouble here is that the main concern of the subjects could be missed through preconception. The advantage, though, is that it conforms to traditional research methods and requirements of faculties.

4.1.4 Theoretical Sensitivity

GGT: The emphasis is on the researcher's ability to generate concepts and their properties from the data, and to relate them. Conceptualization is the core process of grounded theory. Not all researchers have the ability to conceptualize, and few are trained in this technique. In 2001, Glaser observed that 33 years after the writing of *Discovery of Grounded Theory*, "many social researchers still have little or no awareness of conceptualization" [11 p10]. Most are trained to look at the research area in a descriptive way. This is one of the difficult, but exciting, areas of GGT, because it is highly creative. Although the process to arrive at the concepts is rigorous, the ability to transcend the descriptive and uncover the real, underlying abstract concepts depends on the researcher's creativity and skill at conceptualization, and has no rules.

SGT: Emphasis is on the researcher's insight, ability to give meaning to the data, capacity to understand and capacity to separate the pertinent from the non-pertinent. It refers mainly to the researcher's professional experiences in the discipline under study.

4.1.5 Who should try Grounded Theory

GGT: Only researchers who have conceptual ability.

SGT: Almost anyone who wishes to investigate this method and is prepared to invest in continued study and practice. The premise here is that the researcher will gain better grounded theory skills with practice.

4.1.6 Focus of the Theory

GGT: Generates abstract theory to explain behaviour during the continual resolving of the subjects' main concern. It is abstract of time, place, and people as it transcends the data into abstract concepts. The theory emerges from the data and focuses on the concerns of the subjects.

SGT: Creates explanatory theory that closely approximates the reality it represents. It starts with the data, considers aspects wider than the collected data, and then tries to verify the exploratory theory in existing or newly collected data. It focuses on describing the area under research.

It is worthwhile to note here that both types of theory are grounded in the data, but with a different focus. This might explain why Strauss refused to remove the term 'grounded theory' from his method. A better solution might be if both methods were given more descriptive names than just 'grounded theory', or Glaserian and Straussian grounded theory. The GGT could be called 'conceptual grounded theory' and SGT 'descriptive grounded theory', for example.

4.2 Analysis Principles

4.2.1 Questioning

GGT: The researcher questions the data in terms of what the data is a study of; what concept the data incident indicates; what is happening in the data; what the main concerns of the subjects are; and how the concerns are addressed by them. The researcher stays in the collected data and is open to whatever carries enough importance to be of concern to the subjects. The questioning is focused on the data.

CGT: The researcher takes each incident in the data and formulates any possible question that relates to the data, going much wider than the data incident under investigation. This is done in an attempt to 'break the data open'. It guides further research for new data that can be used to verify provisional answers to the questions. This is mainly researcher-driven, as it depends on the ability of the researcher to reach beyond the collected data and think of any possible aspect that could be present in the research area. It will include aspects that might not be important to the concerns of the subjects, but that rather describe the area under research. The problem with this questioning is that it could virtually go on forever if not limited by the researcher – and the 'stop' criteria are unclear. It also carries the danger that preconceived ideas can be forced onto the data.

4.2.2 Emergence Versus Verification

GGT: All the categories and their properties emerge from the data. No additional properties are added as this will negate the degree to which the theory is grounded pertaining to the concerns of the subjects. Glaser contends that if anything is important enough to the subjects to justify its inclusion in the theory, it will emerge from the data (assuming that the data was collected properly in the field). If it is not in the data, it is not important enough and should not be included in the theory.

SGT: To 'open up' the data the researcher asks all kinds of questions about the data. The researcher's experiences and skills affect the number and quality of questions asked and the preliminary answers given. The preliminary answers are verified in the data.

4.2.3 Induction Versus Deduction

GGT: Induction where the theory emerges from the data.

SGT: Based on induction, but with its questioning that goes wider than the data and is then verified in the data, it includes a large component of deductive reasoning.

4.2.4 Role of the Literature

GGT: To avoid any preconceptions of the concerns of the subjects and the creation of concepts, any reading of the literature in the

research area, or related areas, is delayed until the emergent theory is sufficiently grounded. Reading in unrelated fields for ideas is encouraged, though. It must be noted here that Glaser does not imply that the literature in the research area should *not* be read, but only that reading should be delayed until a later stage in the research when the concepts have been sufficiently developed. The information in the literature is viewed as additional data for the theory. An advantage of this approach is that it avoids wasting time reading areas in the literature that are not of concern to the emerging theory. Having knowledge of research literature pertaining to the research area makes it very difficult to identify the real concerns of the subjects. The tendency is to link what the subjects say to already existing concepts, rather than to develop new concepts. To delay reading pertinent literature has severe implications for research students, who are expected to do a thorough literature study before embarking on the research. As the literature acts as data, the researcher does not write a literature review chapter because the literature is woven into the storyline.

SGT: Although in-depth reading of the literature in the research area is delayed, descriptive literature in the research area is read in the beginning. It stimulates 'theoretical sensitivity' and ideas for possible questions, and guides the initial observations. The continued role of the literature is to direct sampling and support validation.

4.3 Coding Techniques

4.3.1 Open Coding

GGT: The researcher starts analyzing the data using open coding. The data is compared, incident to incident, for similarities and differences on a conceptual level. Concepts (also referred to as categories) emerge from patterns of similar incidents; therefore, the incidents become interchangeable. As categories are developed, the researcher continues comparing incidents for new categories and incidents to categories to generate the properties of the categories. Open coding ceases as soon as a core category emerges that accounts for most of the variation in the pattern of behaviour and is related to most, if not all, of the other categories. As the concepts are already generated on an abstract level, the number of different categories is not high. Any relationships between the categories are noted on memos.

A researcher new to grounded theory, who does not have a clear understanding of conceptualization, finds it difficult to understand what is meant by 'categories' and 'properties'. Even though reading high-quality GGT studies in the literature is advised by Glaser, it does not make this aspect any easier. The concepts generated often employ discipline-specific jargon, which makes them difficult to understand. Further, only a few studies mention what their core category is, and hardly any refer to the other categories or properties. This is due to the fact that, although the core category is in the centre of the theory developed, the writing phase is not based on the core category and its properties, but rather on the memos that are written on the relationships between the categories (see Memos below). The aim of the research studies in the literature are usually not to specify how the research was executed, but to use the theory generated in the study to inform people in the respective research areas. For example, the central theoretical concern in Glaser and Strauss's book *Time for Dying* is "the temporal aspects of work", specifically the "*temporal organization of behavior* toward dying patients" [8 p vii, p x, p xi]. The authors do not specify what the other categories or any of the properties are. The chapter headings also do not reflect the categories, but define different dying trajectories. We found this aspect to be one of the most difficult aspects of GGT to master, especially since training of ICT professionals does not include conceptualization.

The advantage of this method is that if the researcher enters the field without preconception, and with a ability to conceptualize, more often than not new categories and relationships are discovered.

SGT: Open coding in SGT differs significantly from the method with the same name in GGT. Each observation, sentence, and paragraph is broken down and each discrete incident, idea, or event is given a name that represents a phenomenon (concept). Similar incidents are grouped within the same concept. The level of abstraction here is much lower than in GGT, resulting in a large number of concepts. The concepts generated are grouped into categories, which are, again, regrouped into more abstract categories. To 'open up' the data, the researcher tries to generate as many properties and subproperties of each category as possible by asking all kinds of questions about the data. The properties are dimensionalized along a continuum. These properties form the basis of the relationships between the categories and subcategories. The thoroughness of this aspect is only bound by the creativity and skill of the researcher and the time available. As observed before, this aspect can be taken to extreme levels. Strauss and Corbin state that questioning is central to all the coding procedures, but admit that so many questions can be asked that it is hard to "keep track of them", because they are so "numerous and diverse" [34 p60]. The categories, properties, and relationships that can be verified in the existing, or subsequently collected data, form the theory.

The lower level of abstraction required for the conceptualization makes this open coding easier to apply than GGT for researchers new to grounded theory. Strauss and Corbin warn, though, that researchers should not summarize, but conceptualize. Except for a few examples of the differences between summarizing and conceptualizing, no further guidelines are given on how to conceptualize. It is disconcerting that they claim that a beginner cannot usually expect to make 'great' discoveries, but with enough hard work and persistence, a researcher is capable of making contributions to his or her field of interest [34 p58]. This is not very comforting to researchers who are new to the method, but who are being expected to contribute to the field of interest.

4.3.2 Axial Coding

GGT: Does not use axial coding. If a researcher mentions axial coding it means that (s)he is using SGT.

SGT: Axial coding runs parallel to open coding. Where open coding fractures the data, in axial coding, the researcher puts the data back together again by making connections (relationships) between the categories and their subcategories.

4.3.3 Core Category

GGT: The core category is the crux of the GGT method, as the theory is developed around the core, allowing for integration, density, saturation, completeness and delimiting the focus. After a time period of open coding, the core category emerges. This category accounts for most of the variation in the pattern of behaviour and is related to most, if not all, of the other categories. Glaser warns that the researcher must not preconceive the core category, but must continue with the open coding until the core category emerges from the data. As soon as the core category is

identified, open coding is ceased and the researcher moves on to the more focused phase of selective coding. If two possible core categories are identified, one is chosen as dominant for the specific paper/book, and the other can be used as the dominant category in another paper/book. This was done by Glaser and Strauss's in their first two books [6, 8].

SGT: The core category plays a smaller role in SGT than in GGT, and it is only selected after the researcher has decided on a storyline during the selective coding phase. If an abstract category that encompasses the grounded theory storyline exists, it is chosen; if not, a new abstract category is created.

4.3.4 Selective Coding

GGT: The core category is known and the collection, analysis and coding of the data are now limited to only those categories that are relevant to the core. Coding stops when no more incidents are found that indicate new categories or properties. That which is not related to the core is ignored for that particular research study, but can be used in another research study, if relevant.

SGT: The term selective coding again has a different meaning than in GGT. Selective coding is similar to axial coding, but on a more abstract level. The categories are now woven together through relationships between them to fit the storyline decided on by the researcher. Because the relationships do not emerge from the data, but are generated by the researcher, they have to be verified in the data. Categories that are not yet saturated are completed by the researcher by asking more questions and then verifying the preliminary answers in existing or new data.

4.3.5 Theoretical Sampling

GGT: Theoretical sampling refers to the process whereby the researcher selectively samples the next data to collect whilst jointly collecting, coding and analyzing the data. It is guided by the needs of the emergent theory and cannot be determined in advance. Theoretical sampling ceases when the categories are saturated.

SGT: At first sampling is guided by the research question. In open coding, the aim is to uncover as many as possible potentially relevant categories with their properties and dimensions, and to enable the verification of researcher generated preliminary answers. During axial coding the purpose changes to uncover and verify relationships. In selective coding, the sampling is driven by the purpose to integrate the categories to form the theory; to validate the integrative relationships; and to fill in any categories that have not yet been saturated.

4.3.6 Closure of Coding

GGT: When no more new interchangeable incidents are found in the data, the categories are saturated and the researcher proceeds to the writing phase.

SGT: Research could go on indefinitely by the researcher constantly asking new questions that need to be verified. The process is time-consuming and can only be done on a subset of the data. The researcher has to make a decision on when to stop (usually when time and funds run out).

4.3.7 Computer Assistance in Coding

GGT: Because the researcher needs to conceptualize, the coding cannot be done by an assistant or a computer program.

SGT: In practice, categorization is often done by computer programs running on the field data. Whether this adheres to Strauss and Corbin's intended method is questionable, as their method also expects conceptualization and not summarization.

4.3.8 Premature Termination

GGT: The purpose is to generate theory, so no premature termination can take place.

SGT: Strauss and Corbin [34] state that the researcher can stop after axial coding if (s)he is not interested in generating theory, but only in using the research for theme analysis or concept development. As no grounded theory is developed, the question can be asked whether this should be referred to as a grounded theory study (as it often is) in the literature.

4.4 Memos and Diagrams

GGT: During all the phases of the research, the ideas about categories and their relationships, and any other relevant thoughts or ideas, are recorded in memos. The memos can take on any form, as long as they are on a conceptual level and highly sortable (see Storyline below). Diagrams are only used when they are needed, but do not play a prominent role.

SGT: Memos represent the recorded form of the abstract thought about the data and are written during all the phases of the research. Different types of memos are recommended: for example, code notes, theoretical notes, operational notes, and subvarieties of these. Guidelines are given for their format. The memos are supported by diagrams which are the graphic representations of the relationships between the concepts. The diagrams become more intricate and complex as the research progresses.

4.5 Writing Phase

4.5.1 Storyline

GGT: Once the categories are saturated, the memos are sorted on their relevance to the core category. The theoretical codes (see Theoretical Codes below), by means of which the theory is integrated, emerge during sorting. These codes form a complex mosaic with one or more theoretical code dominating and guiding the story line. Once sorted, the theory is written from the memos. The aim is to capture the conceptualization and integration of the theory.

The sorting phase is of utmost importance and cannot be omitted as the best theoretical codes to use must emerge from the memos. Glaser recommends that GGT researchers study and restudy the theoretical codes so that they do not to fall into the trap of developing one 'pet' theoretical code and then force all their theory development into the one mold. The researcher needs to be able to recognize the best code(s) that emerge from the sorting of the memos.

For a researcher new to grounded theory, this area is also difficult to master with few guidelines. Again, studying existing GGT studies does not solve the problem as the researchers do not specify the theoretical codes they have used. It is woven into the theory and an inexperienced researcher will find them very difficult to identify.

SGT: The researcher looks for patterns and relates the data on conceptual, property, and dimensional levels. The relationships between subcategories and categories which are developed during axial coding; and the relationships between categories which are developed during selective coding are based on a causal paradigm

model. In a simplified form, the model contains: *causal conditions* that lead to the occurrence or development of a *phenomenon.* The phenomenon has a specific set of properties represented both by the *context* and a broader structural context called the *intervening conditions*. In managing or responding to the phenomenon the subjects implement and execute *action/interaction strategies.* The outcomes are the *consequences* which can become the conditions of a new phenomenon. A conditional matrix is used to trace conditional paths through different generality levels to enable the linking of conditions and consequences with actions/interactions.

During the selective coding phase the researcher decides on the main concern of the research area, chooses a core category that encompasses the story and sorts the memos to link the categories to the core category whilst adhering to the paradigm model. Diagrams of the links are drawn and, together with the memos, used to write a descriptive overview. With the help of the categories and memos, this is then translated into an analytical storyline. The memos are sorted again and a provisional outline is written. Once the outline exists, the memos are sorted into the outline and the complete story is written. The categories are arranged and rearranged according to the causal paradigm model until they fit the story. If no fit can be found, the researcher rewrites the story. The evolving theory is repeatedly validated in the data and by subjects in the field, colleagues, friends, spouses, and companions.

4.5.2 Theoretical Codes

GGT: Many theoretical code families exist that can be used to present the final theory. They do not have to be causal in nature, but can be a combination of codes from a substantial variety of relational code families. Glaser defines 18 different family types in *Theoretical Sensitivity* [10] and a number of additional types in his later books.

SGT: Only the causal paradigm model (theoretical code) is used. The memos are rearranged until they fit the model.

4.5.3 Fit, Gaps, and Saturation

GGT: Everything fits somewhere as the categories and their properties emerge from the data. Gaps in the data are analyzed in terms of the reasons for the gaps and woven into the theory. The purpose of the theory is to account for as much variation as possible in the core category, within the limits of the research aim and the researcher's resources in terms of time, money, and energy. Because the theory is modifiable, it can be extended or changed at any time in the future; therefore, saturation is defined within the confines of the limitations.

SGT: Everything has to fit the causal paradigm mode. If a case does not fit the model, it needs to be traced back to determine the reasons for this and corrected, if possible. Any existing gaps have to be filled. Saturation is important and the researcher must carry on sampling until no new or relevant data are found, categories seem to be dense and relationships between the categories are well established and validated.

4.6 Criteria for Judging the Theory

GGT: Because the theory emerges from the data, the criteria for evaluating the theory are limited to: fit (fit reality in the eyes of the subjects, practitioners and researchers in the area); work (explains the major variations in behaviour in the area with respect to the major concerns of the subjects); relevance (if it fits and works it has relevance) and modifiability (if new data warrants modifications). Glaser contends that the theory is too fluid and changeable in time to consider reproducibility. The theory is not verified or thrown out, but modified if needs be.

SGT: Three levels of criteria are proposed to judge the theory.

- Firstly, the validity, reliability and credibility of the data;
- Secondly, the adequacy of the research process (7 criteria);
- Thirdly, the empirical grounding of the research findings (7 criteria).

The criteria can be found in Strauss and Corbin's book [34].

5. CONCLUSION

From the above comparative discussion it can be seen that the Glaserian and Straussian grounded theory methods have a few similarities (for example, both generate theory grounded in the data and both require the researcher to conceptualize), but differ vastly in approach, initial considerations, analysis principles, coding techniques, writing of memos and use of diagrams, the writing phase and the criteria by which the product is finally judged. Both have merit as research methods, but the researcher must make a decision early on in the research as to which method (s)he wants to use and clearly identify the method in the research writing. They cannot be mixed. Both methods are difficult in that they need the researcher to conceptualize the data. Although the Straussian method gives more guidelines, it suffers from unlimited questioning which needs to be controlled and justified by the researcher. The preliminary answers to the questions need to be verified (research papers using this method are very sparse on explaining how this verification is done). The ability to ask the right questions relies on the knowledge and skills of the researcher. The Glaserian method, on the other hand, allows for more creativity, but needs a high aptitude for conceptualization and skill in the use of theoretical codes. The researcher must have faith that the theory will emerge from the data and resist the temptation to preconceive the theory.

For either of the methods to generate credible results, any researcher new to grounded theory needs to take into account that (s)he will need to spend a substantial amount of time on becoming skilled at using his/her method of choice. Using the 'grounded theory' name to justify research that does not comply fully with either of the two methods can be challenged with regard to legitimacy as good research or discarded as hearsay or an anecdotal story [1]. This is becoming more important as the popularity of the Glaserian and Straussian grounded theory methods is growing, and more and more researchers word-wide are learning how to use these two methods for research.

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