

Creating and Sustaining Transparency in Information Systems Research: the Classic Grounded Theory Methodology (CGTM) perspective

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Abstract

The Classic Grounded Theory [CGT] research method reveals latent patterns of human behavior. It is a general research methodology because it uses both qualitative and quantitative data. CGT's main objective is to discover a robust, empirically derived hypothesis or core variable. The core variable captures the respondents' main concern. It is so called because the core variable explains most of the variation in the data. A particular feature of the CGT research method is that it is transcendent of both time and place. This is because CGT delivers a conceptual explanation rather than a low-level, descriptive, context-based narrative. As the number of researchers using CGT increases, so does the potential for more confusion regarding the legitimate criteria for its evaluation. To help eliminate confusion, this paper investigates how to create and sustain transparency when using the Classic Grounded Theory research method. This will hopefully enable researchers, supervisors, and their respective institutions to make more informed decisions about evaluating research that has used the CGT methodology.

Keywords: Classic Grounded Theory, transparency, theoretical sensitivity, theoretical memos, Classic Grounded Theory evaluation

1. Introduction

The main objective of the Classic Grounded Theory (CGT) is to discover a robust, empirically derived hypothesis or core variable. The core variable captures the respondents' main concern. It is so-called because it explains most of the variation in the data. A particular feature of the CGT research method is that it transcends both time and place (Glaser 1978, 1992, 1998, 2000, 2003, 2008, 2009). This is because CGT delivers a conceptual explanation rather than a low-level, descriptive, context-based narrative. The emergent grounded theory must earn its way by demonstrating that it represents the main concern of those being researched (Glaser, 1978). There are four main criteria for evaluating CGT. They will all be discussed in more detail later in this paper (Glaser & Strauss, 1967; Glaser, 1978, 1992, 1998, 2001). Unfortunately, some researchers claim to use CGT, yet they have simply borrowed its powerful jargon to legitimize their work without adhering to all its tenets (Glaser, 2006). This has perpetuated confusion among researchers, sponsors, and institutions about how to evaluate CGT research projects.

This paper will clarify the confusion about how transparency can be created and sustained throughout the CGT process. The paper has four main sections: a clarification of the main purpose of the CGT research method, an explanation of the CGT process, a detailed outline of how transparency is both created and maintained throughout the CGT process, and finally, how CGT must be evaluated.

2. Clarification of the main purpose of the CGT research method

This research method is a latent pattern indicator. It achieves this by revealing respondents' deep-seated habitual tendencies. These tendencies will exist whether or not any research is done. They are difficult to identify because respondents are often unaware of them, even though they constitute an important part of their daily behavior.

CGT is a multivariate (Glaser, 1998) process that occurs sequentially, subsequently, simultaneously, serendipitously, and in a scheduled manner. It is the systematic generation of theory from data acquired through rigorous research methods [Glaser (1967, 1978, 1998, 2000, 2007, 2008, 2009)]. It is an integrated set of conceptual hypotheses and probabilistic statements about relationships among concepts. The hypotheses are generated through constant coding and data analysis. CGT is a general research method, not an evidence-based one. This is because using evidentiary data presupposes a deductive, hypothesis-based research method. CGT is a general research method that is mainly inductive. Glaser (1978:134) explains why it is inappropriate to treat CGT as though it were evidence-based.

"The credibility of the theory should rest on its integration, relevance, and workability, not on illustrations as if they were proof. The theory is an integrated set of hypotheses, not of findings. Proofs are not the point."

3. An explanation of the CGT process

CGT is a nonlinear process. Although there are specific stages that the CGT researcher must go through, the order in which they are carried out will change depending on what emerges from the data. This is necessary to reveal the deep-seated patterns of human behavior. The orthodox structure of CGT is as follows:

3.1. Generating Theoretical Sensitivity

Before embarking on any CGT research, the researcher must first develop their theoretical sensitivity. Glaser (1978) explains what this entails. There are already literally hundreds of patterns of human behavior. Having a repertoire of these in advance of doing the research is absolutely essential. Here are just a few examples of theoretical codes:

- (1) Causal consequence models [cause, consequences, contexts, contingencies, covariances, and conditions]
- (2) Process models [stages, phases, polarity, progressions, temporality, and cycling]
- (3) Degree models [cutting points, probability, polarity, continuum, and intensity]
- (4) Asymptote models [maths model for getting as close as possible]
- (5) Isomorphism [maths model how one established theory can trigger a new theory]
- (6) Moment capture [business model which explains how many financial services operate]

Armed with a repertoire of theoretical codes, the CGT researcher can more easily begin to make sense of his data.

3.2. Theoretical Sampling

This is a form of sampling in which, prior to doing the research, it is both inappropriate and impossible to state exactly what data will be needed. This is because the sampling process will only cease once the core variable has emerged. The researcher collects data until he identifies the respondents' main concern. The researcher then samples within his chosen constituency for this newly emerged concept. Once the researcher reaches the point where no more patterns emerge, the data are said to be saturated, and the core variable has emerged.

Theoretical sampling is a process of data collection for generating theory, in which the researcher simultaneously generates, codes, analyzes, and synthesizes data and decides what data to collect next and where to find them. The researcher begins by selecting a context for the research. The researcher then has a series of short conversations with a small number of respondents. This is necessary for two reasons. First, a high level of rapport must be established between the researcher and the respondent to foster trust and respect. This cannot easily happen with a single encounter. Second, the researcher must not use any form of recording or note-taking during the meeting. This both deepens the researcher/respondent trust and increases the researcher's concentration. Immediately after each encounter with respondents, the researcher must document the interaction in a theoretical memo.

3.3. Theoretical Memos

Theoretical memos are described by Glaser (1978:83) as *“the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding”*.

They are the means to abstraction and ideation and can be used continually throughout the CGT process. Initially, they start as short sentences, but as the analysis progresses, they are updated and developed, and can become several pages long.

3.4. Substantive Coding

These are the earliest attempts to highlight data that the analyst believes may be important beyond a simple description of the data's context. These codes are labeled and often gerund forms. In other words, the researcher converts the substantive code label into a verb ending in “ing”. The purpose of this is to sensitize the researcher to the processes and patterns that may be revealed later.

3.5. Theoretical coding

This is a conceptual code. It arises from the synthesis of the substantive codes. Moving from substantive codes to theoretical codes is tricky and often elusive. This can be achieved by examining the interplay among theoretical memos. The main mechanism for this is the constant comparison method. Here, the researcher has to engage both intellect and intuition to shift perspective from low-level, context-based description to higher-level, conceptual abstraction.

3.6. The Constant Comparison Method

The researcher has to painstakingly review all his data and theoretical memos to identify various types of indicators that might reveal previously hidden connections and patterns. There is a hierarchy at play here. It starts with raw data in the theoretical memos and moves to substantive coding, which is then fractured into categories and subcategories. These, in turn, have different properties. Both categories and properties are consistently compared across all theoretical memos. As this process gathers pace, theoretical codes begin to emerge. What begins as a property of a category within substantive codes sometimes emerges as a theoretical code in its own right. Only by constantly comparing the data for differences and similarities can theoretical codes emerge. The exception to this is those rare occasions when the respondent himself is an articulate conceptualizer and is able to step back from his own context and give an authentic explanation of his main concern.

3.7. *Sorting*

This is an iterative process that occurs in the later stages of the CGT process. This is because it ensures that the emerging theoretical codes have truly earned their place. If sorting does not occur several times, it is unlikely that the research will move much beyond low-level narrative description. The principal aim of the sorting process is to ensure that the emerging core variable has been fully saturated and has earned its place.

3.8. *The Emergence of the Core Variable*

The core variable is so called because most of the variation in the data can be accounted for by it. It is the respondents' main concern, as explained at the conceptual level. Frequently, there are also sub-core variables that lead to the core variable.

4. *An outline of how transparency is both created and maintained throughout the CGT process*

4.1. *Generating Theoretical Sensitivity*

Anyone reading a thesis that has used CGT must be able to assess the extent to which the researcher, prior to starting the project, has been exposed to theoretical sensitivity. This will become obvious in the skill with which the researcher deals with his data.

4.2. *Theoretical Sampling*

The researcher must explicitly explain how and why their theoretical sampling has been constructed. There must be a clearly stated, logical argument for the main reasons for his choice. There should be no note-taking or recording during the encounters with respondents.

There are four main reasons to avoid real-time note-taking during interactions with respondents in CGT. First, it allows respondents to feel more relaxed and less threatened by the encounter with the researcher. Second, because the researcher is not taking notes during the meeting, he will have to keep each encounter with respondents quite brief; this greatly assists theory generation by allowing the researcher to examine his data reflectively before arranging subsequent meetings. Third, the grounded theory method is a delayed-action process for both the respondent and the researcher. Thus, a series of brief interactions with the same respondent enables the development of concepts rather than mere descriptions. Finally, the researcher is encouraged to make notes immediately after the encounter with respondents rather than in real time, which forces the researcher to increase his level of concentration during the encounter rather than passively going through a checklist of predetermined questions.

4.3. *Theoretical Memos and coding*

Although there is no single template that all theoretical memos must follow, there are some basic issues that all theoretical memos must address. If these are not present, it would not be transparent to the reader how the researcher progressed from raw data to the emerged core variable. All memos should include the following to meet transparency requirements:

- (1) Memo Title
- (2) Summary of any substantive codes, categories, and properties
- (3) Conceptual indicators [These are important links that bridge the gap from substantive description to conceptual explanation]
- (4) Emergent theoretical codes, categories, and properties

- (5) A statement about the type of data the researcher believes he has been given by the respondent [Baseline – reliable, properly lined - manipulated, vague – economical with the truth, or interpreted data – edited]. It does not matter at all when doing CGT what type of data the researcher has, because everything is data. If people are being untruthful, for example, that is probably more interesting than if they were being honest. What is of the utmost importance is that the researcher fully understands what type of data he has.
- (6) A clear separation of empirical data from conjectural data. Both are important in CGT, but they are quite different types of data and need to be treated accordingly.
- (7) How has the data been fractured? Which conceptual and theoretical perspectives has the researcher used to better understand the latent patterns embedded in the data?
- (8) Which links have been highlighted to other memos from the researchers' bank of memos?
- (9) What unanswered questions arising from the data will the researcher use in his next meeting with the respondent?
- (10) How have the theoretical concepts in each memo been constantly compared and then sorted?

4.4. The Constant Comparison Method and Sorting

The reader of a CGT thesis should be able to easily understand how and why both the constant comparison and sorting processes were operationalized. There are now commercially available computer software packages designed to “speed up” these processes. However, Glaser (1996) strongly advises researchers to avoid their use. This is not for reactionary reasons; rather, the use of computer packages, in Glaser’s words, is “a creative kop out.” He says there are four main reasons why the use of computer software should be avoided when using CGT. Firstly, computer packages are excellent for dealing with very large volumes of data. If the research is using CGT correctly, there is no need for very large volumes of data because latent patterns can be detected from rather small amounts of data. Secondly, Glaser (1996) states that when sorting is done manually, it takes time. This time can be used creatively and productively by the researcher to reflect on the data itself. CGT is a delayed-action phenomenon for both the researcher and the respondent. Thirdly, when a CGT researcher is faced with having to manually analyze a mass of his data, it can seem overwhelming and can create a degree of anxiety. This anxiety results in fear or psychological regression. However, the CGT researcher needs to develop skills to cut through the uncertainty in order that the authentic latent emerges rather than being forced. Computer packages to date are unable to do this. Finally, none of the currently available computer software packages have been written by people who fully understand the CGT process. er to demonstrate to the reader a pathway through the data showing how the raw data were transformed into the core variable. But it should not be treated as evidence. It should instead be presented in a transparent way so that the reader can immediately understand how the core variable emerged. This can be achieved in a PhD thesis by publishing thin, deep slices of data in the appendices of the thesis for all to see.

5. How CGT must be evaluated

The grounded theory research method is a general inductive methodology that can be applied to all types of data, both quantitative and qualitative, or a combination thereof (Glaser, 1978, 1998). It is not a subset of Qualitative Data Analysis (QDA). Therefore, QDA criteria are inappropriate for evaluating research conducted using the grounded theory research method.

Glaser (1978, 1998, 2000, and 2001) reiterates the four main criteria for evaluating a grounded theory study as follows:

(a) Fit

Fit of a concept means that it adequately reflects the data it purports to express. The categories must fit the data used to create the theory. Ungrounded assumptions and forcing the data into preconceived concepts derail fit in CGT, as well as the theory's relevance. (Fit corresponds to positivistic validity; however, it is fit in action and usage, not by testing.) In comparison with preconceived research, such as hypothesis testing, data that can not be forced are discarded rather than used to correct categories. Data, and only data, are used for the development of theory, making CGT fit (Glaser, 1998). Fit can be expressed as refit or emergent fit. Categories emerge so quickly during research that they must be refitted to the data as the research proceeds, to ensure they fit all the data they purport to indicate, increasing transparency. Categories can emerge between data and pre-existing categories (Glaser, 1978).

(b) Workability

How does the core variable account for respondents' continual resolution of their main concern? The emergent GT must clearly explain what is happening and why, and, by doing so, should be able to predict future behavior (Glaser 1978, 1998, 2001).

(c) Relevance

How has the emerged core variable been received by the members of the constituency from which the data was drawn? Prior to the research commencing, it is very likely that respondents would be unable to articulate their main concern. Once they have read the research, they should be able to instantly recognize the emerged core variable as authentic.

(d) Modifiability

The theory is considered modifiable if it is easy for subsequent CGT researchers to catch up on what has been done so far and to modify or refine the theory as they collect and code new data (e.g., code new data for emergent fit) without invalidating the theory.

Questions about transparency raised by universities, such as "How can research using CGT establish a chain of evidence? How does this reconcile with the approach of not recording and not taking notes in interviews? How will you demonstrate the chain of evidence from data to concept/theory?" imply an assumption that the collection of evidence-based data must be accurate.

CGT is an inductive research methodology, so it is appropriate to use only a legitimate set of evaluation criteria as outlined by the CGT's co-organizer Glaser (1978, 192, 1998, 2000, 2001, 2003, 2005, 2007, 2008). However, there must be total transparency when using CGT so the reader can more easily and clearly see how the emergent core variable arose.

Glaser (2007:41-42) explains that the level of misunderstanding about the grounded theory research method persists among many academics because they fail to clearly distinguish between "conceptual generalizations" and "descriptive generalizations".

"The constant comparative method [at the heart of CGT] was developed in 1967 to generate concepts by constantly comparing indicators of a latent pattern. After several comparisons, the result is a concept that names the pattern and its properties. The category is abstract with respect to time, place, and people. The conceptual categories apply with emergent fit. The formal CGT research generates categories that relate to each other as generalizations."

In contrast, descriptive comparisons are as old as research itself. They simply compare differences and similarities and provide a summary of people's social actions over a unit of time. The concern is always accuracy, which the researcher must constantly contend with. Generalizations are difficult to make from one unit to another and even within the unit

studied. These are the problems of accuracy, respectively, for external and internal validity of descriptive generalizations.

Conceptual generalizations do not have this validity problem. They apply within a context and are modified as needed. For example, controlling clients by pseudo-friending simply varies by client type and client condition.

Finally, Glaser (2009:15) offers a robust response to the persistent misconceptions about CGT articulated by Bryant & Charmaz (2007).

"Data worries dominate the GT jargonizing of Quantitative Data Analysis (QDA) issues in the Handbook. And why shouldn't they? Worrisome accuracy is the central issue of QDA. QDA research has to yield accurate description, which puts an emphasis on analyzing the data used in any research every which way to see what, indeed, is being described and is verifiable. And furthermore, how fast will the description get outdated, and if it can be momentarily generalized. This is a perennial, unsolvable problem. It totally neglects the conceptual level of GT, which is free of and abstracted from place, time, and people, and hence free of worrisome accuracy. Comparisons generate a GT's constant concept modifiability."

The transparency of a fully grounded theory will be achieved only when the reader can clearly see how the researcher progressed from raw data to the final integrated cover variable. If the researcher who uses the CGT research method follows the guidelines outlined in this paper, this will be achieved.

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