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Multi-Grounded Theory in Practice – a Review of Experiences from Use

Stefan Cronholm

Dept. of Computer and Information Science
Linköping University
SE-581 83, Linköping Sweden
Email: stecr@ida.liu.se

Abstract

This paper tries to answer the question: What problems and strengths exist from the practical use of Multi-Grounded Theory? Multi-Grounded Theory is a qualitative research methodology aiming at generating theory that is grounded both in data and in established theory. It challenges some corner stones in Grounded Theory and can therefore be viewed as a reaction against Grounded Theory. This paper constitutes a part of a larger study and in this part we are analysing and presenting experiences from use of Multi-Grounded Theory. The aim of collecting experiences from use is to achieve a base for improvements and refinements.

INTRODUCTION

This paper reviews the experience and critique of Multi-Grounded Theory (MGT) and Grounded Theory (GT) in practical use. GT is a qualitative research methodology aiming at generating theory that is grounded in data (Glaser & Strauss, 1967; Strauss & Corbin, 1998). MGT is a qualitative research methodology aiming at generating theory that is grounded both in data and in established theory (Goldkuhl & Cronholm, 2003; Cronholm, 2004).

MGT is based on Grounded Theory (GT), but can also be understood as a reaction against GT since it challenges some corner stones of GT. MGT was first presented in Goldkuhl & Cronholm (2003) as a theoretical framework. This means that it was not presented at the methodological level and therefore lacks details of procedure and examples. In Cronholm (2004) a proposal of methodological issues and illustrative examples was added to MGT. The aim of these examples is to support users in understanding important concepts and how to follow the process of generating theory. This paper concerns the empirical grounding of MGT and therefore works as a complement to earlier MGT papers. In this step of the development process of MGT we have studied MGT and GT in practical use. We have done that in order to understand how users perceive the MGT in relation to GT and how to get ideas for improvements. The reason for analysing use of both MGT and GT is that MGT and GT partly overlap and that the differences between MGT and GT will become clearer.

This paper tries to answer the question: What problems and strengths exist in the practical use of MGT? In this respect this paper is more pragmatic since we review experiences and critiques from concrete usage situations. This paper could be understood as a complement to earlier research that is of a more abstract and theoretical nature (vide Babchuk, 1996; Rennie et al, 1988).

Methodology users can be seen as novices or experts or something in between. In this study we are focusing on novice methodology users' experiences. The reason for analysing novice users' experiences is that we want to understand if MGT is applicable for users without or with a low pre-understanding. If novice users experience MGT as too complex and as having a high learning threshold, there is a risk that they never will become expert users. After this introductory section a short description of MGT will follow. The next section describes the research methodology followed by a presentation of the results. Finally, in the last section the conclusions are presented.

SHORT DESCRIPTION OF MULTI-GROUNDED THEORY

The aim of this section is briefly to describe MGT and its relationship to GT. The interested reader should confer Goldkuhl & Cronholm (2003) for a more full description. More or less GT prescribes a strict inductive way of generating theory from empirical data. Different coding processes (open coding, axial coding, selective coding) are performed which implies abstracting and relating categories to each other. The use of established theoretical categories when studying data should be avoided. GT has been criticized for this pure emergent procedure. This inductive way of working with data is conceived as a major strength of GT, but also as a weakness. Rejecting the use of established theories implies a loss of knowledge. Established theories can act as a source for inspiration and also as a challenge to abstractions made from empirical data. There is a potential to compare and

contrast the empirical findings and abstractions to other theories. We claim that theory development should aim at knowledge integration and synthesis.

In order to incorporate established theories in the theory development process the concept of MGT is proposed. MGT can be viewed as a reaction against GT and tries to combine certain aspects from inductivism and deductivism. In a dialectical spirit we try to abolish oppositions through avoiding weaknesses and incorporating strengths in each approach. To combine inductive and deductive thinking is sometimes called abductive (cf e.g. Peirce, 1931-35; Alvesson & Sköldberg, 1999). We will not use this concept in our text. It is important to be explicit when an inductive vs. a deductive strategy is applied (see Figure 1).

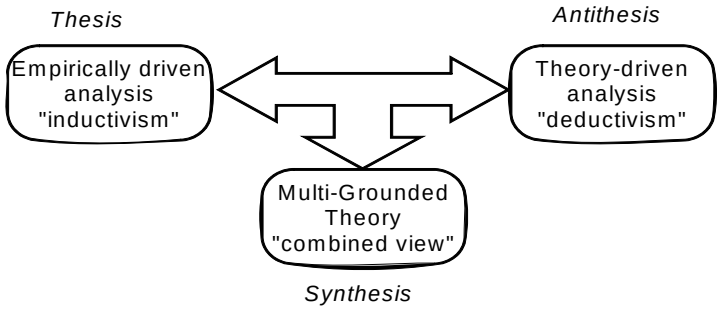

Figure 1: Multi-grounded theory as a dialectical synthesis between inductivism (GT) and deductivism

MGT differs between generation and grounding/validation. According to MGT there are three kinds of work:

- Theory generation
- Explicit grounding
- Research interest reflection and revision

Theory generation embraces the stages of inductive coding, conceptual refinement, building categorical structures and theory condensation. Inductive coding corresponds to open coding in GT. The researcher should keep an open mind towards the data and acts without constraints from pre-categorisations. Conceptual refinement means that the researcher should not take empirical statement for granted. He/she should have a critical attitude towards what has been said or observed. To start building categories on vague formulations in data will not render any valid theories. There should also be an ontological and linguistic determination of the phenomenon identified. MGT introduces procedures for a critical category determination. Every category that is developed should be reflected upon concerning its ontological status. In Goldkuhl (2002) there is a description of a procedure for ontological determination of scientific categories.

Building categorical structures corresponds to axial coding in GT. An action-oriented paradigm model is used to support the building of categorical structures. The stage of theory condensation corresponds to selective coding in GT. The grounding/validation in MGT consists of three types of explicit grounding processes (see also Goldkuhl, 2004 for ideas about multi-grounding):

- Theoretical matching
- Explicit empirical validation
- Evaluation of theoretical cohesion

The concept of grounding means an analysis and control of the validity of the evolving theory. The three grounding processes correspond to three kinds of validity claims: theoretical, empirical and internal validity. Theoretical validity means that the theory is in accordance with other theoretical abstractions. The evolving theory and its categories is matched in that way that it is compared and contrasted with other existing theories. This stage does, thus, imply theoretical grounding. References can be made to external theories and abstractions with the purpose of providing theoretical warrants. Theoretical matching may lead to revisions of the evolving theory. Categories from other theories can be proven to be more adequate and they can replace some formulated earlier categories.

Explicit empirical validity means that the theory is in accordance with empirical observations of the world. Validating the theory means a focus shift from theory generation towards control and testing of validity.

Evaluation of theoretical cohesion means an internal grounding. The conceptual structure of the evolving theory is systematically investigated. Consistency and congruency of the conceptual structure are checked. There may be a need for good illustrations of the theory for such an internal validation. MGT proposes the use of graphical illustrations besides textual presentations. During the process of theory development the research interest should be reflected upon. Gathering and analysing data will successively increase the knowledge of the researcher. This increased knowledge may lead to a revised or refined research question that redirects the empirical and theoretical orientation.

BRIEFLY ABOUT THE DATA SOURCE

The experiences of MGT are gathered from a PhD course concerning qualitative analysis and theory development. In this course the PhD students used GT and MGT as instruments for analysis and theory development of different real life situations. The PhD students were instructed to log experiences from using the methodologies and they were informed that the course examination consisted of both a presentation of how grounded theory has been used and a critical review of the methodologies. Both of these areas have been data sources for this study. The criticism of MGT has been in particular interest for this paper. The variant of GT used is the one presented in Strauss & Corbin (1998).

The reason for choosing a doctoral course as a data source is that all the PhD students used the methodology for the first time. They were novice users. Since we were the lecturers for the course, this also meant that we had ready access to the data source. Grounded theory is often used in psychological and sociological research. The major subject of the PhD students is information systems. Examples of situations studied by the students are e-government in the State Audit Institution, grading at Linköpings University, geographical information systems (GIS), a gamma knife system and conditions for implementation of 24/7 agencies. In total, experiences have been gathered from 11 student reports.

RESEARCH METHOD

This study is part of a larger context (see Figure 2). The idea of developing and validating MGT can be seen as an iterative process consisting of 1) development of an theoretical framework (Goldkuhl & Cronholm, 2003), 2) adding methodological issues and proposals for notation Cronholm, 2004) and 3) empirical grounding (this study).

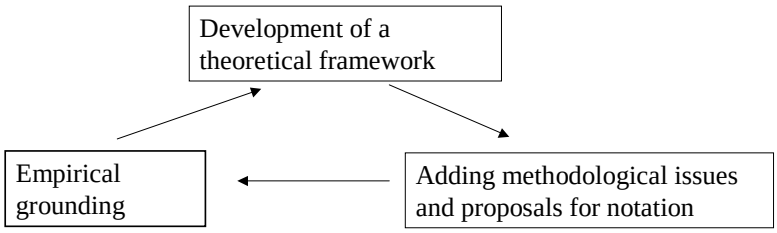

Figure 2: This study in relation to the larger context

An important question that affected how we decided upon the choice of research methodology was “What kind of knowledge are we looking for?” Our research question reads “What problems and strengths exist from the practical use of Multi-Grounded Theory?”. This question means that we are interested in an understanding of how MGT was adopted. To be able to suggest improvements of MGT we were also interested in the question why these strengths and problems exist. In other words we have also an explanatory interest. To be able to explain something, we must first understand the phenomenon that we are studying. According to Kvale (1989) and Strauss & Corbin (1998) you should use qualitative approaches when you are interested in this type of knowledge. Kvale (1989) claims, “the aim of qualitative approaches is to achieve a deeper understanding of a phenomenon”.

Another question that helped us to decide upon the research methodology reads “Where does the knowledge that we are looking for exist?”. We were interested in novice methodology users’ experiences so we needed to access the PhD students’ understanding of MGT. We accessed the PhD students’ experiences through written reports consisting of a criticism of MGT. These written experiences, expressed in a free format, were our data source. Using a free format means that no specific questions were asked. The reason for using an unstructured form of data collection was that we preferred to gather the students’ opinions on a broad spectrum. Since this was the first time of introducing MGT we wanted the PhD students to express their experiences with an open mind. Being unprejudiced in the data collection phase is an imperative of qualitative analysis (Glaser & Strauss, 1967; Strauss & Corbin, 1998).

Having decided upon the data source the next question was to decide upon "How should we analyze the data?". We decided to induce statements/categories and try to relate the categories to each other according to the suggested action paradigm model (i.e. in terms of condition – action/interaction – consequences), by Strauss & Corbin (1998). Pettigrew (1989) claims that this way "provides an opportunity to examine continuous processes in context in order to draw out the significance of various levels of analysis and thereby reveal the multiple sources of loops of causation and connectivity so crucial to identifying and explaining patterns in the process of change". Another reason is that the PhD students' criticism was written in a free format and therefore it would be hard to use a statistical method. Examples of analytical questions asked to the data material are "Why is this problematic?", "How did the PhD student use this recommendation?", "How did the PhD student understand this part?" and "Why is this considered as a strength?".

Since MGT and GT partly overlap it was important to understand which of the methodologies the PhD students criticized. The relation between MGT and GT is pictured in Figure 3. Area A consists of parts of MGT that not are represented in GT such as theoretical matching. Area B consists of parts that are represented in both methodologies such as inductive coding. Area C consists of parts of GT that not are represented in MGT such as pure empirical driven analysis. The criticism has been related to one of these areas.

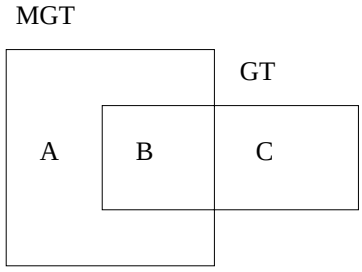

Figure 3: The relation between MGT and GT

Furthermore, the PhD students' experiences have been related to the different kinds of work (theoretical generation, explicit grounding and research interest reflection and revision) in MGT. Some experiences are considered as being of more general nature. Finally, each category is viewed either as a problem or as a strength. The categories generated are not analyzed according to their relative importance. In order to do that, we need more data from other data sources.

The findings in this paper can be viewed as a hypothesis. Arthur (1983) claims that many theories that have been developed have been tested by irrelevant hypotheses. The hypothesis that we have generated is grounded in empirical data through the PhD student's experiences of how MGT has supported their analysis. Pries – Heje (1992) claims that one of the most important strengths when building theory from data is that empirical data "automatically" grounds the theory. This implies that there is a good traceability between data, categorization and theory.

RESULTS

This section describes identified experiences in terms of problems and strengths. Problems and strengths are presented respectively for the different areas (MGT, MGT/GT and GT) that are discussed above and a reference is given to the according to the kind of work presented in MGT. All the experiences are viewed either as a condition or as a consequence.

Criticism related to MGT (area A)

Problems

The first problem identified relates to theoretical generation and concerns ontological and linguistic determination. Some of the PhD students thought that the reason why this work should be done was not enough explained. Consequently, the perceived lack of explanation led to problems in understanding the usefulness of this method part.

The PhD students also criticized the lack of proper notation techniques. They claimed that the methodology should be clearer about how to present categories and their relationships. They maintained that there should be more developed notation techniques. Several notation techniques are suggested, but the PhD students meant that they lack precision and semantics. For example, there was a need for expressing a more precise logic in regard to conditions and actions. There was also a need for expressing recursion. The unsatisfying notation techniques led to a large variation in illustration of results.

Another perceived problem is that MGT recommends a not too unfocused research question that should guide the data collection. This can be seen as a conflict to the recommendation of an open-minded approach in the stage inductive coding. In other words, the research question should be well reflected and at the same time should the domain be approached with an open mind (see table 1).

Table 1: Perceived problems in MGT (area A)

Conditions	Consequences	Kind of work
Week explanation of why ontological and linguistic determination should be used.	Problems in understanding the usefulness. Several PhD students did not use this tool.	Theory Generation
Insufficient notation techniques.	Illustrations varied greatly among the students. The PhD students made innovations.	Theory Generation
Recommendation to use a not too unfocused research question.	A conflict to the recommendation of an open-minded approach in the stage inductive coding.	Research interest reflection and revision

Strengths

Besides a number of problems, the PhD students have perceived several strengths. Two strengths were identified for the stage conceptual refinement. The first concerns the risk of that the researcher could take an empirical statement for granted. MGT has a critical view of data and recommends that methodology users should look behind informants' utterances.

Above is ontological and linguistic determination discussed as a problem. This was also considered as a strength from some PhD students. These students meant that using the ontological and linguistic determination improved the quality of the categorisation.

Furthermore, the problem of unsatisfying notations techniques is discussed above. Although there are some perceived lacks in the notation techniques, the PhD students thought that the notation techniques suggested in MGT makes the methodology more accessible than the notation techniques suggested in GT. The added notation techniques in MGT supported the abstraction of categories, category relation, communication between analysts (if several), the communication to other researcher and practitioner. They have also improved the visibility.

One of the major strengths identified is that MGT acknowledges existing theories. This acknowledgement led to an increased acceptance of the methodology, improved explanation power of the evolving theory and a possibility to check that the analysis is coherent to existing theory. This possibility was perceived as a quality control and strengthens the PhD students' confidence that the evolving theory is coherent to existing theory. Furthermore, the PhD students also thought that evaluation of theoretical grounding was useful in order to check logic and internal congruency.

Gathering and analysing data will successively increase the knowledge of the researcher. MGT encourages a continuous reflection and revision of the research question. The PhD students understood this encouragement useful since it supported effectiveness and set focus on the right issues. One of the most positive strengths was that MGT supports both theory generation and theory validation. This comprehensive view is perceived as very positive among the PhD students. Finally, the order between inductive work and theoretical matching is also perceived as positive (see table 2).

Table 2: Perceived strengths in MGT (area A)

Conditions	Consequences	Kind of work
The risk that the researcher could take empirical statement for granted is discussed. Recommendations for looking behind these statements.	The informants' utterances were carefully analysed in order to reduce the risk of an over-belief that collected data are "true".	Theory Generation
Encouragement to use ontological and linguistic determination.	Supports improved categorisation.	Theory Generation

Added graphical notation techniques.	Improved visibility, supported abstraction of categories, supported category relation, supported communication between analyst (if several) and supported the communication to other researcher and practitioner.	Theory Generation
MGT acknowledges existing theories.	Increased methodology acceptances. Improved explanation power of the evolving theory. Possibility to check that the analysis is coherent to existing theory.	Explicit grounding
Recommendation to use evaluation of theoretical grounding.	Support logic checking and control of internal congruency.	Explicit grounding
MGT encourages research question reflection.	Support for being effective and setting focus on the right issues.	Research interest reflection and revision
Recommendation to perform both theory generation and theory validation.	A comprehensive view is supported.	General experience
The order between inductive work and theoretical matching.	Existing theory is used as grounding of the evolving theory and not as a starting point that governs analytical work.	General experience

Criticism related to MGT and GT (area B)

Problems

A problem perceived is that the PhD students in the beginning of the analysis come up with too large and diverged sets of categories. This amount of categories led to problems with overview and problems in managing the categorical structure. There was a temporary frustration that disappeared after a while when more central categories began to emerge and when the PhD students become able to see groups (contexts) of categories. Rennie et al. (1988) discuss meaningful units of individual concepts as an alternative. A meaningful unit is a naturally delimited context. Several PhD students thought that building categorical structures with action categories as a base should be emphasised. They meant that the identified actions worked as a driving force for the progression. Having the action categories as a base will make it easier to identify categories that can be characterised as conditions or consequences.

Some PhD students perceived the method descriptions as too general while others perceived the method description as too detailed. Consequences are that some PhD students thought that MGT would offer method support and some that MGT would offer more room for flexibility. Further, the PhD students meant that following MGT is a time-consuming process and they meant that this way of work is unrealistic because in a real situation there is limited resources. Carrying out qualitative analysis is time consuming. It takes time to carefully ground theory in data. The pay-off comes when patterns arise among data and theory evolves. One way to reduce the time spent can be to use computer-based support when working with a large amount of data. There are some present computer-based tools such as QSR Nud*ist (QSR International, 2002b), Merge for Nvivo (QSR International, 2002a) or Atlas.ti (Atlas.ti, 2005) Some PhD students thought that the methodology is too complex and claimed that “this is not for novice users”. These students meant that MGT is probably more useful for experienced users.

The PhD students thought that the methodology structure implied a too strict sequential usage. First they performed inductive coding and then they build categorical structures. They meant that the iterative approach was not emphasised enough. This led to ineffective ways of working because novice users tend to slavishly follow the methodology. This behaviour is also in line with how novice users react when using information systems methodologies (vide Cronholm, 1995), (see table 3).

Table 3: Perceived problems in MGT and GT (area B)

Conditions	Consequences	Kind of work
Insufficient description of how to identify and relate categories.	Too large and diverged sets of categories emerged.	Theory Generation
Description level: Too detailed descriptions in some stages. Too general descriptions in some stages.	Not enough flexibility in the method. Not enough method support is offered.	General experience
Extensive and complex methodology.	Time-consuming process. "This is not for novice user".	General experience
Methodology structure and presentation.	A too strict sequential usage (novices tends to slavishly follow the methodology).	General experience

Strengths

The methodology offers several generative and analytical questions. The PhD students understood this tool as a good support for analysis work. The recommendation to perform empirical validation was also appreciated by the PhD students. They meant that empirical validation supported traceability between categories and data. This traceability supported the argumentation for the evolved theory and that the theory became anchored in the "reality".

Another perceived strength is the recommendation to identify and enrich undeveloped areas. Following this recommendation has improved the categorisation work and the explanation power of the developed theory. The PhD students also thought that using the methodology carefully implies that you become an expert on the data material. Furthermore, the PhD students maintained that the methodology contributed with a systematic that brought order to the data and this order supported traceability between the data and categories (see table 4).

Table 4: Perceived strengths in MGT and GT (area B)

Conditions	Consequences	Kind of work
Generative and analytical questions are offered.	Good support for analysis.	Theory Generation
Recommendation to perform empirical validation.	Support for traceability between theory and data. The theory becomes anchored in the "reality".	Explicit grounding
Encouragement to identify and enrich undeveloped areas (theoretical sampling).	Improved categorisation and explanation power in the developed theory.	General experience
Careful analysis of data.	You become an expert on the data material.	General experience
Systematic work is highly supported.	Ordered data and trace ability from data to categories.	General experience

Criticism related to GT (area C)

Problems

The method user is encouraged to approach the study domain with an open mind. The consequence of this encouragement was that the PhD students perceived it hard to get rid of pre-assumptions. They meant that in order to interpret data you have to use your own earlier experiences and existing conceptual structures. Further they pointed out that if you have a high knowledge about the studied domain it is hard to just "let the data speak". Personal opinions may easily be incorporated in the analysis.

Another problem identified is that that one central category should be identified (Strauss & Corbin, 1998). This central category shall represent the main theme of the research. Some of the PhD students arrived at several core categories. The experiences identified are that some of the PhD students thought it was hard to integrate all the categories into one central category. The output from axial coding can be seen as several clusters of categories. The problem was to integrate all the clusters into one big cluster. In other words, it was hard to identify one major theme in the data material (see table 5).

Table 5: Perceived problems in GT (area C)

Conditions	Consequences	Kind of work
Encouragement to approach the domain with an open mind.	Hard to get rid of pre-assumptions.	Theory Generation
Encouragement to identify one central core category.	Hard to integrate all the categories into one central category.	Theory Generation

Strengths

The methodology encourages the user to alternating between micro- and macro analysis. The PhD students understood this recommendations as good support for understanding the both the parts and the whole of the studied domain (see table 6).

Table 6: Perceived strengths in GT (area C)

Conditions	Consequences	Kind of work
Encouragement to alternating between micro- and macro analysis.	Good support for understanding both the parts and the whole.	Theory Generation

CONCLUSIONS

The analysis of how MGT and GT are perceived has resulted in both problems and strengths. One of the major strengths in MGT is the possibility to incorporate established theories and validate the evolving theory against existing theory. Goldkuhl (2004) claims that external grounding in the form of established theories is an important source for validation of action knowledge. This means that the risks for isolated knowledge development and a non-cumulative theory development are reduced. To illustrate that theory development is cumulative we use a well-known quote by Newton (1676): "If I have seen further it is by standing on shoulders of Giants".

Another strength is the added notation techniques. The added notation techniques are considered as an improvement compared to GT but the PhD students would like to have more developed semantics and rules. A probable explanation of this experience is that the PhD students are used to work with information systems methodologies. These methodologies consist of richer semantics for describing processes and data models (vide Rumbaugh et al., 1991; Jacobsson et al., 1992). A third strength is that MGT encourages research question reflection. This is also perceived as a problem. MGT recommends a more focused (but not too focused) research question than GT that should guide the data collection. At the same time MGT recommends an open mind during inductive coding. Theses two recommendations can be viewed as a contradiction. In this respect, MGT needs to be clearer in order to reduce conflicting recommendations.

A problem revealed is the question of description level of the methodologies. In the analysis we have found opinions that the methodologies are too detailed but also that the methodologies are too general described. The contradiction could depend on some parts being perceived as more developed than others. This could also be a question of how much "freedom" the method user prefers, which leads us to the question of standardized work vs. a high degree of freedom (confer Cronholm 1995 for a discussion about methodology and standardization).

Finally, MGT and GT are considered as offering a systematic way of work. To work in a structured way is similar to how design of information systems often is performed. The PhD students recognized similarities in grounded theory with what is called data or object modelling (vide Kructhen, 1999; Howe, 1989) of information systems. Another observation is that the analysis has revealed rather few comments on GT (area C). One possible explanation is that MGT has incorporated and refined several stages from GT in the theory generation work. Another explanation is that we have directed our focus onto comments upon MGT.

Both strengths and problems have been identified in this study. Our aim has been to validate/ground the first version of MGT and we have identified several important ideas for improvements but we have also identified several positive comments that strengthen us in our belief that theory development is a cumulative process. The results are based on only one case study that encompasses 11 course reports. The findings can therefore be viewed as hypothetical. A complementary qualitative study should make it possible to analyse the relative importance of the categories.

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