

Multi-grounded theory – Adding theoretical grounding to grounded theory

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Abstract

The purpose of this paper is to challenge some of the cornerstones of Grounded theory and propose an extended alternative approach for data analysis and theory development, which we call *multi-grounded theory* (MGT). A multi-grounded theory is not only empirically grounded. Three different grounding processes are acknowledged: Theoretical, empirical and internal grounding. We go beyond the pure inductivist approach in GT and add the explicit use of external theories. A working structure of MGT is presented, which can be seen as an extension of Grounded theory.

Key-words: Grounded theory, data analysis, theoretical grounding, empirical grounding, theoretical cohesion

1 Introduction

Grounded theory (GT) is in many fields an established approach for empirically based theory development. GT emerged out of the empirically based sociological theorizing by Glaser & Strauss (1967). It is now a widespread approach for analyzing (mainly) qualitative data in the social science field. GT has systematized the (often difficult) stage of analyzing and abstracting empirical data into categories and theoretical constructs. Through the years GT has developed into different “dialects”. A controversy developed between the two originators. Strauss developed GT further together with Corbin (Strauss & Corbin, 1998). Glaser (1992) attacked this variant of GT for renegading from the basic principles. This has been observed and discussed by several scholars (e.g. Babchuk, 1996; Urquhart, 2001).

In its orthodox form GT prescribes a strict inductive way of generating categories 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. We find the inductive way of working with data as a major strength of GT, but we also conceive it as a weakness. We claim that the reluctance in GT to bring in established theories implies a loss of knowledge. In certain stages of the process of theory development, the use of pre-existing theories may give inspiration and perhaps also challenge some of the abstractions made. There is a potential to compare and contrast the empirical findings and abstractions to other theories. In a pure inductive abstraction there is an obvious risk of knowledge isolation. We claim that theory development should aim at knowledge integration and synthesis.

The purpose of this paper is to challenge some of the cornerstones of Grounded theory and propose a partially alternative approach for theory development which we call *multi-grounded theory* (MGT). We base this alternative approach on GT, we try to include many of its strengths and avoid some of its weaknesses. As a main idea, the alternative MGT approach involves three types of grounding processes:

- Empirical grounding
- Theoretical grounding
- Internal grounding

The authors have several years of experience working with GT; as researchers using GT¹, as teachers on GT and as supervisors for many Ph D candidates using GT and variants of it². These different experiences have been a good basis for developing this alternative approach.

2 Strengths and weaknesses in Grounded theory

Following our approach of using GT as a base for achieving MGT we first have to analyze the strengths and weaknesses in GT. The primary sources for doing this analysis are Glaser (1998), Strauss & Corbin (1998) and Cronholm (2002). Below, we present some of the most important strengths and weaknesses for data analysis and theory generation.

Data Analysis

One strength that we have found in the data analysis procedure is that systematic work is highly supported. This means that the method supports ordering of the data and this order offer trace ability between the data and categories. Further, the category development is unprejudiced and that the methodology users approach should be open minded. Data analysis is not a routine-like process. It is an iterative process between categorisation and creativeness an there is good support for discovering new ideas and relations among categories and properties. This experience of using GT is also in line with Orlikowsky (1993) who claims that the ability to incorporate unique insights during the course of the study is one of the benefits of a Grounded theory research approach. Strauss & Corbin (1998) also claim that open coding is a creative phase and that open and axial coding are not discrete phases.

Another strength is the theoretical sampling process. This is a process aiming at discovering variations among concepts and to enrich the categories in terms of their properties and dimensions. Theoretical sampling means to select new data sources that enrich the evolving theory. In the methodology there is an encouragement for seeking variation among concepts and condensing categories.

One problem in GT is how to cope with a large amount of data. There is no explicit support for helping the user where to start the analysis. Imagine that you have several hundreds pages of interview transcripts. This means that there is an obvious risk for an unfocused analysis and a frustration about a disorder in the data. We think that there is a need for computer-based support when working with a large amount of data. This has been acknowledged by several scholars (e.g. Cronholm, 2002).

There is also a risk that collected data is taken for granted. The information from an interviewee is always results of the interviewee's interpretation. As a researcher we should

¹ We used GT for the first time systematically in 1992 when studying the use of meta CASE tools (Cronholm & Goldkuhl 1994).

² Experiences from Ph D candidates' use of GT has been analysed in Cronholm (2002).

always be critical towards information and try to go beyond what has been said or find alternative information sources that can confirm the data. There might be a tendency in GT of “slavery of data” and what has been said is the “truth”. We have not found this critical stance towards empirical data in the methodology.

Further, there is also risk that the data collection could be too unfocused. If you are too open minded in the data collection phase you will probably end up with a large and diverging amount of data. We think that there is a need for defining a relative explicit research question that supports and governs you in the data collection. Of course, the research question should not be too restricted. There must be possibilities for refining the formulations of the question in the progress of the study.

Be un-prejudiced in data collection and data analysis is an imperative of GT. Being un-prejudiced can mean being uninformed and we believe that there in such cases is a risk of being too naïve and even ignorant when entering the empirical field.

Theory generation

One of the most important strengths in GT is that building theory from data “automatically” grounds the theory in empirical data. This implies that there is a good traceability between data, categorization and theory (e.g. Pries-Heje, 1992). This also means that there are good possibilities for a transparent process. A transparent process increases the credibility of the study.

One weaknesses that we have found is that the GT users are encouraged to rid themselves of pre-assumptions so that the “true nature” of the field of study will come out. A practical implication of this is that GT researchers should avoid reading pertinent literature until the study is finished (Rennie et al, 1988). To ignore existing theory means that there is a risk for inventing the wheel again. As researchers we often build new knowledge on existing knowledge. An isolated theory development also means that there is a risk for non-cumulative theory development. We claim that it is important to relate the evolving theory to related research during the process.

Another weakness is the lack of good illustration techniques. As information systems researchers we are used to work with diagrams as tools for describing, explaining and illustrating problems that we are studying. As we see it, there is a need for more developed illustration techniques that supports especially the axial coding and the final theory.

Besides generating theory there is also a need for grounding the theory. We think that the differentiation between generation and grounding is conceptually unclear. When working with comparing and judging a theory new insight can emerge that could improve the theory. The process of grounding theory is both a checking and a creative process. The process is therefore multi-functional since it has dual aims.

One of the major strengths in GT (Strauss & Corbin (1998) is the encouragement to use a action-oriented paradigm model in the phase axial coding. This encouragement supports the possibility in achieving a well-structured theory.

3 Towards Multi-Grounded Theory

Based on the discussion in section 2 above we will now elaborate on an alternative approach. In a dialectally fashion we will build on GT, but try avoid some of its weaknesses and also incorporate some opposite views. GT favors a strict empirically driven analysis. Start with the empirical data and then abstract and categorize is the motto. GT is as a pure inductive approach contrasted to a theory-driven deductive analysis (figure 1). The main criticism from Glaser (1992) against the elaborated GT approach of Strauss & Corbin (1998) should be understood as a proclamation not to renegade from the pure inductive way of analyzing data.

The approach we present here - multi-grounded theory (MGT) – tries to combine certain aspects from inductivism and deductivism¹. In a dialectical spirit we try to abolish oppositions through avoiding weaknesses and incorporating strengths in each approach (figure 1).

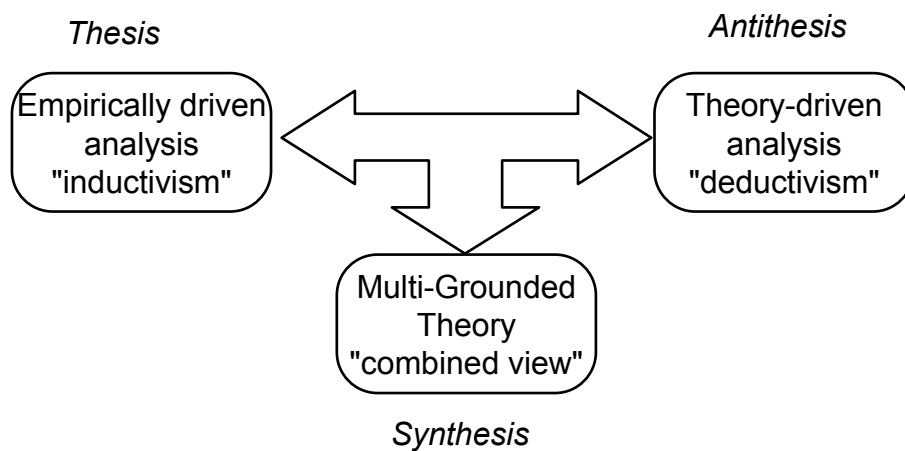


Figure 1 Multi-grounded theory as a dialectical synthesis between inductivism (GT) and deductivism

There is much GT in our MGT approach. We would like to see it as an extension to or modification of GT. We think that Strauss & Corbin (1998) have taken important steps away from a pure inductivist position. We will continue this move away from pure inductivism. This should not be interpreted as we reject an empirically based inductive analysis as is performed in the coding processes of GT. To have an open-minded attitude towards the empirical data is one of the main strengths in GT and this is incorporated in MGT. We have added a more systematic use of pre-existing theories in our approach. We have also added two explicit grounding processes (theoretical and internal) besides the empirical grounding. These different grounding processes are separate processes in the MGT working structure, which will be described below. They also represent the enhanced grounding perspective in MGT: A multi-grounded perspective. We mean that a multi-grounded theory² is a theory grounded in

- empirical data (preferably through mainly an inductive approach)
“empirical grounding”
- pre-existing theories (well selected for the theorized phenomena)
“theoretical grounding”

¹ To combine inductive and deductive thinking is sometimes called abductive (cf e.g. Peirce, 1931-35; Alvesson & Sköldbberg, 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.

² The comprehensive grounding view consisting of three grounding processes emanates from Goldkuhl (1993, 1999). Confer also Lind & Goldkuhl (2002).

- an explicit congruence within the theory itself (between elements in the theory)
“internal grounding”

These different grounding aspects are illustrated in figure 2. The focused theory is related to its different knowledge sources. These knowledge kinds are both sources for theory generation and warrants for its validity.

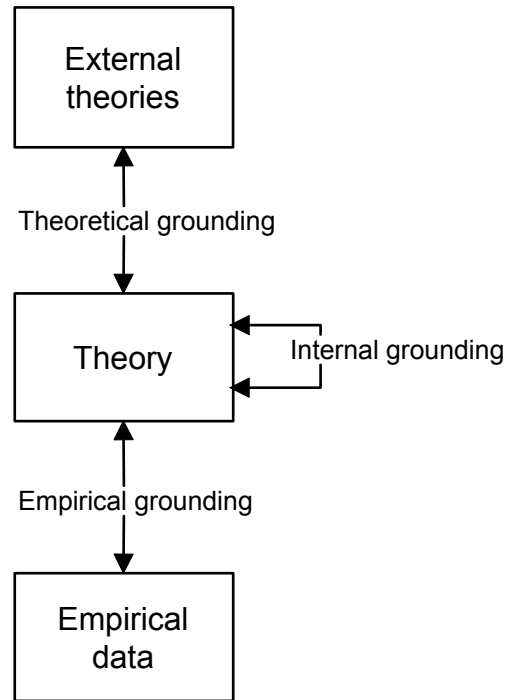


Figure 2 Three complementary grounding sources for a developed theory
(adapted from Goldkuhl, 1999)

One criticism raised in section 2 above was that GT-based analysis can be too unfocused both in empirical and theoretical phases. The research questions may be too vague. According to MGT it is important to be reflective on the research interest of the study. It is possible to be rather open in the research questions, but it is also possible to work with a fairly sharp research purpose. In a pragmatic spirit we think that it is often reasonable to think through one’s research questions to some depth at a start. It is however important to be open-minded during the research process and let empirical observations and theoretical insights influence the research interest. It is fully acceptable to let the research questions develop through the empirical and theoretical work. Compared to classical GT we emphasize to role of theories and research interest more. We stress that the research interest (operationalised in research questions) should evolve over time and that one should use external theories in a constructive way throughout the research process (figure 3).

MGT is an approach for theory development. The process of theory development is divided into three kinds of work:

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

Theory generation

We have argued above for introducing different grounding processes and a continual research interest reflection. We will deepen this argumentation below. First we will describe the work of theory generation, which consists of the following stages:

- Inductive coding
- Conceptual refinement
- Building categorical structures
- Theory condensation

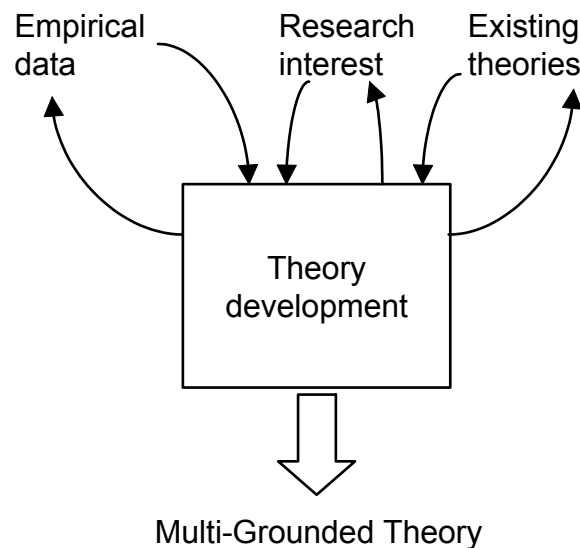


Figure 3 Empirical data, research interest and existing theories informing the development of multi-grounded theory

Inductive coding

Inductive coding corresponds to open coding in GT, both in the working procedure and in the basic view towards the role of data. We emphasize that this initial work shall be done inductively with an open mind and as free as possible from pre-categorizations. Let the data “speak”! It is harder to introduce an open mind later if one has explicitly used some pre-categories early in the process for interpretation of the data. Therefore we argue that the first analysis of the data should be as free as possible from pre-conceptions of the researcher. There is risk that one destroys the freshness of the data if theories and categories are used too early in the process. If there is something to be discovered, then let the conditions be as good as possible for such a discovery. It is harder to discover something if you obtrude your pre-defined categories on the data. We argue here for an adherence to basic principles in GT – the inductive way of working with data. This includes both procedures as e.g. conceptual labelling and the conceptual apparatus (categories, sub-categories, properties, dimensions etc).

Conceptual refinement

In our next step - conceptual refinement - we start diverging from GT. Conceptual refinement means working with the categories in a critical and constructive way. It consists of the following activities:

- Critical reflection on empirical statements
- Ontological determination

- Linguistic determination

It is important not to take the formulations of the empirical statements for granted. Data can and should be challenged. There might be a tendency in GT of “slavery of data”. What are said by interviewees are always results of their interpretations. As researchers we should have a critical stance towards what has been expressed by different informants. We should be cautious concerning the linguistic formulations in the empirical statements. This has to do with the quality assurance of our empirical data. To start building categories on vague formulations in data will not render any valid theories.

We think that many researchers adopt such a critical stance towards their empirical data. We emphasize it here since we have not found such an emphasis in GT.

We introduce also procedures for a critical category determination. In the Strauss & Corbin (1998) version of GT, they describe an action-oriented paradigm model to be used in axial coding when connecting categories to statements. We think that such a pragmatic paradigm model should be used already in earlier phases of category formation. Every category that is developed should be reflected upon concerning its ontological status. What kind of phenomenon is this? Goldkuhl (2002) has described a procedure for ontological determination of scientific categories. This approach is based on an action-oriented ontological framework. This framework is called socio-instrumental pragmatism¹ (SIP). The different ontological categories (realms) of the framework are mentioned below (ibid):

1. Humans
2. Human inner worlds (knowledge, intentions, emotions etc)
 - 2a. Intra-subjective part (individualised)
 - 2b. Inter-subjective part (shared knowledge and social institutions)
3. Human actions
 - 3a. Intervention-as-action (communicative or material actions)
 - 3b. Interpretation-as-action
 - 3c. Reflection-as-action
4. Symbolic objects (signs)
5. Artefacts (artificially made material objects and their processes)
6. Natural environment (objects and processes)

One core idea of this approach is that phenomena have locations. If a phenomenon exists, it exists somewhere in the world. Besides the fundamental ontological question “What kind of phenomenon is this?”, there is a need for a supplementary ontological question “Where does this phenomenon exist?”. Conceptualised phenomena must exist somewhere. The division into different ontological realms is also a determination of principle places of phenomena. It must be possible to give a proper answer to the supplementary ontological question “Where does this phenomenon exist?”.

This kind of ontological reflection and determination is supplemented by a linguistic reflection, also described in Goldkuhl (2002). Inspired by Wittgenstein’s (1958a, b) view on language, Goldkuhl (ibid) describes a way of reflecting on the linguistic character of different categories. Wittgenstein (1958a) pronounces a warning against the use of nouns. Many concepts are often given a substantival form instead of an original adjective or verb form. Falling in the traps of such a noun disease, scientists often search for the essential thing

¹ Besides Goldkuhl (2002) this ontological framework is described in e.g. Goldkuhl (2001) and Goldkuhl & Röstlinger (2002).

behind the concept. But does the concept really represent a separate thing? Or is it only to be seen as an attribute of an object, or as some kind of active process? The ontological questions mentioned above should be supplemented by the following linguistic questions (Goldkuhl, 2002): Is there an adequate correspondence between the category and its word form? Is this category a separate entity, or an attribute or a state of an entity, or some process?

This kind of conceptual refinement should be performed in full iteration with the inductive coding and formulation. This kind of work strategy should be emphasized concerning the whole of MGT: Iterating and alternating between different tasks. We have formulated a principle working procedure, as is done in GT, but it is important to understand that flexibility rather than strict adherence to described order should be adopted.

Building categorical structures

The next stage is building categorical structures. This stage corresponds mainly to axial coding in GT. Categories are combined into theoretical statements. We agree, with Strauss & Corbin (1998), that an action-oriented paradigm model should be used. They assert that “Grounded theory is an *action/interactional method of theory building*” (ibid). They use several generic notions related to action explanations as causal and intervening conditions, context, action/interactional strategies and consequences. To these pragmatic concepts we would like to add some socio-instrumental elucidations following the SIP ontology mentioned above. Another way to put it is to say that we have enhanced the action oriented paradigm model into a socio-instrumental action paradigm model.

The kind of action, we as social scientists, try to understand and explain, is usually social action. This means that the action performed has social grounds and social purposes. It is based on social antecedent conditions and it is socially oriented as having intended effects for other humans. This follows the classical definition made by Max Weber (1978 p 4) of social action: "That action will be called 'social' which in its meaning as intended by the actor or actors, takes account of the behaviour of others and is thereby oriented in its course".

The conditions and results of our social actions may be both signifying (communicative) and material. The affording and constraining nature of material and communicative conditions for action must be acknowledged. Confer Goldkuhl (2001) for a more thorough discussion on this interpretation of the social action concept.

The stage of theory condensation corresponds to selective coding in GT. We do not however raise the same claim for one core category. We agree concerning a need for densifying the theory, but this must not lead to just one main category. Theory condensation is a concluding stage in MGT. It should be preceded by three different explicit grounding processes.

Explicit grounding

We distinguish three types of explicit grounding processes:

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

When we talk about grounding we mean an analysis and control of the validity of the evolving theory. The concepts of validity and grounding are not only related to direct

empirical truth. There are different validity claims¹ concerning theories. The three grounding processes correspond to the following three kinds of validity claims:

- Theoretical validity means that the theory is in accordance with other theoretical abstractions.
- Empirical validity means that the theory is in accordance with empirical observations of the world
- Internal validity means that the theory is considered to be a coherent way of talking about the world

When working with checking these different types of validities, one is concerned to bring forth warrants for the theory; i.e. to check that there are internal and external congruencies. The external congruencies are, as said, concerned with relations to the empirical world and to other theories. These grounding processes will however have other consequences than only explicating warrants. When working with comparing and judging theoretical elements and warrants, insights will emerge that the evolving theory does not fit these warrants. These grounding processes will as a secondary result often lead to modification and further development of the theory. The grounding processes will not only have validity controlling functions. They will also have a generative function concerning the contents and structure of theory. Theory grounding is also theory generation. And the vice versa counts also: Theory generation (as described above) is partially also theory grounding. This is the case because GT is an inductive way of building theory from data. The theory will emerge as an empirically grounded theory.

Explicit empirical validation

If GT contributes with building an empirically grounded theory, why is there - in MGT - a need for the proposed stage of explicit empirical validation? In the coding processes of theory generation, the purpose is to create categories. Explicit empirical validation means that one change this primary focus on generation towards control and test of validity. We claim that there is a need for a comprehensive and systematic check of the theory's empirical validity. This need is operationalised in our approach as this separate and explicit stage.

Theoretical matching

Theoretical matching means that the evolving theory is confronted with other existing theories. The evolving theory and its categories are compared to other the theories. These other theories should cover, or in some way relate to, the studied phenomena. There must be relevant to select the matching theory. Sometimes it will be relevant to use a theory on a very general and abstract level and use it as matching base. In such cases, the questions will be if the evolving theory can be seen as a specialization of the more general theory.

Theoretical matching 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 earlier formulated categories.

¹ The concept of validity claim is developed and used by Habermas (1984) in relation to his communicative action theory. We use it here with partially different meanings. What we mainly use from Habermas is the idea that there might be different validity claims and these can be challenged and vindicated in different ways. Confer Goldkuhl (1999) for a deeper discussion on validity claims in relation to grounding of knowledge.

Outside theories and categories can through this theory matching process be brought into the theory development in much stronger way than is the case in more orthodox GT. Other theories can be used in active ways. It can be used for interpretation of data or generated categories (cf e.g. Walsham, 1995). It can be even used in hypotheses testing purposes towards the generated data. We claim that not only the evolving theory, but also other theories should inform theoretical sampling, which is the later more focused parts of data generation according to GT (Strauss & Corbin, 1998).

In theory matching we let “deductivism” take over. In the initial phases of data analysis and theory generation, we apply an inductive way of working, but now it is time to actively use other theories.

Theoretical matching may also render effects for the external theories. The collected data and the constructed theory may contradict what was earlier claimed in other theories. The comparison may render comments on or substantiate criticism towards other theories.

Theoretical matching can thus lead to three types of results (cf also figure 4):

- Adaptation of evolving theory
- Explicit theoretical grounding
- Comments/criticism towards existing theories

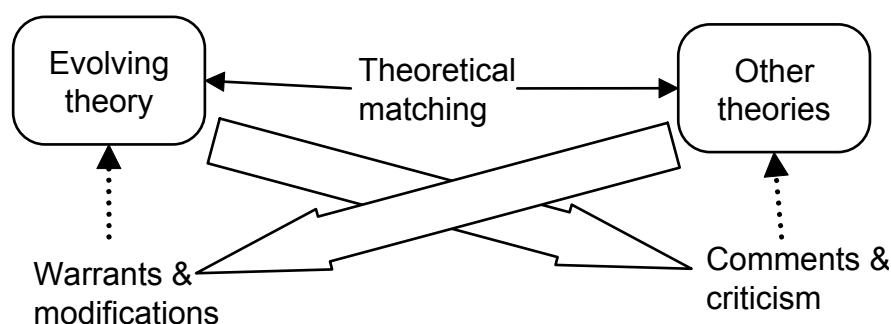


Figure 4 Theoretical matching

Evaluation of theoretical cohesion

Evaluation of theoretical cohesion means an explicit internal grounding. It is a systematic investigation of the conceptual structure of the evolving theory. Consistency and congruency are checked. There may be a need for good illustration of the theory for such an internal validation. We propose the use graphical illustrations besides textual presentations. The use of appropriate diagrams¹ for describing conceptual structures is not only important for these internal grounding reasons. We think that is important in the construction process as well, and also for presenting the theory to others.

¹ We have used different types of diagrams in theory development, as e.g. concept diagrams (for describing categories and relations between them), theory diagrams (for describing structures of theoretical statements) and goal diagrams (for describing goal hierarchies and conflicts). Confer e.g. Cronholm (1998).

Overall working structure

The working structure of MGT has been depicted in figure 5. Theory generation is divided into two parts, separated by the three grounding processes. During the process of theory development, there will be needs, now and then, for shifting focus towards the research interest (i.e research purposes and questions) in order to possibly redirect the empirical and/or theoretical orientation.

We have structured the different tasks in a procedure with a certain order. It should be stressed that, although this structured order, the way of working with analysing data and developing theory according MGT, should be pursued with flexibility alternating and iterating between different tasks.

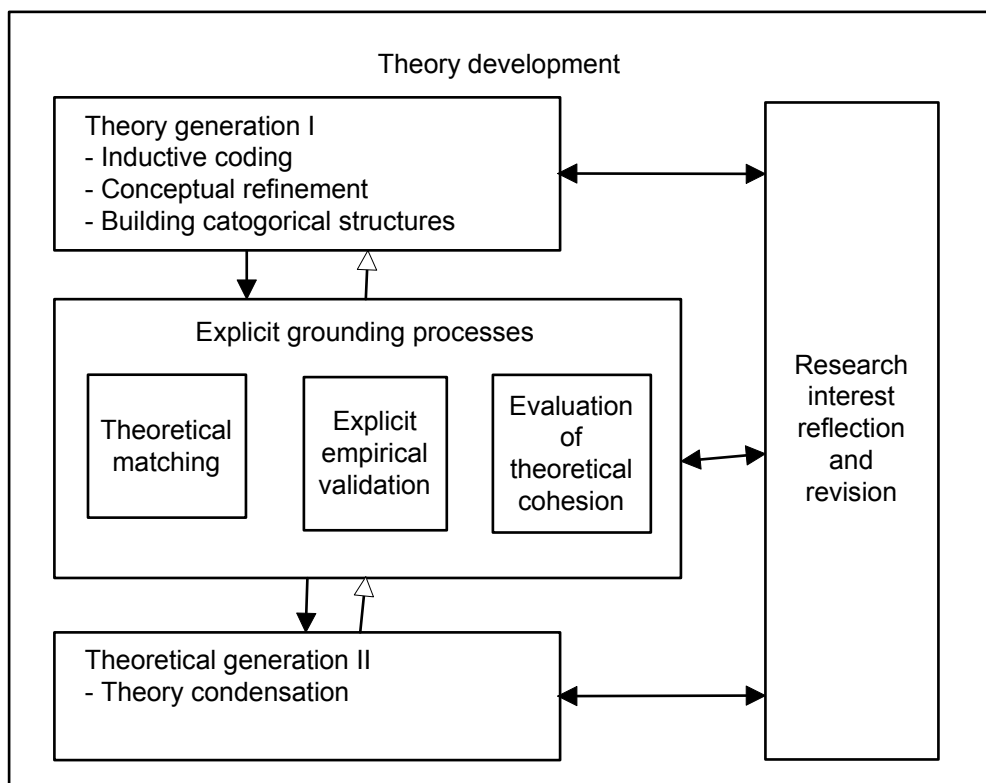


Figure 5 Working structure of the MGT approach

4 Development and application

This approach for multi-grounded theory has evolved over several years' research. The idea of multi-grounding was introduced by Goldkuhl (1993); later refined in Goldkuhl (1999). The GT approach has been used, sometimes enhanced by the multi-grounding perspective, by ourselves and close research colleagues in several projects. Continuously we have moved away from pure inductivism towards this combined approach of data and theory based construction of theories. Another related issue has been the illustration of the evolving theory. We have adapted different notations from the information systems development area and used these for theory modelling. Such modelling is important, as said above, for construction, internal validation and presentation of the theory.

This evolving approach, which we here call MGT¹, has been applied (with different variations) in several research projects. We mention some studies below; there exist several others.

- Activities in software maintenance (Bergvall, 1995)
- Usability of method adapted CASE tools (Cronholm, 1998)
- Use of a change analysis method (Lind, 1996; Lind & Goldkuhl, 2002)
- Inter-organisational data exchange between public authorities (Andersson, 1999)

We claim that we have applied the same principles for MGT when developing MGT, as a kind of meta grounding. This means that we have been governed by an effort for empirical, theoretical and internal grounding of MGT. We claim that such different warrants exist, although it is far beyond the scope of this paper to present a comprehensive grounding in these different respects.

5 Conclusions

We have in this paper been both appreciative and critical towards Grounded theory. We build on several features of GT, but we have also added several others. The GT claim for congruence between data and theory has not to be challenged; on the contrary this is one feature of GT to be sustained. But a new theory should not only be grounded in empirical data. We claim that it also should be grounded in already existing theories. Much of what is done in social research, by support of GT, is based on case studies. There is of course a risk (even if we strive towards analytic generalisation) of over-generalisation from used cases. Using pre-existing theory should reduce the risk of over-generalisation from few cases). Integrating or relating the evolving theory to other theories may increase the possibilities for adequate generalisations.

Through theoretical grounding we want to avoid an isolated knowledge development. When performing pure GT, there is a risk of introvert theorizing. It is important to acknowledge and utilise other theoretical sources. Such other conceptualisations may have a function of adjusting the inductively created abstractions. Further, science evolves through cumulative knowledge development. We claim that there is an imperative for a researcher to try to build on earlier work, and not reinvent the wheel by himself. Working cumulative does not mean to be uncritical and take earlier theories for granted. On the contrary, the imperative for cumulateness includes a critical dimension: Distinguish between what is usable and what should be refuted. Pre-existing theories may also contribute, through their explanatory power, in condensing the theory, which is one explicit aim in GT. As a consequence of these arguments, we have added theoretical grounding to the Grounded theory approach.

References

Alvesson M, Sköldbberg K (1999) *Reflexive Methodology: New Vistas for Qualitative Research*, Sage, London

Andersson B (1999) *Samverkande informationssystem mellan aktörer i offentliga åtaganden*, (in Swedish) Licentiate thesis, IDA, Linköping University

¹ The combination of data-driven and theory-driven analysis supported by the use of explicit modelling has sometimes been called TIM (Theory-driven, Inductive and Modelling based research).

- Babchuk W (1996) Glaser or Strauss? Grounded Theory and Adult Education, presented at *Midwest Research-To Practice Conference in Adult, Continuing and Community Education*, University of Nebraska, Lincoln, NE
- Bergvall M, (1995) *Systemförvaltning i praktiken*, (in Swedish), Licentiate thesis, IDA, Linköping University
- Cronholm S (1998) *Metodverktyg och användbarhet - en studie av datorstödd metodbaserad systemutveckling*, (in Swedish), PhD Thesis, IDA, Linköping University
- Cronholm S (2002) Grounded Theory in Use - a Review of Experiences. in *Proceedings of European Conference on Research Methods in Business*, Reading
- Cronholm S, Goldkuhl G (1994) Meanings and motives of method customization in CASE environments - observations and categorizations from an empirical study. In *Proceeding of the 5th European Workshop on Next Generation of CASE Tools*. Utrecht, The Netherlands
- Glaser B (1992) *Basics of Grounded Theory Analysis*, Sociology Press, Mill Valley, Ca.
- Glaser B (1998) *Doing grounded theory: issues and discussions*. Sociology Press, Mill Valley, Ca.
- Glaser B, Strauss A (1967) *The discovery of grounded theory*, Aldine, New York
- Goldkuhl G (1993) *Välgrundad metodutveckling*, (in Swedish), Working paper, IDA, Linköpings University
- Goldkuhl G. (1999) The grounding of usable knowledge: An inquiry in the epistemology of action knowledge, accepted to *HSS99*, Borlänge, Sweden
- Goldkuhl G (2001) Communicative vs material actions: Instrumentality, sociality and comprehensibility, in Schoop M, Taylor J (Eds, 2001) *Proceedings of the 6th Int Workshop on the Language Action Perspective (LAP2001)*, RWTH, Aachen
- Goldkuhl G (2002) Anchoring scientific abstractions – ontological and linguistic determination following socio-instrumental pragmatism, in *Proceedings of European Conference on Research Methods in Business*, Reading
- Goldkuhl G, Röstlinger A (2002) Towards an integral understanding of organisations and information systems: Convergence of three theories, in *Proc of the 5th International Workshop on Organisational Semiotics*, Delft
- Lind M (1996) *Affärsprocessinriktad förändringsanalys - utveckling och tillämpning av synsätt och metod*, (in Swedish), Licentiate thesis, IDA, Linköping University
- Lind M, Goldkuhl G (2002) Grounding of methods for business change: Altering between empirical, theoretical and internal grounding, in *Proceedings of European Conference on Research Methods in Business*, Reading

Orlikowski J W (1993) CASE Tools as Organisational Change: Investigating Incremental and Radical Changes in Systems Development, *MIS Quarterly*, Volume 17, Number 3,

Peirce C S (1931-35) *Collected papers*, Harvard U.P., Cambridge

Pries-Heje J (1992) Three barriers for continuing use of computer-based tools in information systems development: A grounded theory approach, *Scandinavian Journal of Information Systems*, Vol 4

Rennie D, Phillips J, Quartaro G (1988) Grounded Theory: A promising approach to conceptualization in psychology?, *Canadian Psychology*, Vol 29(2), pp 139-150

Strauss A., Corbin J (1998) *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*, Sage Publications, Thousand Oaks, CA

Urquhart C (2001) An encounter with Grounded theory: Tackling the practical and philosophical issues, in Trauth E M (ed, 2001) *Qualitative research in IS: Issues and trends*, Idea Group, Hershey

Walsham G (1995) Interpretive case studies in IS research: nature and method, *European Journal of information systems*, vol 4, p 74-81

Weber M (1978) *Economy and society*, University of California Press, Berkeley

Wittgenstein L (1958a) *Philosophical investigations*, Basil Blackwell, London

Wittgenstein L (1958b) *The Blue and Brown books. Preliminary studies for the "Philosophical investigations"*, Basil Blackwell, London