

# HOW TO DEVELOP A MULTI-GROUNDED THEORY: THE EVOLUTION OF A BUSINESS PROCESS THEORY

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## ABSTRACT

In the information systems field there is a great need for different theories. Theory development can be performed in different ways – deductively and/or inductively. Different approaches with their pros and cons for theory development exists. A combined approach, which builds on inductive as well as deductive thinking, has been put forward – a Multi-Grounded Theory approach. In this paper the evolution of a business process theory is regarded as the development of a multi-grounded theory. This evolution is based on empirical studies, theory-informed conceptual development and the creation of conceptual cohesion. The theoretical development has involved a dialectic approach aiming at a theoretical synthesis based on antagonistic theories. The result of this research process was a multi-grounded business process theory. Multi-grounded means that the theory is empirically, internally and theoretically founded. This business process theory can be used as an aid for business modellers to direct attention towards relevant aspects when business process determination is performed.

Keywords: Research method, Grounded Theory, Business Processes, Dialectics

## INTRODUCTION

Knowledge created within scientific disciplines are often codified and structured in theories. In information systems (IS) research, there are growing efforts in developing theories. One approach often taken is to use an established theory from a reference discipline and redevelop and adapt it to the information systems context. The use of external theories such as Actor-Network Theory (Latour, 1992) and Structuration Theory (Giddens, 1984) are examples of such endeavours; confer Walsham (1997), Orlikowski (1992) and Rose et al (2003) for examples and analyses. Such an approach can be seen as a deductive one. An established theory is used to categorize and classify IS phenomena. A deductive approach to theory development is not the only one. An alternative approach often taken is an inductive analysis of empirical data for creation of a theory. The Grounded Theory (GT) approach (Glaser & Strauss, 1967) is a prominent representative of inductive approaches to theory development. During the later years GT has been used within IS research; confer e.g. Urquhart (2001) for example and analysis.

Criticism has however been raised against Grounded Theory for a too strict inductive approach where existing theories are left out. An alternative approach, building on Grounded Theory, has therefore been put forward – the Multi- Grounded Theory (MGT) approach. Goldkuhl & Cronholm (2003) define a multi-grounded theory to be an empirically, theoretically and internally grounded theory.

Developing a multi-grounded theory builds on the interplay between grounding and generation in which empirical data and theories will have different roles as knowledge sources. In this approach the risk of “introvert theorizing” is avoided. The importance of acknowledging and utilising other theoretical sources is put forward as a strong argument for working in a multi-grounded manner.

Our main interest in this paper is the development of theories in information systems. How can such a development be performed? Can theory development be performed in a combined inductive and deductive way? Our research interest is towards research method, research process and research product. This is hence meta research. Studies in research methodology are often performed as theoretical discourses. Our approach taken here is more empirically oriented. We do not deny the need for formulating and assessing theoretical arguments (this will be done), but we claim that research on research should also be empirically oriented. We use a case study approach in the paper. We use a theory development process – a development of a business process theory – as our case (Lind, 2002). The need for the development of this theory is based in the problem of how to divide organisational work into different business processes during business analysis. We have had access to material from this research process as well as to knowledge from the key researchers.

One important aspect of a multi-grounded theory is that it should be cumulative and that the theory should be grounded in already existing theories. Such theories can however be contradictory (antagonistic). This affords the possibilities of a dialectic approach. In a dialectic research contradictions between a thesis and an antithesis are resolved through the creation of a synthesis. The cumulative theoretical development is operationalised by letting the synthesis become a new thesis to be used in future dialectic interplays (Skirbekk & Gilje, 2001).

In this paper we will analyse and describe the interplay between analysis of empirical data, and contradicting theories (as thesis and antithesis) as well as how complementary theories have been used in the evolution of a multi-grounded theory. Empirical data from several business process analyses meet several theories both for the generation of and grounding of the business process theory. An answer will be given in what ways the business process theory is to be regarded as multi-grounded and the fruitfulness of adopting a multi-grounded theory approach when performing theory development. In order to give such an answer focus will be put upon the data generation, the theory-informed theory generation as well as the theoretical, empirical and internal grounding.

This paper is structured as follows. In the next section we will introduce the different principles of the Multi-Grounded Theory approach. In that section we will also relate Multi-Grounded Theory approach to the origins in Grounded Theory. Following that we will give a historical description of the research process concerning the development of the business process theory mentioned above. This historical description will be divided into three episodes. Following that historical description we will show how this research process is an application of Multi-Grounded Theory approach. The paper ends with some conclusions.

## PRINCIPLES OF MULTI-GROUNDED THEORY

### *Origin in Grounded Theory*

Grounded theory (GT) is an established research approach for qualitative analysis in social research (Glaser & Strauss, 1967; Glaser, 1978; Strauss, 1987; Strauss & Corbin, 1990; Strauss & Corbin, 1998). As such, GT has also been established within information systems research (e.g. Urquhart, 2001). GT is a method for analysing data, mainly qualitative data. GT is a method to support the, often difficult, work to go from large amounts of qualitative data via abstractions and conceptualisations to a condensed theory. The sociologists Barney Glaser and Anselm Strauss developed this approach during the sixties and published a seminal book "The discovery of grounded theory" (Glaser & Strauss, 1967). This book has had a great impact on qualitative social research. GT has been further developed and it has later turned into different "dialects". In the beginning of the nineties there was a break between the two originators. Glaser (1992) made a harsh critique of a book co-written by Strauss (Strauss & Corbin, 1990). This dispute between the originators has been discussed by several scholars, e.g. Babchuk (1997), Bryant (2002), Charmaz (2000), Smit & Bryant (2000) and Urquhart (2001).

GT is an inductive approach to theory development. It starts with analysis of empirical data. This data analysis should be performed in a way that is theoretically unprejudiced. The originators explicitly warn against reading literature concerning other theories before performing data collection and data analysis. "An effective strategy is, at first, literally to ignore the literature of theory and fact on the area under study, in order to assure that the emergence of categories will not be contaminated by concepts more suited to different areas." (Glaser & Strauss, 1967 p 37). The analysis of data is performed in a series of coding steps. According to Strauss & Corbin (1990) three coding steps should be performed: Open coding, axial coding and selective coding. In the open coding, the data are scrutinized and a first conceptualisation is made. Categories are formulated, which in the axial coding are grouped into categorical structures. An action-theoretical paradigm model is used in this axial coding. Originally in Strauss & Corbin (1990) this paradigm model was fairly complicated. Later, in the second edition of their book, Strauss & Corbin (1998) simplified this action model (conditions → actions → results/effects). The controversy between Glaser and Strauss is concerned with the use of such an action oriented paradigm model; confer the harsh critique in Glaser (1992). Urquhart (2001 p 115) also criticizes the action paradigm model: "Put simply, I found it difficult to apply the coding paradigm, and the relationships between codes and categories hard to discover." She has in her analyses given preference to Glaser. It must however be noted that her critique is towards the more complicated action model in Strauss & Corbin (1990) first edition of their book. MGT is in adherence with the much simpler action paradigm model of the second edition (Strauss & Corbin, 1998) mentioned above.

In the selective coding, the emerging theory is condensed and a main theoretical category is formulated. Through these coding processes, categories and theory are generated from data and also automatically grounded in these data. A 'grounded theory' means theory grounded in empirical data.

Grounded Theory, in its different variants, has been widely used in research endeavours. The GT approach has been assessed and criticized by several scholars; e.g. Charmaz (2000), Bryant (2002) and Urquhart (2001). One criticism is the pure inductive approach to data analysis where relations to other theories are left out (e.g. Bryant, 2002; Cronholm, 2002). Another criticism is a supposed unclear epistemological basis (e.g. Bryant, 2002; Charmaz, 2000).

### *Revised to Multi-Grounded Theory*

Based on experiences and analysis of strengths and weaknesses (Cronholm, 2002) a revised approach, called Multi-Grounded Theory (MGT), has been formulated by Goldkuhl & Cronholm (2003); confer also Axelsson & Goldkuhl (2004), Cronholm (2004; 2005) and Goldkuhl (2004a; 2004b). MGT should be seen as an extension to or modification of GT. We have mainly followed Strauss & Corbin (1990; 1998) in our revision. We will comment on this preference below. The main principles of the Multi-Grounded Theory approach will be presented below.

GT favours 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. MGT is an attempt to combine certain aspects from inductivism and deductivism, as a kind abductivism (Alvesson & Sköldberg, 1999). It incorporates both an inductive analysis and a theory-informed analysis of data (figure 1).

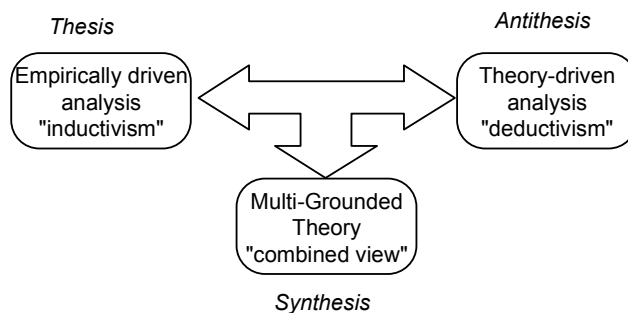


Figure 1: Multi-grounded theory as a dialectical synthesis between inductivism (GT) and deductivism (from Goldkuhl & Cronholm, 2003)

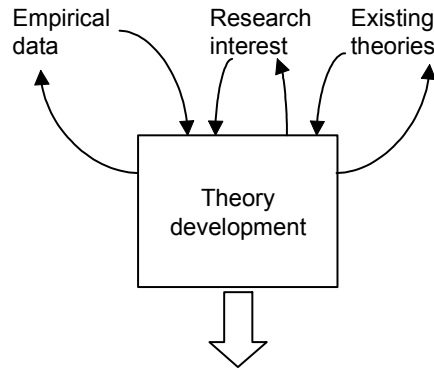
MGT includes a more systematic use of pre-existing theories than pure GT. Besides empirical grounding, two more grounding processes (theoretical and internal) have been added. This means that it is an enhanced grounding perspective behind MGT: A multi-grounded perspective. A multi-grounded theory is a theory grounded in:

- “empirical grounding” empirical data (preferably through mainly an inductive approach)
- “theoretical grounding” pre-existing theories (well selected for the theorized phenomena)
- “internal grounding” an explicit congruence within the theory itself (between elements in the theory)

These three grounding processes emanates originally from Goldkuhl (1999), later also described in Goldkuhl (2004b).

One criticism raised against GT is that the analysis can be too unfocused both in empirical and theoretical phases (Cronholm, 2002). The research questions may be too vague. In the MGT approach, a continual refinement of research questions is emphasised. “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.” (Goldkuhl & Cronholm, 2003).

Compared to ordinary GT the role of theories and research interest are emphasised more in the MGT approach. The research interest (operationalised in research questions) should evolve over time and one should use external theories in a constructive way throughout the research process (figure 2).



Multi-Grounded Theory

Figure 2: Empirical data, research interest and existing theories informing the development of a multi-grounded theory (from Goldkuhl & Cronholm, 2003)

The Multi-Grounded Theory approach has been operationalised into a number of work steps as a method for data analysis and theory development (figure 3). It consists of the following main working areas :

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

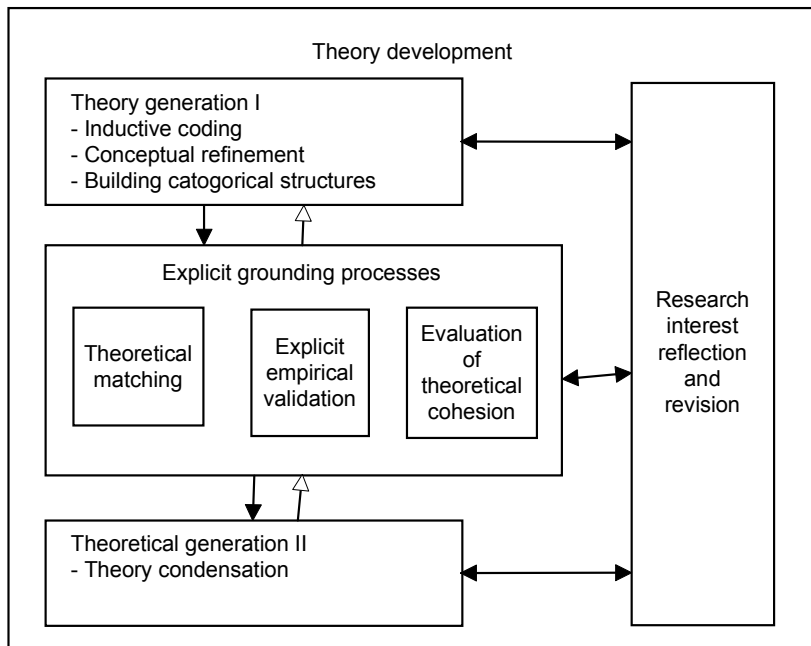


Figure 3: Working structure of the MGT approach (from Goldkuhl & Cronholm, 2003)

Theory generation corresponds to the coding processes in GT (Strauss & Corbin, 1990) in certain ways. 'Open coding' (in GT) corresponds fairly well to 'inductive coding' (in MGT). The open-minded way to analyse data of GT is also emphasized in MGT (ibid). After the inductive coding there is a 'conceptual refinement' in MGT, which is not found in GT (see ibid and especially Goldkuhl (2002; 2004a)). Axial coding (in GT) corresponds to 'building categorical structures' in MGT (see Goldkuhl & Cronholm (2003) and especially Axelsson & Goldkuhl (2004)). The stage of 'theory condensation' (in MGT) corresponds to 'selective coding' in GT. The strong claim for one core category (in GT) is however not raised in MGT. Theory condensation is a concluding stage in MGT. It should however be preceded by three explicit grounding processes: Theoretical matching, evaluation of theoretical cohesion, and empirical validation. The two first grounding processes (theoretical and internal grounding) cannot be found in GT as such explicit processes. A 'multi-grounded theory' means a theory grounded in empirical data, other theories and internally validated.

### ***MGT and the different variants of GT***

How is MGT positioned in relation to the two variants of GT; Glaser vs Strauss? Several scholars within IS argue for the importance to make an explicit stance in the GT dispute; e.g. Urquhart (2001) and Smit & Bryant (2000). We agree with this and have declared above that MGT is more in line with Strauss than Glaser. What are the reasons for this stance? There are many good features of GT, not only the inductive way of building theories from data. Another very important aspect is the pragmatic orientation of GT. Already in the beginning of Glaser & Strauss (1967 p 1) such pragmatic features of a grounded theory are put forth: "Such a theory fits empirical situations, and is understandable to sociologists and laymen alike. Most important, it works - provides us with predictions, explanations, interpretations and applications." In later parts of their book (especially chapter 10) this pragmatic orientation has come through even more elaborate. The link to American pragmatism and especially to Dewey (1938) is clearly described. As Bryant (2002) points out this pragmatic orientation has not always been recognized as an important part of GT. One can, however, read the different books by Strauss (Glaser & Strauss, 1967; Strauss 1987; Strauss & Corbin 1990) and clearly follow a pragmatic thread through his writings on GT. His foundation in American pragmatism has been most clearly described in Strauss (1993).

The discourse of the GT dispute seems to have been set by Glaser (1992). Strauss is considered to be the renegade from original GT. E.g. Charmaz (2000) and Urquhart (2001) seem to follow Glaser's way of defining the dispute. There does not seem to be any explicit answers from Strauss concerning Glaser's critique. This might be an explanation why some scholars tend to follow Glaser's arguments too easily. But is it really so that Strauss is the renegade? The pragmatic orientation in original GT has clearly been maintained by Strauss. Such a clear pragmatic orientation cannot be found in Glaser (1978; 1992). In this alternative way of defining the dispute, Glaser can be seen to be the renegade!

IS is a science of the practical, and as such it is important that theories and other research products are useful for the IS practice. There are several scholars, when arguing for such a practice orientation, who identify pragmatism to be a proper foundation for IS research (e.g. Goles & Hirschheim, 2000; Baskerville & Myers 2004; Goldkuhl 2004c). We agree with this and believe that GT in its pragmatic orientation is good analytic instrument for such IS research. A good analytic instrument can however be even better. MGT should be seen as improvement of GT, still in a pragmatic vein. This discussion will be furthered below through the concept of practical theory.

As claimed above, MGT is a research approach based on a dialectic interplay between deductivism as the thesis and inductivism as the anti-thesis. Different versions of GT have been used as the anti-

thesis, but as claimed in this section the Strauss way has made more important marks in MGT because of its pragmatic emphasis. We acknowledge the need for an inductive way of building theories, but there is also a need to involve other processes (as e.g. conceptual refinement and explicit grounding processes). We build on Grounded Theory, but since we see Multi-Grounded Theory as a further refined approach (in relation to Grounded Theory) we have chosen to label the research approach as Multi-Grounded Theory. Glaser (1992) means that not even straussian GT should be called Grounded Theory. MGT differs even more from Glaser's ideal.

## THE EVOLUTION OF A BUSINESS PROCESS THEORY

The case study described in this paper was driven from the need to develop a business process theory to be used in business analysis when developing information systems. During the period 1994 - 2001 a research project concerning a business process theory as a basis for systems development was conducted by the authors of this paper. This means that we use our own research process as the main object for this meta research. We refer to ourselves as "the key researchers" in the following. The research project was heavily influenced by process orientation. In this section the research process concerning the evolution of this business process theory is described. Result from this business process theory development is summarised in Lind (2002). The theory development was inspired by the principles of Multi-Grounded Theory without being a strict application of these principles. In fact MGT was evolving as an approach to research methodology during the same time. The evolving MGT approach has been applied in several research studies. One of them was the development of this business process theory. Other studies were concerned with information systems architecture (Axelsson & Goldkuhl, 2004), usability of CASE tools (Cronholm, 2004), information systems actability (Ågerfalk, 2004), method configuration (Karlsson, 2005) and knowledge management (Braf, 2004).

The research process is divided into three episodes, which will be reconstructed in the next section. Each episode generated important results, which were important parts in building the multi-grounded theory (i.e. the business process theory). The description of the three episodes is followed by a reflection of in what ways this research process is related to the Multi-Grounded Theory approach.

### *Episode 1: Initialising the research process*

It was the year of 1994. Business Process Reengineering (BPR) (cf. Hammer & Champy, 1993; Davenport, 1993) had put forward a business process perspective on organisational work. Traditionally, organizations have in their development efforts focused on their internal activities at the expense of focusing on their environment. In different approaches for organizational development, such as Total Quality Management - TQM (Harrington, 1991), BPR and Process Management, there was an emphasis on horizontal work processes combined with a customer focus. Common to all these approaches is that they focus on business processes in order to facilitate the value creation and need satisfying of the customers or clients of the organization.

Two researchers in information systems (the authors of this paper) watched this development trend in organisational management. These researchers had a strong emphasis in their research that information systems and practices need to be co-designed. This means that perspectives on organisational work need to influence the analysis performed of the workpractice (cf. analysis of the object system according to Langefors, 1973) when developing information systems. Questions such as "How will this management trend influence system development?", "What characterises a process oriented system development?", "How shall a process oriented system development be conducted and

how are existing methods affected?” arose. Literature on business processes had at that time a strong emphasis on perspectives and concepts rather than methods. There were no guidelines on how to perform process oriented development work.

The key researchers found a suitable empirical object, a steel company. This company had an ambition to work with the development of new information systems with a strong business process emphasis. A change analysis was conducted which included activity analysis, problem analysis, strength analysis, goal analysis and formulation of change requirements (Goldkuhl & Röstlinger, 2005). An important ambition with the change analysis was to achieve a high integration of production and administrative work. It was thus important to study details as well as holistic aspects of the business. Early in this project it was identified that the organisation performed business in different ways, thus one could say that it existed different business processes. During the activity analysis separate series of process models were drawn covering the contents of each different business process. This kind of process model separation was made in order to reveal the diverse and specific logics of the different business processes.

The insight that the business was performed in different ways created a need for knowledge regarding how to determine (= delimit and divide) business processes in relation to each other. A suitable process determination was performed of the company in order to distinguish different business processes. The notion of variant processes was coined. The key researchers studied the ways business processes had been delimited in the change analysis. The researchers reconstructed and abstracted the used criteria. Two criteria were used to perform the determination: internal handling (as an expression for the content of the business processes) and customer relations (as an expression for how the exchanges between the steel company and the customer were conducted). Two categories of customer relations were distinguished; separate ordering and frame contracting. By combining these criteria six variant processes had been distinguished. Examples of identified variant process were ‘standard stock customer’, ‘frame contracting customer’, ‘trading’.

The insights from this field study led the key researchers to refine the research question and the research purpose. They moved from the question of how to perform process oriented systems development to the question of how to determine business processes and criteria for such determination.

When looking into the literature the key researchers also found arguments that this was an important problem. How is a business process constituted? How can a process be delimited and divided? These were issues not yet resolved theoretically or practically. One of the “process gurus” Thomas Davenport (1993, pp. 27-28) claimed that “Considerable controversy revolves around the number of processes appropriate to a given organization. The difficulty derives from the fact that processes are almost infinitely divisible; the activities involved in taking and fulfilling a customer order, for example, can be viewed as one process or hundreds. The ‘appropriate’ number of processes has been pegged out from two to more than one hundred”.

The first case study gave a first tentative definition of the business process notion and also criteria for process determination. A need to direct attention towards process variants had been acknowledged. This episode of initiation of the research process had given fruitful conceptions for future research. This concerned especially the variant process concept and some preliminary criteria for process determination.



## Episode 2: More empirical data and the introduction of antagonistic theories

The further research was characterised by parallel empirical generation/validation and theoretical development (see figure 4).

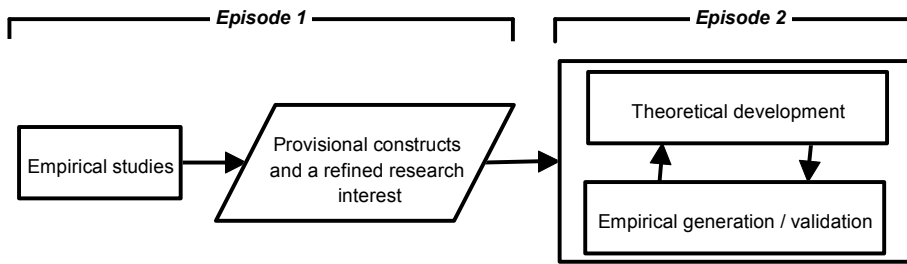


Figure 4: The two first research episodes

The conducted empirical projects were oriented towards application of earlier generated knowledge (the notion of business processes and the determination criteria). Approximately 15 action research projects were conducted. These projects were performed in many different settings. In these projects it was very important to arrive at practical results. An important foundation in these projects was the need to rather rapidly perform process determinations. Requirements had been put upon the process theory to manage process determination in a well-founded way. This also meant that the research performed in the empirical field gave new insights regarding suitable ways of making process determinations. Different settings gave new dimensions to process determination.

During the empirical studies the key researchers understood the importance of managing different customers in different ways. One example of such situation was from a sawmill where a distinction was made between core customers and potential core customers as well as other customers (without the potential of becoming core customer). Another aspect that was important, identified in the same empirical setting, was the differentiation between different types of products. The sawmill worked with three types of products; customer-unique products, standard products as well as waste products. Different kinds of customers bought different kinds of products. These circumstances suggested that there existed a close relationship between the way the interaction between the customer and the company was conducted and the characteristics of the products that were offered.

Parallel to the empirical studies theoretical development was performed. In theoretical discourse on business processes it had been identified that there existed two conflicting families of theories (cf. e.g. Keen & Knapp, 1996). The predominant view regarded a business process as a phenomenon that takes one or more inputs and transforms these to an output that is of value to the customer. This view was expressed in much BPR literature. It originates from TQM and can be seen to be a traditional industrial view on business processes (e.g. Harrington, 1991). TQM has a focus on transformation of raw material to finished product. Within the BPR approach this view was then widened in order to include more commercial aspects.

In contrast to this transformative view on business processes there was also the communicative view based on language/action-oriented theories; confer Winograd & Flores (1986) who base their work on the speech act theory of Searle (1969). This perspective is based on the idea that communication is not just transfer of information. When you communicate you also act. As a reaction against the transformative view on processes there exist several process-oriented approaches for business

modelling<sup>11</sup> based on the language/action perspective. By applying a communicative view on processes the organization's establishment and fulfilment of commitments were emphasised.

The key researchers acknowledged these conflicting views. They saw the need to position their emerging theories in relation to these theories. They felt that they could not adopt either view. A third alternative was to develop a new theory. The key researchers therefore adopted a dialectic approach to develop a new business process view as a synthesis. According to Hegel's dialectic thinking (Skirbekk & Gilje, 2001), knowledge development can be divided into three main phases: 1) The thesis as the original state, 2) the antithesis as the reaction against the thesis, and 3) the synthesis that resolves the oppositions between the thesis and antithesis. Development of syntheses can be characterised by taking the good parts from the thesis and the antithesis and avoiding antagonistic parts through transformation and creation of something new.

The transformative view on business processes was regarded as the thesis in this dialectical approach. Important strengths of the transformative view on business processes were the focus on activity chains, value-adding activities, and on customers. Weaknesses were a nearly total dissociation of coordination and communication. A communicative view on business processes was regarded as an antithesis in relation to the transformative view (the thesis) on business processes. Strengths in the communicative view on business processes were a focus on communication as the backbone. One main weakness was however a total dissociation of material acts.

In order to arrive at a comprehensive understanding of the thesis and the antithesis conceptual modelling was performed. The different concepts had to be clarified. A thorough analysis was performed in which a number of different concepts with relations to the concept of business process were identified. Conceptual modelling as well as goal modelling also served as an important tool in deriving a congruent synthesis.

Aspects identified through empirical observations inspired the creation of synthesis. These aspects helped the key researchers in directing attention towards contradictions between the transformative view on business processes (the thesis) and the communicative view on business processes (the antithesis). By identifying these contradictions, strengths and weaknesses could be identified in the thesis and the antithesis. This basis was however not enough for developing the synthesis. The key researchers found that it was necessary to move to an ontological level. In order to determine which concepts and values to include in the synthesis the dialectical process was guided by generic action models together with empirical observations. These action models are in this process to be regarded as an ontological foundation (generic theory) used to secure that chosen concepts were possible to relate to each other. Different types of theories were thus used; antagonistic theories and theories as the ontological foundation. Workpractice theory and socio-instrumental action theory (Goldkuhl & Röstlinger, 2003) formed the ontological foundation (generic action models).

Four important forces have thus influenced the development of a new business process theory (see figure 5).

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<sup>11</sup> Example of approaches based upon the language/action perspective are Action Workflow (Medina-Mora et al, 1992), DEMO (Dietz, 1999), which are influenced by the conversation-for-action schema (Winograd & Flores, 1986).

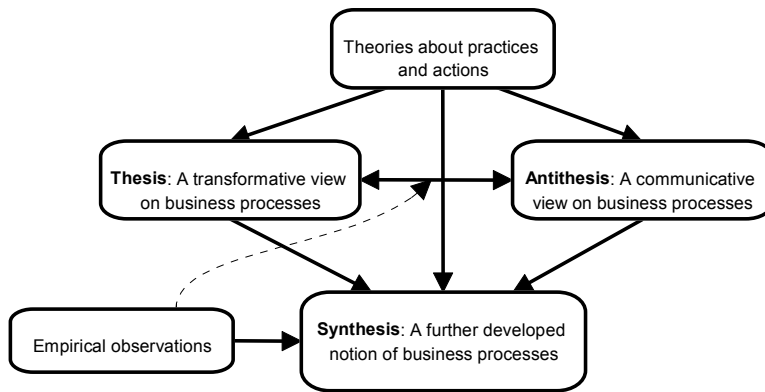


Figure 5: Influences on and procedure for developing the synthesis

The further developed notion of processes presented in Lind (2002) and Lind & Goldkuhl (2006), was based upon a transformative and a communicative view on processes, empirical observations, and foundational theories (see also figure 6), implied that:

- there was a need to separate work performed in the organization for potential respective particular clients;
- processes could not exclusively be regarded as either transformation or communication; transformation needs to be regarded in an coordination context;
- processes could not exclusively be regarded as sequentially related sub-processes; there exist variants of processes consisting of sequentially related sub-processes;
- a one-sided focus on the customer not was enough; there was also a need to focus suppliers and other parties related to the business;
- an asymmetric view on customer satisfaction not was enough. There was a need to acknowledge reciprocal relationships between customer and supplier and mutual satisfaction of both parties.

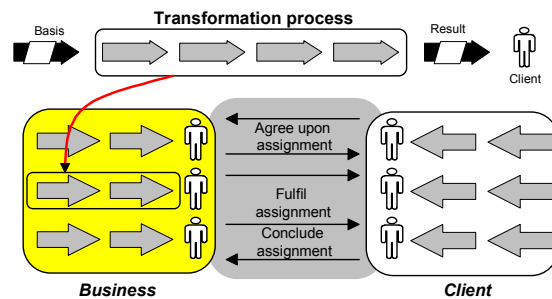


Figure 6: Synthesis: Transformation in an assignment perspective (from Lind, 2002)

The result from this episode, in which parallel theoretical development and empirical studies were performed, was a synthesised theoretical conception, i.e. further developed notion of business processes. This theoretical conception was improved by empirical observations.

### ***Episode 3: Theoretical refinement and further empirical grounding***

The key researchers were now satisfied in having developed a business process theory that covered both transformative aspects as well as coordinative aspects of business processes. This further developed notion of business processes was now used to re-evaluate the process determinations made in earlier empirical studies. This investigation revealed new criteria to take into consideration when dividing organisational work into business processes. In order to avoid researcher bias, secondary empirical cases were analysed. Secondary empirical cases consisted of empirical data not generated/collected by the key researchers.

These new criteria could be divided into two dimensions of criteria that were combined when performing process determination. The first was the product dimension and included an analysis of different product characteristics (cf. Goldkuhl & Röstlinger, 2000) and the second dimension was the business relation dimension. The product dimension concerned different types and classes of products. The business relation dimension mainly distinguished between separate orders (one-time transactions) and frame contracting (long-term agreements); Goldkuhl & Lind (2004). These two dimensions of criteria were made the subject of several theoretical matching processes.

To conclude, one can state that there had been a gradual interplay between theoretical studies and empirical studies in order to establish an appropriate business process theory with appurtenant criteria for process determination. Important to acknowledge in this research process was the need for a foundational theory (such as socio-instrumental pragmatism) as an enabler for developing a consistent and transparent theory. Different procedures therefore needed to be adopted. This is in line with Blumer (1954) who reasoned "Theory, inquiry and empirical facts are interwoven in a texture of operation with theory guiding inquiry, inquiry seeking and isolating facts, and facts affecting theory. The fruitfulness of their interplay is the means by which an empirical science develops".

After this episode the key researcher felt that a full-blown multi-grounded theory (i.e. an empirically, theoretically and internally grounded theory) had evolved.

### **THE EVOLUTION FROM A MGT-PERSPECTIVE**

This description of the evolution of the multi-grounded business process theory with ancillary criteria for process determination is a reconstruction of how the theory development has been conducted. The research was not designed in this way from the beginning. It has rather been a continual design of the research process based on discoveries made as the evolution went on.

This research process can be seen as an application of the Multi-Grounded Theory approach (see section 2). The research process has been inspired by the evolving MGT approach. During the research process there has been interplay between empirical data and existing theories as a basis for refinement of the research interest. Research questions and hypotheses have gradually evolved through empirical and theoretical analyses. During this research process there has been recurrent theoretical matching as well as recurrent empirical validation. The primary empirical data has been supplemented with additional empirical data (secondary empirical data). The primary empirical data has both been used for generating theory, i.e. a synthesised theoretical conception of business process, as well as a basis for reconsidering the empirical data in the light of a new theory and thereby generating criteria for business process determination. An important source for developing the business process theory has been the analyses of competing theories on business processes. The whole research process has been guided by certain ontological foundations based in work practice

theory and social action theory. In the theoretical grounding theories for strengthening the explanatory power of different concepts and values have also been used (as e.g. in the properties of the two dimensions of criteria; product and business relation). In this MGT-development three different types of theories have been used; 1) antagonistic theories, 2) theories forming the ontological foundation, and 3) theories for strengthening the explanatory power of concepts and values. The analysis and development has been supported by performing modelling such as e.g. conceptual modelling and goal modelling in order to arrive at a conceptual cohesion of the evolving theory. These modelling activities are important to ensure an internally grounded theory.

Going back to figure 3 (describing the MGT approach) one can conclude that the evolution described in the episodes above can be understood according to the different steps in the working structure of MGT. One can conclude that all the different episodes are important for many of the processes of generation and validation. There has been a continual interplay between several of these processes in order to create a multi-grounded theory. It is however important to notice that the point of departure has been in inductive coding, conceptual refinement and building categorical structure (theory generation 1). This research study is thus a recognition of the need to let empirical data guide the continuous research process.

The developed business process theory has been put into application in several occasions after the development reported in this paper (e.g. Lind et al, 2003; Lind & Olausson, 2004; Haraldson & Lind, 2005; Eriksson & Lind, 2005; Lind & Goldkuhl, 2006). In several business analysis projects this full-blown multi-grounded business process theory has been used for determination of business processes in many different kinds of practices. The theory has shown to be a good support in directing attention towards essential aspects of the studied workpractice and thus performing well-founded process determination. This practical use of the business process theory means a further empirical grounding. This is however a grounding that goes beyond observational grounding. It implies an application grounding (Goldkuhl, 2004a). The evolving theory is not only a conceptualisation of an empirical domain. The concepts have shown to be useful in application for practical change. This process of putting the theory into application has also created incentives for further development. To create concepts and theory useful for practical change is in line with the notion of a practical theory (Cronen, 2001). The main source of inspiration for the concept of practical theory put forth by Cronen is pragmatist philosopher Dewey (1938) with his logic of inquiry. This can be compared with what Strauss (1987 p 6) says about the relation between GT and the Pragmatism of Dewey: "For a fuller historical understanding of the background of grounded theory, it would be useful to read John Dewey's *Logic: The theory of inquiry* [Dewey, 1938]...". The idea of application grounding (and practical theory) is actually in full accordance with the pragmatic claims in original GT (Glaser & Strauss, 1967) and Strauss' further writings.

## CONCLUSION

In this paper we have put the MGT research approach into application by studying the evolution of a business process theory with ancillary criteria for process determination. Important to acknowledge is that research methodological considerations have been made continually during this theory evolution. The evolution can be characterised as an interplay between empirical studies, theoretical analysis and building a congruent theory with appurtenant criteria. The business process theory has been internally, empirically and theoretically generated as well as grounded. The empirical studies have not just been about data collection – they have also been arranged data generation efforts based on certain theoretical needs. Criteria for business process determination have been generated by having the theory put into application - a kind of theoretical sampling. This business process theory

is also to be regarded as a practical theory (Cronen, 2001), i.e. the theory has been applied in practical problem solving. There has been an active application of the principles of the business process theory in the different action research studies. The theory has not only been empirically generated through observation and inductive analysis. The theory has also been validated and modified through its application in different business process analysis settings.

We believe that MGT is describing the way successful theory development actually is performed in a field such as information systems. It is important to pay attention to and interact with the empirical field without being theoretically naïve. That risk is present when applying a pure Grounded Theory approach in the research process. The Multi-Grounded Theory approach builds upon a combined inductive, empirical and theory informing approach. This research approach allows also a continual refinement of research interest and research questions.

Our stance is also that research methods (such as for example GT and MGT) should be made objects for empirical research. In this paper we have put the Multi-Grounded Theory approach into an empirical application by giving a historical description and analysis of an actual research process that has been conducted. We claim that many descriptions of research methods are just theoretical arguments. In this paper we have studied a research method by its application in an empirical example. The evolution of a business process theory has been seen as a case study of theory development. Studies on research methods should be empirically based not only a theoretical discourse. Research on the Multi-Grounded Theory research approach should in itself be made in a multi-grounded way as we have tried to show in this paper! This paper is thus to be seen as a contribution to the validation of the MGT approach. Other papers, as Axelsson & Goldkuhl (2004), Cronholm (2004; 2005) and Ågerfalk (2004), have also made empirical contributions to the Multi-Grounded Theory approach.

## REFERENCES

- Ågerfalk P (2004) Grounding through Operationalization: Constructing Tangible Theory in IS Research, In Proc of the 12th European Conference on Information Systems (ECIS 2004), Turku
- Alvesson M., Sköldbberg K. (1999) Reflexive Methodology: New Vistas for Qualitative Research, Sage, London
- Axelsson K., Goldkuhl G. (2004) Theory Modelling - Action Focus when Building a Multi-Grounded Theory, In Proc of the 3<sup>rd</sup> European Conference on Research Methodology for Business and Management Studies, Reading
- Babchuk WA (1997) Glaser or Strauss?: Grounded theory and adult education, Midwest Research-To-Practice Conference in Adult, Continuing and Community Education, Michigan State University
- Baskerville R, Myers M (2004) Special issue on action research in information systems: making IS research relevant to practice – foreword, MIS Quarterly, Vol 28 (3), pp 329-335
- Blumer H. (1954) What is wrong with social theory?, American Sociological Review, Vol 19, pp 3-10
- Braf E (2004) Knowledge Demanded for Action - Studies of Knowledge Mediation in Organisations, PhD Diss, Department of Computer & Information Science, Linköping University

- Bryant A. (2002) Re-grounding Grounded Theory, *The Journal of Information Technology Theory and Application*, Vol 4, No 1, p 25-42
- Charmaz K. (2000) Grounded Theory: objectivist and constructivist methods, in Denzin N K, Lincoln Y S (Eds, 2001) *Handbook of qualitative research*, 2 ed, Sage, Thousands Oakes
- Cronen V. (2001) Practical theory, practical art, and the pragmatic-systemic account of inquiry, *Communication theory*, Vol 11, No 1
- Cronholm S. (2002) Grounded Theory in use – a review of experiences, in *Proceedings of European Conference on Research Methods in Business*, Reading
- Cronholm S. (2004) Illustrating Multi-Grounded Theory, Accepted to the 3<sup>rd</sup> European Conference on Research Methodology for Business and Management Studies, Reading
- Cronholm S. (2005) Multi-Grounded Theory in Practice – a Review of Experiences from Use, In *Proc of QualIT2005*, Brisbane, Australia
- Davenport T. H. (1993) *Process Innovation – Reengineering Work through Information Technology*, Harvard Business School Press, Boston
- Dewey J (1938) *Logic: The theory of inquiry*, Henry Holt, New York
- Dietz J. L. G. (1999) Understanding and Modelling Business Processes with DEMO, *Proc. 18th International Conference on Conceptual Modeling (ER'99)*, Paris
- Eriksson O., Lind M. (2005) “Problems with Communication Quality in Commitment Management” in Goldkuhl G., Clarke R. J., Axelsson K. (Eds.) *Proceedings of the International Workshop Communication and Coordination in Business Processes*, Linköping University and University College of Borås, Sweden
- Giddens A. (1984) *The constitution of society. Outline of the theory of structuration*, Polity Press, Cambridge
- Glaser B (1978) *Theoretical sensitivity: advances in the methodology of grounded theory*, Sociology Press, Mill Valley, California
- Glaser B. (1992) *Basics of Grounded Theory analysis: Emergence vs. forcing*, Sociology Press, Mill Valley, Calif.
- Glaser B., Strauss A. (1967) *The discovery of grounded theory*, Aldine, New York
- Goldkuhl G. (1999) The grounding of usable knowledge: An inquiry in the epistemology of action knowledge, Accepted to HSS99, Falun; also working paper 99:03 CMTO, Linköping University
- 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 (2004a) Conceptual Determination when Developing a Multi-Grounded Theory – Example: Defining ISD Method, In *Proc of the 3rd European Conference on Research Methods in Business and Management (ECRM 2004)*, Reading
- Goldkuhl G (2004b) Design theories in information systems – a need for multi-grounding, *Journal of Information Technology Theory and Application (JITTA)*, 6(2) p 59-72
- Goldkuhl G (2004c) Meanings of pragmatism: Ways to conduct information systems research, in *Proc of the 2<sup>nd</sup> Intl Conf on Action in Language, Organisations and Information Systems (ALOIS)*, Linköping University

- Goldkuhl G., Cronholm S. (2003) Multi-grounded theory – Adding theoretical grounding to grounded theory, in Proc of the 2<sup>nd</sup> European Conference on Research Methods in Business and Management (ECRM 2003), Reading
- Goldkuhl G., Lind M. (2004) The generics of business interaction - emphasizing dynamic features through the BAT model, in Proc of the 9<sup>th</sup> Intl Conference on the Language Action Perspective (LAP2004), Rutgers University
- Goldkuhl G., Röstlinger A. (2000) Beyond goods and services - an elaborate product classification on pragmatic grounds, in proc of Quality in Services (QUIS 7), Karlstad university
- Goldkuhl G, Röstlinger A (2003) Towards an integral understanding of organisations and information systems: Convergence of three theories, in Gazendam H WM, Jorna R J, Cijssouw R S (Eds, 2003) Dynamics and Change in Organizations. Studies in Organizational Semiotics, Kluwer, Boston
- Goldkuhl G., Röstlinger A. (2005) Change Analysis – Innovation and Evolution, invited paper to the 14<sup>th</sup> Intl Conf on Information Systems Development, Karlstad University
- Goles T, Hirschheim R (2000) The paradigm is dead, the paradigm is dead ... long live the paradigm: the legacy of Burell and Morgan, Omega, Vol 28 p 249-268
- Hammer M., Champy J. A. (1993) Reengineering the Corporation: A Manifesto For Business Revolution. Nicholas Brealy, London.
- Haraldson S., Lind M. (2005) "Broken Patterns" in Goldkuhl G., Lind M., Haraldson S. (Eds.) Proceedings of the 10th International Working Conference on The Language Action Perspective on Communication Modelling, Linköping University and University College of Borås, Sweden
- Harrington H. J. (1991) Business Process Improvement: The Breakthrough Strategy for Total Quality, Productivity and Competiviness. McGraw Hill, New York.
- Karlsson F (2005) Method Configuration - method and computerized tool support, PhD Diss, Department of Computer & Information Science, Linköping University
- Keen P.G.W., Knapp E.M. (1996): Every Manager's Guide to Business Processes – A Glossary of Key Terms & Concepts for Today's Business Leader. Harvard Business School Press, Boston
- Langefors B. (1973) Theoretical Analysis of Information Systems, Fourth edition, Studentlitteratur, Lund
- Latour B. (1992) Technology is society made durable, in Law (ed, 1992) A sociology of monsters: Essays on power, technology and domination, Routledge& Kegan Paul, London
- Lind M. (2002) Dividing Businesses into Processes – Foundations for Modelling Essentials. In Liu K et al (Eds, 2002) Organisational Semiotics: Evolving a science of information systems, Kluwer, Boston
- Lind M., Goldkuhl G. (2006) "Designing Business Process Variants – Using the BAT Framework as a Pragmatic Lens" in C. Bussler et al. (Eds.): BPM 2005 Workshops, LNCS 3812, pp. 408 – 420, 2006, Springer-Verlag Berlin Heidelberg 2006
- Lind M., Hjalmarsson A., Olausson J. (2003) "Modelling interaction and co-ordination as business communication in a mail-order setting" in Weigand H., Goldkuhl G., de Moor A. (Eds) Proceedings of the 8th International Working Conference on the Language-Action Perspective on Communication Modelling, Tilburg University, The Netherlands
- Lind M., Olausson J. (2004) "Balancing Horizontal and Vertical Co-ordination in Business Transactions - Towards a Clarification of the Role of IT-systems in an E-commerce Setting"



- in Goldkuhl G., Lind M., Cronholm S. (Eds.) Proceedings of Action in Language, Organisations and Information Systems, Linköping University, Sweden
- Medina-Mora R., Winograd T., Flores R., Flores F. (1992) The Action Workflow Approach to Workflow Management Technology, In: Turner J., Kraut R. (Eds.) Proceedings of the Conference on Computer-Supported Cooperative Work, CSCW'92, ACM Press, New York
- Orlikowski W. J. (1992) The Duality of Technology: Rethinking the Concept of Technology in Organizations, *Organization Science*, Vol 3 (3) pp 398-429
- Rose J., Jones M., Truex D. (2003) The problem of agency: how humans act, how machines act, in Proc of the International workshop on Action in Language, Organisations and Information Systems (ALOIS-2003), Linköping University
- Searle J. R. (1969): *Speech Acts. An Essay in the Philosophy of Language*. Cambridge University Press, London
- Skirbekk, G., Gilje, Nils., (2001) *History of Western Thought: An Introduction to the Philosophical Roots of Modernity*. Taylor & Francis Books Ltd.
- Smit J, Bryant A (2000) Grounded Theory method in IS research: Glaser vs Strauss, Working paper, Leeds Metropolitan University
- Strauss A (1987) *Qualitative analysis for social scientists*, Cambridge University Press, Cambridge
- Strauss A (1993) *Continual permutations of action*, Aldine de Gruyter, New York
- Strauss A., Corbin J. (1990) *Basics of qualitative research. Grounded theory, procedures and techniques*, Sage, Newbury Park
- Strauss A, Corbin J (1998) *Basics of qualitative research. Techniques and procedures for developing Grounded Theory*, 2<sup>nd</sup> edition, Sage, Newbury Park
- 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. (1997) Actor-network theory: Current status and future prospects, in Lee AS, Liebenau J, DeGross JI (Eds, 1997) *Information systems and qualitative research*, Chapman & Hall, London
- Winograd T. , Flores F. (1986) *Understanding Computers and Cognition: A New Foundation for Design*, Ablex, Norwood NJ

