Linköping Studies in Science and Technology
Thesis No.1402
LiU-TEK-LIC 2009:10

Translating Lean Production

From Managerial Discourse to Organizational Practice

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2009

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Linköping studies in science and technology,
Thesis No. 1402

LiU-TEK-Lic 2009:10

ISBN: 978-91-7393-630-9
ISSN: 0280-7971

Printed by: LiU-Tryck, Linköping

Distributed by:

Linköping University
Department of Management and Engineering
SE-581 83 Linköping, Sweden
Tel: +46 13 281000, fax: +46 13 281873

Everyone's got to have the sickness

Cause everyone seems to need the cure

J. Hetfield

Abstract

The majority of organizational change efforts end in failure. These failures can often be ascribed to lack of understanding of the translation processes that accompany the implementation of management concepts. Translation becomes evident when the initial ambitions of an implementation process are changed as they are communicated through the organization, often leading to unwanted results.

This thesis deals with the translation of management concepts. The ambition is to contribute to the body of knowledge that is concerned with this theoretical direction through demonstrating how the currently dominating management concept Lean Production is translated as it is passed between contexts.

The thesis is based on three studies of management concepts at various levels of abstraction. The first study is based on a review of the major literature on Lean Production. The second study is based on a survey among Swedish production managers on their application of management methods and concepts. The third study comprises a series of interviews within a large Swedish industrial organization, focusing on how Lean Production has been translated during the implementation process.

The results show that Lean Production is far from well defined or unequivocal. There is always room for translation as the concept is passed between actors within an organization. It is therefore unreasonable to expect the concept to provide certain results. The results are determined by the way the concept is interpreted and translated within the organization that seeks to implement it. It is argued that insufficient translation competence will increase the risk of an uncontrolled and potentially ineffective translation process, leading to unexpected and undesirable results.

Through combining these results with existing theories within the management field, the author presents a tentative model for analyzing the translation of management concepts all the way from the general managerial discourse to the practice that can be observed at the factory floor of a company. It is proposed that this model may be used as a conceptual framework for further studies of the translation of management concepts.

Foreword

Although I am the single author of this thesis and mine is the only name on the front page, this is by no means an individual effort. There are many people who have taken part in producing this thesis.

First of all, I would like to thank my supervisors Jörgen and Mattias for tirelessly supporting and encouraging the work I have done during the past few years. During this final stressful period of tying the pieces of this thesis together, your comments and advice has been invaluable.

I would also like to send my gratitude to Jens, for encouraging me to send in my application and take on this journey towards a PhD. As a certain Greek professor would say: Well done, Jens!

Special thanks to my fellow PhD students and other colleagues at Helix and at the division of Quality Technology and Management. My best ideas have been born and refined during our discussions.

Lena, although I had to manage the last part without you, your company and loving support over the years has given me the energy I have needed to get through this process. I could not have come this far without you.

Elina, the final stretch of producing this thesis has tested the limits of my capacity, but your kind and encouraging words during the past few months have cast sunshine on many a dark day. You light up my life!

Finally, I would like to display my gratitude to my parents and the rest of my family in Oslo, for always supporting me in my choices and believing in my abilities.

You all contributed to make this possible. I could not have done this without you. Thank you!

Norrköping, April 2009

Jostein Pettersen

Preface

During my basic studies of Quality Management, I have found interest in various management concepts and their application in industry. I read and learned about the ‘gurus’ of quality management and felt that my education gave me all the tools needed to amend just about every problem in any organization. Although I realized that the application would be difficult, I had a perspective that management concepts were more or less universal solutions, very much like the illustration on the front cover.

After starting as a PhD student I read more about management and found the subject to be far more complex than I had thought during my basic studies. I realized that there are a multitude of different interpretations on the meanings of the concepts that I had previously thought had water tight definitions.

Elaborating on this newfound insight led me to apply theories of translation on the analysis of management concepts, both in conceptual discussions and their practical application. The main idea is that an individual or an organization that comes in contact with a management concept will understand it based on the context that he/she is in and thus modify the concept accordingly. With reference to the front page, one could say that the medicine jar keeps its label while having somewhat different content, depending on the context.

After reading a dissertation on how the management concept ‘balanced scorecards’ has been translated within a Swedish county council (Käll, 1999), I came into contact with Actor-Network Theory (ANT), which was a perfect theoretical fit to my ideas.

The hypothesis I had at that point in time was that most management concepts are formed from the same basis and that there must be some kind of ‘core’ that is constant and unchanged as the concepts pass through the chains of translation. There had to be some residue in the medicine jar that did not change. This thesis is the result of my attempts to find this core.

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Contents

Introduction

> *At dawn, 17 July 1787, Lapérouse, captain of L'Astrolabe, landed at an unknown part of the East Pacific, on the area of land that was called 'Segalien' or 'Sakhalin' in the older travel books he had brought with him. Was this land a peninsula or an island? He did not know, that is no one in Versailles at the court of Louis XVI, no one in London, no one in Amsterdam in the headquarters of the West Indies Company, could look at a map of the Pacific Ocean and decide whether the engraved shape of what was called 'Sakhalin' was tied to Asia or was separated by a strait. Some maps showed a peninsula, others showed an island; and a fierce dispute had ensued among European geographers as to how accurate and credible the travels books were and how precise the reconnaissances had been. It is in part because there were so many of these disputes [...] that the king had commissioned Lapérouse, equipped with two ships, and ordered him to draw a complete map of the Pacific. (Latour, Science in action, 1987, p. 215)*

Over the two hundred and some years that have passed since Lapérouse set out to map the Pacific Ocean, this kind of dispute has occurred many times and in many different theoretical fields. Within the field of management theory, one such dispute is currently active - regarding the wide spread management concept Lean Production. The similarities between the land area Sakhalin and the management concepts go beyond the dispute. In fact, most of the elements of this story are relevant and analogous to the story of Lean Production.

In the late 1980's a research team from MIT (Womack, Jones, & Roos, 1990) embarked on a voyage – a comprehensive research project aiming to compare automobile manufacturing practices across the world. During their research, the results indicated that the performance of the Japanese manufacturers, and Toyota in particular, was outstanding. What they learned during their expedition to the Japanese automobile plants made such an impression on them that a new term was coined to describe the Japanese way of production - Lean Production.

The results presented by the MIT research team (Krafcik, 1988; Womack, Jones, & Roos, 1990) made an impression on many other researchers as well, although not exclusively in a positive way. This started a dispute between researchers whether or not Lean Production actually led to better performance (Womack, Jones, & Roos, 1990; Lewis, 2000; Berggren, 1992) and whether it was good or bad for employees working under the conditions brought about by the production system (Kamata, 1982; Spithoven, 2001; Conti, Angelis, Cooper, Faragher, & Gill, 2006).

One problem when embarking on a journey to a foreign country is that one is ususally in a weaker position compared to the natives. They live and breathe the culture that interest the visitors, and know it in a way that we cannot fully understand. Our understanding of the foreign land, whether it is an actual land area or a management concept, will be limited to the pieces of evidence that the researchers bring back with them. Both Lapérouse and Womack have found themselves in the position where other scholars have questioned their results and forced them to present their body of evidence to support their claims (Williams, Haslam, Williams, Cutler, Adcroft, & Johal, 1992).

Womack and his colleagues made a first map of the 'land area' now called Lean Production, and other explorers have followed in their footsteps. In the two decades that have passed since Womack and his team first presented their results (Krafcik, 1988), many other researchers have visited Toyota and other Japanese auto makers in order to draw *the* map of Lean Production.

As interpreters of the maps, we find ourselves in an even weaker position compared to the explorers that have produced them, since we have not even seen the foreign land that the maps describe. The ambition of this thesis is not to draw a final and correct map of Lean Production, but rather to point to the difficulties in producing one, and the many aspects included in the interpretation and usage of such a map.

Background and previous research

Throughout the years, the field of management studies has received massive attention, and the ambition to find effective methods for managerial work seems to be undiminished. According to Sveningsson and Sörgärde (2007) this development has practically exploded during the latest decades with a multitude of concepts that are launched as beneficial methods for producing change in organizations.

Lean Production and other management concepts have received massive attention and become immensely popular. However, Sveningsson and Sörgärde (2007) state that the majority of change initiatives end in failure. Many researchers have provided support for this statement, with reported failure rates indicating that the failures outnumber the successes with a two-to-one ratio, see e.g. Spector and Beer (1994).

Sveningsson and Sörgärde (2007) argue that most management concepts are presented with an over confidence in their ability to produce controlled and predictable change. The complexity of an organization and the processes that are associated with change is often grossly simplified.

In general, failure can be said to occur when the achieved results differ significantly from the initial goal (Griffith, 2002; Beer, 2002). It is impossible to point to a single reason for these divergences, but one of many reasonable explanations is the idea that the interpretation of the management concepts change with their travel in space and time. In other words, the concepts are translated as they are disseminated between people and over time.

There is a set of features in most management concepts that can provide a partial explanation for the high failure rate in application (Beer, 2002). As stated above, all ‘universal’ concepts are – and need to be – ambiguous. And at the same time, the popular management literature implies that the concepts will provide certain predictable effects. This is a paradox. A concept that is not clearly defined cannot possibly be predictive in its effects (Sveningsson & Sörgärde, 2007; Weick, 2000; Czarniawska & Joerges, 1996). Studies have shown time and again that organizational change initiatives have failed to deliver the expected results (Beer, 2002; Quist, 2003; Skålén, 2002).

The introductory comparison between the IMVP research program and Lapérouse’s exploration of 18th century China is not only interesting for the purpose of finding an analogy to management research. The two stories are exemplary for demonstrating the elements of a translation process (see Chapter 2 for an elaboration on theories of translation).

Previous research on the dissemination of organizational ideas can be grouped in two categories, focusing on the idea itself or the organizations that encounter them. A sociologist would perhaps see this as the classical discussion of actor versus structure, and in the case of management theory structure is leading the race in terms of quantity of publications. This thesis is an attempt to provide more input to the latter category of management studies.

The majority of studies on management concepts have applied a macroscopic perspective, with organizations as the smallest unit of analysis. Some studies have directed attention towards the production of management concepts, such as *organizational excellence* and *service management* (Furusten, 1999) and *Corporate Social Responsibility* (Windell, 2006). Other scholars have studied how these and similar concepts are disseminated between organizations (Lillrank, 1995; Furusten, 1999; Røvik, 2000; 2007; Sahlin-Andersson & Engwall, 2002; Alvarez, 1998) and how these concepts become managerial fashion (Abrahamson, 1991; Abrahamson, 1996; Benders & van Veen, 2001).

Although the actor perspective is less common, the field is not entirely blank. But the ambition to study the translation of management concepts in detail is far more uncommon compared to general management theory. Various concepts have been studied from this perspective, for instance *Balanced Scorecards* (Käll, 1999), *Quality Assurance* (Erlingsdóttir, 1999), *New Public Management* (Skålén, 2002; Book, Hellström, & Olsson, 2003), *Total Quality Management* (Quist, 2003) and *Process Management* (Hellström & Peterson, 2006; Hellström, 2007). Although concepts and contexts in these studies differ, the results point in the same direction.

Käll (1999) states that BSc has changed both in interpretation and effects through several iterations over time in the studied organizations. He shows that the degree of appropriateness of technological support influences the outcome of implementing the concept.

Erlingsdóttir (1999) states that uncritical application of management concepts without proper knowledge about adaptation and application may lead to unexpected and unwanted effects. She further states that the initial idea tends to change and deviate from the basic intentions, thus leading to unexpected results.

Skålén (2002) identifies conflicts and loose coupling (see Chapter 2) as results of introducing a management concept in the studied organization. The emergence of different groups with different assessments of the concept has led to problems in the implementation process. Skålén's results indicate that translation also occurs when people in key positions within an organization are replaced.

Quist (2003) argues that one explanation of change failure is that key actors in organizations that seek to implement a management concept sometimes lack necessary knowledge. Concepts tend to change over time and deviate from the initial intentions, making change processes difficult to predict.

Hellström (2007) states that introducing a management concept will incur mutual adaptation between the concept and the organizational practice. Inability to take this into account will produce a discrepancy between intentions and application of the concept.

Apart from theoretical perspectives, these studies all point to the same problem, namely that management concepts are generally ambiguous and require some effort to get them to work in the context where they are implemented. Introducing a management concept is therefore not a straightforward implementation exercise, but includes an iterative process of translations on several levels.

In the opinion of these authors, there are some questions that require closer attention. Skålén raises the question of whether doubt and ambiguity can produce conditions for change and dissemination of management concepts within organizations. Käll raises a similar question, recommending a study on how inscriptions (see Chapter 2) are created and how these influence susceptibility and motivation among employees. Quist claims there is need to explore what happens when ideas meet organizational practice in general, and whether there are common features in the translation process.

Other researchers have raised related questions: How does isomorphism relate to decoupling? What effects do coalitions, networks and strategic alliances have on the desire and ability of organizations to engage in decoupling? (Boxenbaum & Jonsson, 2008).

Purpose of the thesis

The purpose of this thesis is to contribute to the knowledge base concerning translation of management concepts. More specifically, to describe the chain of translation of a concept from the general management discourse to organizational practice and back.

As has been demonstrated in the previous section, studies of different concepts have produced similar results. In this thesis *Lean Production* is the management concept of choice, and will provide an example of how we can understand this translation process.

Emphasis is given to the whole range of abstraction, from the discourse level to the interorganizational level to the intraorganizational level and multiple levels of abstractions within an organization.

In order to provide a corresponding response, the purpose has been divided into three parts, as described in the table below. The idea is that comparing the three levels of abstractions related to the three research questions will provide an indication of the translations that occur between them.

	Paper A	**Paper B**	**Paper C**
Research question	How is Lean Production defined in literature (discourse level)?	Which principles and practices are associated with Lean Production in industry (interorganizational level)?	How is Lean Production disseminated within an organization (intraorganization level)?
Sample	Academic literature	Swedish organizations	Hierarchical levels within a single organization
Method	Literature review	Questionnaire survey	Interviews

Outline of the thesis

The thesis begins with an introductory chapter, where the overall ideas behind the thesis are presented along with aims and research questions. This is followed by a chapter that presents the theoretical framework that will be used in the discussion. The third chapter gives an overview of the overall research approach, consisting of an illustration of how the appended papers are related, along with a short summary of methods and findings of the appended papers. These findings are discussed and synthesized in chapter 4, based on the theories presented in chapter 2. Chapter 5 contains a discussion of the scientific contribution of the thesis. Finally, chapter 6 gives the conclusions of the thesis and some views on future research.

Theoretical framework

There is a large number of management concepts and they circulate within and between organizations of all forms, shapes and sizes. In some cases these ideas have positive effects, and in other cases the effects are not so positive. However, there are many different opinions and theories about the ideas and about the mechanisms that describe their dissemination and adoption. All of these theories cannot agree, but as will be shown in this chapter, the virtues of different theories become visible at different levels of abstraction.

Discussions in the concluding chapters of this thesis are based on the theories presented in this chapter.

Theories of translation

As demonstrated in the introduction chapter, the notion of translation can be a useful perspective in studies of organizational change. However, translation can be a confusing term, since it applies to a variety of situations and entities. According to Røvik (2007), there are two main perspectives within theories of translation. One is based on Actor-Network Theory (ANT), and one on the tradition simply known as 'translation studies'.

Translation studies are mainly concerned with literal translations, i.e. translation of language (Halverson, 1998; Venuti, 2004). Applying this perspective suggests that translation is an isolated activity performed by an individual or a secluded group, thus leaving social issues as something that is separated from the translation process and comes into account at a later point in time. Using translation in relation to organizational change and implementation of management concepts requires a perspective that has stronger focus on social processes. Although translation studies has evolved from the traditional literal focus to include social aspects of the translation studies (Bassnett, 1998), there are other theoretical directions where this perspective is more elaborate.

Within the perspective known as Actor-Network Theory (ANT), translation is mainly described as a collective process, focusing on the negotiations, manipulations and treachery that occur in the process (Callon & Latour, 1981; Callon, 1986a; Latour, 1987).

> *By translation we understand all the negotiations, intrigues, calculations. acts of persuasion and violence, thanks to which an actor or force takes, or causes to be conferred on itself, authority to speak or act on behalf of another actor or force: 'Our interests are the same', 'do what I want', 'you cannot succeed without going through me'. Whenever an actor speaks of 'us', s/he is translating other actors into a single will, of which s/he becomes spirit and spokesman. (Callon & Latour, 1981, p. 279)*

The quote above is focused on social displacement or translation of interests. Following Callon and Latour (Callon, 1986a; Latour, 1987) translation in its literal sense can be seen as a physical displacement or translation of meaning. This also applies to situations when a message or interest is transferred to a different 'medium', for instance when an idea or argumentation is expressed in a text. This mode of translation can also be understood as a process of *inscription* (Latour & Woolgar, 1986; Latour, 1987).

Action programs and inscriptions

Within Actor-Network Theory (ANT), there is a central idea that humans and artifacts interact and form networks of human and non-human actors. (See paper C for elaboration). According to Latour (1992) we delegate tasks to objects around us that receive the task of communicating a message to ourselves or other actors. This communication is made operational through the act of *inscription*. These inscriptions, or the meaning we ascribe to the objects in our surroundings, determine the ways we interact with the objects (Latour, 1987; Latour & Woolgar, 1986).

Inscriptions can be interpreted in a very literal sense, just like physical inscriptions on rock. The purpose of inscriptions is to attempt to impose an action program on other actors (Hanseth & Monteiro, 1997). Inscriptions can be weak or strong. Strong inscriptions can be said to exist when they will be generate a predictable course of action by most actors in a given context or culture.

On the other hand, we say that the inscriptions are weak when there is much room for interpretation and translation of the original message (Latour, 1987; Callon, 1986b).

> *Analytically viewed, the strength of an inscription relies on three aspects: the size and complexity of the surrounding actor-network which is linked to the inscription, the degree to which it is aligned with this surrounding actor-network and the strength of the inscription on its own. (Hanseth & Monteiro, 1997, p. 208)*

Engaging in a project such as implementation of a management concept could in ANT-terms be seen as an attempt to enforce a so called *action program*. Following Latour (1992) an action program is a desired course of action on the behalf of an actor or network, communicated through some form of medium.

The high failure rate in the implementation of management concepts (see introduction) puts a large question mark behind the effectiveness of positional power. Following the reasoning of Foucault (2003) and Callon & Latour (1981), power is distributed and cannot be confined. A salient example of this is Bruno Latour's investigation of the 'death' of the advanced public transportation system Aramis (Latour, 1996). Through his investigations, Latour found that no formal decision was made to cancel the project, but the group's collective action (or lack thereof) created a collective sense of a 'dead' project (Ibid.). In other words, no one had the power to sustain or cancel the project – the power was contained in the group's interactions.

This notion applies to all action programs, not only technological innovations or management concepts. According to Latour (1986) every person that is faced with an idea is free to translate it as (s)he sees fit, ignore it completely or design a contrary action program (anti-program). Thus, the strength of an inscription and its associated action program depends on what the receiver does with it (Latour, 1998). Artifacts contribute in the creation and stabilization of networks, supporting and enforcing certain types of behavior (Latour, 1992; 1998), and the stronger support an actor can mobilize from other actors (human or non-human) the stronger the action program (Callon & Latour, 1981; Latour, 1987). Inscriptions can be strengthened through the mobilization of various artifacts. In some cases artifacts (technical devices, legal requirements etc.) leave the user/receiver with no alternative than to adhere to the inscribed action program. The inscription thereby becomes a prescription.

Models for analyzing translation

Following Skålén (2002), the process of implementing a new management concept in an organization can be understood in terms of translation. Within the general management discourse – or organizational field, in Skålén's terms – various ideas and institutions circulate. As they are disseminated to organizations, they are translated and thereby changed. Each time an idea passes from one group or one level of abstraction to another, translation occurs.

According to Skålén, we can follow the process of translation from the discourse level into an organization, where it is translated and incorporated into the formal structure of the organization (or discarded). When the formal structure is to be converted into action within the organization, we can see a new process of translation taking place, again changing the idea (or discarding it). When actions become a routinized part of the processes, they form an institution, again translated and changed.

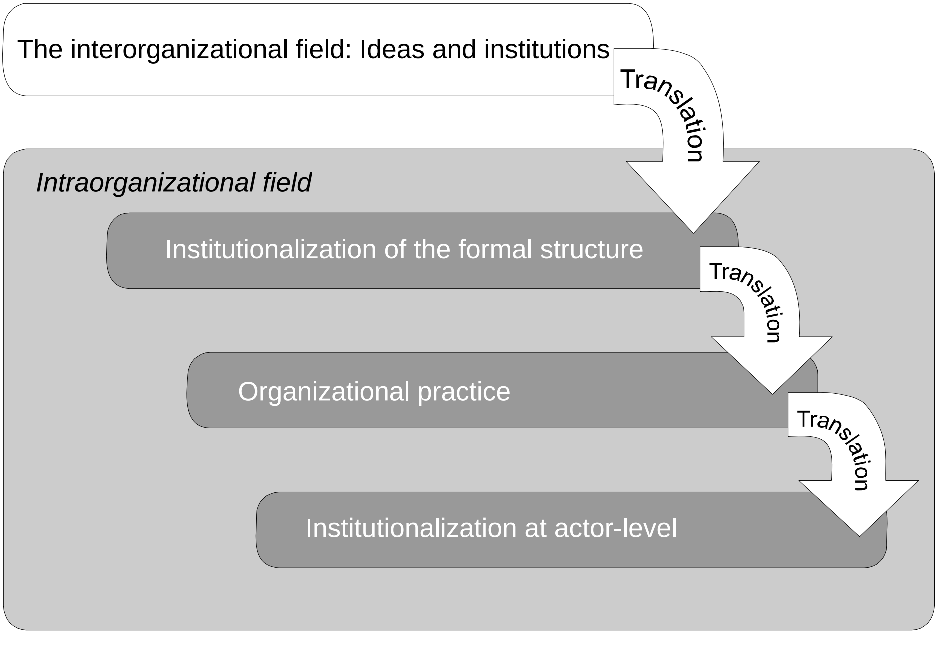

Figure 1 ***Tracing translation through three levels of abstraction, adapted from Skålén (2002, p. 45)***

Skålén's model (above), illustrates the different levels of abstraction used in this thesis, the *interorganizational field* and the *intraorganizational field*. For discussion purposes Skålén's interorganizational field can be divided into two parts, academia and practice, applying the term *discourse level* to represent the theoretical/academic production of management concepts.

According to Callon (1986a) a change process is a process of gaining power through creating and mobilizing a network of actors. In short, this is achieved through specifying an obligatory passage point (OPP) and translating it and each actor’s interests so that all of the actors’ interests are in line with the OPP (See paper C for elaboration).

In a change process studied by Sarker et al. (2006) top management concluded that there was a need to improve the market position of the company. In order to achieve this goal, the idea of a major change initiative was introduced. Through comparing the interests of the various actors with the obstacles they face, the interests were translated and the idea of radical change was presented as a solution to the problems, and thus became an obligatory passage point (See figure 2).

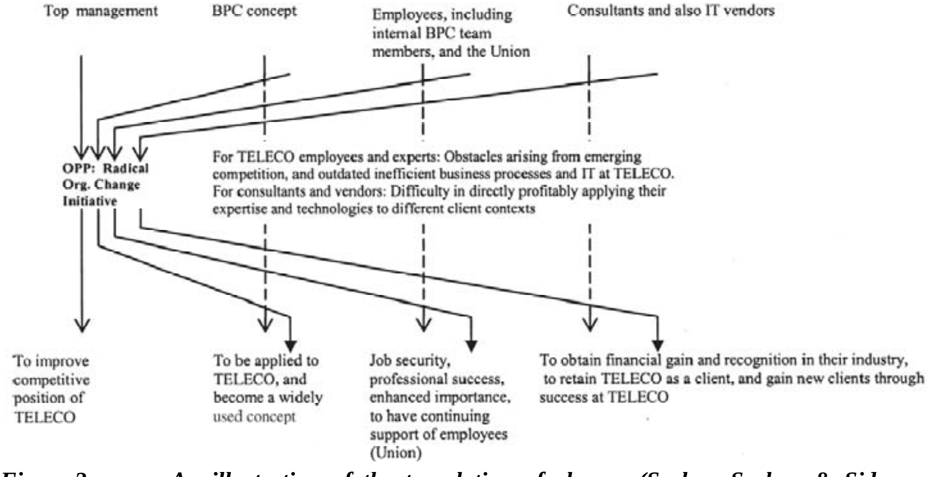

Figure 2 ***An illustration of the translation of change (Sarker, Sarker, & Sidorova, 2006, p. 63)***

In the illustration above we see that the Business Process Change (BPC) concept is seen as an actor with interests of its own. This is because of the interests (action program) that are inscribed in the concept. Viewing artifacts as actors and including their interests in the study of translation provides a deeper understanding of the change processes. Latour (1998) argues that artifacts are what make interactions durable, and that they therefore need to be included in organizational research.

A historical overview of the management discourse

Tracing the history of management concepts requires us to go back about one hundred years in time. The work of Frederick W. Taylor around the turn of the last century could be seen as the first significant management concept, cf. Barley & Kunda (1992). Taylor was critical to what he saw as an arbitrary approach to management, and devised a set of principles that formed the basis of the method he called *scientific management* (Taylor, 1977). Taylor summarized his method in four principles (Taylor, 1977, pp. 36-37):

1. Develop a science for each element of a man's work, which replaces the old rule-of-thumb method
2. Scientifically select and then train, teach, and develop the workman, whereas in the past he chose his own work and trained himself as best he could
3. Cooperate with the men as to insure all of the work being done in accordance with the principles of the science which has been developed
4. An almost equal division of the work and the responsibility between the management and the workmen.

Taylor's method became the standard method for managerial work, and has been both celebrated and criticized over the years. Much of the criticism that has been directed towards Scientific Management has concerned the overly rational management approach, leaving little room for 'softer' aspects of work life. In the 1920's these aspects were given more attention, which eventually led to the *Human Relations* movement (Barley & Kunda, 1992).

As pointed out by Barley and Kunda (1992), rational and normative[1] management concepts have substituted each other in an oscillating fashion since the 1870's. The Human Relations movement was followed by *Operations Research* (OR), or what we currently refer to as Operations Management. The purpose of OR was to optimize the output from operations (processes), which has much in common with the slowly growing movement of Quality Management (QM).

[1] Note that the terms 'rational' and 'normative' are used in a specific way by Barley and Kunda, and could be said to be have a production and humanistic orientation respectively.

The quality movement began with the work of W. E. Deming and J. M. Juran in the 1950's. Deming and Juran shared an ambition to improve the management's focus on their customers, and providing them with techniques for a structured analysis and improvement of their organizations (Deming, 1986; Juran & Godfrey, 1999). Deming and Juran both went to Japan, where their teachings found interested ears. Japanese industry lay in ruins after World War II and the quality of Japanese products were poor (Bergman & Klefsjö, 2003). The Japanese took the new ideas to heart and managed to improve their performance significantly, to such a degree that the previous dominance of the Americans was threatened.

The efforts of Deming and Juran have been seen as having a central role in the transformation of Japanese industry, but they have not been solely responsible for the achievement. As previously stated, the quality movement, fronted by Deming and Juran, has much in common with OR, both emphasizing a structured way of working.

One of the organizations that have applied these ideas successfully is the Toyota Motor Company. Like most other Japanese organizations, Toyota's performance was dismal in the 1950's. Aiming to amend the situation, Toyota sent representatives to Detroit to study Ford's manufacturing facilities and learn from them (Womack, Jones, & Roos, 1990; Liker, 2004). The insights gained from visits at Ford led to the conclusion that a completely different approach was necessary to meet the requirements of the Japanese market conditions. A resource efficient production system was needed, and the journey began to create what later became known as the Toyota Production System or simply TPS (Liker, 2004; Womack, Jones, & Roos, 1990). The chief architect behind this production system, Taiichi Ohno, published a book in the late seventies, declaring that the construction of the system was complete.

In his book, which was later translated into English (Ohno, 1988), Ohno states the purpose of TPS as reduction of cost through the elimination of the seven forms of waste (Ohno, 1988):

1. Transportation
2. Inventory
3. Motion
4. Waiting
5. Over production
6. Over processing
7. Defects

After the MIT-driven IMVP studies were published (Womack, Jones, & Roos, 1990; Krafcik, 1988), TPS received massive attention and became known under the term Lean Production. The publications from the IMVP research group concluded that the high Japanese performance was mostly determined by the limited amount of resources in their production processes or *value chain*.

A different explanation for the success of the Japanese is their focus on customer requirements and quality (Bergman & Klefsjö, 2003). This, in combination with a statistical handle on production management, was by many seen as a valid explanation for the differences in performance between organizations.

During the 1980's many scholars set out to find the determining factors behind successful organizations. OR and QM strategies were two models of explanation. A third explanation focused on the organizational culture, and claimed this was what differentiated successful organizations from non-successful ones (Barley & Kunda, 1992).

The previously statistics based QM approach absorbed many of the elements from the corporate culture movement (Dahlgaard, Kanji, & Kristensen, 2005). Although QM and OR have many elements in common, there are some crucial differences between the two, namely the focus. Whereas OR is focused on production and the maximization of quantifiable outcome, QM is directed towards the customer, aiming to establish a corporate culture around the customer focus, thereby gaining advantages against the competitors (Dahlgaard, Kanji, & Kristensen, 2005).

At one level, the previously discussed discursive oscillation between rational and normative concepts can be seen as a dialectic process where the challenging perspective thrives on the flaws of the dominating one, thus creating the need for a new dominating discourse (Barley & Kunda, 1992).

Translation at the interorganizational level

The mobility of management concepts has been discussed from many different perspectives, and described along many lines. One classical theory is Rogers' diffusion theory (Rogers, 2003). According to Rogers, the diffusion of ideas is highly dependent on the 'force' of the communication and time, much like ripples spreading on the surface of a lake. When faced with these ripples, the receiver has the options of adopting or discarding the idea.

Latour (1987; 1998) directs critique towards this theory and claims that ideas *seem* to spread by some force of their own when everything goes well in a translation process, indicating that what looks like diffusion is actually the result of an action program in which everything runs smoothly.

Sahlin & Wedlin (2008) take a perspective that is somewhere in between diffusion and translation and discuss the mobility of management concepts in relation to what they call *editing*, which is synonymous with the term translation as used by Røvik (2007). The basic idea of editing is that ideas do not travel by a force of their own, as proposed by Rogers, but are communicated between actors who continually change the ideas as they pass them along.

> *Through editing, an idea or an account of a practice may be formulated more clearly and made more explicit; however, the editing process may also change not only the form of the idea or account but also its focus, content, and meaning. (Sahlin & Wedlin, 2008, p. 226)*

According to Sahlin & Wedlin (2008), the general editing process can be described in three different steps:

Abstraction	Ideas are taken from a certain context and expressed in general terms.
Reconstruction	The ideas are reformulated in different terms, perhaps shifting focus to emphasize different elements than in the original idea.
Commodification	Many ideas are picked up by management consulting agencies, researchers and other actors in the field. The ideas are usually given catchy names and labels, and in many cases marketed as off the shelf solutions.

This kind of theory clearly implies that there are 'suppliers' and 'consumers' of ideas, cf. Lillrank (1995). Sahlin & Wedlin (2008) further discuss three modes of *imitation*, which can be seen as modes of *dissemination*. Most closely linked to the supplier side of idea dissemination is the *broadcasting* mode. This mode has many similarities to Rogers' theory of diffusion (see above), indicating that there is one, mainly unchanging, idea that spreads from a single source. Another mode of dissemination is *mediation*, which also is closely linked to the conception of 'idea suppliers', the meaning being that there are persons and organizations that promote certain ideas and help their dissemination. The third mode of dissemination is the *chain* mode, indicating that the idea spread from organization to organization, in a sequential manner. With this perspective, there is no particular supplier of ideas, rather each organization has an active role in disseminating the idea. These three modes of dissemination will have different effects on the idea that is communicated.

One consequence of these perspectives is that most organizations are at the receiving end as more or less helpless 'victims' of the trends in the managerial discourse, or what Røvik calls the 'virus theory' (Røvik, 2007). This conception does not necessarily hold at all levels of analysis.

The institutional perspective

According to Meyer & Rowan (1977) management concepts are formed as a result of the efforts and coalitions of powerful and influential organizations. These organizations manage to

> *force their immediate relational networks to adapt to their structures and relations […and] attempt to build their goals and procedures directly into society as institutional rules. […] Rivals must then compete both in social networks or markets and in contexts of institutional rules which are defined by extant organizations. In this fashion, given organizational forms perpetuate themselves by becoming institutionalized rules. (Meyer & Rowan, 1977, p. 348)*

In short, this is the basis of *isomorphism*, which makes it very difficult for other organizations to challenge the institutional rules, or the dominating managerial discourse.

Although the management discourse indicates this, not all management concepts are representations of 'best practice'. They are in some cases compounded from several practices or in their entirety constructed at an office desk (Røvik, 2007). One problem with this is that the ideas that organizations are expected to follow and implement are not necessarily beneficial for every organizations. They may, on the contrary, be counterproductive for some organizations, leading to the previously discussed discrepancy between management discourse and organizational practice. In other words, although most organizations *seem* to be doing the same things, the actual practice may differ substantially (Meyer & Rowan, 1977).

Conforming to the dominating ideas is essential for the legitimacy of the organization, thus forcing it into a standard institutionalized mold (Meyer & Rowan, 1977).

> *[O]rganizations that omit environmentally legitimated elements of structure or create unique structures lack acceptable legitimated accounts of their activities. Such organizations are more vulnerable to claims that they are negligent, irrational, or unnecessary. (Meyer & Rowan, 1977, pp. 349-350)*

This realization led to an alternative view of organizational behavior, indicating that not all decisions are rational, and that conformism is very much present in managerial work (Meyer & Rowan, 1977). The tendency of similarity between organizations led to the term *isomorphism*, which was elaborated by DiMaggio and Powell (1983).

The process of becoming isomorphic is linked to the notion of *institutions*, based on the ideas of socially constructed practices (Berger & Luckmann, 1966). Berger and Luckmann describe institutionalization in the following way:

> *All human activity is subject to habitualization. Any action that is repeated frequently becomes cast into a pattern, which can then be reproduced with an economy of effort and which, ipso facto, is apprehended by its performer as that pattern. […] Institutionalization occurs whenever there is a reciprocal typification of habitualized actions by types of actors. Put differently, any such typification is an institution. (Berger & Luckmann, 1966, pp. 70-72)*

Isomorphism is used to describe how organizations resemble one another. The literal meaning of the word gives association of an institutional perspective on organizational structure. Erlingsdóttir (1999) has further expanded the term and suggested *isopraxism* to denote similarities in practice. To complicate matters further, it is not uncommon that the similarities are merely rhetorical, without any connection to either practice or structure, a phenomenon that Erlingsdóttir & Lindberg (2005) have called *isonymism*.

Management fashion

Furusten (1999) has studied the discursive elements of management concepts in detail, and has found some general patterns within the literature. There are differences in focus between management books, and they are produced by different authors with different backgrounds. But still they share the same rhetoric and fundamental assumptions, namely that the success of organizations can be predicted through a single factor – effective leadership. The rhetoric in the literature is also endowed with ideological representations of general and at times vague statements (Furusten, 1999).

Latour (1987) argues that the simplest way to spread an idea is to leave a ‘margin of negotiation’, to leave the message ambiguous. This way each actor may transform the message as he or she sees fit and adapt it to local circumstances.

The phenomenon described by Latour seems to be widely applied within the management discourse. Benders & van Veen (2001) not only agree with Latour, but claims it is necessary for management concepts to be ambiguous or have what they call *interpretative viability*. This claim is also supported by Røvik (2007).

However, this approach has some consequences: (1) The message will be translated by anyone, (2) There will be as many translators as there are actors in the network, (3) the message will be impossible to trace historically as it will have multiple sources, (4) changes in opinion will not be noticeable since there is no ‘core’ or ‘baseline’. The localized versions will not be easily transformed through outside influence because of their foundation in the local context (Latour, 1987).

Because of this mechanism it is difficult, or even impossible, to find the origin of any management concept. They become collectively formed constructs or a ‘family’ of constructs – a form of managerial fashion (Abrahamson, 1991; 1996; Benders & van Veen, 2001; Røvik, 2000; Røvik, 2007). As indicated by Meyer & Rowan, application of the fashionable concepts, or at least giving the impression of application, becomes a key for managers to gain legitimacy for their organizations (Abrahamson, 1996).

The effectiveness of change concepts

When reading about the multitude of management concepts that surround us, e.g. Total Quality Management, Business Process Reengineering, Human Resource Management or Lean Production, there is often a discussion of the effectiveness of the concept (Womack, Jones, & Roos, 1990; Berggren, 1992). According to Sveningsson & Sörgärde (2007), there is a general misconception that these models have an innate ability to produce certain results and control change processes within organizations. Lillrank (1995) calls this an ‘attribution error’, that the success or failure of a certain organization can be traced to specific factors or generalized principles. As shown in the introductory chapter of this thesis, the results that come out of a change initiative often differ from the initial goals (see figure 3).

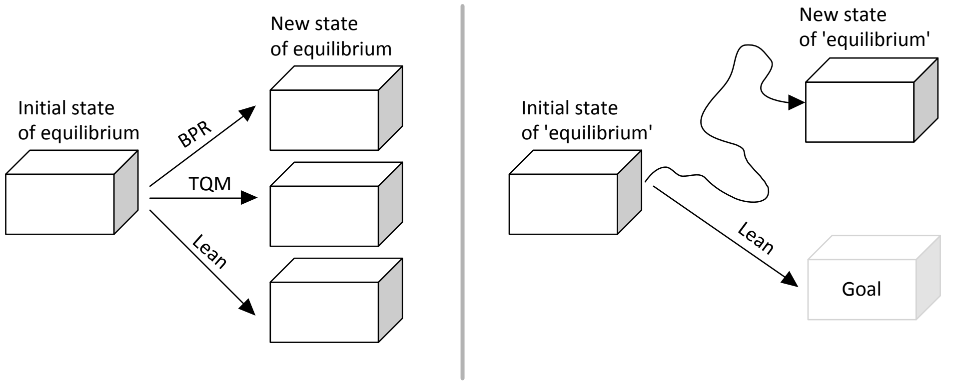

Figure 3 ***An illustration of the discrepancy between the assumed trajectories and effects of a concept (to the left) and a more realistic trajectory and result (to the right).***

The complexity of an organizational change process is often reduced to simplistic generic advice, often in the form of a list of sequential steps that will ensure success (Sveningsson & Sörgärde, 2007). Based on the theories presented earlier in this chapter, it is easy to question this kind of instrumental rationalization and simplification of change processes.

> *Organizational change is basically about people. And it is not possible to direct or have complete control over how other people experience a situation and choose to act; social engineering is problematic by nature. This can seem obvious, but it nevertheless seems to be something that is often ignored when organizational change is discussed. (Sveningsson & Sörgärde, 2007, p. 266; translated from Swedish)*

Sveningsson & Sörgärde (2007) have tried to give a more reflective and realistic account of the implications of change processes. Some of the key factors are that (1) change processes take time and require persistence, (2) the change initiatives are not unequivocal, and (3) change initiatives based on external influences may produce difficulties in gaining acceptance within the organization (ibid, p. 265).

Translation at the intraorganizational level

Traditional theories of institutionalism and the diffusion of ideas have been critiqued for having a too instrumental view, disregarding the role of actors in the systems they discuss. The Scandinavian tradition of neo-institutionalism has addressed this issue, putting a stronger emphasis on actors and their roles in relation to the dissemination of ideas.

> *Ideas do not diffuse in a vacuum but are actively transferred and translated in a context of other ideas, actors, traditions and institutions. This brings actors and interests into the analysis. (Sahlin & Wedlin, 2008, p. 219)*

This perspective brings the analysis to the fundamental level, the level at which groups and individual actors operate. The question here is not what happens to the idea or the organizations, but *why* ideas are translated. Røvik (2007) deals with this question through distinguishing between different kinds of translations. First of all, translation may be a *rational act*, aiming to adapt the idea to the local context and optimize the output from the implementation. Secondly, translation may be an effect of *conflicts and negotiations*, as a dialectical process at a micro level. Thirdly, translations may result from ambitions of gaining *status or symbolic effects*. These three types are *intentional* modes of translation. Røvik (2007) also argues that there are *unintentional* modes of translation, where ideas may change as a result of differences in interpretation between actors.

According to Beer & Nohria (2000) organizational change is mostly seen as a process of going from an old state to a new state. This statement is based on the idea that organizations alternate between more or less stable states, commonly described as the Lewinian process of *unfreezing – change – refreezing*. This conception is not necessarily true. According to a number of researchers (Czarniawska & Joerges, 1996; Weick, 2000) the alternation between stable states is an illusion that appears when viewing organizations from a macro perspective. When taking a closer perspective on the organizations, one will find a process of continuous adaptation and adjustment (Weick, 2000). This process of continuous change implies that organizations never really stabilize, they are living systems, constantly evolving and adapting to a multitude of factors. Weick (Ibid.) therefore argues that organizational change is really about utilizing the momentum that already exists within the organization. It is therefore not about changing states, but about providing a direction for the collective actions in the organization.

Weick (2000) questions the conception that management concepts lead to certain results (cf. figure 3). He claims that any concept will work as long as it fulfills some basic criteria (Ibid, p. 233). Czarniawska & Joerges (1996) support this view, and state that the concept of translation is vital to understand the concept of organizational change:

> *With some exaggeration, one can claim that most ideas can be proven to fit most problems, assuming good will, creativity and a tendency to consensus. It is therefore the process of translation that should become our concern, not the properties of ideas. (Czarniawska & Joerges, 1996, p. 25)*

Weick (2000) argues that managers should make sense of the choices made in the front line and communicate the essence throughout the organization. This process of sensemaking and communication will spread like ripples on water and create a chain of sensemaking activities with each actor affected by it. This allows the actors to change the meaning of the initial message, thus leading to a chain of translations (Callon, 1986a; Latour, 1987).

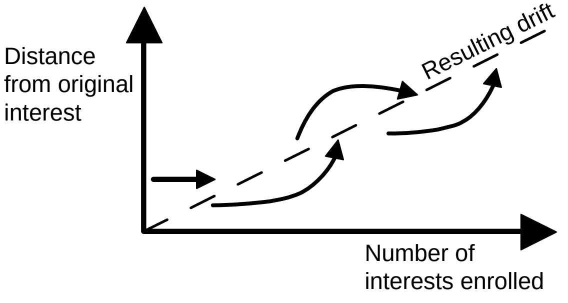

Figure 4 ***An illustration of the expected 'drift' than occurs in translation processes, Adapted from Latour (1987, p. 117)***

In relation to the above mentioned modes of translation, Røvik (2007) argues that the translating actors need to have *translation competence*, in order to avoid unintentional or *ineffective* translations, i.e. translations that contradict the stated purpose of the idea. The notion of *translation competence* is based on knowledge of four elements; (1) The context *from* which the translation is done; (2) *Decontextualization* of the translated idea (cf. the term *abstraction* used above); (3) *Recontextualization* of the translated idea (cf. the term *reconstruction* used above); and (4) The context *to* which the translation is done.

Røvik's perspective works fine at the interorganizational level, but when penetrating the organizational boundaries, the picture becomes more complex. Seeing translation as an isolated activity causes implementation to be seen as a case of direct application, which is only rarely possible. A competent translator must also understand the mechanisms of intraorganizational translation processes.

Failure, decoupling and loosely coupled systems

When asking who has the power in an organization, pointing to the organizational chart seems to be a standard response. According to this view, power comes with the position. It is therefore often assumed that organizational change can and should be initiated by management. Beer et al. (1990) argue that this approach is ineffective. Studying a number of manager induced change efforts, Beer and his colleagues found that approximately most of these efforts failed to produce the expected results. This seems to be a common conclusion in research on programmatic change. About two thirds of programmatic change initiatives have been reported to fail (Spector & Beer, 1994).

Røvik (Røvik, 2007) distinguishes between different modes of failure: (1) Decoupling, (2) dismissal and (3) abandoning because of unwanted results. All of which he claims can be traced back to poor translation efforts.

It has long been known that organizations are not necessarily as rational and predictive in their performance as they would like to be or as they describe themselves. Scholars have time and again found organizations where action and formal structure are disconnected or decoupled (Meyer & Rowan, 1977). Weick (1976) prefers to use the term *loose coupling* to describe this phenomenon. Weick defines loose coupling as events that

> *are responsive, but that each event also preserves its own identity and some evidence of its physical or logical separateness […] and that their attachment may be circumscribed, infrequent, weak in its mutual affects, unimportant, and/or slow to respond. (Weick, 1976, p. 3)*

According to Weick (1976) the idea of loose coupling is used to describe different situations that can be summarized as low or nonexistent response, coordination, influence or other types of connections between organizational units or between structure and activity (see figure 5 below).

Loose coupling	**Tight coupling**
Sudden	Continuous
Occasional	Constant
Negligible	Significant
Indirect	Direct
Eventual	Immediate

Figure 5 ***Different modes of influence in loosely and tightly coupled systems, after Orton & Weick (1990)***

Although loose coupling may seem to be a negative phenomenon, it can have some beneficial effects as well. Loose coupling can function as a sort of buffer that protects the core business from fluctuations in the external environment, thus enabling the loosely coupled system to function more effectively compared to an organization with tighter coupling (Weick, 1976).

Orton and Weick (1990) describe different variants of loose coupling in the way described in figure 6 below.

	Distinctive	**Non-distinctive**
Responsive	*Loosely coupled system*	*Tightly coupled system*
Non-responsive	*Decoupled system*	*Noncoupled system (Not really a system)*

Figure 6 ***Variants of loose coupling, after Orton & Weick (1990, p. 205)***

According to Weick (1976), loose coupling may be exceedingly hard to identify; “By definition loosely coupled events are modestly predictable at best” (Weick, 1976, p. 13). However, loose coupling may become evident through excessive rationalization and attribution of meaning, predictability and coupling of organizational activities.

Weick (1976) suggests that loose coupling occurs when there is ambiguity in or lack of knowledge about intentions, how intentions are translated into action or about the consequences of action. This is related to the above discussions concerning *translation competence*, indicating that this is a key factor in processes of organizational change.

Overview of appended papers

This chapter gives a presentation of the research approach that underlies the thesis. The relationships between the three appended papers are illustrated, followed by a short presentation of the methods that have been used in the three studies and a summary of the results.

Research approach

As stated in the introductory chapter, an individual study has been conducted for each research question, resulting in three seemingly unrelated papers. However, there is an underlying idea that brings the three studies together.

	Paper A	**Paper B**	**Paper C**
Research question	How is Lean Production defined in literature (discourse level)?	Which principles and practices are associated with Lean Production in industry (interorganizational level)?	How is Lean Production disseminated within an organization (intraorganization level)?
Sample	Academic literature	Swedish organizations	Hierarchical levels within a single organization
Method	Literature review	Questionnaire survey	Interviews

The three papers and their respective research questions come together in relation to the overall purpose, namely to study the whole process of translating Lean production from the academic discourse to practice within organizations – from a high to a low level of abstraction. Figure 7 on the next page is an attempt to convey this ambition visually.

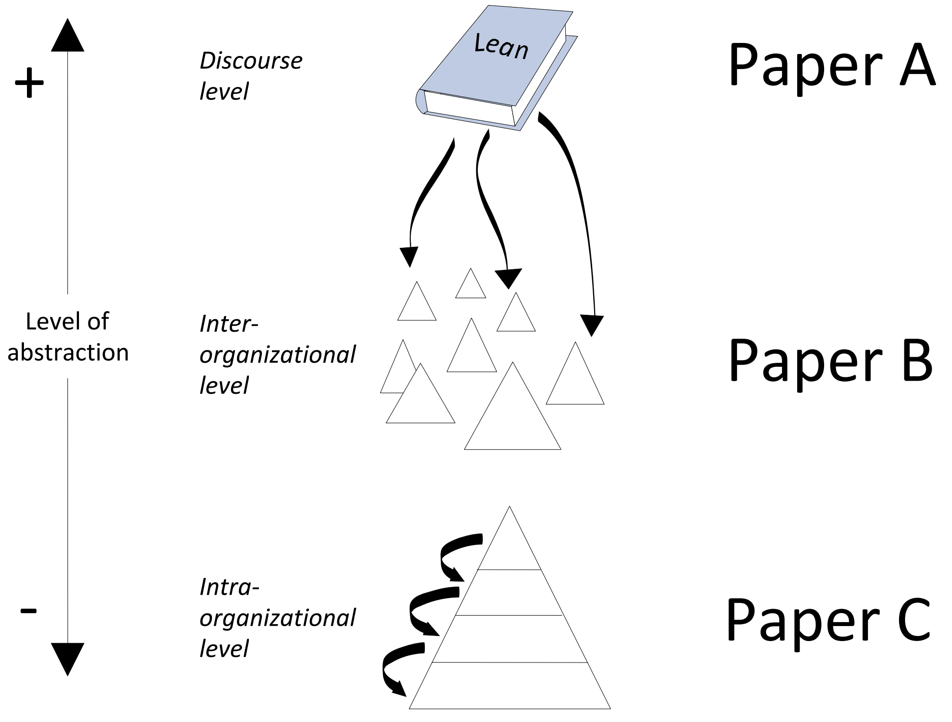

Figure 7 ***An illustration of the research design***

In paper A (Pettersen, 2009), the ambition is to find a conceptual core for Lean Production. Since the research question is aimed directly at the academic discourse (literature), the principles for sample and method are already given at the outset. Please see paper A for a detailed description of sampling strategy and selection of publications.

Paper B (Pettersen, Poksinska, Elg, Eklund, & Witell, 2009) is based on a similar line of thought as paper A, with a slight reduction in the level of abstraction. The focus here is Swedish industry, at an aggregated level. The general idea has been to compare the views on Lean Production in literature (discourse level) with management practices in Swedish industry (interorganizational level). In order to reach the ambitions set forth before paper B, a questionnaire study was a natural choice. Since the aim was to see what kind of management practices were applied in the organizations, an operative perspective on the matter was sought after. Production managers (or persons with a similar function) were deemed most likely to give accurate information on this. Both manufacturing and service organizations took part in the study.

In the final paper (Pettersen, 2008), the ambition was to follow the translation process beyond the discourse and interorganizational levels of abstraction and penetrate the intraorganizational level. This was achieved through a single case study, where interviews with representatives from all organizational levels within a large manufacturing organization comprised the main source of information.

As the purpose states, the ambition is to contribute to the knowledge base concerning translation of management concepts. More specifically, to describe the chain of translation of a concept from the general management discourse to organizational practice and back. This purpose is fulfilled through bringing these three studies together in this thesis, where the results are brought together and analyzed in the following chapter.

Results

In Paper A (Pettersen, 2009) focus is placed on the academic discourse of Lean Production (LP). The paper illustrates that it is very difficult to find a conceptual core for Lean Production. One thing that is beyond any doubt is that continuous improvements (kaizen) is a core principle for LP, but this does not make LP unique in any way since improvement is the basic idea of every management concept.

It is shown in the paper that there is no consensus on a definition of Lean Production between the examined authors. The authors also seem to have different opinions on which characteristics should be associated with the concept. Overall it can be concluded that Lean Production is not clearly defined in the reviewed literature. This divergence can cause some confusion on a theoretical level, but is probably more problematic on a practical level when organizations aim to implement the concept.

As is demonstrated in the paper, it is possible to find general themes that could be said to constitute some kind of ‘core’, but this requires that the level of abstraction is raised somewhat, thus reducing the practical implications of finding such a core.

The weak inscriptions of LP are visible in many ways. In addition to the characteristics mentioned above, there are different views on what the purpose and goal of the concept is. In paper A, four different perspectives on LP are identified: (1) Being Lean, (2) Becoming Lean, (3) Doing Lean and (4) Thinking Lean. In the leading literature on the subject these four perspectives have not been brought together, but have been treated without respect to the others, thus contributing to the confusion that surrounds the concept. However, focusing one perspective limits the range of possible interpretations of the concept, leading to a narrower *translation space*.

This paper argues that it is important for an organization to acknowledge the different variations, and to raise the awareness of the input in the implementation process. Combining perspectives in the way suggested in the paper, will widen the translation space, but also reduce the confusion. With less confusion, actors with different perspectives will be able to speak to each other in a more constructive way. It is further argued that the organization should not accept any random variant of LP, but make active choices and adapt the concept to suit the organization’s needs. Through this process of adaptation, the organization will be able to increase the odds of performing a predictable and successful implementation.

Finally, a comparison between LP and TQM shows that there are some important differences between the concepts, although they share many underlying principles.

These differences are also evident in paper B (Pettersen, Poksinska, Elg, Eklund, & Witell, 2009), where focus is placed on the application of management concepts in Swedish industry. As in paper A, we see that a conceptual core is highly elusive. The management concepts in the study have been found to be highly correlated to each other, indicating that an exclusive application of any one single management concept is quite rare.

The analysis allows us to identify three categories of management practices: (1) Lean and TPS, (2) TQM and Six Sigma and (3) Quality management systems such as ISO 9000. Although these conceptual groups can be identified, they are not significantly different. There seems to be an overlap of management practices related to these concepts.

Also, the results indicate that consultant assistance is associated with all of these management concepts, suggesting that consultants play a vital role in translating the management concepts between the general discourse and the intraorganizational level.

In paper C (Pettersen, 2008), we see an example of how consultants play a vital role in the translation process. The paper gives a description of the first steps in implementing Lean Production in a company named HiTech Inc. It is demonstrated in the paper that the implementation process has not been linear, but that the focus of the initiative has shifted somewhat compared to the initial ambitions. The implementation could be seen as a semi-failure, leading to some positive results, but not providing the strong supporting basis for expanding the application of LP to include other practices.

The analysis shows that individual actors translate the core ideas of the LP concept so that they become more in line with their own frames of reference, which causes the concept to have several different meanings within the organization.

The case study gives an example of how a consultant based approach to implementation may lead to an over reliance on the actions of individuals, instead of aiming for collective action based on a common understanding. This mode of application creates greater room for translation to take place, thus increasing the risk of an uncontrolled implementation process and communication difficulties within the organization.

A tentative model for the translation of management concepts

Based on the research leading up to this thesis, there are some interesting links between the empirical material and the theories that have been reviewed in chapter 2. The aim of this chapter is to synthesize results from the empirical studies and the theoretical perspectives presented in the previous chapters.

Based on the theoretical discussions in chapters 2 and 3, a model for analyzing the translation of management concepts has been produced. The ambition is that this model may be used as a conceptual framework for future studies of the same kind.

Each part of the model is discussed from a theoretical perspective, followed by an example of how the model can be applied and related to the empirical material.

The proposed model

The translation of management concepts, according to the proposed model below, is to be interpreted as a circular process, feeding on and feeding back to the discourse. Given a certain point in time, we can identify a set of institutionalized practices and ideas in the management discourse.

Following this evolution of management concepts, as described by Barley and Kunda (1992), enables us to see an oscillation between rational and normative concepts. This oscillation can be traced more than a hundred years back in time. And although the article by Barley and Kunda is 17 years old, we can see that the evolution continues in the same pattern. The normative era of corporate culture and QM strategies has died down and lost ground to the now dominating management concept Lean Production.

Precisely in line with Barley and Kundas conclusions, the current managerial discourse has a rational flavor to it. Coming from a period where organizational culture, participative strategies and customer focus has been predominating factors in the management discourse, we are perhaps starting to see a move from a normative to a rational management discourse, cf. Paper A. Providing this oscillation has predictive power, we should see a normative approach coming around the corner.

Management concepts are decontextualized, reconstructed and commodified and then disseminated to organizations through the process of *interorganizational translation* described in chapter 2. Once inside the organizational framework, the concept will be met by networks of actors. Based on the *translation competence* within the organization, different modes of interpretation of the encountered idea will be applied and the idea will be translated by individuals and networks of actors within and outside the organization (e.g. consultants, business partners etc.) – *intraorganizational translation*. As defined in chapter 2, translation competence requires knowledge about both the concept that is to be translated as well as the contexts from which it comes and to which it is to be applied (Røvik, 2007), as well as knowledge about the translation process itself (cf. paper C). The translation competence within these networks will determine the basis for application of the concept. Since the concepts themselves are always more or less ambiguous in nature (Benders & van Veen, 2001) they need to be translated to fit the context, thus creating a need for translation competence within the translating network in the organization.

As described in chapter 2, all general management concepts such as LP must have *interpretative viability* in order to be attractive on the market (Benders & van Veen, 2001). In order to provide a concept with strong inscriptions, it would need to be adapted to a specific branch of industry, a certain category of organizations, or limit its applicability in some other way. A management concept with the universal range of applicability as argued by Womack et al (1990) requires weak inscriptions, so that the concept can be interpreted to fit the organization that chooses to take it in.

Because of these weak inscriptions in management concepts such as Lean Production, it is unlikely that they will be directly applicable without translation, causing translation to be the first mode of application in the figure below.

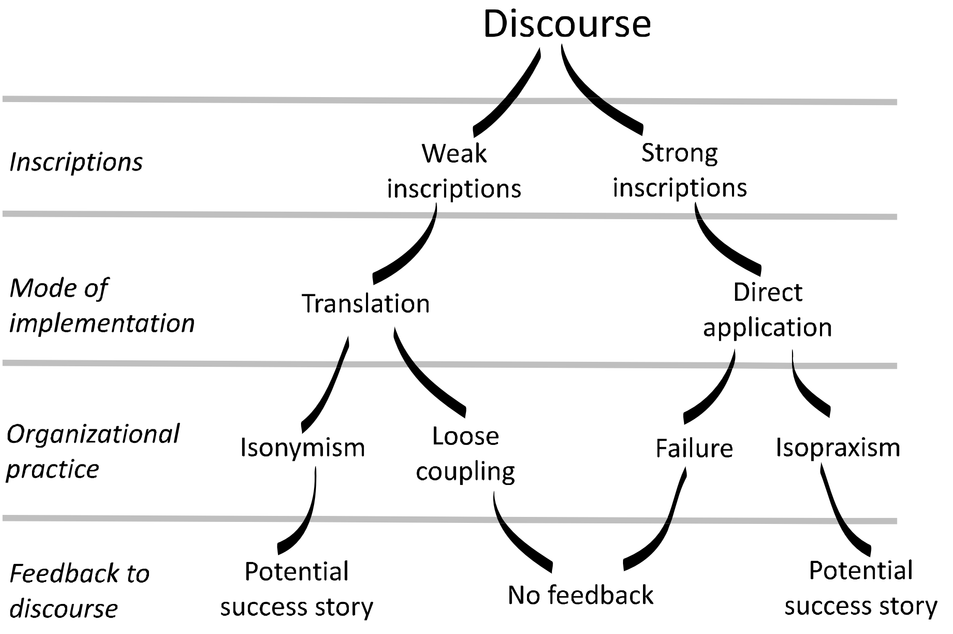

Figure 8 **A proposed model for analyzing the translation of management concepts**

During the intraorganizational translation process, the concept will be subject to many possible modes of translation, as suggested by Røvik (2007). When considering several networks and/or actors within an organization, Røvik's framework (Røvik, 2007) can be expanded to include combinations of the two modes of translation, i.e. translations that are both intentional and unintentional at the same time. When the opinion of one translating actor or network differs from that of another, this combination may come into play, cf. Paper C. The management concept is interpreted in different ways and conflicting action programs are produced.

The strongest action program will be the one that has supporting devices with the strongest inscriptions. If a concept related action program has sufficiently strong inscriptions, it could be seen as a prescription and the possibility/risk of further translation of the concept is minimized. This allows us to speak of *direct application* of the idea, leading to *isopraxism*, provided that the practice undergoes actual change and the application is successful. If the idea does not deliver the promised results, the effort will most likely be characterized as a failure. But as long as the effort provides desired results isopraxism will remain. The application may then be seen as a potential success story that may be decontextualized and fed back to the discourse by similar means as discussed above, strengthening the discourse surrounding the idea.

If, however, the translating networks within the organization have insufficient translation competence, the inscriptions in the idea and the devices mobilized in its support may be too weak to ensure an effective application. The idea may be further translated to suit the needs of other networks, leading to *decoupling* or *loose coupling* (Meyer & Rowan, 1977; Orton & Weick, 1990) between the translating and the effectuating networks. This decoupling may be conceptual or practical or both. With a practical decoupling only, we can speak of *isonymism* (Erlingsdottir & Lindberg, 2005). Although there may not be actual results supporting the overall idea, this isonymism may be used as another kind of success story for supporting the idea and strengthening the discourse.

Isonymism can also be a form of loose coupling, but in this case the two terms are separated in order to provide a more precise description. The term loose coupling is used to describe situations where there is a gap between rhetoric and practice within an organization, whereas isonymism is used when organizational practice differs between hierarchical levels or departmental boundaries although the same rhetoric is used to describe the practice.

Usually, the term *failure* is used when the expected results of an effort are not reached. However, unexpected results may come out from all the four modes of organizational practices described in the model. In this model, the term failure is therefore used in a very narrow sense, only having application to those efforts that 'die out' either because of unwanted results or insufficient interest within the organization.

Isopraxism can exist in both inter- and intraorganizational terms, indicating similarities in practice between or within organizations respectively. Strictly speaking, this can only occur when the concept has not been translated – that is when it has been subject to direct application.

Traversing the model – an example of application

This section is dedicated to a demonstration of how the model above can be applied to a practical case. The studies in the three appended papers provide a basis for demonstrating the model.

Over the years there have been many opinions on the definition and meaning of various management concepts, and Lean Production is by no means an exception. However, these opinions are in many cases contradictive. As described in paper A, there are two main categories of goals associated with LP that are more or less contradictive.

Lean Production is in many ways a translation – a decontextualized version of Toyotas Production System (TPS). But there are also influences from other organizations (Womack, Jones, & Roos, 1990). However, discussions concerning Lean Production tend to reference Toyotas practice in many cases. This sometimes leads to confusion about the topic. Saying something about Lean Production may be criticized based on what Toyota does and does not do. But this is in fact beside the point, since Lean Production is not TPS. Lean Production is as indicated above a *decontextualized* translation of TPS, with weak inscriptions to support the claim of universality. TPS is only applied in full within Toyotas organization, making it a unique and well defined concept. The inscriptions in TPS are necessarily stronger than those within Lean Production, although there may be room for translation within the Toyota organization. But that is a discussion beyond the scope of this thesis.

Some argue that the goal of LP is to please the customer, while others claim it is to cut costs. Some will say that TQM is a part of LP (Shah & Ward, 2003) and others will say that LP is just a new name for TQM (Dahlgaard & Dahlgaard-Park, 2006; Andersson, Eriksson, & Torstensson, 2006). When going back to the time before the LP term was introduced, Just In Time (JIT) was the term that was used to describe the generalized TPS concept. Schonberger (1982) describes JIT and TQM as two different approaches, thus providing yet another opinion about the relation between the two concepts.

In the appended papers (A and B), we find support for Schonberger's opinion, that TQM and LP are distinctly different approaches. In paper A, there is no doubt that the concepts differ when it comes to the practices associated with the concept, cf. Hackman & Wageman (1995). There are also some differences in the principles that constitute the two concepts. In paper B, we can see that this difference in approach manifests itself through the crystallization of two different categories for LP/TPS and TQM/SixSigma. Any statistical test would show that the differences between the two groups are statistically insignificant, indicating that there is some overlap in how the conceptual terms are used and which characteristics they are associated with in practice. The survey data is of course not suitable for making robust statistical tests of this kind, but because of the relatively homogenous group of respondents there is little reason to doubt that this statement would hold for a more comprehensive study of the same kind.

Paper A clearly demonstrates that LP is an ambiguous concept at the discourse level. If it is possible to speak of a 'core' for the concept, it is very small and also laden with weak inscriptions. This is a necessary feature of a management concept if it is to be applicable to a wide range of organizational contexts (Benders & van Veen, 2001). Since any general concept such as LP must be ambiguous it requires translation in order to be applicable in a given context.

From the appended papers, we see that there is much variation in the applications of management concepts, and Lean Production is no exception. Already at the discourse level, there is great variation. And although it is possible to find general principles and groups of practices that can be said to define the concept (Pettersen, 2009), these differ between theory and practice, indicating that translation occurs between them.

Based on the results from paper A, the weakest inscriptions in Lean Production concern the overall goals of the concept and what practices should be included in an application of the concept. These issues are left to the organization that seeks to implement the concept, thus inducing a need for translation competence.

As demonstrated in Paper B (Pettersen, Poksinska, Elg, Eklund, & Witell, 2009), consultants play a key role in the interorganizational translation. Other sources of information and knowledge about management concepts are seemingly independent of any management concept in the study.

In paper C (Pettersen, 2008), it is shown that the goal and practices required discussion, leading up to an implementation strategy. Visual management and 5S were deemed most reasonable for the first LP associated practices.

In the case of HiTech, the translation competence within the management group is insufficient to ensure a successful implementation of LP. Knowledge of the context of application does exist within the group, but the knowledge of the concept and the context from which it comes is limited. This is compensated for through creating a book circle on the book *The Toyota Way* (Liker, 2004).

In order to strengthen the translation competence in the implementation process, a consultant was invited to advice on the matter. The implementation strategy was devised by the consultant, and when he left HiTech nobody seemed to have a good understanding of the next steps in the process. The strategy did not contain sufficiently strong inscriptions to ensure its survival, leading to a renegotiation between the involved actors. This is in line with previous research (Skålén, 2002).

Because of the weak inscriptions, the concept itself cannot be directly implemented without significant translation efforts. However, the practices are generally less ambiguous compared to the overall concept, enabling them to be implemented in a more or less straight forward sense.

But even simple and well defined practices need supporting devices to ensure stability within the organization. We therefore end up in a situation that is in between translation and direct application.

From the study in paper C, we can see some examples of *isonymism*. At the intraorganizational level, it is clear that there are some differences in application of 5S within various departments at HiTech, but the same term is used to describe the practice. There are also examples of departments where the practice is presented using the LP related terms although no actual change has occurred.

At the interorganizational level, we can see the use of the term ‘Lean Production’ as a sign of isonymism. The Managing Director explicitly said that he feels obliged to use the term in some situations. Isonymism can thus be said to be a question of legitimacy at both levels of abstraction.

As stated above, isonymism can be said to be a form of *loose coupling*. The different applications and in some cases non-application of 5S is an example of this. At one of the studied departments, lead time reduction is seen as a crucial part of the LP concept, although it disagrees with the general opinion. This is a much stronger form of loose coupling that is a result of a conscious translation. Whether the lead time reduction is successful or not, the translation is not in line with the general opinion, and can thus be seen as a failure. It will therefore most likely not be used as a success story, and will not be fed back to the general discourse.

In paper C, it is clear that 5S did not lead to the desired results at HiTech. Management was unable to create sufficiently strong inscriptions and the application received insufficient structural support leading to continuously reduced interest from both managers and operators. This mode of failure is similar to what has been found in previous research (Käll, 1999).

Visual management at HiTech was implemented in a different way. Daily mandatory meetings in designated areas provided the structural support and inscriptions necessary to ensure a durable and stable application of the method. This method has not required or been subject to any significant translation, enabling us to describe it as a *direct application* as well as both intra- and interorganizational *isopraxism*. This practice could easily be fed back to the discourse as a success story.

Discussion

The purpose of this chapter is to discuss the purely academic side of the thesis. The aim is to give a presentation of the ontological and epistemological positions that the thesis is based on. This will provide the basis for a discussion of the scientific contributions of the thesis, which concludes the chapter.

A philosophical positioning of the thesis

When writing a thesis of this kind, discussions of world-view (ontology) and knowledge-view (epistemology) may be of interest. Unfortunately, these two viewpoints are sometimes confused both in the author's presentation and through the readers' interpretation. By writing this chapter, I hope that my ontological and epistemological positions will be clear.

Some dichotomies in the philosophy of science

Regarding the philosophy of science, there are many pairs of terms that are held as opposites. For instance qualitative vs quantitative, constructivism vs realism, natural science vs social science. The list goes on. Making these distinctions between terms can be fruitful when trying to make sense of the whole scientific field, but in practice there are no water-tight boundaries between them.

Within social science, the currently dominating perspectives are *transcendental realism* and *constructivism* or derivations of these, cf. Delanty & Strydom (2003). These two perspectives, in this text represented by Roy Bhaskar and Niklas Luhmann respectively, will be presented and thereafter serve as a basis for discussion.

What and how do we *want to* know?

Within the natural sciences, the goal is to explain the world we live in through various tests and procedures to find the 'true' explanations for the phenomena under analysis.

> *What scientific explanation, especially theoretical explanation, aims at is not this intuitive and highly subjective kind of understanding, but an objective kind of insight that is achieved by a systematic unification, by exhibiting the phenomena as manifestations of common underlying structures and processes that conform to specific, testable, basic principles. (Hempel, 1966, p. 83)*

Bhaskar (Bhaskar, 2003) takes a methodological stance, asking the question of to what extent society can be studied in the same way as nature. He claims a 'qualified anti-positivist naturalism', which implies that "it is possible to give an account of science under which the proper and more or less specific methods of both the natural and social sciences can fall" (Bhaskar, 2003, p. 443). He claims that the investigation of the limits of naturalism is equal to the investigation of the conditions of social science.

Bhaskar refrains from the conception that humans are 'free agents' uncontrolled by any laws. He compares social structures with natural laws, and claims that they can be equally coercive or controlling. He commends the positivist tradition for its focus on causal laws and the complexity of these. On the other hand, he criticizes the positivists for reducing these laws to empirical regularities. Bhaskar states that social scientific phenomena only occur in open systems, making the notion of regularity absurd, thus excluding the possibility of predictive scientific results, and only leaving room for explanatory forms of social science.

When referring to the hermeneutical tradition, Bhaskar states that it is correct in its idea that social sciences deal with a pre-interpreted reality as well as insisting on a different methodological approach compared to positivism. The critique he has for hermeneutics is the sole focus on the subjective and the lack of attention to the objective side of reality.

What and how *can we* know?

On another account Luhmann (2003) discusses the perception/definition of knowledge and how we can claim it. He takes a quite naturalistic approach, defining human beings as information processing systems. The functioning of the brain is the fundament on which he stands in his discussion. Referring to brain research he states that “the brain is not able to maintain any contact with the outside world” (Luhmann, 2003, p. 436). He supports this argument through reference to cognitive science and the reasoning that all information processed by the brain is coded signals, which in themselves have “absolutely no qualitative and only very slight quantitative contact with the external world” (Luhmann, 2003, p. 439).

Luhmann refrains from the distinction subject/object and suggests a distinction between system and environment and what is internal/external to the system is more useful. This is a distinction that comes from systems theory, which results in what Luhmann refers to as a ‘deontologization’ of reality. Luhmann states that “only closed systems can know” (Luhmann, 2003, p. 439), and claims that this is a paradox that every epistemologist will have to face. Since a system cannot have any knowledge about anything external to the system (i.e. a person cannot *know* anything about anything outside himself/herself), there is no way of gaining knowledge about reality. However, Luhmann dismisses the idea that reality does not exist. He states that it is “beyond doubt that an observer can observe that and how a system is influenced by its environment or deliberately and successfully acts upon its environment” (Luhmann, 2003, p. 441). It is only the claims of knowledge about reality that cannot be made with any certainty.

In order to answer the question of what ‘knowledge’ is, Luhmann makes a further distinction between *observation* and *operation*. He defines ‘observation’ as “an operation that uses distinctions in order to designate something” (Luhmann, 2003, p. 440), making operation and observation caught in a circle of defining each other. He further states that “an observation leads to knowledge only insofar as it leads to re-usable results in the system” (Luhmann, 2003, p. 440).

Luhmann also claims that information cannot be exchanged between a system and its environment. In other words, information cannot enter into a system from outside the system. Hence, all ‘knowledge’ that goes beyond the boundaries of the system is internal to the system and thus a construct.

The arguments by Luhmann falls into what Collins and Yearley (1992) criticize as a negative relativistic trend in science, and state that a natural scientist should be a *naïve realist*, whereas a social scientist should be a *social realist*. Both perspectives have in common that a scientist should not filter or interpret the empirical material, but rather experience it in a naïve way.

Bhaskar criticizes the tradition within social sciences that focus events/actions as the only object of analysis. This is, according to Bhaskar, a misconception that leads to a failure to see the underlying structures in society. The picture painted by Collins & Yearley is an example an ideal that will lead to this kind of mistake. Following Danermark et al. (2003), the world is stratified in three layers – experience, events and reality. They further argue that the world has a transitive and an intransidive dimension. Reality and events comprise the intransitive dimension and contains the mechanisms and effects that exist, i.e. the *objective* world. We cannot, however, access this world directly, but need to go through the third layer – experience, which is transitive. Because experience is dependent upon selection, methods and so on, it is open for discussion.

An eclectic approach

Although Luhmann (Luhmann, 2003) advocates a constructivist and relativistic perspective, he explicitly states that we are real individuals in a real world. It is only in a cognitive sense that the world is unapproachable to us. This means that the 'knowledge' about reality is socially constructed, but reality itself is highly real.

Natural and social science differ in terms of research object, but the process for knowledge production is the same for both traditions. Danermark et al (2003) discuss the research objects within the two traditions. The research objects of natural science is *naturally produced* while those of social science are *socially produced*. But both research objects are socially *defined* or *constructed*.

With this perspective, there is an objective reality, but we can only reach it through experience. And because the empirical material for both traditions are socially constructed, the research process is identical, in spite of the fact that the underlying mechanisms that produce our research objects are different.

The ideal that Collins & Yearley represent leads to a reduction of reality to only that which is directly observable, which according to Danermark et al. (2003) is an epistemic mistake. Reality consists of more than we can observe directly, and we cannot say anything for certain on the sole basis of our observations. We need to consider both the transitive and intransitive dimensions in order to understand our research objects, whether they are socially or naturally produced. But following the advice of Collins & Yearley will categorically disregard the transitive dimension of research and thereby lead to explanatory difficulties.

Returning to Danermark et al (2003) they argue that social and natural science differ because the research objects of social scientists are co-subjects taking part in the social world that they are a part of. This argument does in fact also apply to the objects in our surroundings. Bhaskar (2003) states that objects/artifacts take part in the structures and mechanisms that govern social life, and that they can be viewed as actors. This line of thought is strongly represented within Actor-Network Theory. According to Latour (1993) it is pointless to make a distinction between nature and society. It leads to a series of paradoxes – that nature is created independently of man, but we recreate it in our laboratories and make it a social construct. And society is a human creation, but we cannot affect its mechanisms. This leads to the creation of *quasi-objects* that belong to both domains at the same time, thereby becoming incomprehensible (Latour, 1993). Through uniting society and nature in our ontology, artifacts can be seen as participants in our world.

Latour (1990) further argues that relativism and realism are *too* consistent in their relations between ontology and epistemology. Classical realism represents an ontological perspective where we access ‘things in themselves’, and so far Latour agrees. He does, however, disagree with the correspondence based realist epistemology. He quite strongly argues that scientific results are socially produced or constructed (Latour & Woolgar, 1986; Latour, 1987; Latour, 1990), a perspective that finds support in classical constructivism and relativism. But just as with realism, Latour has objections towards relativism and the supposition that reality itself is socially produced. He proposes an eclectic approach, with a realist ontology and a relativist epistemology: We access things in themselves (ontology) which are constructed (epistemology) (Latour, 1990).

Based on the discussion above, it can be argued that all knowledge is relative, without finding oneself in the *relativistic swamps* described by Thurén (1991). This is only an epistemological relativism, not ontological relativism or solipsism.

Reflection on the research approach

Actor-Network theory has received much criticism over the years (Collins & Yearley, 1992; Amsterdamska, 1990; Bloor, 1999). Røvik (2007) argues that ANT is a relatively abstract and theoretical direction and too abstract to be combined with pragmatic ambition of being used in management studies. However, as demonstrated in this thesis, there are some elements of ANT that are highly pragmatic in nature and particularly useful for analyzing processes of organizational change.

The first study is based on a literature review which, as stated above, is a natural choice when trying to map out the discourse surrounding any idea. So far, the validity is unimpeachable. However, there are some question marks that can be placed behind the selection and use of publications in the study. As has been clearly stated throughout this thesis, Lean Production is a translated version of the Toyota Production System (TPS) and Lean Production has itself been translated into many different versions. There are possibly other similar concepts that should have been included in the search but have been excluded because of differences in labels. Expanding the search terms would perhaps give an entirely different set of publications, leading to different results. However, it is unlikely that wider search terms would provide more homogenous results, leaving the overall conclusions unchanged.

In the second study, the choice of a questionnaire seems highly relevant when aiming to find patterns in management practices among a large number of organizations. One may ask whether a production manager is best suited for answering questions about practices related to quality management. The reason for this selection was to see what methods are *practiced and known* in production, making an operative manager a natural choice. But perhaps a quality manager would provide more reliable answers.

The third study aims to capture a translation process within an organization. Using interviews to do this is questionable from more than one perspective. First of all, the interviews are retrospective, focusing on events that date back several years. This creates a risk of reinterpretation of the events under discussion, thus decreasing the reliability of the information. But this is compensated for through asking the respondents to describe the same events, which were not significantly different. Of course, differences in points of view were evident, but this is probably not due to the time that has passed. A more serious question goes to the very validity of the study. A natural question is whether interviews capture the translation process itself. According to the theoretical perspectives used in this thesis, the translation process comprises negotiations between actors in the translating networks. These negotiations are only captured indirectly through the interviews.

This argument also holds for the methodology of the entire thesis, which shares the same basic assumptions as the third study. The underlying assumption here is that it is possible to capture the translation process indirectly through studying the outcomes from each step rather than the actual translation activities. In terms of validity, this is of course a weak point in the very foundation of the thesis.

However serious this critique may seem, the methodological choices may be justified. First of all, the time available has been limited, making a more comprehensive study difficult to achieve within the framework of a thesis like this. But most importantly, the thesis is based on an explorative ambition, aiming to produce a model that may be useful as a conceptual framework in future studies.

Reflection on results

The proposed model above indicates that weak inscriptions in the initial ideas will only lead to ceremonial application of the idea, if any. However, this is not necessarily the case. Under the circumstance that the effectuating network(s) has sufficient translation competence, parts of the translation can be left open, intentionally creating weak inscriptions. This may lead to a sort of deliberate decoupling within the organization and possibly a more effective translation of the concept in the area of application.

Since the concepts are ambiguous, they can be interpreted, translated and approached in different ways. Some may actively choose to decouple the concept from the practical business. On the other hand, some organizations will ensure that strong inscriptions are created through networks of people and supporting structures and artifacts within the organization. These two approaches are frequently discussed in publications with an institutional perspective (Greenwood, Oliver, Sahlin, & Suddaby, 2008). In Poksinska (2006), organizational maturity and strategic ambition are used to create a two dimensional space of resulting approaches to implementing management concepts – resulting in actual organizational change or business as usual.

As stated above, this thesis is based on an epistemological position that is very much relativistic. What kind of knowledge does this leave us with? And how can we claim to know anything with this epistemological position? According to such a perspective, knowledge is negotiable and will differ depending on the point of view, but there are nevertheless statements in this thesis that do not give an impression of relativism at all. In one way this leads to a paradox that is very simple to criticize: How can I claim to know anything if I say that knowledge is relative? The answer is that I cannot. Based on the arguments above, it is difficult to claim that there is correspondence between results and reality. However, the quality of the results can be measured based on their pragmatic value, i.e. the applicability of the proposed model in other contexts.

One key point in the relativistic position described above is that results are dependent upon the research design. When looking for signs of translation, this is most likely what will come out from the study. There is therefore a risk that the research does nothing more than provide support for existing theory.

I do not claim to have the ‘correct map’ of LP through these papers. They are but another input into the debate about how we can understand general management concepts such as LP. This is a different input that highlights some of the problems with believing that there is a final truth about Lean Production. Hopefully, the problematization done in this thesis will help to widen the perspectives of both researchers and practitioners that in some way work with management concept, and that they will have a more solid foundation to stand on when considering organizational change.

The discussion surrounding Lean Production bears much resemblance to the classic story about *the blind men and the elephant* (in poem form by John Godfrey Saxe). Six blind men are placed around an elephant and asked to describe it based on the parts of the elephant that they touch, each of them touching different parts and therefore having different opinions about the nature of the elephant. One verse in the poem goes as follows:

And so these men of Indostan
Disputed loud and long,
Each in his own opinion
Exceeding stiff and strong,
Though each was partly in the right
And all were in the wrong

Conclusions

The purpose of this thesis has been to contribute to the knowledge base concerning the translation of management concepts with a specific focus on Lean Production. The underlying ambition has been to take a holistic perspective on the matter and demonstrate how different theoretical perspectives can be combined to form a model for analyzing these processes of translation.

The thesis clearly demonstrates that there are many different versions of Lean Production, both in literature and in practice as well as within organizations. This leads to potential communication difficulties when discussing the matter, which could be reduced through an increased awareness of the different perspectives that are associated with the concept as well as the processes that produce them.

It is shown that Lean Production cannot be said to be a specific concept, but rather a collection of rather general and abstract principles causing the interpretations to differ significantly between authors on the subject. Within industry, the concept cannot be said to be associated with a certain set of practices, but rather seems to be a label that is used to describe a variety of applications. Taking these results together indicates that it is unreasonable to expect the concept to provide certain results, but rather that these are determined by the way the concept is interpreted and translated within the organization that seeks to implement it.

Although weak inscriptions (ambiguity) of management concepts are required at the discourse level, these can cause problems when a management concept is brought inside an organization. It is indicated that insufficient translation competence will lead to weak inscriptions, which in turn may lead to an uncontrolled and potentially ineffective translation process, increasing the risk of undesired decoupling.

Translation should not be approached normatively. Just as with Lean Production, one cannot say that translation is good or bad, but is dependent upon the situation. One should therefore not generally strive for a certain ‘level’ of translation within an organization. To borrow a term from Karl Weick translation could be used as a ‘sensitizing device’, something that makes an observer more sensitive to things that have been taken for granted and perhaps gone unnoticed. Applying a translation perspective may be useful for both researchers and practitioners, and perhaps enable them to see phenomena in a different light.

Future research

Considering the limited amount of research on the subject, more comprehensive studies of the entire translation process are needed. With a particular focus on the micro processes and the many negotiations between translating actors, such studies will provide useful input to theoretical discussions on organizational change.

In order to ensure better validity than in this thesis, emphasis should be placed on capturing the negotiations in the translation process first hand through the use of a collection of different methods. A suggestion for achieving this is to use observations and contextual interviews as the primary methods.

In this thesis, it has been suggested that weak inscriptions have negative consequences. However, it is likely that the interpretative viability that exists within the general discourse also could be applicable at the intraorganizational level, especially in larger organizations. The utilization of deliberate weak inscriptions at the intraorganizational level could be a new strategy for organizational change, making it a possibility that deserves attention in future studies.

It should be noted that the proposed model is far from complete. Of course, a model is never perfect, since it is a simplification of reality. However, its pragmatic value may be tested and developed. The best way of achieving this is to apply the model in a variety of settings and for different management concepts. Apart from testing the applicability of the model, studies of this kind will probably make important contributions to the theoretical development of the translation of management concepts.

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