



Exploring Sustainable Work Systems:
An Interactional Perspective on
Learning and Organizing

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Thesis

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ABSTRACT

Working conditions are increasingly unpredictable, complex, and ungovernable creating severe health risks for employees and negative economic consequences for both corporations and society. Considering the growth in understanding human psychology and sociology, and the progression in measuring working conditions and health, this phenomenon is most perplexing. The enigma has yielded interest in a field known as *sustainable work systems*, where the challenge is to organize work in a manner that is both beneficial for the business and for its employees.

In an attempt to shed light on the growing issue, this dissertation outlines the features of a model intended to capture conditions of organization where learning is of paramount importance, and where organization is conceptualised using interaction as the foundation. One central question concerns which forms of interactions and co-operations replace traditional structures in organizations. Another relevant question, linked to the former, concerns the way in which these structures shape conditions of organization, learning, efficiency, and effectiveness.

A combination of research methods has been employed to provide an enhanced picture of this inquiry. Four corporate sub-units have been subject to a cross-sectional study. These sub-units were chosen by middle managers of a corporation because they excelled in an organizational reform that was initiated two years prior. During 2004, a survey was constructed and distributed to all employees in these four sub-units. Data regarding the sub-units' efficiency and effectiveness has been collected; and, interviews with managers leading the organizational change have been conducted.

The two papers included in this thesis disclose four distinctly different approaches to organizational design. All four sub-units have separate conceptions of function and organization, although the guiding principles prescribed by top-management were identical for each of the four first-line managers who were leading the change. Three of the four sub-units have made more pervasive change efforts, and have a higher degree of learning and development, efficiency and effectiveness.

The results of this thesis suggest that interaction serves as a vehicle for shaping organizational conditions and outcomes. As a consequence of the chosen design, interaction varied between sub-units, thus influencing conditions of organization, learning, efficiency and effectiveness.

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Stockholm, 21st of November, 2005
Jens Hemphälä

INCLUDED PAPERS

SUMMARY OF THE THESIS

PAPER I

Backström, T. and Hemphälä, J. 2004. *Effects of Four Different Types of Learning Organisations*. Accepted in International Journal of Human Resources Management and Development.

PAPER II

Hemphälä, J. 2004. *Learning When Organizing: The Influence of Interactions on Learning at Work*. Presented at the Fourth Annual Meeting of the European Chaos and Complexity in Organisations Network (ECCON).

SUMMARY OF THE THESIS

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I BACKGROUND

This dissertation is the result of a research and development project jointly conducted by researchers from The Royal Institute of Technology and The National Institute for Working Life in Stockholm, Sweden. This project was named SALUT, which stands for **S**amarbete (Collaboration), **A**ction **L**earning, and **U**tveckling (Development). During the period of 2001 to 2002, this project was conducted with the ambition of enabling new insights regarding sustainability using an action-learning approach. To a large extent, the research questions regard the causes and remedies of emergent *work intensity* or, in other words, the consumption of *human resources*. These human resources encompass physical, cognitive, social, and emotional aspects of work organizations. This focus on well-being in the workplace was mirrored by the symbolism of the acronym SALUT, which translates into the Latin word for health. From 2002 onward, the next phase of SALUT used the experiences gained from the first phase of the project and focused on the concept of *sustainable work systems*. In contrast to work intensity, sustainability presents a vision of competitive organizations in which human resources are regenerated and allowed to grow.

II INTRODUCTION

In Scandinavia, both practitioners and scholars alike have endeavoured to improve working conditions by promoting worker autonomy. The Tayloristic principles have, therefore, been replaced by concepts of self-management and self-actualisation. Two of the main reasons for this new direction are to ensure the fulfilment of basic human needs and to improve the health of people in organizations. In spite of these efforts, all is not well; and, signs of deteriorating health in working life have yet again emerged. We have, in Sweden, witnessed a surge of long-term sick leaves where the word *burnout* is a frequently used term in all kinds of workplaces. There are, therefore, reasons to once again address this issue when the current practice does not seem to be sufficient in creating healthy and efficient work organizations.

Where did we go wrong? The art of measuring working conditions and health has excelled, as has the theoretical foundation for understanding human psychology and sociology. Practitioners and academics have developed a plethora of theories and methods on which to base organizational actions, but to no avail. In practice, management wrestles with the challenge of organizing work that is both beneficial for the corporation and for the employees. In academia, this enigma has yielded interest in an approach known as *sustainable work systems*. The generation of this new field is manifested in: *Creating Sustainable Work Systems: Emerging Perspectives and Practice* (Docherty, Forslin, & Shani, 2002), *Learning by Design: Building Sustainable Organizations* (Shani & Docherty, 2003), and *From Good Work to Sustainable Development* (Kira, 2003). One profound issue in this literature is the creation of work that regenerates and develops human resources.

OUTLINE OF THE THESIS

The starting point in *Chapter One* of this thesis is the description of the research atmosphere in which the work has been conducted. The emergence and present state of the concept of sustainable work systems is described in *Chapter Two*. *Chapter Three* contains the theoretical perspective and frame of reference. Here, the inherent complexity of the concept of sustainability is described, and a current approach to overcome this crux is presented and put into the perspective of previous research within the field of *Science of Work*. In addition, sustainable work systems is conceptualised using interactions as a foundation for learning on both the individual and collective levels, as well as being a vital element in organizing activities. *Chapter Four* contains an introduction to the case upon which the empirical part of this thesis is based. The method of the results part of the analysis is presented in *Chapter Five*. *Chapter Six* contains the results. In conclusion, the main research findings are highlighted and I reflect upon the study for the benefit of future research in *Chapter Seven*.

CO-AUTHORS

The attached papers are a product of a joint effort, partly based upon a survey that has been constructed by Tomas Backström at the National Institute for Working Life. Tomas and I have carried out the administration of the survey in close cooperation. The interviews, as well as the validation meetings, have also been conducted together.

In the first paper- *Effects of Four Different Types of Learning Organisations* - Tomas is the first author and my involvement has been mainly that of the interpretation of the interviews and the method chapter. I am, however, the sole author of the second paper - *Learning When Organizing: The Influence of Interactions on Learning at Work*.

THE EMERGING FIELD OF SUSTAINABILITY

A new research agenda for a durable working life is laid out in the anthology *Creating Sustainable Work Systems: Emerging Perspectives and Practice* (Docherty, Forslin, & Shani, 2002). The results are based on a collaboration spanning four years by eighteen different researchers representing a variety of academic disciplines from twelve institutions in the United States and the European Union. The insights garnered from previous research encompassed in the concept of *intensive work systems* have necessitated a shift in direction: a new set of tools and ways of understanding in order to respond to current demands of the workplace. In this book, the aforementioned authors' aim is to illuminate the existing possibilities and emerging solutions, and to explore alternatives to intensive work systems.

The theories outlined in this work are diverse: there is not a single unified message, but rather a variety of different impressions of sustainability. The following two sections *Emerging Trends* and *Visions for Sustainability* contain a summary of the main features of a conceptualised sustainability.

EMERGING TRENDS

Written in the era of the *New Economy*, the authors note changes on several levels of society that contribute to the emergence of intensive work. In particular, two broad trends are significant. The first movement is that of the globalisation of business. Market economy is spreading throughout the world, and this has been noted in the introduction of market forces, free trade, and widespread deregulation. The second trend is the revolution in information technology. Digitalisation and Information & Communication Technology (ICT) have replaced traditional industries as the main motor for industrialized economies.

Added to these broader trends are a number of intensity-related developments. For example, there is a more heightened focus on speed. The pace of work is constantly increasing, as is the necessity to adapt to new conditions, for example shorter learning times (Lundgren, 1999). There is also a heightened requirement for flexibility in the use of labour. The new flexible and ICT intensive workplace is profoundly ambiguous for employees. In addition, management practices such as downsizing, outsourcing, and temporary employment, have all lead to a new insecurity in the workplace. This means the end of an essential prerequisite for high trust organizations: secure employment. Furthermore, to add to the complexities of these trends, the authors state that the *work-life balance* is also an intensity-related issue, and that employees in various countries rate it as one of the top three working priorities.

These dramatic changes during the past decades have forced companies to review their organizational structures and procedures. In the wake of deregulation, markets have undergone turbulent movements with enforced competition. Thus, new business opportunities have developed, in particular in the field of ICT.

Moreover, knowledge that is usable for new products, services, and processes is expanding, although it is getting more and more fragmented into different knowledge domains, disciplines, and professional communities. This amounts to a widely increased complexity in markets, products, and processes, which inevitably causes high levels of uncertainty in work, leading to a growing number of contingent and conflicting requirements.

According to the authors, the new reality of business has exerted more pressure on both the organization as well as the employee to be fast, changeable, and adaptable. This development toward an internalization of the market¹ means that organizations have a tendency to emphasize flexibility, skill formation, and problem solving - all on the operational level.

THE VISION FOR SUSTAINABILITY

According to Docherty, Forslin, Shani, and Kira (2002), sustainable work systems (SWS) explores a more sustainable world of work, which is conceptualised in a vision for organizations in which human resources are regenerated and allowed to grow. The notion of SWS addresses four related fields and basic issues:

- *The regeneration and development of human resources.* The core concept of sustainable work systems is that the resources deployed are regenerated by the system. Human resources to be fostered include skills, knowledge, co-operation and trust, motivation, employability, constructive industrial relations, and also broader institutional/societal prerequisites, such as training systems.
- *The promotion of quality of working life and competitive performance.* Sustainable work systems pay equal attention to improving working conditions and organizational performance and effectiveness. Again, their interdependencies require an integrated approach.
- *The nature of sustainable change processes for renewal and learning.* Sustainable work systems should not produce static conditions. Many processes of reorganization and reengineering are failing or stalled. Sustainability, therefore, has to include the question of how organizational change can be structured and guided. In other words, since challenges and organizational environments are increasingly volatile,

¹ Regarding *internalization of the market* the authors refer to Moldaschl & Sauer (2000).

sustainability means creating *liberating structures* and building up internal capabilities to carry through reorganizations and continuous change successfully, and to facilitate learning.

- *The provision of employment.* Sustainable work systems provide a micro-economic context for increasing employment levels, as well as counteracting current tendencies of labour market segregation. Sustainable work systems could serve as paths of integration for unemployed people into the labour market by reversing processes of exclusion on the micro level.

PURPOSE OF THE THESIS

Work redesign and sustainable work systems are essential elements in the field of Science of Work: both attempt to simultaneously improve the productivity and the quality of the employee work experience within organizations. However, a shift in the focus of the redesign of work may be noted where the trend is to include the redesign of the *work organization*, as well as the redesign of the *work task*.

In line with the aim of sustainability, this thesis is part of an exploration of new ways to view and understand organizations in order to respond to current demands. By illuminating some of the existing possibilities and emerging solutions, I will explore some alternatives to intensive work systems by:

- describing a framework that encapsulates elements of sustainable work systems, and by
- assessing the relationship between these elements by comparing four organizational redesign efforts.

One central question concerns which forms of interactions and co-operations replace traditional structures in organizations. Another relevant question, linked to the former, concerns the way in which these interactions shape conditions of organization, learning, efficiency, and effectiveness.

III THEORETICAL FRAME

THE CRUX OF SUSTAINABILITY

Inherent in any attempt to grasp sustainability is the question of organizational design. Discussing intensity from a historical perspective, Brödner and Forslin (2002) present the issue of organizational design and its consequences. Regardless of whether it may be seen as a response to a changing environment or an essential element in the mindset of the 21st century, the authors state that a whole set of management doctrines have appeared in public discourse: *lean production*, *business process reengineering*, *total quality management*, and *agile manufacturing*. More than thirty such doctrines compete for management's attention by presenting themselves as radical and necessary alternatives in the new world of business.

In this confusing *sloganeering*, the authors claim that most managers have already lost overview and orientation. The concepts labelled in this diversity often lack theoretical foundation, merely attaching new labels to well-established organizational principles. They go on to say that only a few serious efforts have been made to systematically analyse and compare the diverse conceptions and strategies.

The problem of self-induced stress and intensity is, according to the authors, mostly related to the limitations of post-Tayloristic approaches and the internalisation of the market. These may be seen as two motives resulting in autonomy in some form or another for which the price is often intensity. The problem of this autonomy is that management functions that once served as *filters* or *buffers* between the competitive and market requirements, and the actual work processes, are now disappearing. More precisely, the authors associate the growing intensity with new forms of work organization that they partly trace to a common cause: the relaxation of Tayloristic confinements of work processes.

The authors emphasize that the new management doctrines are shedding confinements, that strict regulations are no longer possible, and that work processes can no longer be prescribed in detail. Unpredictability and complexity, therefore, undermine the basis for controlling intensity and balancing workload.

This description calls attention to the concept of modern work as being unlimited and unrestrained. As the authors state, this situation leads to a disparity between job requirements and available resources, thus, creating severe health risks and negative socio-economic consequences. In the viewpoint of management, if management cannot understand, cannot control, or cannot predict the work process, then they cannot ultimately calculate the resources that are needed.

Adding to the debate of organizational design, Brunsson and Olsen (1990) question the premise of rational choice in organizational reforms by asking if organizational form can be chosen. Their stance is that the rational perspective is a pervasive norm in political and economic life. Formal organization is, for many, the embodiment of a belief in government, rationality, leadership, power, and order. In this anthology, reforms are regarded as attempts to change practice by producing talk about it. In some cases, reforms are only talk. Brunsson refers to a case where reformers protected the reform from opposition by keeping it on a principle level. The reform was, therefore, mainly about changing talk regarding principals and avoiding talk regarding practise. Following this institutional view is that organization is not only about efficiency, but also about factors concerning identity. It is, therefore, not clear what aspects belong to the former category or to the latter. These circumstances render it difficult to study organization by looking solely at practice; the study of talk is of equal importance.

Shani and Docherty (2003) argue that there is a critical need for learning by design. In line with Brödner and Forslin (2002), they also point to the variety of management methods as a means for improving and enhancing business performance and competitiveness. They also claim that in many cases, their application probably reflects more of a fashion, management fad, or quick fix; and, there is a growing recognition that these methods have too often failed to deliver on their promise. Moreover, they state that creating sustainable competitiveness is only rarely successful in implementing; and in many cases, the learning potential embedded in the change programs never materializes.

The fundamental question in the arguments of Brödner and Forslin, Shani and Docherty, and Brunsson and Olsen is whether organizational labels have more validity as metaphors than as descriptors of organizations. However, in response to this complexity and uncertainty of a turbulent environment, Shani and Docherty (2003) take notice of the emergence of a more innovative and adaptive corporate form: *the learning organization*. The basic premise is that organizations that prioritise the development and full utilisation of their personnel, and simultaneously aim to achieve optimal and sustainable business performance, must explore alternative design configurations. According to this perspective, learning truly holds the promise of contributing both to sustainable companies and to sustainable people. Learning is embraced as a strategy to simultaneously improve the productivity and the quality of employee work experience. Hence, learning is understood as being not only a powerful tool for description, but also as a practical instrument for creating corporate sustainability.

However, we may be at risk, yet again, of creating another *management fad* by stressing the importance of learning and organizing in order to create sustainability. We must, therefore, ask what learning and organizing entails that make them a fruitful conceptualisation of organizations. Shani and Docherty (2003) provide sustainable work systems with the premise of being learning organizations where the organization prioritises the regeneration of the human resources and simultaneously aims to generate optimal and sustainable business performance. Learning as a concept also parallels the core aspect of sustainable work systems where the resources deployed are regenerated by the system. As I will explain, these two premises are linked in a common factor: interaction, which in this case is meant as *social interaction* or as *discourse* (see van Dijk, 1997). Further, this chapter will present a perspective where learning and organizing are important aspects of sustainable work systems, and in which interactions play a crucial role.

ORGANIZATIONAL LEARNING AND INTERACTION

The understanding of organization varies between authors. From an historical perspective, the understanding of organization has been

influenced by Tayloristic approaches to work organization. The focus of these has been on the characteristics of the work task and the roles of actors.

Interactions, however, are becoming increasingly more important in contemporary organizations. According to Docherty, Forslin, Shani, and Kira (2002), there is an evolving trend that replaces predefined job descriptions, which is in contrast to the current Tayloristic trend in working life. Organizational structures are being replaced more and more by interaction, dialogue, and negotiation. Answers, therefore, are no longer given, but must be created daily between people.

Based on a heightened awareness of the influence of interactions and on the growing need to interpret a world that is constantly changing, there has been considerable attention focused on learning in organization studies. Contributions to this research area have come from a vast number of academic disciplines and perspectives rendering it ambiguous, and therefore, adventurous for a single researcher to encompass. However, studies with diverse understandings of both learning and organization often rest upon the axiom that learning is, or is dependent of, social interaction. For example, three strands of research relating to learning are: *organizational learning* (Gherardi & Nicolini, 2001), *sensemaking* (Weick, 1995), and *communities of practice* (Lave & Wenger, 1991). These perspectives weigh heavily upon the notion that learning is highly influenced by participation and interaction in organizations or communities.

Gherardi and Nicolini (2001) describe the social foundations of organizational learning. Relating to what they call *the microinteractionist tradition*, they state that learning is always situated in the sphere of social interaction where learning has to do with participating, and that social relationships are important for the transmission of knowledge.

Weick (1995) argues that sensemaking is a social process, and those who forget this miss a constant substrate that shapes interpretations and interpreting. This is exemplified by Weick, who uses Walsh and Ungson's definition of an organization as a "network of intersubjectively shared meanings that are sustained

through the development and use of a common language and everyday *social interaction*” (1991, p.60 *my emphasis*).

Lave and Wenger (1991) argue that communities of practice can be found everywhere, and that people are generally involved in a number of them. Here, learning involves a process of engagement situated in communities. An important aspect of this is legitimate peripheral participation. In some communities, we are at the centre of participation; in others, we are more peripheral. Their concept of learning involves identity, learning to speak, act, and improvise in ways that make sense in the community; the focus is on the ways in which learning is an ever-evolving, consistently renewed set of relationships. In communities of practice, the “meaning of learning is configured through the process of becoming a full participant in a sociocultural practice” (Lave & Wenger, 1991, p.29).

These three strands of research relating to learning share the understanding of organization as a fundamental social process where organizational members interpret their environment through interactions that enable them to act and learn collectively.

CAPTURING THE CONDITIONS OF COLLECTIVE LEARNING

Research regarding *collective learning* is closely related to that of organizational learning - a field that has been forming during four decades (see for example Cyert & March, 1963). One recent development has been made by Backström (2004). He suggests a framework to study how employees learn collectively within an organization. In light of a case study of an unsuccessful reform project in a Swedish telecommunications firm, Backström points to the need for collective learning. The unsuccessful reform demonstrates the need for a *chaordic systems thinking* as a diagnostic framework. Backström concludes is that the reform failed because the organization remained stuck in old behaviour patterns where there was no development of the *interiority*. In terms of chaordic systems thinking, they did not find “a way over the ridge to a new organizational attractor” (p. 466).

As a means of developing the interior of an organization, collective learning is suggested to develop an organic connection between the exterior and interior of an organization, thus, creating a

reciprocally better fit between them. Collective learning will also develop the organizational-mind domain of the telecom firm in order to make the desired organizational-behaviour change more likely to occur.

Consequently, Backström builds a framework with an ambition to capture the conditions of collective learning. Five conditions are suggested for this purpose. The theoretical basis for these is a combination of theories from the fields of complex systems and experiential learning. To quote Backström, he lists the five kinds of conditions on page 474:

- (1) *Dialogue* is the most important vehicle for correlation², and thereby, also for collective learning. Aspects of dialogue are: frequency and profoundness of interaction, quality of dialogue (Wilhelmson, 2002), and accessible meaning structures (Dixon, 1994).
- (2) *New experiences* are a motor in the collective learning cycle. Ways of getting new experiences included are: accessibility of feedback and of external experiences, and diversity in work.
- (3) *Authority to test* is needed; if you are not allowed to experiment, based on new understanding, learning will cease. Possibilities to test are including: control on local level (Hagström & Hanson, 2003), and attitudes toward new thinking.

² Regarding correlation, Backström refers to Prigogine (1997, p. 74). Backström's argument is that interaction between two co-workers results in a correlation, i.e. a mutual understanding in relation to what has been said and experienced during the interaction. According to Backström, the understanding of issues will converge with time.

- (4) *Aggregation* (Holland, 1995) into a collective is fundamental for collective learning according to the model. Aspects of aggregation included are: feeling of aggregation on which organizational level, heedfulness³ (Weick & Roberts, 1993) and transfer of knowledge (Dixon, 2000) between aggregates.
- (5) *Leadership* may either ruin or create opportunities for collective learning. Style of leadership is measured, looking for a complex leadership (Marion & Uhl-Bien, 2002), where the leader engages in the interaction processes (Streatfield, 2001).

The framework is aimed at describing a new model of collective learning. A very important aspect of this framework, according to Backström, is that most frameworks use two idealizations - linearity and interdependence - yet neither of them is acceptable for his framework of collective learning. As Backström states, a traditional framework is giving a person a tool. This tool is aimed at controlling the part of reality in focus, and at trying to predict the future by extrapolating on the present. However, this logic is contrasted by Backström's framework influenced by chaotic systems theory, which he sees as a means for arranging good prerequisites of growth for the kind of phenomena upon which it is focused.

The case of the telecom firm highlights the complex nature of organizing a turbulent business using control as management logic. Attitudes and behaviour are no longer only influenced by the planned operational organization, but are also likely to be influenced by unplanned or emergent events. This is consistent with the arguments of Brödner and Forslin (2002): that the new management doctrines are shedding confinements, that strict regulations are no

³ Weick and Roberts explain that "the word 'heed' captures an important set of qualities of mind that elude the more stark vocabulary of cognition. These nuances of heed are especially appropriate to our interest in systems preoccupied with failure-free performance. People act heedfully when they act more or less carefully, critically, consistently, purposefully, attentively, studiously, vigilantly, conscientiously, pertinaciously" (1993, p.361). Regarding this statement, they refer to Ryle (1949, p.151).

longer possible, and that work processes can no longer be prescribed in detail. This unpredictability and complexity must, therefore, be considered in the model.

FROM JOB CHARACTERISTICS TO LEARNING CONDITIONS

The approach suggested by Backström is still in its infancy, but can be paralleled with recent research in the fields of learning and organization. One example of this recent research is a psychological focus on learning in organizations (Holman, Epitropaki, & Fernie, 2001). The aim of this study was to validate a scale of learning strategies, as derived from the educational literature, in an organizational context. Two other examples are: assessments of the organizational learning process (Chan, Lim, & Keasberry, 2003; Goh & Richards, 1997; Lord & Ranft, 2000), and the creation of conditions for organizational learning (Friedman, Lipshitz, & Overmeer, 2001).

With the purpose of comparing aspects of these recent conceptual developments regarding the conditions for learning with more established theory within the Science of Work, I have chosen to contrast Backström's concept with the work done by Oldham and Hackman. An important reason for choosing the work of Oldham and Hackman is because their approach, as with sustainability, attempts to simultaneously improve the productivity and the quality of the employee work experience within organizations. It should be noted that there are substantial differences between the authors' respective perspectives. For example, Oldham and Hackman tend to regard relationships between variables as causal, whereas Backström accentuates their complex and co-dependent nature. In the former, the focus is on employee reaction; in the latter, the focus is on interaction.

In a study of motivation, Hackman and Oldham (1976) critique the socio-technical systems approach⁴. They claim that it provides few explicit specifications of how and under what circumstances the work itself and the social surroundings affect one and other. They

⁴ In spite of this, the sociotechnical systems approach and the job characteristics model have striking similarities.

proceed by presenting a model for motivation in an attempt to analyse the relationships between job characteristics and individual responses to the work. In this model, five job dimensions are seen as prompting three psychological states that, in turn, lead to beneficial personal and work outcomes. The model postulates that an individual experiences positive affect to the extent that one learns (*knowledge of results*), that one has personally performed a task well (*experienced responsibility*), and that one cares about the given task (*experienced meaningfulness*). This positive affect is seen as reinforcing to the individual, and serves as an incentive to continue the attempt to perform well in the future. The authors suggest that employees should react positively to five job dimensions: skill variety, task identity, task significance, autonomy, and feedback.

This framework is in line with that of Backström (2004), who places the focus of his model on one's working conditions. However, there are some important aspects that differ from Hackman and Oldham's lineage. The most essential difference lies in the focus of how perceptions are formed at work. According to Hackman and Oldham, perceptions are formed by the work, which is understood as the formal work task. According to Pfeffer and Salancik (1978), this can be described as an internal perspective, which tends to consider that problems can be solved by changing elements within the organization without regard for their contextual basis. The authors challenge the view of Hackman and Oldham (1976), and the problem of motivating workers to engage in menial tasks. The proposed job redesign where the solution is based on the assumption that there is something inherent in the task itself that creates the attitudes of the individual workers has been challenged by studies suggesting that there are no inherent reactions at all in a given activity (Pallak, Sogin, & Van Zante, 1974). While affected by reality, individuals partially create interpretations and descriptions of reality. Under certain conditions, subjects will express enjoyment in a boring task and willingly sign up to do it again; while under other conditions, they will simply label it as unenjoyable.

Hackman and Oldham's definition of the job, to a large extent, is focused on the tasks of the work. However, the effect of the organization on these characteristics is not elaborated upon. This external perspective is the focus for Backström where he considers

the individual's interpretation of organizational factors, such as leadership and heedfulness. Furthermore, Backström's framework is not as specific as the causal relationships of Hackman and Oldham's job-diagnostic survey.

The similarities, however, are apparent. The original contribution in Oldham and Hackman's approach can now be found in that of Backström, where he develops a framework that considers work's influence on employees. Moreover, Backström specifies work using five categories that are likely to differ between individuals within the same organization.

CONDITIONS AND ORGANIZATION

The relationship between the conditions in Backström's framework and organization as a concept remains to be developed. In relation to this, Oldham and Hackman (1981) present the important question of how organizational structure relates to employee reaction. A critique of Hackman and Oldham's job characteristics model (1976) is that they failed to elaborate upon the effect of the organization on the job characteristics. Addressing this issue, Oldham and Hackman present the *job-modification* framework as an extended model of the relationship between organizational structure and employee reaction (1981). Here, they argue that the structural properties of organizations influence employee reaction by shaping the characteristics of their jobs. The structural characteristics of interest for Oldham and Hackman are the organization's size, formalization, hierarchical levels, and centralization. This model is also compared to an attraction-selection framework, which suggests that personal attributes of employees (such as gender, age, and education) mediate the structure-reaction relationship. The results provide more support for the job-modification framework than for the attraction-selection framework, even if the authors suggest that a more comprehensive explanation would consider both models.

Applying the job-modification framework to a concept where interactions are seen as the key to shaping the relationship between structure and learning is an interesting possibility to explore. An important difference between a framework entailing interaction and that of Oldham and Hackman is the structure in the former

framework is not the level of formality, hierarchical levels, or organizational size; instead, the focus is on interactions. This difference in the meaning of organization has been illustrated by Gherardi (1999) and Gherardi and Nicolini (2001) contrasting the term organization with the term *organizing*. Oldham and Hackman use a concept of organization to which Gherardi refers as a sociology of being: that directs attention to boundaries, distinctions, hierarchy, and order. The focus on interactions promotes the understanding of organizing as a concept that she refers to as a sociology of becoming: one that directs attention toward implications, complicities, and ambiguity (Gherardi, 1999). According to Gherardi and Nicolini (2001), the organization concept views organizational learning as a result, where attention is on products, consequences, and on what is accomplished; the organizing concept is to view organizational learning as a process where the focus is on provisional knowledge, and on that which never ends. With learning occurring when organizing, Gherardi and Nicolini propose changing the term organizational learning into *learning-in-organizing*, which focuses directly on the process of creating and using knowledge while organizing.

The perspective of Backström's framework is one where the exploration of interaction is very important in order to understand and arrange conditions for collective learning. However, in order to fulfil the two design conditions of sustainability, individual learning must also be taken into consideration and linked to interaction.

INDIVIDUAL LEARNING AND POSITIVE AFFECT

In line with sustainability, individual learning is also related to theories of individual well-being. The aforementioned organizational perspectives of learning rest firmly upon the notion that learning is dependent upon participating or interacting in organizations. Even if these perspectives do not explicitly contradict Herbert Simon's statement that "all learning takes place inside individual human heads" (1991, p.125), the link between the social definition of learning and an individual's perception of learning is not prominent, and the subsequent sub-question of this thesis regards the influence of participation on learning as perceived by those engaged in

participation. For sustainability, learning is also regarded as a motivational factor and an enabler of well-being at work, both of which are examples of positive affect. This conceptualises individual actors as emoting as well as cognising, feeling as well as thinking, and treating emotions as internal reinforcements or punishments (Lawler, 2001).

With regard to learning at work, there are several approaches to achieve a positive affect. One of the most influential approaches relevant for learning at work has been Herzberg's two-factor theory of satisfaction and motivation (1968). Focusing predominantly on work tasks, learning is seen as psychological growth and as part of creating job enrichment and motivation. In short, the approach proposes that the primary determinants of employee satisfaction are factors *intrinsic* to the work that is being done. These factors are: recognition, achievement, responsibility, advancement, and personal growth in competence. Conversely, dissatisfaction is seen as being caused by *hygiene factors*. These factors include: company policies, supervisory practices, pay plans, and working conditions.

Another strand of learning can be found in activation theory. Scott (1966) suggests that activation theory may be of considerable use in understanding jobs that are highly repetitive, and in planning for task designs that minimize the dysfunctional consequences of *underactivating* work. In activation theory, stimulation is required because people learn the responses required in a repetitive task, which leads to a decline in the activation level. The rationale is that one identifies ways in which one can maintain activation at near-optimal levels through planned stimulus change. A conceptualisation of this is tantamount to the notion that the use of job rotation is a motivational technique.

Furthermore, with Maslowian connotations, learning is considered to be a basic human need in the human relations movement, and as a design criterion in sociotechnical systems theory (Pasmore & Sherwood, 1978). This theory was the first attempt to introduce flexible learning forms of organization (Shani & Docherty, 2003) resulting in a marked shift in the view of learning. Where learning previously was attributed to the work task, it is now attributed to the organization as well.

Learning can also be illustrated using the concept of *flow*: the state of pleasure or satisfaction that occurs during the performance of tasks that represent the matching of demand and skill. Studies by Csikszentmihalyi found that every flow activity provides a sense of discovery: a creative feeling of transporting the person into a new reality while it pushes that person to higher levels of performance. In terms of *flow*, “it transformed the self by making it more complex. In this growth of the self lies the key to flow activities” (1990, p.74).

Yes, learning on the individual level certainly connotes many aspects of interest for the researcher of working life. This abundance of various descriptions does not facilitate conceptual clarity; however, it does point to learning as a powerful concept for sustainability because of its capacity to enable positive affect. An example of positive affect on the most basic level is that of well-being. Learning in this perspective is rewarding because it yields an immediate positive affect for the learner, and enables positive rewards.

An extrinsic affect of learning may also be when the positive affect arises from monetary rewards or other social benefits the competent receives. The perspective of learning I will adopt is one where learning enables positive affect whether it is intrinsically or extrinsically induced.

INDIVIDUAL LEARNING AND INTERACTION

The separation between the individual perspective and an organizational perspective on learning is not clear (see Kim, 1993; Nicolini & Mezner, 1995; Weick & Roberts, 1993). From the perspective of this thesis, an individual focus is based on the explicit notion that learning affects an individual’s mental models or mental functions. Learning on the individual level, as well as on the collective level, is suggested to have important links to interaction. The fact that learning and interaction are related is widely accepted, see for example Bjerlöv (2002), Moldaschl and Brödner (2002), and Backström, Eijnatten *et al.* (2002). Here, the focus is on dialogue, democratic dialogue, and reflexiveness: each a form of interaction. The work of Argyris will serve an example of this line of reasoning. Argyris (1990) provides an illustration of the importance and

purpose of the form of interaction and learning. This concept is based on two types of knowledge (he uses the term theory): espoused theory and theory-in-use. That is to say, people talk as if the world is one way, yet they act according to another. In Argyris' view, they do this in a skilled manner in order to continue a cover-up. What makes this behaviour even more difficult to bring into light is that theory-in-use is designed to sustain a level of control for the individual, and to enable him/her to save face and to avoid embarrassment. In addition to this basic human need to be in command, these defences are ingrained so early in life that they are not reflected upon and are, therefore, taken for granted. The behaviours or defensive routines that support these cover-ups hinder the learning that is needed to bring about individual and organizational development. The suggested remedy involves learning from the point of interaction. A few key elements of this therapy are:

- talking honestly and openly;
- always asking the question “why”;
- being clear and concrete, not abstract, about solutions to problems; and,
- working at improving communications that will reduce the number of assumptions people make.

These elements should be applied with the understanding that approaches to learning must assist people in examining their own existing mental models, to identify any of their shortcomings, and to construct more useful ways of thinking. These arguments concern the form of interaction more than its specific content. None the less, interactions are seen by Argyris as the channels of flow for resources that reduce assumptions.

As previously mentioned, Argyris is not the only one to make this claim, nor is he the first. The notion that interaction and learning are intimately connected is the major tenant in the work of Vygotsky. According to Hasan (1992, p.495): “verbal interaction, which is itself an expression of social relations, assumes a crucial role in

Vygotsky's theory of the development of higher mental functions: by its very nature, everyday talk becomes an active force in the process of acculturation". Learning is seen by Vygotsky as semiotically mediated, which Hasan (1992, p.489) claims "is the deep meaning of human social interaction. And since due to its inherent characteristics, language is the most pervasive modality for social interaction, it follows that language is also the most powerful tool for semiotic mediation". However, Hasan remarks that there are a number of problems in relation to Vygotsky's ideas. She states that: "while in general terms, the role of semiotic mediation in the development of specifically human mental functions as outlined by Vygotsky appears convincing, some serious problems surface as soon as we begin to consider particular cases of higher mental functioning" (Hasan 1992, p. 497). Hasan highlights two major problem areas with the Vygotsky framework for the socio-genesis of mind. First, she asserts that a theory of language is virtually absent in the work; second, a theory of social organization is also lacking. Hasan claims that these two aspects will explain why members of different social groups might experience different forms of verbal interaction, and whether variant forms of consciousness⁵ are semiotically mediated by these interactions. I will not comment upon Hasan's arguments here; however, I will return to the work of Hasan and Vygotsky in the next chapter.

Furthermore, I will elaborate on a concept of social space for the study of learning and interaction pertaining to a resource-based view of the firm. Shani and Docherty (2003, p.19) state: "a critical element of learning is the need for a space in which learning occurs". Further in their argument, the authors use the concept of *ba*⁶, which is defined as the context in which knowledge is shared, created, and utilized. They maintain that a critical aspect of *ba* is space for interaction.

⁵ Hasan assumes that consciousness in Vygotsky's terms is another name for higher mental functions.

⁶ Shani and Docherty (2003) credit the Japanese philosopher Kitaro Nishida with the original development of *ba*, and Nonaka and Konno (1998) and Nonaka, Toyama, and Byosière (2001) for the advancement of the concept.

A SPACE FOR INTERACTING AND LEARNING

Pfeffer and Salancik (1978) view organizations as being embedded in networks of interdependencies and social relationships. The need for resources, including financial and physical resources as well as those that are informational, makes organizations potentially dependent upon the external sources of these resources. Drawing from the ideas of open systems theory (Katz & Kahn, 1978; Yuchtman & Seashore, 1967), Pfeffer and Salancik stress the importance of the environment for understanding organizations. This resource-dependent concept is equally applicable on the individual level as it is on the organizational level, where the channel for the flow of resources is interaction. Using this perspective, attitudes and perceptions originate from the social context in which they are formulated. Arguing that finding meaning in a work environment is an information-processing activity, the authors suggest that people develop attitudes as a function of the information that is available to them through their social relationships. Bjerlöv (2002) expresses a resource-based view by stating:

Besides our own history of experiences and knowledge, we use the nearest environment as a frame for interpretation when we try to understand. At the workplace this environment could be the group, the larger unit, the client relation, or a part of the production line.
(p.193)

She suggests how it is imperative to design a space where learning is free and where it bridges the gap between ways of understanding. This space can be created for individual learning, collective learning, and for organizational learning. For Bjerlöv, some existing arenas and processes can be highlighted, for example workplace meetings or conferences.

Helen Schwartzman uses the term *sense-making* instead of learning. She views meetings as an important sense-making form for organizations and communities because “they define, represent, and also reproduce social entities and relationships” (1987, p.288). Her definition of a meeting is characterised by focused interaction in

Goffman's (1961) terms. The focus is on the formal functioning of an organization or group:

A meeting is a *social form* that organizes interaction in distinctive ways. Most specifically, a meeting is a gathering of three or more people who agree to assemble for a purpose ostensibly related to the functioning of an organization or group, e.g., to exchange ideas or opinions, to develop policy or procedures, to solve a problem, to make a decision, to formulate recommendations, etc. (Atkinson, Cuff, and Lee quoted in Schwartzman, 1987, p.274)

Meetings as a sense-making form are significant for Schwartzman because they are the condensed version of the organization or community. She suggests that one looks for sense-making in meetings, paralleling Tyre and von Hippel's discussion of locations (1997). They argue that the location - where the interactions take place - partly determines what actors can do, what they know, and what they can learn. This is based on the location's influence on who interacts with whom, and the location's influence on the way in which interactions unfold. Implicit in these arguments is that: interactions are the main cause of learning; the proximity of location explains why interactions do or do not take place; and, the topics of interaction are dependent upon the location in which they occur.

According to Oldham and Hackman, job characteristics mediate the relationship between organizational structure and employee reaction (1981). They elaborate on this line of thinking and suggest two alternative ways that the structure of an organization can influence reaction. The first is a perspective where structure moulds perceptions of job characteristics operating through the influence of *informational cues* (Salancik & Pfeffer, 1977). It may be that individuals working in various organizational structures receive different cues about the nature of their work from *significant others* in those structures. The second possibility, according to Oldham and Hackman, is that structure influences work reactions, for example, by restricting the amount of decision-making responsibility

individuals maintain. In line with the perspective of informational cues, Dixon (1997) proposes that meetings of a more informal nature cannot be ignored without excluding a crucial part of the interactions at work. Proposing that sense-making is an information-processing activity based on available information, system boundaries in which learning is likely to occur expand well beyond the doors and schedules of the meeting room. Dixon argues: “some of our best conversations happen in the hallways” (p.23). These crucial interactions are, in fact, ignored in the work of Schwartzman, whose definition of a meeting as a gathering of three or more people, fails to consider one-on-one talks. Examples of one-on-one talks can be informal meetings or conversations during off-hours, discussions around the water cooler, or the seeking of advice from trusted colleagues. These interactions share two things in common: they are usually face-to-face meetings that are not planned or regulated formally, and they emerge and dissolve spontaneously. In addition to informal talks, significant formal interactions do not only occur in meetings with three or more people. An example of a formal one-on-one talk is a development meeting between manager and employee. This leaves me to ask: *how can these interactions be included in a conceptualisation of space?*

This question of conceptualising social space sparks one immediate answer, found in recent developments of Vygotsky’s ideas (Hasan, 1992), which I will return to below. However, I will first present ideas that can be found in studies that are now considered classics within the field of Science of Work. Roetlisberger and Dickson show that the Bank Wiring Observation Room at Western Electric had an internal organization (1947). They suggest a concept of *patterns of interactions*, which forms both the formal and the informal organizations. These patterns are correlated with outcome variables, such as efficiency measures. In organization studies of knowledge-intensive work that occurs in larger and ever-changing settings, it may be appropriate to use Roetlisberger and Dickson’s concept of patterns of interactions in order to define a social locality of study rather than a physical one.

Given the concept of patterns of interactions, what informational cues or resources are important for learning? Some fruitful

contributions can be found in *Social Network Theory*⁷, which is a branch of sociology that has focused on the operationalisation of social space. According to Berkman, Glass *et al.* (2000):

the strength of social network theory rests on the testable assumption that the social structure of the network itself is largely responsible for determining individual behavior and attitudes by shaping the *flow of resources* which determine access to opportunities and constraints on behavior. (p.845 *my emphasis*)

Regarding the influence of interactions in knowledge-intensive work, it is conceivable that interactions carry a flow of resources that contain different informational cues from one another.

An essential structural network property is the concept of being central, which may be interpreted as being at the core of participation in a community or organization. Initially, people join an organization and learn on the periphery, and as they become more central and *embedded*⁸, they become more and more competent. Centrality is perhaps the structural property most often associated with social network theory and outcomes, including *power* (Brass & Burkhardt, 1993), *affect* (Lawler 2001), *job satisfaction* (Flap & Völker, 2001), and *innovation* (Ibarra, 1993). Centrality also has important theoretical links to cognition, and centrality in the informal structure can lead to both cognitive accuracy and power (Krackhardt, 1990).

Following the outlined importance of interactions, the interpretation of interactions remains. Defining a social space involves two aspects of interactions: centrality and the subject of centrality. Based on findings by Allport (1962) and Weick (1969), Pfeffer and Salancik (1978) state that behaviours, and not individual people, are organized. Using this perspective, a given individual is only partially included in a system of organized behaviours, and he

⁷ For a comprehensive review, see Galaskiewicz and Wasserman (1993); Mizuchi (1994); Borgatti and Foster (2003).

⁸ See Granovetter (1985) regarding the concept of *embeddedness*.

or she is partly included in many other behaviour systems as well. Consequently, it is possible for individuals to be a part of an organization and, through different behaviours occurring at different times, be a part of its environment as well. As Weick states (1969, p.46): “a person does not invest all his behavior in a single group; commitments and interlockings are dispersed among several groups”. This line of reasoning also has bearing on what Brödner and Forslin (2002) describe as a growing intensity-related to new forms of work organization. They point to this being an increasing trend relating to the relaxation of Tayloristic confinements of work processes.

If we equate behaviour or action with interaction (van Dijk, 1997), this asserts that interactions are likely to be interpreted as having different meanings, and that people are likely to be involved in various types of interactions. This also affirms that organizations are made up of several systems depending on the type of the interaction.

Although it is important to note there are many different types of interactions that are of interest for organization and learning, the results chapter in this thesis focuses on three distinct categories of interactions at work: *goals & strategies*, *experiences*, and *routines*. These three types of interactions are examples of *speech genres*. According to Bachtin:

These genres are so diverse because they differ depending on the situation, social position, and personal inter-relations of the participants in the communication.
(Quoted in Hasan, 1992, p.506)

...the choice of a particular speech genre...is determined by the specific nature of the given sphere of communication, semantic (thematic) considerations, the concrete situation of the speech communication, the personal composition of its participants, and so on.
(Quoted in Hasan, 1992, p. 510)

Genres correspond to typical situations of speech communication, typical themes, and, consequently, also to particular contacts between the *meanings* of words and actual concrete reality under certain typical circumstances. (Quoted in Oinas, 1999, p. 355)

Various genres of interactions are, therefore, likely to have separate meanings. Returning to the aforementioned work of Hasan, speech genres have an important link to the theories of Vygotsky. In her opinion, speech genres hold the promise of resolving the previously mentioned problems in Vygotsky's framework. The first quandary is related to the total absence of a theory of language, and the second pertains to Vygotsky's deficiencies in relating to a theory of social context. In an attempt to resolve these problems, Hasan points to the potential of Bachtin's speech genres to explain the existence of variant forms of semiotic mediation, which may underlie the genesis of variant forms of mental functions: variant forms of consciousness. Hasan claims that one of the most valuable contributions made by Bachtin is his conception of understanding as an integral element of the speech process: who is talking to whom and why. Moreover, Hasan (1992, p.515) states that Bachtin and Vygotsky share common ground in "the idea that members of different social groups might experience different forms of verbal interaction that the heterogeneity of semiotically mediated consciousness could find a 'rational' explanation." She further explains this rationale:

Language seen socially is discourse specific to a particular stratum in society, defined by some social attribute such as class, profession, race, gender, age. At any one point in the history of a communication, there might exist many such 'social languages'. This amounts to saying that the natural experience of language is in the form of specific dialects, specific registers/genres, and specific codes displaying distinct semantic orientation. Moreover members belonging to distinct social groups experience a different subset of these varieties, and this experience actively shapes their own verbal

consciousness, their own ways of saying and meaning. It is these habitual fashions of speaking - and coding orientations to meanings - that mediate specific forms of human consciousness. (Hasan, 1992, p.515)

This general idea is at the heart of the perspective on interaction in this thesis. The conceptualization of social space outlined here is, at the very least, a case of integrating elements of language into the social context with the aim of exploring the social genesis of variant forms of mental functions. To further the understanding of the importance of speech genres in relation to a resource-based perspective, Hasan is not alone in her view of speech genres as a specific resource. Relating to a resource-dependent perspective and using the term social capital⁹ for this resource, Oinas (1999) claims:

A specific speech genre is a means - even if not rationally attempted - to get access to the social capital inherent in specific social relations in which he is embedded: it facilitates communication and interaction with others who are involved. In doing that, a speech genre itself also functions as social capital. (p. 355)

Discussing the epistemological problems involved in doing empirical research on the embeddedness of business firms in the local context, Oinas states that actors' embeddedness in multiple sets of social relationships results in *multivoicedness*, which leads to the need for the researcher to identify the different voices and their social origins. In line with Oinas' argument, this thesis is concerned with the influence of three predefined voices, or speech genres, and presents an elaboration of the very notion of being embedded. A brief theoretical account of the three aforementioned types of interactions is: goals and strategy are often portrayed as prerequisites for coordinated action; sharing experience is a fundamental aspect of learning when it is an integral part of the experiential learning cycle;

⁹ Oinas refers to Coleman (1988) and Bourdieu (1986) regarding the term social capital.

and, routine work interaction is beneficial insofar as it allows for the transmission of knowledge. These three speech genres are based upon the fact that actors interpret behaviour, which often takes the form of narratives (Czarniawska, 1997). Narrative skills are important when they organize know-how, tacit knowledge, nuance, sequence, multiple causation, means-end relationships, and consequences into a memorable plot (Weick & Roberts, 1993). In this view, narratives are also ways of tapping into shared meanings and professional identities (Lave & Wenger, 1991).

From a sociotechnical perspective (Pasmore & Sherwood, 1978) and the perspective of corporate democracy and participation (Ackoff, 1994), the significance of the goal regards those who set it, thereby, creating autonomy for those involved. Moreover, formulating goals and strategies may be a question of conflict, controversy, and power. However, this is not necessarily an impairment to learning (Ellström, 1996), and may be a contributing factor for double-loop learning – that is to question one's established assumptions about work (Argyris & Schön, 1978).

In addition to being an integral part of the experiential learning cycle (see Kolb, 1984), Cross and Cummings (2004) anticipate that certain ties might yield better or more relevant information than others that provide experience, novel information, and legitimation. Reflecting with others is tantamount to sharing experiences. Argyris and Schön's (1978) denotation of reflection in double-loop learning maintains that reflection is confronting and questioning basic assumptions in the work place. Argyris' term *espoused theory* is another example of sharing experience, even when it involves *skilled incompetence*: when people engage in cloaking or hiding their true experiences. Furthermore, regardless of whether interactions are formal or informal, the stories that people tell each other can be a sharing of experience.

Routine work interaction, which dominates the work interaction in many cases, is of interest when referring to the ways in which one learns at work. Mehra, Kilduff *et al.* (2001) explain that a structurally advantageous position regarding work interaction can benefit the individual, in terms of diverse information and other resources.

These three speech genres serve as a point of departure when exploring the influence of interactions in work settings, while at the same time considering their multifaceted nature. This exploration rests on the basic argument brought forth by, among others, Lave & Wenger (1991): that interaction is the primer of learning and organizing. Extending this basic argument, this thesis also has the ambition to explore the effects of socialization on those doing the socializing, thereby pursuing a previously neglected portion of the socialization process (Weick & Roberts, 1993).

CONCLUDING REMARKS AND OUTLINE OF RELATIONSHIPS

As this theoretic chapter has outlined, there are a number of factors and relationships that are of interest in the study of sustainable work systems, as framed in the chapters *The Vision for Sustainability* and *The Crux of Sustainable Work Systems*. I have chosen to focus on two of the four basic issues. Accordingly, the first is that a sustainable work system pays equal attention to improving working conditions and to ameliorating organizational performance. The second is that a sustainable work system has the capacity for regeneration and development of human resources. In relation to this, the notion of a learning organization has arisen as a model for obtaining sustainability (Shani & Docherty, 2003). However, many previous normative concepts of organization are critiqued for being the subject of sloganeering and being more of a fashion, management fad, or quick fix. There is a growing recognition that these methods have too often failed to deliver on their promise (Brödner & Forslin, 2002; Shani & Docherty, 2003). Hence, my research includes aspects of: organizational learning, individual learning, efficiency, and effectiveness. These interdependencies require an integrated approach.

The basis for the study of learning organizations begins with an adaptation of Backström's (2004) operationalisation of conditions for collective learning. These are further developed in this thesis by using a resource-based perspective where the conditions are seen as suggested resources for learning on the collective level, as well as on the individual level. In addition to a resource based view, an interactional perspective on learning and organizing has been

adopted and conceptualized in the form of social space. In the latter theoretical advancement, recent developments of Vygotsky's theories have been coupled with social network theory.

Further investigations are directed to the general outline of relationships between the elements of this theory. The elements are: individual learning, collective learning, learning conditions, interaction, efficiency, and effectiveness. In the framework created by Backström (2004), interaction is included in the learning conditions. However, because of the emphasis and advancement of social space in this thesis, of which interaction is an integral part, interaction as an element is treated separately from the other learning conditions.

Thus, in addition to the question *what are the conceptual aspects of sustainability*, this general framework enables the exploration of how the aspects relate to one and other. Some of these relationships have gained attention, particularly the relationship between organizational learning and performance measures, which is suggested to be positive. More innovative with this study is the inclusion of the link between organizational learning and individual learning. The importance of this academic question, and lack of research thereof, has been argued by Nicolini and Meznar (1995), Kim (1993), and Weick and Roberts (1993).

Furthermore, the aforementioned perspective in this chapter holds the promise of linking employee perception to organization, via interaction. This relationship between interaction and learning begs further academic investigation and consideration, which this thesis explores by examining the relationship between Backström's learning conditions and the three previously defined categories of interactions at work: goals & strategies, experiences, and routines.

Adding the aspects of efficiency and effectiveness will complete the conceptual framework of sustainable work systems. The chosen empirical case to which I have applied this model is that of four districts of pharmacies, each close to identical in operational contingencies, and each with a distinct organizational design. This allows the assessment of the relationship between organizational design and aspects of sustainable work systems.

IV INTRODUCING THE REFORM AT APOTEKET AB

Apoteket AB is a Swedish state-owned monopoly on the selling of pharmaceuticals. Since 2001, Apoteket has been in a transition toward decentralization and customer-focus as integral elements of becoming a *learning organization*. The lowest level of management is now that of the district level, which leaves each individual pharmacy without daily supervision. The development of competence and autonomy for both worker and the collective at large is believed to be of central importance for the success of this initiative.

In the case of organizational reform at Apoteket AB, a change process was initiated with the intention of adopting features for a learning organization. Meetings were held at the top management level. Two of the outcomes from these top management activities were: first, the establishment of a set of guiding principles for the business; and second, an organizational reform was initiated that consisted of making one manager responsible for several pharmacies - instead of the former system, which had one manager per pharmacy. This reform was explained by the company's middle managers as a process of decentralization. This concept of decentralization encompassed both the change in managerial structure and that of guiding principles, in particular the principle of empowerment. In accordance with the principle of empowerment, the task of the first line manager was not to supervise daily work, but to design an organization with distributed responsibility. An essential component of this principle was the fact that the greatest amount of responsibility and authority should be situated as locally as possible. As an integral part of this reform, a balanced scorecard was developed and goals were introduced as a control method, replacing that of instruction and direction. The newly appointed first line managers' initial task, therefore, was to implement the new principles including the specification of distributed authority.

This setting was highly appropriate for studies of organization. Because the separate pharmacies were homogenous, they were ideal for studying the influence of the organization when the work tasks, environment, directions from the head office, formal education, occupation, and demographics were, for the most part, equal

between the pharmacies. The differences between pharmacies consisted mainly in size, where the smallest in this study had only two employees, and the largest over forty. For this study, two of Apoteket AB's middle managers selected four districts that, in their opinion, were leaders in the organizational change.

The results from paper I - *Effects of Four Different Types of Learning Organisations* show that three of the four districts had planned organization renewal, implementing at least part of their ideas. In describing the organization, the district managers all use different labels of description. This enables a categorization of the districts into four distinct organizational types:

1. The district with Team Organization (*Team-Org*)
2. The district with an Integrative Organization (*Integrative*)
3. The district with Self-Organization (*Self-Org*) pharmacies
4. The Ordinary district (*Ordinary*).

Although the districts share many features, the differences between the organizational concepts are striking. Although these districts operate in the same area of Sweden, in the same company, with the same type of operations, and with the same guiding principles, policies and rules, these districts have developed completely different organizational designs.

Out of the four districts that were selected as being at the forefront of organizational design, three have made a substantial change in the way in which they operate. With regard to the level of change, *Integrat*, *Team-org*, and *Self-org* have planned and instituted more radical changes than the fourth district, *Ordinary*.

All four of the district managers have described a change process that has not entirely been trouble-free: where they have all struggled with obstacles ranging from groups that were problematic, resistance to the removal of the previous hierarchy, ambiguous jurisdictions, and resource-consuming projects that diverted attention away from the change project itself. For the fourth district, other resource-consuming projects have restricted work with the organizational change to the extent that this particular district resembles the

situation of the other three districts at the beginning of the change. Hence, it was labelled *Ordinary*. The other three districts have made changes impacting on the operational structures. The job itself has not been the focus of this reform, and the study shows no differences in the formal job descriptions between the districts. The results indicate a situation where the work tasks are very similar across the districts, and that what separates them is the degree to which employees are involved in activities in addition to the work at hand.

V METHOD

Three sources of data provide the basis for this analysis. First, based on Backström's 2004 framework, a questionnaire was developed and distributed to employees in all four districts. Second, data regarding the districts' efficiency and effectiveness was provided by the regional managers, consisting of computer printouts from Apoteket AB's balance scorecard system. Third, semi-structured interviews were conducted with all four district managers. The results regarding *interactions* have been taken from paper II - *Learning When Organizing: The Influence of Interactions on Learning at Work*. The results regarding the other conditions and outcome variables have been taken from paper I - *Effects of Four Different Types of Learning Organisations*.

MEASURED CONDITIONS

Four out of the five conditions from Backström's 2004 framework that have been presented in chapter III¹⁰ are selected and measured using the questionnaire. The conditions are operationalised into seven measurements, which are listed in italics for the condition to which they are related. The measured variables are:

1. dialogue (*Interaction Level, Interaction Focus and Collective Reflection*);

¹⁰ The conditions are presented on page 12 and 13.

2. aggregation into a collective (*Heedfulness*¹¹ on pharmacy and district levels);
3. style of leadership (*Administrative Leadership, Cultural Leadership, and Co-Management*¹²); and,
4. authority to test and to experiment (*Self-Control*).

DIALOGUE

Interaction encompasses three aforementioned speech genres: *Goals & Strategies* of work, sharing *Experiences*, and *Routine* work interaction. These genres will serve as a basis for exploring the link between organizing and learning, and have been selected partly because of their association with learning, and mainly because of their association with central aspects of being or becoming organized. *Interaction Level* is calculated using the total average number of contacts. *Interaction Focus* is calculated using the average number of contacts per speech genre. *Interaction Focus* is categorized based upon which of the three speech genres has a high value compared to those in the other districts.

Collective Reflection regards taking time on a regular basis to determine ways in which one can improve work processes and secondly, scrutinizing and reconsidering goals, values, and other assumptions regarding work.

AGGREGATION INTO A COLLECTIVE

Heedfulness is a measure of the aggregation into a collective. The employee reflects upon: how his/her work influences the achievement of goals for the district; how his/her work influences colleagues in the district; and, how he/she feels solidarity with colleagues in the district.

¹¹ Backström and Hemphälä use the term *Feeling of Integration at District-Level* in paper I - *Effects of Four Different Types of Learning Organisations*.

¹² Backström and Hemphälä use the term *Social Interaction* in paper I - *Effects of Four Different Types of Learning Organisations*.

STYLE OF LEADERSHIP

Style of leadership refers to the leadership of the district manager, and is divided into three categories: *Administrative*, *Cultural*, and *Co-Management*.

Administrative Leadership refers to when the district manager devotes time to managerial tasks, such as planning, giving instructions, and administration.

Cultural Leadership refers to when the district manager devotes time to considering personnel, such as formulating and disseminating visions, values, and strategies.

Co-Management refers to when the district manager devotes time to the social climate, such as listening, trouble-shooting, emphasizing team spirit and co-operation, resolving conflicts, and arranging talks.

The style of leadership in the district is categorized based upon which of the three categories has a high value compared to those in the other districts.

AUTHORITY TO TEST AND TO EXPERIMENT

Self-Control involves the authority to test and to experiment or, in other words, that which the individual employee decides to do at work. He/She also has the possibility to influence the contents of his/her work, and ensure that their initiatives are not being constrained.

OUTCOME VARIABLES

In order to fulfil the criteria of a sustainable work system, the organization must pay equal attention to the three outcomes: *Individual Learning*, *Collective Learning*, and *Performance*.

INDIVIDUAL LEARNING

Individual Learning concerns learning something new at work. This encapsulates personal development in the work, the individual work that has been developed, and the improvement of the work results.

COLLECTIVE LEARNING

Learning on the collective level is categorised into three sub-types: *Cumulative Learning*, *Adaptive Learning*, and *Transformative Learning*.

Cumulative Learning refers to the way in which one works, the improvement of the work-results within the district, and whether or not the employees in the district are learning new things.

Adaptive Learning concerns rapidly finding new ways to work when faced with a change in conditions (e.g. introduction of new technology, changes in staffing, new routines, etc.) The employees are quick to learn from other workplaces, even from other companies.

Transformative Learning regards being the first with a new idea or to develop new goals at the pharmacy or within the district. The pharmacy also develops its own goals, in addition to goals developed for the district. Finally, the district develops its own goals, in addition to goals developed for the business unit, of which the district is a part.

PERFORMANCE

Performance is operationalised into two measures: *Efficiency* and *Effectiveness*.

The *Efficiency* is measured by the operational costs divided by the weight multiplied by volume. Operational costs are calculated using total costs, excluding the costs of merchandise. The weight

multiplied by volume is the sum total of different weights of order items relating to the sales of goods.

The *Effectiveness* is measured by Apoteket AB's own scorecard survey to measure customer satisfaction. This measure is based on a questionnaire conducted quarterly that contains five questions ranging from 1) "I do not agree" to 5) "I agree fully".

Data for *Efficiency* and *Effectiveness* has been collected yearly from 2002 to 2004 in order to properly assess the impact of the organizational redesign since the start of the change. The measure for 2004 is used for the comparison in Table 6.2.

THE ANALYSIS

The following relationships are of interest in this thesis: learning conditions and learning, learning and performance, individual learning and collective learning, and the ostensible role of interaction. The relationships are assessed by comparing the mean values between the districts.

The relationship between learning and learning conditions is assessed by comparing the variables: *Individual Learning*, *Cumulative Learning*, *Adaptive Learning*, and *Transformative Learning* with the values for the learning conditions: *Collective Reflection*, *Heedfulness*, *Self-Control*, and *Style of Leadership*.

The relationship between learning and performance is assessed by comparing the variables: *Individual Learning*, *Cumulative Learning*, *Adaptive Learning*, and *Transformative Learning* with the measures of *Efficiency* and *Effectiveness*.

The relationship between learning and performance is assessed by comparing the variables: *Individual Learning*, *Cumulative Learning*, *Adaptive Learning*, and *Transformative Learning* with the measures of *Efficiency* and *Effectiveness*.

The relationship between individual learning and collective learning is assessed by comparing the variables: *Individual Learning*

with the measures of *Cumulative Learning*, *Adaptive Learning*, and *Transformative Learning*.

The role of interaction is assessed by comparing the level of interaction regarding the three speech genres with the measures of learning, learning conditions, and performance.

All conditions, except those of *Interaction Level*, *Interaction Focus*, and *Heedfulness* are measured using the seven-point Likert scale. Mean values are calculated for each condition.

Also using the seven-point Likert scale, self-reported learning is measured on the collective level, as well as on the individual level. Mean values are separately calculated for the four types of learning.

To increase the comprehensibility of the analysis, a summary of the results from the comparison between the four districts is displayed in Table 6.1 and Table 6.2. The district with the highest mean value relative to the others has been attributed High; the district with the lowest mean value relative to the others has been attributed Low. When the mean values are of similar proportion, they are assigned the same attribute.

VI THE EFFECTS OF THE REFORM

THE CONDITIONS

Compared to the other districts, the *Integrative* district has higher mean values for *Heedfulness* and *Collective Reflection* where the first line manager spends time on *Co-Management*: listening, working with conflicts, and creating team spirit. The *Integrative* district also has lower mean values for *Self-Control* than the other districts. The *Team-Org* district has higher mean values for *Self-Control* and for *Administrative Leadership*: planning and giving instructions. The *Team-Org* district has lower mean values for *Heedfulness*, specifically at the district level. Also, comparing mean values suggests that the first line manager in the *Self-Org* district spends time on the *Culture*: formulating and disseminating ideas and visions to a higher degree than the managers in the other districts. The *Ordinary* district is the only district that has low values for the *Interaction Level*. However, with respect to the conditions, the *Ordinary* district is similar to the *Self-Org* district.

Table 6.1 The Learning Conditions Two Years After the Initiation of Organizational Change in the Four Districts

<i>Condition</i>	<i>Districts</i>			
	Team-Org	Integrative	Self-Org	Ordinary
Collective Reflection		High	Low	Low
Heedfulness	Low	High		
Self-Control	High	Low		
Style of Leadership	Administration	Co - Management	Culture	Co - Management
<i>Interaction</i>				
Interaction Level	High	High	High	Low
Interaction Focus	Routine	Goals & Strategies	Experience	Goals & Strategies

In addition to these aforementioned findings, the results from the second paper entitled *Learning When Organizing: The Influence of Interactions on Learning at Work* show that there is a considerable difference in the number of interactions that employees have in the *Ordinary* district compared to the other three districts that have been more active in their organizational redesign. The total average number of contacts in the *Ordinary* district is almost 50 percent less than the total average number of contacts in the other districts. The *Ordinary* district has a smaller number of contacts, most likely resembling the other districts in the initial stage of the restructuring process. Additionally, the employees in all four of the districts have comparatively different interpretations of the meaning of interactions. Comparing the values for *Interaction Focus* reveals that the *Team-Org* and the *Self-Org* districts display marked similarities even when the former focus is on *Routine* and the latter is on *Experiences*. The *Integrative Organization* stands out as being unique with a broad collective approach to interactions pertaining to *Goals & Strategies*.

THE OUTCOMES

Self-reported learning is measured on all four levels: the *Individual*, the *Cumulative*, the *Adaptive*, and the *Transformative*. As with the conditions, the most characteristic distinction of learning is that the

Ordinary organization has lower mean values than the other districts.

Table 6.2 The Outcomes Two Years After the Initiation of Organizational Change in the Four Districts

<i>Outcome</i>	<i>Districts</i>			
	Team-Org	Integrative	Self-Org	Ordinary
Efficiency		High		Low
Effectiveness		Low	High	
Individual Learning	High			Low
Cumulative Learning		High	Low	Low
Adaptive Learning	High	High	High	Low
Transformative Learning			High	Low

Moreover, the differences between the other districts suggest that they each have a separate approach to learning. The *Team-Org* district has an organization that supports the individual approach, whereas the *Integrative* district has a collective approach. The *Self-Org* district, in turn, has a *Transformative* approach. The dissimilarities in *Adaptive Learning* between these three districts are less pronounced.

The analysis in the second paper *Learning When Organizing: The Influence of Interactions on Learning at Work* shows that interactions are of importance for learning. A significant correlation factor is found between interactions regarding *Goals & Strategies* and *Individual Learning* for the four districts taken together, and between *Experience* and *Individual Learning* for the *Self-Organized* district. Interactions are significantly related to *Individual Learning*; however, the influence on learning varies within these districts.

The organizational changes have had an influence on the districts' performance. This is indicated by the fact that the districts that put the most effort into the reform displayed more variance in the measured *Efficiency* and *Effectiveness*. Measuring the *Efficiency* in the districts over a three-year period, all four districts remained at the same level for the first two years after the reform. In the third year, however, there was an increase in *Efficiency* in all of the

districts, with the exception of the *Ordinary* district that remained approximately the same.

Measuring the *Effectiveness* within the districts, the implementation of the *Team-Org* district had an immediate positive effect on customer satisfaction. The *Effectiveness* of the *Self-Org* district remained the same for two years; however, there was a considerable increase in customer satisfaction in the third year. The *Integrative* district had a marked decrease in customer satisfaction in the beginning of structural change. In the third year, however, the *Integrative* district regained its initial figures, but still was the least effective of the four districts. The customer satisfaction increased steadily for the *Ordinary* district over the three consecutive years. Yet, compared to the changes in the other districts, those in the *Ordinary* district are relatively small and steady.

VII CONCLUSION AND DISCUSSION

The results of the analysis of the organizational reform at Apoteket AB reveal differences in organization between the districts. Tentative conclusions may be drawn about the influence of these differences on conditions and outcomes.

The major finding in this study suggests that organizations that actively engage in the design effort will have an increase in learning. In addition, the choice of organizational design will have an influence on various types of learning.

Another major conclusion is that the learning conditions do not facilitate collective learning in all cases. Rather, the learning conditions have either a positive relationship to collective learning or to individual learning. Moreover, the learning condition self-control has a negative relationship to collective learning, whereas it has a positive relationship to individual learning.

Furthermore, the results of this thesis suggest that collective learning is not related to performance in general. Instead, this relationship depends on the type of collective learning, and whether or not performance pertains to efficiency or effectiveness.

The results reveal a complex set of relationships, which beg further investigation; however, we are left with a number of hypotheses, as outlined below. Hence, further discussions of the relationships are as follows: learning conditions and learning, learning and performance, individual learning and collective learning, and the ostensible role of interaction.

LEARNING CONDITIONS AND LEARNING

Collective reflection and cumulative learning are both high for the Integrative district; this relationship is also low for the Self-Org district. This proposes that collective reflection and collective learning are, indeed, related to each other.

A comparison of the results from the Ordinary district and the Self-Org district points to the fact that a co-management style of leadership does not solely contribute to positive outcomes. The Self-Org district and the Integrative district both have a focus on culture and co-management respectively; both of these districts have high mean values for collective learning. Therefore, the results of this thesis suggest that two leadership styles have a positive relationship to collective learning: cultural leadership and co-management.

However, these leadership styles do not facilitate individual learning since the Team-Org district has a high mean value for individual learning and a dominating leadership style that is administrative. The leadership of the district manager in the Team-Org district also has a distinct focus on administration rather than on culture, which is unexpected if one assumes that the latter facilitates learning in general. In fact, this finding suggests that the leadership style contributes to either collective learning or to individual learning, rather than both.

The organizational design is also a factor that could impact the influence of the leadership style, making it necessary to consider that leadership can be distributed rather than concentrated in the districts. The team leadership structure could make the district manager less visible to employees in general; thus, he/she is labelled more administrative and distant, rather than present and socially active.

Heedfulness in the Integrative district is high by comparison, which points to this condition as an important predictor of cumulative learning. Additionally, heedfulness in the Team-Org district is low by comparison, which indicates that this condition could have an inverse relationship to individual learning.

The Team-Org district also has a high mean value for self-control compared to the other districts, making the positive relationship between self-control and learning viable only for individual learning. Moreover, the Integrative district has a low mean value for self-control, which suggests that collective learning and self-control could, in fact, have a negative relationship to each other.

LEARNING AND PERFORMANCE

There is a positive relationship between collective learning and performance, as the results of this thesis suggest. Cumulative learning and efficiency are correlated in the Integrative district, and transformative learning and effectiveness are correlated in the Self-Org district. Furthermore, cumulative learning is negatively related to effectiveness based on the results from the Integrative district.

Individual learning does not have any apparent link to either efficiency or effectiveness.

INDIVIDUAL LEARNING AND COLLECTIVE LEARNING

The results displayed in Table 6.2 reflect that a relationship between individual learning and collective learning is not apparent.

THE ROLE OF INTERACTION

Comparing the results of the Ordinary district with those of the other districts suggests that interaction plays a major role in the Ordinary district's poor outcomes regarding efficiency and learning. This is true, both on the collective level, as well as on the individual level.

Regarding interaction level, the Ordinary district has markedly less interaction compared to that of the other districts. Interaction, therefore, displays a seemingly significant role when the learning

conditions of the Ordinary district are similar to those of the Self-Org district.

A comparison of the results from the districts with high interaction levels reveals that all districts each have separate interaction focus. This leads to the question: *what is the importance of these interactions for the outcomes?* This query concerns both the explanatory value of interaction compared to that of the learning conditions, as well as the combined explanatory value of interaction and learning conditions when elucidating the outcomes of the organization.

To elaborate upon the role of interaction focus, the Integrative district with a high involvement in goals & strategies interaction has a focus on cumulative learning and an efficiency-focused development. A high involvement of goals & strategies interaction is correlated with collective reflection and heedfulness in this district. However, the Integrative district also has a low mean value for self-control compared to those of the other districts. This finding contradicts the importance of participating in goals & strategies in order to create autonomy. Is organizational learning an oxymoron? According to Weick and Westley (1996), organization and learning are essentially antithetical: where to learn is to disorganize and increase variety, to organize is to forget and to reduce variety. A tentative conclusion is that interactions are focused on standardizing in the Integrative district. Another possible explanation for this antithesis is that, in more central goal interactions, work boundaries disappear and become too abstract, thus, reducing work governability and disturbing self-management (Hatchuel, 2002). Hatchuel describes something that is a permanent knowledge shortage in settings where managers continuously face new challenges. When it concerns the Integrative district, this could be the case for the employees involved in strategy processes.

The Self-Org district with a high involvement in experience interactions has a focus on transformative learning, as well as on a development of efficiency, and foremost, effectiveness. Additionally, this district has low mean values for collective reflection, which suggests that these experience interactions are not held in formal meetings, but rather in more informal settings.

THE REFORM IN THE PERSPECTIVE OF APOTEKET AB'S INTENTIONS

The concept of learning organization in each of the four districts is interpreted in various ways. In the case of organizational change, *isomorphism* (DiMaggio & Powell, 1983) is not a germane term to describe the process. Rather, the change process is quite the opposite, and results in several interpretations of the operative guidelines. This can be referred to as a process of translation (Czarniawska, 1997), where all of the districts have various meanings of how the principles should be applied. Isomorphism, however, is an appropriate label to describe the vision stated in the company's guidelines, which advocates distributed responsibility and empowerment as elements for becoming a *learning organization*.

According to Apoteket AB's guidelines, the principle of empowerment - or in other words, distributed responsibility - is antithetical to the first line manager's task of supervising daily work in the traditional fashion. The fact is that the district where the leadership is more traditionally focused on administration has the highest mean values for self-control. These results suggest that this initial rationale of the causality of conditions may be contradictory to what is, indeed, fact.

Furthermore, when the initial intentions for developing a *flat* organizational structure are to create a distributed responsibility in the name of equal empowerment, the districts show markedly varying amounts of interactions. This reveals that the Team-Org and the Self-Org districts have defined hierarchical levels measured by the number contacts that split these districts into two categories of employees: those with more contacts, and those with less. The number of interactions in the Ordinary district is comparatively so few that any substantial change in this organization is excluded in from study. The Integrative district has succeeded in developing a participatory organization with a high number of contacts for all of its employees, and a collective involvement in interactions regarding goals & strategies of work. The fact that this district has the lowest mean values for self-control begs further investigation.

THE REFORM IN THE PERSPECTIVE OF SUSTAINABLE WORK SYSTEMS

The ultimate question is whether or not these districts are, in fact, examples of sustainable work systems: where the challenge is to organize work that is both beneficial for the business and for its employees. This study reveals substantial differences in the various ways managers can, and do, organize when the prerequisites and guiding principles are the same. As one of the few studies to include interaction and learning, both on the organizational level and on the individual level, the results suggest that collective learning and individual learning run on different tracks. The results also point to interaction as being an important vehicle for learning. This suggests that learning conditions are positively related to either collective learning or to individual learning, enabling the concurrent enhancement of both kinds of learning. From the perspective of creating sustainable work systems, these are certainly favourable prospects. However, the possibility of creating sustainable work systems is still dependent upon the learning condition: self-control. The results of this thesis suggest that self-control is positively related to individual learning and negatively related to collective learning, thus, making this condition integral in realizing a sustainable work system.

Moreover, the study suggests a higher degree of learning, efficiency, and effectiveness in the three districts that have a higher degree of change. This is correlated to an increase in interactions. However, it is uncertain whether or not the higher degree of interaction and learning in these three districts will remain the same as at the time of this study, or will subside over time.

The relationships between the aspects of the framework remain to be analysed in greater detail in order to propel us toward a better understanding of sustainable work systems.

COMMENTS ON THE CONCEPT OF SUSTAINABLE WORK SYSTEMS

Three fruitful contributions have been made in this thesis, which enhance the understanding of sustainable work systems, enabling the

simultaneous improvement of organizational performance and quality of employee work experience.

First, this research examines several of the design conditions of sustainable work systems that are based on learning and interaction, which have been previously suggested to be integral parts of sustainable work systems (see for example Shani & Docherty, 2003).

Second, the concept of sustainability enables an examination of some of the basic assumptions made in perspectives that have arisen within contemporary organizational research. Of interest is organizational learning as a means for an organization to obtain socio-economic benefits, as well as the conditions that facilitate organizational learning.

Third, this concept of sustainability treats how learning on different levels relates to each other: specifically, the relationship between individual learning and the social side of organizational learning. More generally, this approach is an example of a study in social psychology where it treats the relationships between interaction, work conditions, and learning. As Marx said: “It is not the consciousness of men that determines their being, but on the contrary, their social being that determines their consciousness” (Quoted in Hasan, 1992, p.519). We can now begin to examine Marx’s claim, and the extent to which consciousness is derived from social interactions.

In relation to these three contributions, the outlined concept has bearing on previous research. Regarding the first contribution, the predominant focus on social interaction is a complement to other factors influencing work attitude and behaviour. As previously¹³ argued, the conceptual aspects of sustainable work systems presented in this thesis are a demarcation from Hackman and Oldham’s model of job characteristics (1976), where the essential difference lies in the focus of how perceptions are formed at work. According to Hackman and Oldham, work is understood as the formal work task while this thesis explores the context of work (i.e. the learning conditions). Furthermore, Hackman and Oldham’s *job characteristics model* is not complete, and presumes a complete

¹³ See chapter III -Theoretical Frame.

cause and effect model that can be contrasted with the concept outlined in this thesis.

FUTURE RESEARCH

I have chosen to make the social context of work an integral element in my research. Additionally, Salancik and Pfeffer (1978) present two other causes for an individual's perceptions, attitudes, and behaviours. These two causes remain to be further investigated:

- (1) the individual's perception and judgement of the affective components of the job or task environment; and,
- (2) the individual's self-perception, mediated by processes of causal attribution, of the reasons for his past behaviour. (p.229)

Moreover, the understanding of interactions in this thesis is, to a large extent, based upon interactions as a source of informational cues. According to Blau and Katerberg (1982), social information cues affect task perceptions through four factors as revealed in social psychological studies in laboratory experiments. These four factors are:

- (1) saliency of social cues (e.g. quantity, distribution);
- (2) source credibility;
- (3) individual differences in susceptibility to social cues; and,
- (4) task ambiguity (p.544)

Treated in this thesis are the first, as well as the fourth factors. The first factor is, in essence, equivalent to the theoretical and empirical perspective of interaction in this thesis. The fourth factor is incorporated in the premise of sustainable work systems relating to the relaxation of Tayloristic confinements of work processes. As

Salancik & Pfeffer (1978) state: “the more ambiguous the job aspects, the more the worker will rely on social comparisons to assess them” (p.288). This suggests that the concept outlined in this thesis is more appropriate in organizations where task ambiguity is persistent. The second and third factors remain to be further investigated.

As previously argued, Oldham and Hackman present the job-modification framework as an extended model of the relationship between organizational structure and employee reaction (1981). This model is compared to an attraction-selection framework that suggests that personal attributes of employees (gender, age, and education) mediate the structure-reaction relationship. Although the results provide more support for the job-modification framework than for the attraction-selection framework, the authors suggest that a more comprehensive explanation would consider both models. This full model remains to be tested, elaborated upon, and compared with the concept outlined in this thesis.

The work conditions studied in this thesis are important for the effective design of organizations. The generated conclusions of this study are hypothetical, and therefore, beg further exploration.

The analysis in this thesis rests upon self-reported learning, which is not the only method to capture learning. As an example, one can argue that learning occurs whether or not we are actually aware of it. Learning can also indirectly yield a positive affect. Therefore, learning can be seen as indicative of, but not always a requirement for, positive affect. However, one must note that positive affect is not measured in this thesis, which only enables speculative conclusions about the link between positive affect and learning. This also relates to the question whether or not learning is related to negative affect. For example, if learning is negatively related to stress, then one can avoid stress by learning.

In this study, structure has been conceptualised in the form of centrality. There are alternative ways in which to measure centrality (Freeman, 1979; Marsden, 2002). The accuracy of these measurements is still subject for debate. A variety of measurements has been created to capture nuances and causes of centrality, such as *information* (Stephenson & Zelen, 1991), *power* (Bonnacich, 1987),

and *influence* (Hubbell, 1965; Katz, 1953; Taylor, 1969). These measurements do, however, originate from more basic measurements and have been refined through simulation and empirical evidence. Yet, these variables have not been constructed to study learning. Hence, other structural concepts remain to be explored. The notion of centrality in this thesis is based upon an individual's location within a given organization, which in turn, shapes their access to, and control over, certain resources. Thus, one's location affects evaluations of workplace features. Ibarra and Andrews (1993) contrast this view with another structural conception: where affects are derived from localized social influence processes that produce attitude convergence among socially proximate pairs of individuals.

Pointing to future research, this dissertation has outlined the features of a model intended to capture conditions of organization where learning is of paramount importance, and where organization is conceptualised using interaction as the foundation. The framework also suggests that structures of interaction shape conditions of organization, learning, efficiency, and effectiveness. These relationships remain to be examined in further detail, as do the aspects of the framework. Having made the analysis on the district level, the relationship between conditions and learning remains to be analysed in order to clearly assess the general influence of the conditions on learning on the individual level.

In conclusion, this study points to a number of interesting possibilities to improve working conditions for employees, while simultaneously facilitating corporate sustainability. To further explore sustainability, this thesis expands the notion of organizational learning as a means for an organization to obtain socio-economic benefits, as well as investigate the conditions that influence organizational learning.

The social component of learning is further combined with individual learning by elaborating on interactions as a source of influence on employee perception and attitude. Hence, this research presents an interactional perspective on learning and organizing. A contribution of my work lies in the advancement of the concept of social space, which relates to a social information-processing

approach to organization, combined with social network theory. This groundwork has the potential for further development.

The nature of the relationships between the elements of sustainable work systems is a necessary and vital emerging area of research, leaving room for discovery and growth. The proposition of focusing on learning and organizing from the perspective of interaction has proven to be fruitful; thus, my research inspires ongoing verification and exploration.

This academic territory is still uncharted. This research serves as a vehicle giving motivating direction, while it propels us toward further investigation.

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