
Knowledge Processes and Organizational Learning:

A Radical Shift in Management Thinking?

Angela Lacerda Nobre

Escola Superior de Ciências Empresariais do Instituto Politécnico de Setúbal
ESCE-IPS

Abstract: The present chapter discusses the different epistemologies behind different strands of management thinking and calls for the need for further theoretical development. It proposes a specific management methodology, Semiotic Learning, that corresponds to an innovative approach to the field of organizational learning, one that draws on social semiotics and on ontological hermeneutics in order to develop an integrative perspective to the individual and to the social dimensions of organizational learning. Pragmatism stands for the inseparable nature of the individual and the collective aspects of learning. Though many organizational learning theories draw on pragmatism, Semiotic Learning argues for the need to develop further this perspective because once its underlying assumptions are understood its consequences imply a radical shift in relation to dominant management thinking.

1 Introduction

It is possible to describe management as being constituted by a set of functions that are usually performed by specialized departments within organizations. This functionalistic perspective on management is reductive and does not take into account the notion of a complex whole—the whole that is more than the sum of its parts. Some management and organization theories take this complex and holistic (non-functionalistic) perspective. However, the present chapter argues that management practice may benefit from further development of these complexity oriented approaches, namely the ones that enable a better understanding of knowledge processes and of organizational learning phenomena. Central aspects of such approaches are the quality of organizational community life and the organizational meaning-making capacity. These aspects are closely inter-linked, and the present chapter discusses their theoretical assumptions and their practical implications.

This chapter discusses different approaches to the “process” phenomena while analyzing the range of epistemologies that inform and orient different

management schools of thought. It proposes a specific framework to facilitate organizational learning—the Semiotic Learning Framework—that is based on social semiotics and related theories, and that draws on pragmatism in order to analyze the links between individual and organizational learning processes. It is important to note that several contemporary organizational theories follow this pragmatist approach. Pragmatism was developed by C.S. Peirce whose work at the end of the nineteenth century, together with the work of F. de Saussure's, led to the two most influential schools of semiotics during the twentieth century.

Among the above mentioned contemporary organization theory approaches that share a non-dualistic, post-cognitivist and post-structuralist stance, are Stacey's complex responsive processes (2001), Checkland's soft systems methodology (1984, 1999), Eijnatten's chaordic systems thinking (2003), Alvesson and Sköldbberg's reflexive methodology (2000), and Weick's organizational sense-making (1995, 2001). Though these are not examples of mainstream dominant management thinking, they reflect the potential for change that already exists in current literature. Therefore, the present chapter argues for the need for a radical change in management thinking and suggests that there already is a high potential for such change to take place.

2 Critical Assumptions—What we Take for Granted

It is important to make explicit what are the underlying assumptions upon which the argument of the present chapter rests. The relevance of this exercise is directly related to the subtle issue being discussed, i.e., what is a “knowledge process” and the set of presuppositions that it implies. Therefore, the following statements refer to that which is assumed as relevant in order to proceed in a discussion on knowledge processes:

- (i) It is assumed within the argument of the present chapter that certain aspects, characteristics and mechanisms can be said to be present within individuals and also within collectivities of individuals. Instead of differentiating single from collective entities, the focus is on the *processes* that can be said to be common to both contexts, individual and collective; there is a wide range of theories that support this approach, namely postmodernism and post-structuralism in general, pragmatism (Peirce, 1955), Bakhtin's dialogism (1981; Brandist, 2002), social subjectivity (Lemke, 1995), reflexive methodology (Alvesson, Sköldbberg, 2000), and critical psychology (Henriques et al, 1984).
- (ii) It is assumed that these mechanisms can be understood as a *creative tension* between two ends of a spectrum, where alternative positions lead to different results so that there is not a single optimum and a state of equilibrium, an ideal result to be achieved, but rather a dynamic and continuous game and negotiation between the two ends, that is, a *developmental process*.

- (iii) What was stated in (ii) implies that besides the immediate and objective aims to be achieved, at individual or at organizational level, there are broader objectives that cannot be pinned down and are *constitutively open-ended*. Therefore, besides a reductive and narrow results-oriented approach there is the need for the complementary open-search that is focused on the *process* itself. This focus corresponds to two parallel strands: sense-making and signification activities, and the quality of the relationships and of community life. The importance of sense-making, signification, relationships and of communities derives from (i) where what is individual and single and what is collective and social are mutually and dynamically determined (i.e., it is through their relationships and through being part of real world social communities that individuals perform or undergo their signification and sense-making processes, so that it is simultaneously an individual and a collective enterprise, thus socially determined).
- (iv) These three initial assumptions imply a *complexity* approach where there is a *gradual search for understanding* and for integration of the different perspectives and interpretations that become available through the explorations of alternative and complementary, though often contradictory, points of view. The importance of complexity is widely recognized within certain strands of organizational literature (Urry, 2003; Stacey, 2001; Alvesson, Sköldberg, 2000; Prigogine, 1980).
- (v) The importance of such an exercise - the *complexity exercise*, the search for understanding through multiple perspectives - derives from (iii) and the continual presence of both an immediate result to be achieved and of an open-ended search for newness. The tension between these two forces is always present and unavoidably so because neither individuals nor communities could survive if only centered in one of the two ends of the spectrum. However, this is often an unconscious process and therefore difficult to assume as being present. It is through the continuous shift between immediate and objective, and long term and open-ended objectives that it is possible to keep the maximum possibilities for development open; it is like an energizing process where both short and long term results can be improved in a synergetic way.

The rationale of the present paper is that bringing forth these links and working on them helps both individuals and organizations to improve themselves. Whether we want to improve performance or simply well-being is irrelevant, because both can be achieved through this rationalization and sense-making activity. We can achieve increased performance with lower well-being only in the short term. If we want sustainable performance and long term results, the two have to be taken together as inseparable, performance and well-being, both at an individual and at an organizational level.

3 The Two Sides of “Process”—The Engineering Versus the Humanities Perspectives

“Process” is one of those words that can have different meanings depending on the context in which it is used. In management thought and practice both sides of the coin are relevant: the engineering perspective, which sees process as a set of structured, pre-determined procedures, and the humanities perspective that focuses on process as an on-going activity that, sometimes, gives rise to a previously planned result.

The tension between these two approaches can be recognized in business settings where both the need to *systematize* (repeat, sameness) and to *innovate* (change, newness) are simultaneously present, so that entrepreneurship and “intrapreneurship” are attitudes to be cherished by innovative managers (Nobre, 2002a). Focusing on organizations as a whole, the notion of organizational effectiveness is also directly related to the balancing of this tension between what has to be repetitive and stable, and that which has to be renewed and restructured (Nobre, 2002b). These do not belong to different spheres of reality, neatly separated, but rather correspond to a dynamic mechanism of interaction that together define the sense making activity of each organization.

Comparing the engineering approach to the humanities approach several distinctions stand out. The engineering approach may be illustrated through the re-engineering, down sizing, and results oriented approaches to management; it is procedural and focused on efficiency and effectiveness; it stresses linear and cause-effect forms of rationality; and it is centered on subject-object relationships. The humanities approach focuses on the notion of process, on non-linear forms of rationality, and on non-causal effects. It is highly sensitive to complexity and to the simultaneous interference of multiple influences; it is open to the existence of paradoxes and to the ambivalence of human contexts; it is not focused on objective and objectionably measurable final results, but on the on-going *processes* that continually produce those partial results; it takes a being-in-the-world approach where the object and the subject cannot be neatly separated.

Looking into the relationship between both approaches it can be said that they correspond to different levels of analysis, they have different purposes and serve different functions. The first one, the procedural orientation, is centered on a system’s perspective and takes into account the structural relationships at an horizontal level, focusing on the direct impact of immediate connections. The heart of the re-engineering approach, as well of many previous management perspectives, is the answer to the question of “how to do more with the same” or, even better, “how to do more with less.” This approach narrows down the problem to be solved in order to optimize specific areas that can be perfected. It tends to repeat itself in an effort to achieve this improvement, in the same way that a scientist repeats each experiment at her laboratory while keeping the conditions stable, the manager who wants

to take an engineering, process oriented approach will seek to repeat the context and will eliminate divergences to the desired and predetermined path of development.

The humanities approach, on the contrary, seeks difference, originality and creativity. It intentionally explores alternative ways and often deconstructs what had previously been assumed as settled and taken for granted. It searches for the understanding not of the immediate problem, and certainly not of one area within a problem, but of the larger context where the problem is formulated and makes sense. Therefore, the humanities approach takes a broader and more complex approach and, thus, its achievement cannot be evaluated in terms of measurable immediate results but rather in terms of its capacity to improve the sense making activities taken as a whole. The two approaches correspond to two ends of the same spectrum. They complement one another and are dynamically balanced through a creative tension. They serve diverse, though *complementary*, functions. The engineering approach to the notion of process has the following functions: to systematize, bureaucratize, turn into effective procedures, pre-determine, plan, control, and optimize through a linear rationale. The humanities approach to process has as functions: to rethink, reformulate, deconstruct, innovate, recreate, renew, reinvent, connect, communicate, and to optimize through non-linear rationalization.

Within management practice, though the straightforward, engineering approach is the dominant one, there is a gradual recognition of the relevance and of the complementary nature of the humanities perspective to the notion of "process." This development can be recognized by the importance given to the concept of "knowledge" through ideas present in subjects such as the "knowledge economy" and "knowledge management." Even when such approaches take a commodity approach to what is meant by "knowledge," meaning something that may be exchanged, acquired, stored, retrieved, distributed, etc, there is an unavoidable move toward the acknowledgement of the intangible and tacit nature of knowledge as a process, as something that is lived and experienced within a social context. Nonaka's (1991) work on Polanyi's (1958), who coined the terms "tacit" and "explicit," is an example of such movement.

The literature on knowledge management and on organizational learning stresses the different strands that coexist within these fields: one more results oriented, individual focused, and deriving from cognitivist theories; and another one more process oriented, focusing on community, and based on social theory (Easterby-Smith and Araujo, 1997; Easterby-Smith and Lyles, 2003). To synthesize, the procedural, engineering, plan-execute-control, approach to the notion of "process" is connected to the cognitivist and individual centered theoretical line of thinking, whilst the view of "process" as something embodied and socially embedded, typical of the humanities approach, is community focused and is linked to social theory.

According to this line of reasoning, there is a general consensus regarding the question of “why” it is relevant to look into knowledge processes; the question of “how” is trickier to settle. How may the command-and-control oriented and the social-embedded approaches to the notion of process be integrated and complemented?

The answer to the “how” question can take the form of different recipes but, more important than that, it is critical to identify the different world-views and paradigms that support and legitimate each proposal. This is the role played by the philosophy of science where the process of scientific production is analyzed taking into account the paradoxical and often non-official issues related to power relations, community inner rules, unconscious pressures, historical and political contexts, etc. The history of ideas cannot be isolated from the contexts that gave rise to those ideas, and the insights brought into this production process are critical to its improvement, whether we consider the production of management theory or of other knowledge fields. These insights, again, are to be taken as a *process*, as something to be continually nurtured and fostered, and not as a single once-and-for-all result. More importantly, this *on-going interpretation* is highly relevant for *practitioners* as it corresponds to the most effective way to improve one’s practice because it intensifies and highlights the sense making process. To recognize and value such enterprise is an effort with a very high “return-on-investment,” both for the practitioners themselves and for the organizations that may benefit from such insights.

4 The Epistemic Shifts—The Emergence of a New Paradigm in Management Thinking

The “social turn” in organization theory corresponds to a gradual movement that cannot be easily identified. Therefore, the question mark in the title of this article: are we really facing a *radical* shift in management thinking?

It is critical to distinguish between mainstream traditional management theory and the myriad of complementary approaches that have contributed to the development of alternative perspectives. The dominant stream of management theory is still largely influenced by the command and control paradigm developed over a century ago by early theorists such as Weber, Taylor and Fayol. Though the control paradigm today is closely connected to a technocratic and functionalistic perspective of management science there is a growing awareness of the dangers of assuming a reductive and limited view of organizational complexity. In other words, though it is important to *recognize the role* of bureaucratic, functional, and procedural like aspects of organizational life, it is critical to *complement* these perspectives with *richer and more human centered* interpretations of organizational reality.

This critical role is performed by, among others, communities of practice theory (Brown, Duguid, 1991, Lave, Wenger, 1991, Wenger, 1999, Wenger,

McDermott, Snyder, 2002). The importance of the concept of communities of practice at an organizational level is parallel to the growth in the interest of management approaches, such as organizational learning and knowledge management. At a broader level, this development reflects reactions from management and organization thought and practice to the reality of the knowledge economy of the information age (Kearmally, 1999; Drucker, 1999). This movement may be considered as the tip of an iceberg, as the culmination of a long process of development that is still going on.

Easterby-Smith and Lyles (2003) identified four main authors that have had a significant influence in the organizational learning field many years before the term was used: John Dewey, Michel Polanyi, Edith Penrose, and Frederick Hayek. Argyris and Schön's work (1978) on how to improve work practices led to the creation of the bedrock of organizational learning as a study field. K. Weick (1995, 2001) developed an approach to organizational sense making that can be said to be closest to the organization theories that emphasize reflexive practices (Schön, 1982). The organizational sense making approach is a "vision of a vision," a "framework of ideas about a framework of ideas" and a "book on interpretation"; and the argument behind it is that there is a need to make explicit what was previously implicit (Weick, 1995).

Nonaka, Toyama and Byosiore (2001), describing their theory of knowledge creation argue that their foundations come from pragmatic philosophy and from oriental philosophy, emphasizing links in the contextual dependence of knowledge, and the unity between cognition and action. Therefore, they leave behind the traditional vision of organizations as static and passive machines of processing information, and they offer a dynamic vision of the organization as an entity that continually uses and creates knowledge.

Gherardi and Nicolini (2001) developed an approach to organizational learning according to a sociologic perspective and they use terms such as "reflexivity" and "participation" as essential elements for the understanding of organizational development phenomena. They argue that reflexivity cannot be restricted to the cognitive component and that it involves hermeneutic processes of interpretation, intuition and imagination.

Looking into the organizational learning field of study through a sociologic and post-cognitivist perspective it is possible to identify the influences of the different schools of thought that helped to mould the perspectives that go beyond the neo-rationalist, procedural, normative and prescriptive approaches on organizational learning. This "social turn" corresponds to an emphasis on the *participative* and *collaborative* aspects of work and learning, based on the notion of the social construction of reality, through a practice-based approach which is experiential, pre-reflexive and centered in action (examples of this approach are the works of Kolb (1984), Engström (1987), Gherardi and Nicolini (2001), and Elkjaer (2003)).

The works of the German philosopher, Martin Heidegger (1996) and the hermeneutic ontology, as well as the American philosophical school of pragmatism, created by C.S. Peirce (1955) and followed by John Dewey

among many others, correspond to two of the most *important influences* within the development of the social perspective in knowledge management and organizational learning, the so-called “social turn.” Among the authors responsible for the sociological approach, who explicitly argue about the important role played by hermeneutic ontology and pragmatism, are Gherardi and Nicolini (2001) and Elkjaer (2003).

According to Elkjaer (2003), the approach of organizational learning from a sociological perspective emerges as a critique to the previous reductive, individualistic centered and cognitivist based perspective on organizational learning. Elkjaer (2003) presents a “theory of social learning,” and argues that the sociological approach to organizational learning coincides with the influence of social constructivism in the social sciences and in education through the works of Berger and Luckman (1991/1966), among others.

Constructivism, as an epistemic strand, is a rejection of the positivist approaches to the interpretation of reality as objective, where only a single interpretation is possible, and where this interpretation can be explained through hypothetic-deductive methods. Constructivism argues that reality is not objective and that multiple interpretations are possible because what we perceive as reality is the product of a social construction, i.e., reality is socially constructed.

According to Elkjaer’s theory of social learning (2003), “learners” are social beings that construct their understanding and learn through the social interactions in which they take part, within specific socio-cultural contexts. This perspective stresses that the theory of individual learning is limited to the epistemological aspects of learning, while the social theory of learning includes both epistemological and ontological aspects.

Epistemology considers questions of “knowledge about knowledge,” while ontology is directed to the study of “being” and the manifestation of reality. The social perspective on learning, integrating both epistemic and ontological perspectives, implies that it focuses on knowledge in terms of “content” and also in terms of “process,” focusing on the practical and quotidian aspects of the social, cultural and historical contextualization of such “content.” Epistemology considers reflexive activity, formally rational and conscious, while ontology includes also pre-reflexive, rational-intuitive and unconscious activity. Instead of using nouns, ontology is best expressed by the use of verbs that transmit the notion of movement and continuity, situated and socially contextualized, and not an exterior transaction, commodified: “learning,” “being” and “becoming,” instead of normative prescriptions of what constitutes creating and sharing knowledge. “Knowing” instead of “knowledge.”

Therefore, the radicality of the “social turn” in management thinking is not related to large numbers or to the visibility of the changes in terms of its impact in the media. Rather, its radicality derives from the newness of its perspective, for its change of paradigm. However, this development may go

unnoticed if we fail to recognize the need for a change in the reading matrix. The above mentioned change of paradigm places its focus and its epicenter on the intrinsic and inherent nature of all human action and thought as socially embedded phenomena.

In order to grasp the importance of this change it is critical to point out that this notion of social embeddedness has surpassed the traditional binary opposition between individual and social issues which still permeates current and mainstream management and organizational perspectives. Instead of opposing or separating psychological and sociological issues, it treats the individual and the collective, the internal and the external, the inner and the outer world as a unique single reality. In other words, it does not partition and divide, study each isolated part, and then take the result of this process for the whole. Rather, it takes the whole from the start.

Two of the fundamental influences to this change of paradigm are pragmatism and hermeneutic ontology. Heidegger's (1996) instance of being-in-the-world, as opposed to the subject-object relationship, cannot be easily grasped but it implies a profound shift in thinking, an epistemic shift. The message and potential impact of these two theoretical contributions carries a strength that goes beyond the possible recipes and methodologies that it may inspire. The next section briefly describes one such methodology.

5 The Semiotic Learning Framework—an Innovative Approach to Organizational Learning

The present section presents an organizational learning framework that has been derived from the fields of management and organization science, and from social philosophy (Benton, Craib, 2001). The central aspect to highlight is the importance of meaning-making for the processes of community building and identity enhancement at the organizational level. The richness and theoretical scope of the framework is also a form of syncretism as the contributions from the authors, the categories, and the theoretical approaches all share a common standing and thus mutually support and reinforce one another. The main applications for the theoretical framework are presented and these include three different levels: organizational learning applications, educational applications, and applied organizational research.

5.1 Central Questions

The Semiotic Learning Framework is like a three legged stool: besides pragmatism and hermeneutic ontology it rests upon social semiotics, an area that links social relations and individual meaning making, or signification. Why does semiotics matter? Because, if we want to understand the relationships between culture, mentality and social relations, and their impact on individuals, we need to take into account the symbolic processes that constitute

and characterize human contexts. Human contexts are made of interpretation processes that occur continuously, at a conscious and at an unconscious level. Semiotics is as old as philosophy itself and it has developed throughout Medieval, Modern and Post-modern ages. The branch of social semiotics is typically post-modern as it takes a post-structuralist stand: beyond the search for the identification of rigid structures, it aims at identifying the dynamism and the patterns that form the complex network of social relations and meaning creation. Social semiotics takes a multiple-text approach instead of a single text one; it is sensitive to complexity, to ambiguity and to paradox. The issues of power, of group pressure, of social subjectivity, of narrative, and of discourse are strong items in the social semiotics lexicon.

The “social turn” in knowledge management and in organizational learning led to different approaches and opened the door to the exploration of theoretical inputs from a wide range of areas. The Semiotic Learning Framework enables the development of two critical areas: the quality of community life and the meaning making process at the organizational level. It facilitates and fosters organizational learning through the development of an awareness and of an attentiveness to complexity. By being aware of the processes and the patterns of meaning creation it is possible to work on them constructively, benefiting both individuals and organizations. Innovation comes from the acknowledgement of vicious-circles and dead-ends and the investment on positive and action-led approaches. These approaches take into account the *need for balance* between what has to be stable, structured and systematized and that which has to be creative, dynamic and open. The importance of recognizing the daily pressure of these creative tensions enables the development of a pro-active attitude, thus cherishing innovation.

The question of “why semiotics” is as difficult as the one “why learning” because both deal with processes of human development that are always and unavoidably present. Therefore, at a certain level, they are both redundant words because, in a sense, they refer to life itself. To live is to learn, and to learn is to interpret, and to interpret is to use symbolic reason and to create meaning. At an organizational level *knowledgeprocesses* are important because they help us to focus on the critical role of this learning/meaning creating dynamism. It is not enough to understand knowledge as a socially embedded and embodied process; it is necessary to grasp the functioning of such mechanisms. Language is tricky here because this meaning making corresponds to a non-mechanical process. It is a process of interpretation, of reading reality, not in a pre-defined, precise, and reductive way but in a creative and constructive way, because all meaning calls for the further development of more meaning. The best word to describe this process is to call it transformation. Both individuals and organizations learn, develop and transform themselves, and the better we are at understanding these *transformation processes* the more able we are to profit from them.

5.2 Theoretical Background

The Semiotic Learning Framework (SLF) uses social semiotics theory as its main foundational theoretical approach. Social semiotics, developed by Halliday (1978) and Kress (1985) among others, developed out of the Saussurean school of thought. Besides the influence of Saussure's theories, through social semiotics, the SLF also draws on Peirce's (1955) pragmatism. The SLF, by insisting on the links between theory and practice, the individual and the social, the internal and the external, by arguing in favor of practice-based and action-driven approaches, and by focusing on the spontaneous and natural, trivial and quotidian development of everyday organizational life, uses a pragmatic approach as developed by Peirce. Focusing on self and agency, from social semiotics theory the SLF takes the notion of interdependent social practices, its concept of social subjectivity, and contributions from the social theory of discourse. The theoretical breakthrough work of Bakhtin (1981), Wittgenstein (1958), Bourdieu (1998) and Foucault (1972) are used as foundational background references to the particular approach developed in SLF, an approach that proposes a new standing in terms of organizational theory and practice.

5.3 The Context of the Knowledge Economy of the Information Age

The centrality of information and knowledge in current economic and social processes justifies the concept of the "knowledge economy." The knowledge economy of the information age (Kearmally, 1999; Drucker, 1999) stands for the prevalent context of increasing levels of complexity, turbulence, and the pace of change that characterizes the global markets of present times. This context was set forth by the rapid technological development of the second half of the twentieth century. Therefore, the last quarter of the century witnessed an increase in the number of organizational theories directed at enabling organizations to deal with and to profit from the opportunities, as well as to avoid the risks, of the new organizational reality.

The Semiotic Learning Framework, as an organizational learning initiative, builds on these theories and highlights some of their key concepts. Core concepts of the SLF are: collaborative forms of work and learning, knowledge creation and sharing, reflexive practices and double-loop learning. The fundamental need for collaborative practices and forms of work and learning is intrinsic to the current context of the knowledge economy. While in traditional neo-classical economics knowledge was understood to be an implicit production factor that was subject to the rule of diminishing returns, within the present context, knowledge represents a central factor of production that presents the unique characteristic of increasing returns, thus increasing its value while being used and shared.

The importance of learning arises directly from the need to disseminate and share knowledge across an organization through learning. Within the context of the SLF, “learning” refers to more than the reductive view of formal organizational training or to the aggregation of individual learning processes. In similar terms, collaboration acquires an emphasis and a connotation that surpasses previous protocol or superficial etiquette rules within organizations to become the main drive for, and key issue behind, organizational growth and development. The theory of communities of practice (Lave, Wenger, 1991, Wenger, 1999, Wenger, McDermott, Snyder, 2002, Brown, Duguid, 1991) incorporates a social theory of learning and of collaboration, emphasizing the social embeddedness and embodiedness of all learning processes. Therefore, it places the social dimensions of learning and of collaborating as the central and decisive criteria for organizational innovation and success. The degree and capacity that an organization incorporates in terms of collaboration and learning fundamentally determine its potential to innovate and develop.

The fields of organizational learning and of knowledge management have been influenced by a web of authors and of baseline theories. Argyris and Schön’s (1978, Argyris, 1992) notions of individual mental models and of single and double-loop learning processes largely influenced P. Senge’s work on learning organization (1990). The importance of questioning one’s own assumptions and of reflective practice, key concepts in Argyris and Schön’s work, are critical foundations of organizational learning theory. Senge also relied on Bohm’s concept of dialog (1965, 1983) and on systems dynamics (Forrester, 1971, Meadows, 1982), thus presenting the learning organization as a system. Peter Senge (1990), states that “organisations change only when people change, and people change only when they change from within.” Equally critical is Nonaka’s model of knowledge creation in organizations (Nonaka, 1991, Nonaka, Takeuchi, 1995). Like Senge, Nonaka also draws on systems thinking, including some concepts from chaos and complexity theories (Prigogine, 1980) that he treats as extensions of systems thinking. Bateson’s (1973) work on the ecology of the mind influenced Nonaka’s learning theories, though the major influence comes from Nonaka’s biased reading of Polanyi’s (1958) work, therefore differentiating and separating tacit from explicit knowledge.

Since late 1970s there has been a growing interest in the notions of learning and on the creation and management of knowledge or of intellectual capital in organizations. From an industrial age context, the new age of knowledge work in the information society represents a global pattern of change that includes new forms of organizations and different ways of managing them. The main assets of the industrial age were traded in markets so that the organizations could be objectively valued. In the new knowledge economy, *knowledge* is the major asset and since it cannot be directly traded in markets there are difficulties in valuing organizations, so that the intellectual capital movement calls for new forms of measuring and managing organizational knowledge assets (Stewart, 1997). The task of managing knowledge assumes

that knowledge is in individual minds, mostly in a tacit form, and that it may be converted into an explicit form, and be stored and manipulated by the use of information technology. The cultural reluctance to share knowledge requires leadership, and a management style that encourages and persuades knowledge sharing by promoting dialog. This *mainstream perspective* on knowledge management has benefited from the constructive criticism of approaches that call attention to the intrinsic and complementary processes that occur within organizations, such as the importance of communities of practice in the generation of knowledge (Lave, Wenger, 1991, Brown, Duguid, 1991), and also the view of organizations as sense-making systems (Weick, 1979, 1995, 2001). The importance of informal forms of learning, of conversations, and of storytelling, focus on the role of narrative forms of knowledge, and on *alternative interpretations* to the process of creating, sharing and storing knowledge.

5.4 Organizational Key Issues

SLF acknowledges the early contributions of social theory research to the field of organizational studies. Current organizational approaches may be enriched by the incorporation of key insights from pioneer, though still active, research traditions. Appreciative inquiry is a fundamental aspect to be acknowledged:

Appreciative inquiry involves a systematic discovery of what gives life to a living system when it is most alive, most effective, and most constructively capable in economics, ecological, and human terms. (Cooperrider et al, 2001).

G. Vickers (1965) work on appreciative systems developed a tradition that is still relevant in today's organizational settings. According to Vickers, we perceive reality selectively according to our judgment making—our “appreciation—and this process consists of *relationship management*, within which *goal seeking* represents one of its particular cases. Vickers rejects the goal-seeking model of human behavior, and also the cybernetic paradigm, where the course to be steered is available from outside the system, whereas systems of human activity themselves generate and regulate multiple and mutually inconsistent courses, thus constituting an autopoietic system (Maturana, Varela, 1980).

The process of designing organizational learning initiatives is itself anchored in a *systematic collaborative inquiry process* into the organization's learning experience and practice (Shani, Docherty, 2003). Appreciative inquiry thus has advanced beyond being a philosophical orientation to becoming a theory and a method for systems learning and development. It fundamentally seeks to build *constructive ongoing dialog* between people in an organization, a dialog about past and present learning capacities, processes, innovations, and unexplored potentials.

The contributions from systems thinking and from complexity theories are also critically highlighted within the SLF. Holistic thinking refers to the perspective of perceiving reality as a whole, not as “the whole” but as “wholes.” Historical examples of holistic thinkers are Aristotle, Marx and Husserl, however the institutionalization of holistic thinking only occurred in the 1950s through the development of systems thinking and of the general systems theory (Checkland, 1984, 1999). In the 1970s, the soft-system approach developed, and instead of perceiving the world as systemic, it perceived it as a complex whole that could be explored through alternative world-views and a systemic process of inquiry, that focused on learning leading to action rather than on optimization. Hard-systems focus on problem-solving, and model organizations as coordinated functional task systems seeking to achieve declared goals, and thus see the task of management as decision making in support of goal seeking. H. Simon (1996) developed this type of approach that proves to be extremely effective in situations where there are clear-cut performance measures, and goals are objectively defined.

Soft-system methodology arises as a complement to hard-systems perspective and it focuses on *open complex systems*, systems that are in constant interaction with their environment, and where the social and political aspects of the system are especially taken into account. Within the theoretical development relevant to the present organizational context the theories about complexity, emergence, turbulence and chaos are critical. From a non-mathematical perspective, chaos theory, the non-linear, and complexity may be taken to be a *single paradigm* (Urry, 2003, Prigogine, 1980).

Complexity has also been theorized beyond systems thinking, and Stacey (2001), though acknowledging the importance of systems thinking, and being closely related to the aims of soft systems methodology, focuses on organizations as *complex responsive processes of relating*, where iterative processes sustain continuity with potential transformation at the same time. According to Stacey (2001), analogies drawn from natural complexity sciences are based on a Kantian and idealistic view in which nature is assumed to unfold from already enfolded forms. However, this perspective does not encompass an explanation of the emergence of truly novel forms. This strand of complexity thinking is an extension of systems thinking about nature. An alternative perspective is that derived from Hegel as interpreted by Mead, in which the future is understood to be under perpetual construction, and it is this second strand of the complexity sciences that constitutes the *source domain* for analogies with *human action* (Stacey, 2001).

Chaordic systems thinking is a conceptual contribution for explaining human performance management under turbulent conditions, that is presented as a new paradigm for working life (Eijnatten, 2003; Backström, Eijnatten, 2002); this approach tries to account for the emergence of real novelty “in terms of Stacey.” Chaordic systems thinking recognizes that systems are complex, dynamic and non-linear, in which chaos and order co-exist. This approach is based on an understanding of systems as holons,

entities that are both wholes and parts, both autonomous and dependent; and it agrees with Stacey's argument of the previous system approaches as suffering from a Kantian split, and from being highly embedded in a *control paradigm* (Eijnatten, 2003). The perspective of chaordic systems thinking (Eijnatten, 2003), which uses the chaos metaphor as an *interpreting lens* and that recognizes systems as being simultaneously ordered and chaotic, is presented as a new holinic approach and as the next-generation framework for socio-technical systems design. Holons are entities that are both wholes and parts of a greater whole.

Socio-technical approaches are gaining wide recognition. The term "socio-technical system" was coined by E. Trist to describe his team's work at the Tavistock Institute on the *interrelatedness* of environmental, social, and technical systems of organizations (Emery, Trist, 1969). The origins of socio-technical systems date from the period after the second World War, when E. Trist and F. Emery, two social scientists, pioneered the movement toward experimentation with *alternative work redesigns*, different forms of employee involvement, varied degrees of autonomy and responsibility in work teams, *participative management* orientations, and the development of *learningsystems*, all with deep concerns regarding economic performance.

The present study acknowledges the overwhelming importance of both systems thinking and of structuralism in current interpretations of both organizations and societies as a whole. Nevertheless, this acknowledgment of systems thinking and of structuralism aims at *searching beyond them*, thus contradicting the dominant and mainstream management approach that takes for granted a systems perspective.

5.5 The Learning Cycle Steps

The SLF is organized in a series of four steps that represent the different stages of a learning cycle. Organizational learning is a continual, though not necessarily continuous, process, and organizational learning design tools direct, inform and facilitate this learning process. These steps are to be understood as an *iterative mechanism* balancing the *tension* between theory and practice, between personal and organizational learning and development, and between the formal and the informal, the structured and the unstructured, and the predictable and the unpredictable elements of organizational life. The key idea is that theory and practice are interdependent and mutually determine each other. In similar terms, individuals and organizations simultaneously influence one another in a permanent interaction.

The predictable elements of organizational procedures may have an enabling or a restraining influence in relation to organizational learning initiatives. Formal organizational practices are a medium as well as the result of the unpredictable and informal components of organizational dynamics, i.e., structures determine, condition and influence processes,

and these simultaneously recreate and transform the structures, in an interdependent way.

A crucial issue within the SLF is the identification and acknowledgement of these interdependencies and interactions, and the development of alternative creative and innovative *organizational practices* that enable the exploration of each organization's full potential. This potential critically depends on the degree of openness and flexibility present in every institution and the SLF works on these characteristics. The four learning-steps of the SLF are the following:

- (i) Ice-break - Raising key issues
- (ii) Experiencing—Confronting reality
- (iii) Action Horizons - Transformative learning
- (iv) Innovative Practice—Open dynamism

Ice-Break—Raising Key Issues

The first step of the learning process consists on an introduction to the domain of organizational learning from the perspective of the SLF. More important than delivering prescriptive notions is the raising of *key issues* that may enable a *questioning process* to develop. Within the broad field of organization theory, several approaches are relevant. These correspond to the *organizational key issues* Sect. (5.4):

- a) appreciative inquiry;
- b) open complex systems;
- c) socio-technical systems;
- d) collaborative work and learning;
- e) knowledge creation and sharing;
- f) reflexive practice and double-loop learning;
- g) trust and social capital.

Experiencing—Confronting Reality

From the first introductory step, a general understanding is developed that has to be confronted with the individual and organizational reality that is specific, situated and circumstantial. The degree of detail of the first step depends on the prior knowledge and familiarity with the areas and approaches included as the framework's key issues. As the SLF involves the repetition of the learning cycle, some of the aspects may be omitted from the first round and/or others added later. The central idea is to grasp one or several notions that are able to open new grounds for analysis and debate.

From the analysis and debate of step one, step two consists of bringing forth the key issues raised, and confronting them with the daily organizational life. "Experiencing" is thus a process of attentiveness to the specific circumstances of organizational reality. It aims at gradually

making explicit the *conditions of possibility* for organizational learning to occur in a conscious and intentional form. These conditions of possibility involve both *action-possibilities* and *thought-possibilities* (Karl Jaspers' terms, Young-Bruehl, 1981), i.e., both the ability to perform and the interest in doing so.

This field-work step incorporates two simultaneous lines of development. In the sense that every individual and every organization has an intrinsic capacity to learn, to develop and to innovate, it is important to focus on the issues that limit and restrain this capacity, the barriers, blockages and dead-ends. This *innovation capacity* is a raw material, a hidden potential that needs to be fostered, promoted, encouraged and facilitated. So there is a negative focus, of reducing the barriers and limitations, and a positive focus, of improving and strengthening the creative learning capacity.

Action Horizons—Transformative Learning

The third step returns to theoretical presentation and discussion. The broadening of horizons and the development of new perspectives is fundamentally rooted on the kind of mentality, mind-set, and world-view prevalent in each community and organization. In order to improve the understanding and questioning capacity, certain key theoretical concepts have to be explored and operationalized. This developmental process may be characterized as consisting of both learning and un-learning instances and it reflects a disclosing and dialogical standing. The SLF's *working concepts* (not developed here for reasons of space restrictions) consist of philosophical concepts from six relevant thinkers (Bakhtin, 1981, Halliday, 1978, Wittgenstein, 1958, Foucault, 1972, Heidegger, 1996, White, 1978), and four philosophical categories. The central *working concepts* within this framework are the following:

- a) Bakhtin's concept of *dialogism*
- b) Halliday's notion of *grammar*
- c) Wittgenstein's concept of *language-games*
- d) Foucault's concept of *discursive formations*
- e) Heidegger's concept of *being-in-the-world*
- f) White's concept of *master tropes*

The four philosophical categories that are relevant are the following:

- a) Action; b) Language; c) Knowledge; d) Meaning

These key concepts and categories may only be operationalized gradually, in a disclosing and dialogical way, as was referred to above. They are to be developed according to the conditions of possibility identified in step two. The critical idea is the transmission of the SLF rationale that is based on the development, intensification and deepening of communities within organizations as it is at communities level that the meaning-making process

may be enhanced. The *working concepts* are thus a critical element within the process of internalization of the reflexive practice that constitutes this learning framework.

Innovative Practice—Open Dynamism

The fourth and last step of the learning cycle focuses on *acknowledging the emergence* of developmental and innovative learning patterns, and on opening new *windows of opportunity* for organizational development and community building to take place. It is critical to insist on the issue that organizational learning must first be promoted and fostered within smaller communities and only then may it be spread throughout the organization. The community level represents both the focus of the theoretical aspects of the framework as well as the focus of its practical application. In this sense, and within this framework, the notion of *situated-action* refers to the deepening and intensifying of communities at organizational level, as it is community level situated-action that enables collective meaning-making and shared understanding—that, in turn, is at the basis of knowledge creation and sharing at organizational level.

There are specific organizational learning design initiatives that arise from the theoretical development of step one and step three, however, these have to be situation-specific and cannot be generalized or recommended and implemented in a normative and prescriptive way. The theoretical concepts refer to that which is possible to generalize, but the practical application of this organizational learning framework does not propose specific practices. On the contrary, the SLF ascertains that the organizational practices should be transformed and improved according to the situated reading, interpretation and understanding of specific communities confronted with concrete realities. Again, the key issues are openness and flexibility, not in terms of functionalistic roles or job-profile, but in terms of mentality, mind-sets and world-views. Not as rationalistic mental-models but as reflexive and insightful pragmatic oriented action-centered and practice-based approaches.

Organizational learning never ends, and as each community and organization develops, new areas are disclosed that in turn need further understanding and development, so that the cycle restarts with the first step - ice-breaking and the identification of key issues. There is not a clear cut division, either among different steps in the cycle or among different cycles, so that it is possible, and even desirable, that there is not a perfect, homogenous and symmetric development in relation to different issues and aspects of organizational life. The point that has to be made is that this framework consists in a possible approach to organizational learning and that it presents an idiosyncratic theoretical perspective that is renitent to accept a single, unique, monolithic and standardized discourse on organizational practices. Therefore, though there is a constant subjacent reference to organizational practice throughout the development of the SLF, it cannot subscribe specific practices, as these are themselves the result that is delivered through the

application and use of this theoretical framework for organizational learning. If the SLF were to list a set of specific practices to be applied uniformly at an organizational level, then it would be a contradiction in its own terms.

5.6 Applications of the Framework

The Semiotic Learning Framework refers to a theoretical approach to organizational learning, and, thus, its privileged application domain is that of organizations as such, in particular the knowledge-intensive ones. The use of management and organization theories, when combined with the contributions of social philosophy, brings groundbreaking perspectives to the understanding of the complexity of organizational reality. Therefore, the SLF has a wider range of applications' domains than its immediate organizational field, including the areas of applied organizational research, and the field of postgraduate education, for both managers and information technology professionals. The SLF, in theoretical terms, assumes the locus of a community as the privileged arena for the promotion of organizational learning initiatives. In similar terms, the SLF practical application assumes that it is within a community that its insights may be learnt and fully explored.

Organizational learning initiatives are the first instance for the application of the framework because it is at the organizational level that the SLF is directed. As an organizational learning framework it includes three interrelated dimensions: organizational design, organizational consulting, and organizational audit. Another level of analysis also refers to a triangular relation between: (i) web-based community building mechanisms, (ii) group dynamics and training, and (iii) personal support through coaching, mentoring and tutoring. Organizational design corresponds to both the creation and the developmental organizational stages where the SLF is applied on a continual basis as the background work supporting the organizations' rationale.

Organizational consulting corresponds to the application of the framework to deal with specific and critical situations, when strategic decisions have to be made or when there is conflict or an organizational identity crisis. Organizational audit corresponds to the use of the framework as an evaluation device, as a means to determine the potential for development and the gap between that potential and current reality. Organizational evaluation, self-assessment and internal consulting are areas that the SLF helps to strengthen as key strategic areas for organizational development.

The SLF application within an educational setting potentially includes a postgraduate course (eg. an MBA), an on-line course, and a vocational and professional training initiative focusing on the relationship between information systems and social theory. The target public of these educational formats is management and information technology professionals, though they may be extended to other organizational directed professionals. The areas of potential development of the framework within an educational setting are: (i) information technology and social theory, (ii) project management and policy

formulation, (iii) strategic innovation management, and (iv) information systems analysis and development.

The SLF may be used within the field of applied organization research focusing on three interrelated aspects: transdisciplinary action-research, social philosophy informed research, and practice oriented research. The framework explicitly assumes a certain theoretical orientation and its application as a research approach does not determine exactly the end product of the research but rather gives a common orientation and rationale that may be understood as a background methodology, i.e., a set of principles directing the theoretical perspective that supports and grounds the research. Organizational practices are understood as conveying a dynamic rationale that continuously defines the organization's core identity. The SLF as a potential research approach explores this dynamism and aims at a better understanding and subsequent promotion of organizational innovation and development.

5.7 Final Words

The present section has presented, described and discussed the theoretical framework of Semiotic Learning: a work-methodology that promotes and facilitates learning in knowledge-intensive organizations. The Semiotic Learning Framework is a theoretical approach to organizational learning based on an action perspective and supported by social semiotics and other related theories and concepts. The SLF includes a learning cycle, key organizational issues and central working concepts. The possible applications of the framework are also discussed. The SLF is a contribution to the field of organizational learning that focuses on innovation and creativity as critical elements within the current organizational context of increased complexity.

The central aspect to be considered is the theoretical standing that this framework proposes: *the inquisitive, critical, boundary expanding and creative-thinking perspective*. Though reflexive practices are widely acknowledged in organizational learning literature as having a paramount importance, Semiotic Learning draws on theoretical approaches that are specialized in reflexivity *per se*. Though there is a large variety of approaches that have been integrated into the SLF, their scope points in a single direction, that of exploring post-cognitivist and non-mentalistic approaches to reflexivity. The SLF calls attention to the taken for granted assumptions of mainstream management thinking and explicitly proposes an alternative and complementary perspective. This perspective includes a theory and also a praxis, i.e., it has to be lived through and experienced in order to be fully understood. Nietzsche, Dilthey, Heidegger, Jaspers, Wittgenstein and Foucault also emphasized the practical nature of their philosophical work and they all explicitly claimed that their thought could only be valued as making a difference in terms of how life itself is lived.

6 Conclusions

The complexity of current organizational contexts implies the need for innovative theorization of learning at the organizational level. Organizational learning represents a critical aspect of each organization's capacity to innovate, and to nurture and maintain its inner dynamism.

The Semiotic Learning Framework is presented as a theoretical approach to organizational learning, and as a working methodology to be applied within organizational contexts. It derives its rationale from social semiotics and from social philosophy and it focuses on critical organizational key issues. This framework is to be applied as an organizational learning initiative at the organizational level, as the content of a post-graduate program, and as a methodology for interdisciplinary team works.

Organizational learning is an *application domain* and this implies that it can be approached through different epistemic lenses. Indeed, organizational learning, as well as organization theory in general, has been subject to different influences. James March used the term in 1958, though it was through Argyris and Schön's (1978) work that organizational learning became established as a management research theme and as an organizational practice, and it was through Senge's (1990) contribution that it became widely disseminated. Contemporary approaches to organizational learning give witness to the wide variety of schools of thought that contribute to the richness and complexity of this managerial field.

Organizational learning has developed in parallel with other organizational theories that are part of management science's efforts to respond to the challenges and opportunities posed by the knowledge economy of the information age (Kearmally, 1999; Drucker, 1999). Knowledge management and communities of practice are examples of such theories. Within knowledge management there has been a development from an initial focus on technology related issues, to a focus on the individual and on individual competencies, and then to a focus on the social aspects of knowledge creation and sharing. Communities of practice theory has always had a focus on the social embeddedness of knowledge processes. Organizational learning initially had a systems thinking focus, then it further developed a cognitivist perspective, and finally social oriented approaches started to emerge. Current approaches to organizational learning show an identification with one or with several of these perspectives.

The particular approach that the present chapter proposes belongs to a specific line of thinking, though it claims that it is necessary to understand the radicality of its assumptions. This radicality is connected to the paradigmatic break proposed by *pragmatism*, developed by Peirce (1955). Pragmatism argues for a non-dualistic split between mind and body, and between theory and practice. It responded to the Cartesian focus on the individual, assumed to be an autonomous and independent subject, by arguing that the individual and social dimensions are part of a single reality that has to be *taken as a whole* and that cannot be analyzed separately without the risk of missing its essence.

Many organizational learning approaches claim being influenced by American pragmatism, including Argyris and Schön's (1978) initial contribution. The ideas of *experiential learning* and of *processes of inquiry* are an inheritance from pragmatism. Nevertheless, the present paper argues for the need to radically explore this line of thinking and in order to do so it integrates contributions from philosophy and from social theory.

Heidegger's (1996) ontology and its influence in contemporary hermeneutics through the works of Ricoeur (1981) and Gadamer (1975) are a critical contribution to the development of organizational learning, as has been identified by Elkjaer (1999, 2001, 2003) in her "social theory of learning." She claims that only through an *ontological perspective* it is possible to integrate the social and the individual dimensions because an individual focus only takes into account an epistemological perspective. Therefore, her "social learning theory" integrates both an ontological and an epistemological approach.

Besides *hermeneutic ontology* the approach being proposed, Semiotic Learning, draws on *socialsemiotics* in order to connect the processes of meaning-making with the social environment within which such processes occur. From a sociological perspective, meaning is derived from the social contexts, structures and processes that determine its content. Social semiotics, however, goes further in this analysis by integrating the social and the individual aspects of meaning-making. Semiotics, the science of signs, claims that knowledge is inherently linked to symbolic reasoning and social semiotics analyses the social parameters of this reasoning.

Therefore, ontological hermeneutics, which focuses on the interpretation processes presented by Heidegger's concept of *being-in-the-world* (as opposed to the Cartesian *subject-object* ontology) and social semiotics, which focuses on the social embeddedness of all meaning-making processes, together constitute a powerful theoretical matrix that has radical practical implications both in terms of *personal* and *organizational development*.

The Semiotic Learning Framework takes the full implications of pragmatism by integrating both individual and collective perspectives, so that learning is understood as a *developmental and transformational process* that may be identified both at individual and at an organizational level. Semiotic Learning firstly implies a *radical shift in thinking*, one that is not centered on the individual mental efforts or on volunteeristic approaches but rather on the development of an attentiveness and of an awareness that corresponds to a decentering and to an inquiring process that are parallel to Derrida's "deconstruction."

Semiotic Learning represents a radical shift in thinking in relation to mainstream management approaches that are centered on prescriptive and normative contributions. Breaking with this pattern is a question of grades and not a black and white, or yes or no, issue. As has been referred to, several organizational learning perspectives take this social and pragmatist approach, though Semiotic Learning argues for the need to develop it further, and this development has radical consequences both at the personal and at the organizational level.

References

- Alvesson, M., & Sköldberg, K. (2000). *Reflexive methodology: New vistas for qualitative research*. London, UK: Sage.
- Argyris, C. (1992). *On organisational learning*. Oxford: Blackwell
- Argyris, C., & Schön, D. (1978). *Organisational learning: A theory of action perspective*. Reading, MA: Addison-Wesley.
- Backström, T., Eijnatten, F., & Kira, M. (2002). A complexity perspective on sustainable work systems. In P. Docherty, J. Forslin, & A. Shani (Eds.), *Creating sustainable work systems: Emerging perspectives and practice* (pp.65–75). London: Routledge.
- Bakhtin, M. (1981). *The dialogic imagination: Four essays*. M.Holquist (ed.) Austin, TX: University of Texas Press.
- Bateson, G. (1973). *Steps to an ecology of the mind*. New York: Ballantine Book.
- Benton, T., & Craib, I. (2001). *Philosophy of socialscience: The philosophical foundations of social thought*. New York: Palgrave.
- Berger, P., & Luckman, T. (1966). *The socialconstruction of reality: A treatise in the sociology of knowledge*. Garden City, NY: Doubleday.
- Bourdieu, P. (1998). *Practical Reason*. Cambridge: Polity Press.
- Brandist, C. (2002). *The Bakhtin circle—Philosophy, cultureand politics*. London: Pluto.
- Brown, J. (1991). Research that reinvents the corporations. *Harvard Business Review*, 69 (1), 102–111.
- Brown, J., & Duguid, P. (1991). Organisational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization Science*, 2, 40–57.
- Brown, J., & Duguid, P. (2000). *The sociallife of information*. Boston: Harvard Business School Press.
- Brown, J., & Duguid, P. (2001). Knowledge and organisation: A social-practice perspective. *Organisational Science*, 12 (2), 198–213.
- Checkland, P. (1984). *Systems thinking, systems practice*. Sussex: Wiley.
- Checkland, P. (1999). *Soft systems methodology: a 30-year retrospective*. Sussex: Wiley.
- Cooperrider, D., Sorensen, P., Yaeger, T., & Whitney, D. (2001). *Appreciative inquiry: An emerging direction for organisational development*. Champaign, IL: Stipes Publishing.
- Delanty, G., & Strydom, P. (2003). *Philosophies of socialscience*. Berkshire: McGraw-Hill.
- Drucker, P. (1999). *Management challenges for the 21st century*. Oxford: Butterworth-Heinemann.
- Easterby-Smith, M., & Araujo, L. (1997). Organisational learning: current debates and opportunities. In M. Easterby-Smith, J. Burgoyne, & L. Araujo (Eds.), *Organisational learning and the earning organisation*. London: Sage.
- Easterby-Smith, M., & Lyles, M. (2003), *Handbook of organisational learningand knowledgemanagement*. Malden, MA: Blackwell.
- Eijnatten, F. (2003). Chaordic systems thinking: Chaos and complexity to explain human performance management. Proceeding of Business Excellence Conference 2003.

- Elkjaer, B. (1999) In search of a Social Learning Theory. In M. Easterby-Smith, L. Araujo & J. Burgoyne (Eds.), *Organisational Learning and the Learning Organisation: Developments in Theory and Practice*. London: Sage.
- Elkjaer, B. (2003). Social learning theory: Learning as participation in social processes. In M. Easterby-Smith, & M. Lyles (Eds.), *Handbook of organisational learning and knowledgemanagement*. Malden, MA: Blackwell.
- Emery, F., Trist, E. (1969) Sociotechnical systems. In F. Emery (Ed.), *System thinking*. Handsworth, UK: Penguin.
- Engström, Y. (1987). *Learningby expanding: An activity theoretical approach to developmental research*. Helsinki: Orienta Konsultit.
- Foucault, M. (1972) *The archaeology of knowledge*. London: Tavistock
- Forrester, J. (1971, January). The counter intuitive behaviour of social systems. *Technology Review*, 52–68
- Gadamer, H.G. (1975). *Truth and method*. London: Sheed and Ward.
- Gherardi, S, & Nicolini, D. (2001) The sociological foundations of organisational learning. In M. Dierkes, A. Antal, J. Child, & I. Nonaka (Eds.), *Organizational learning and knowledge*. Oxford: Oxford University Press.
- Halliday, M. (1978). *Languageas socialsemiotic*. Victoria: Open University.
- Heidegger, M. (1996). *Being and time*. Albany: State University of New York.
- Henriques, J., Hollway, W., Urwin, C., Venn, C., & Walkerdine, V. (1984). *Changing the subject: Psychology, socialregulation and subjectivity*. London: Routledge.
- Kearmally, S. (1999). *When economics means business*. London: Financial Times Management.
- Kolb, D. (1984). *Experiential learning: Experience as the source of learning and development*. Cambridge: Harvard University, Graduate School of Business Administration.
- Kress, G. (1985). *Linguistic processes in sociocultural practice*. Victoria: Deakin University.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate and peripheral participation*. Cambridge: Cambridge University Press.
- Lemke, J. (1984). *Semiotics and education*. Toronto: Toronto Semiotic Circle Monographs.
- Lemke, J. (1995). *Textual politics, Discourse and socialdynamics*. London: Taylor & Francis.
- Maturana, H., & Varela, F. (1980). *Autopoiesis and cognition: The realisation of the Living*. Dordrecht: Reidel.
- Meadows, D. (1982, Summer). Whole earth models and systems co-evolution. *Co-evolution Quarterly*, 98–108.
- Nobre, A. (2002a). Entrepreneurship as an attitude—a challenge to innovative managers. *The International Journal of Entrepreneurship and Innovation*, 3 (1),
- Nobre, A. (2002b). Learning organisations and knowledge management—people and technology, the challenges of the information era. *International Journal of Human Resource Development and Management*, 2 (1/2),
- Nonaka, I. (1991). The knowledge-creating company. *Harvard Business Review*, 69 (6), 96–104.
- Nonaka, I., Byosiére, P., & Toyama, R. (2001). A Theory of Organisational Knowledge Creation: Understanding the Dynamic Process of Creating Knowledge. In M. Dierkes, Antal-Berthoin, A., Child, J. & Nonaka, I.

- (Eds.): *Handbook of Organizational Learning and Knowledge Creation*. Oxford University Press.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York: Oxford University Press.
- Peirce, C. (1955). Logic as semiotic: The theory of signs. In J. Buchler (Ed.), *Philosophical writings of Peirce*. New York: Dover.
- Polanyi, M. (1958). *Personal knowledge*. Chicago: Chicago University Press.
- Prigogine, I. (1980). *From being to becoming*. San Francisco: Freeman.
- Ricoeur, P. (1981). *Hermeneutics and the human sciences*. Cambridge: Cambridge University Press.
- Schön, D. (1982). *The reflective practitioner: How professionals think in action*. New York: Basic Books.
- Sebeok, T. (1994). *Signs - an introduction to semiotics*. Toronto: University of Toronto Press.
- Senge, P. (1990). *The fifth discipline—the art and practice of the learning organisation*. New York: Doubleday.
- Senge, P. (1990).
- Shani, A., & Docherty, P. (2003). *Learning by design*. Oxford: Blackwell Publishing.
- Shariq, S. (1998). Sense making and artifacts: an exploration into the role of tools in knowledge management. *Journal of Knowledge Management* (2), 10–19.
- Simon, H. (1996). *The sciences of the artificial*. Cambridge: MIT Press.
- Stacey, R. (2001). *Complex responsive processes in organisations: Learning and knowledge creation*. London: Routledge.
- Stewart, T. (1997). *Intellectual capital: The new wealth of organisations*. Currency, Doubleday.
- Sveiby, K.E. (1997). *The new organisational wealth: Managing and measuring knowledge-based assets*. San Francisco: Berrett-Koehler Publishers.
- Urry, J. (2003). *Global complexity*. Cambridge: Polity Press.
- Vickers, G. (1965). *The art of judgement: A study of policy making*. London: Chapman & Hall.
- Weick, K. (1979). Cognitive process in organisations. In Barry M. Staw (Ed.), *Research in Organisational Behaviour*. Greenwich: Jai Press.
- Weick, K. (1995). *Sense making in organisations*. Thousand Oaks, CA: Sage.
- Weick, K. (2001). *Making sense of the organisation*. Oxford: Blackwell Publishers.
- Wenger, E. (1999). *Communities of practice: Learning, meaning and identity*. Cambridge: Cambridge University Press.
- Wenger, E., McDermott, M., & Snyder, W. (2002). *Cultivating communities of practice*. Boston: Harvard Business School Press.
- White, H. (1978). *Tropics of discourse: Essays in cultural criticism*. Baltimore: The Johns Hopkins University Press.
- Wittgenstein, L. (1958). *The blue and brown books: Preliminary studies for the “philosophical investigations”*. London: Basil Blackwell.
- Young-Bruehl, E. (1981). *Freedom and Karl Jasper’s philosophy*. New Haven: Yale University Press.

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